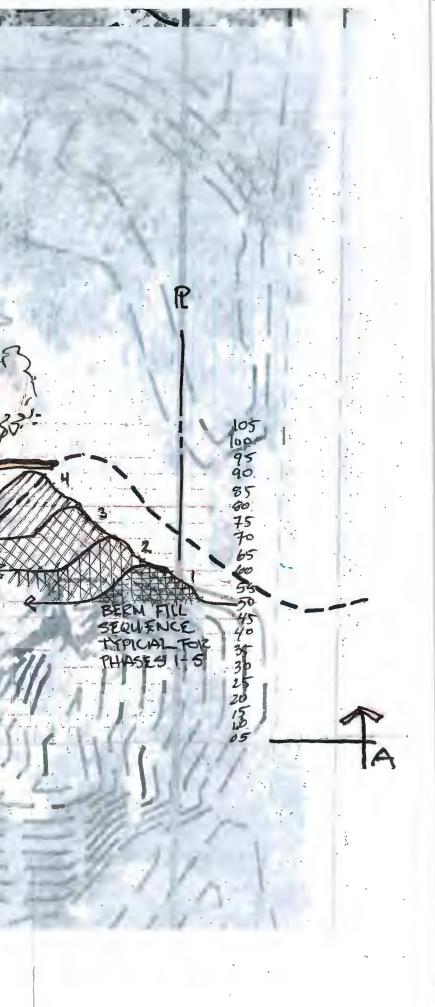
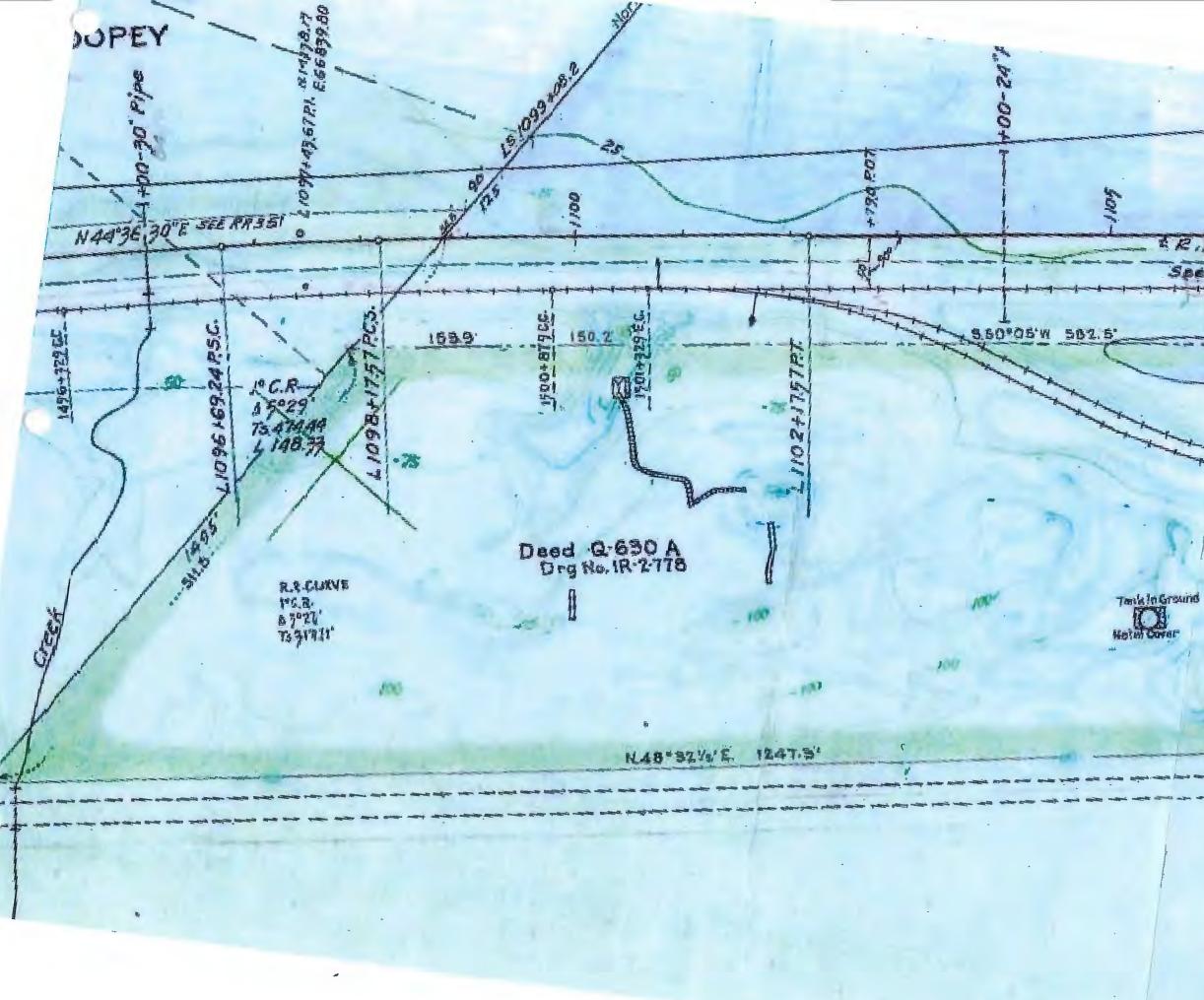
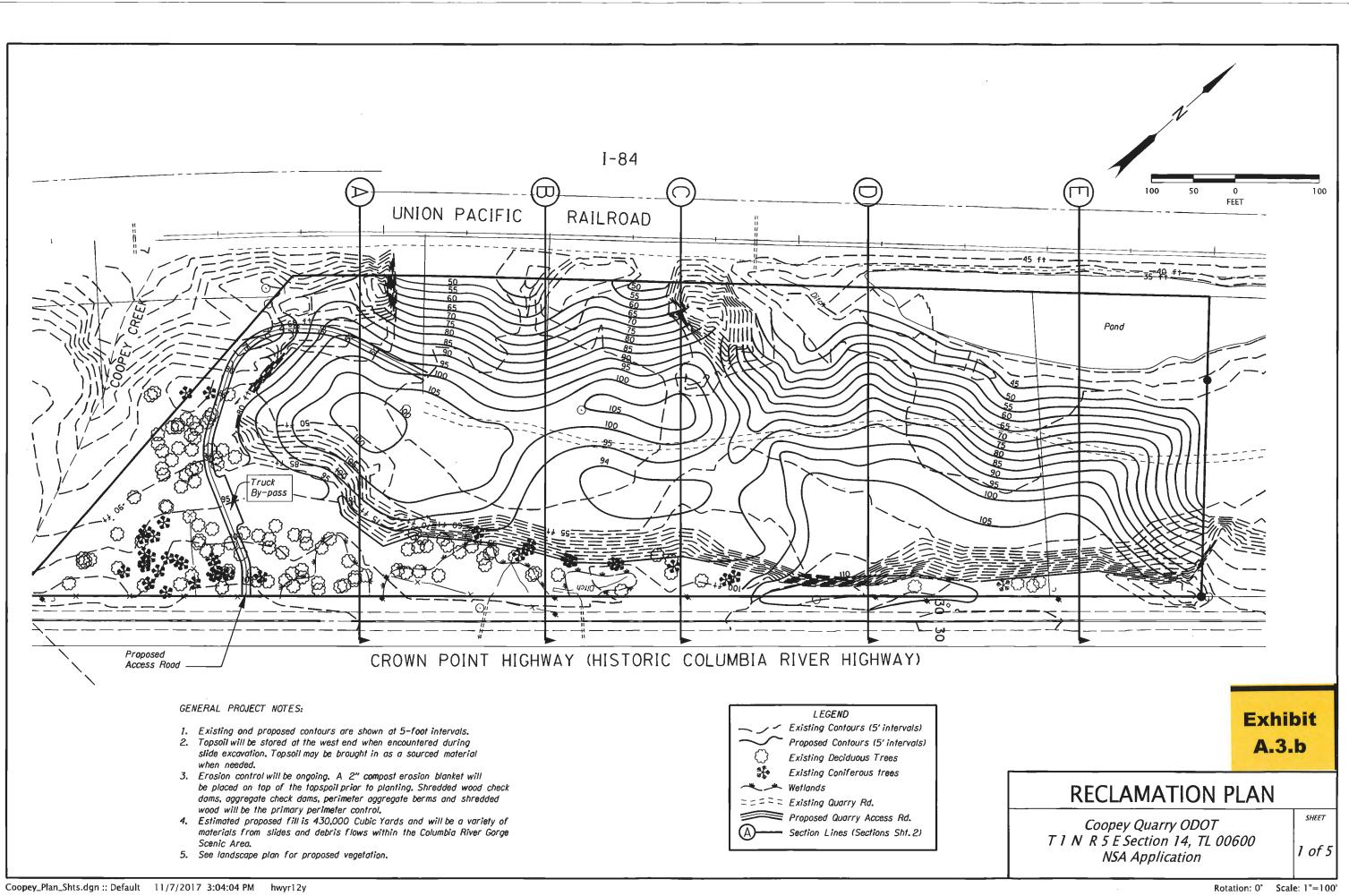


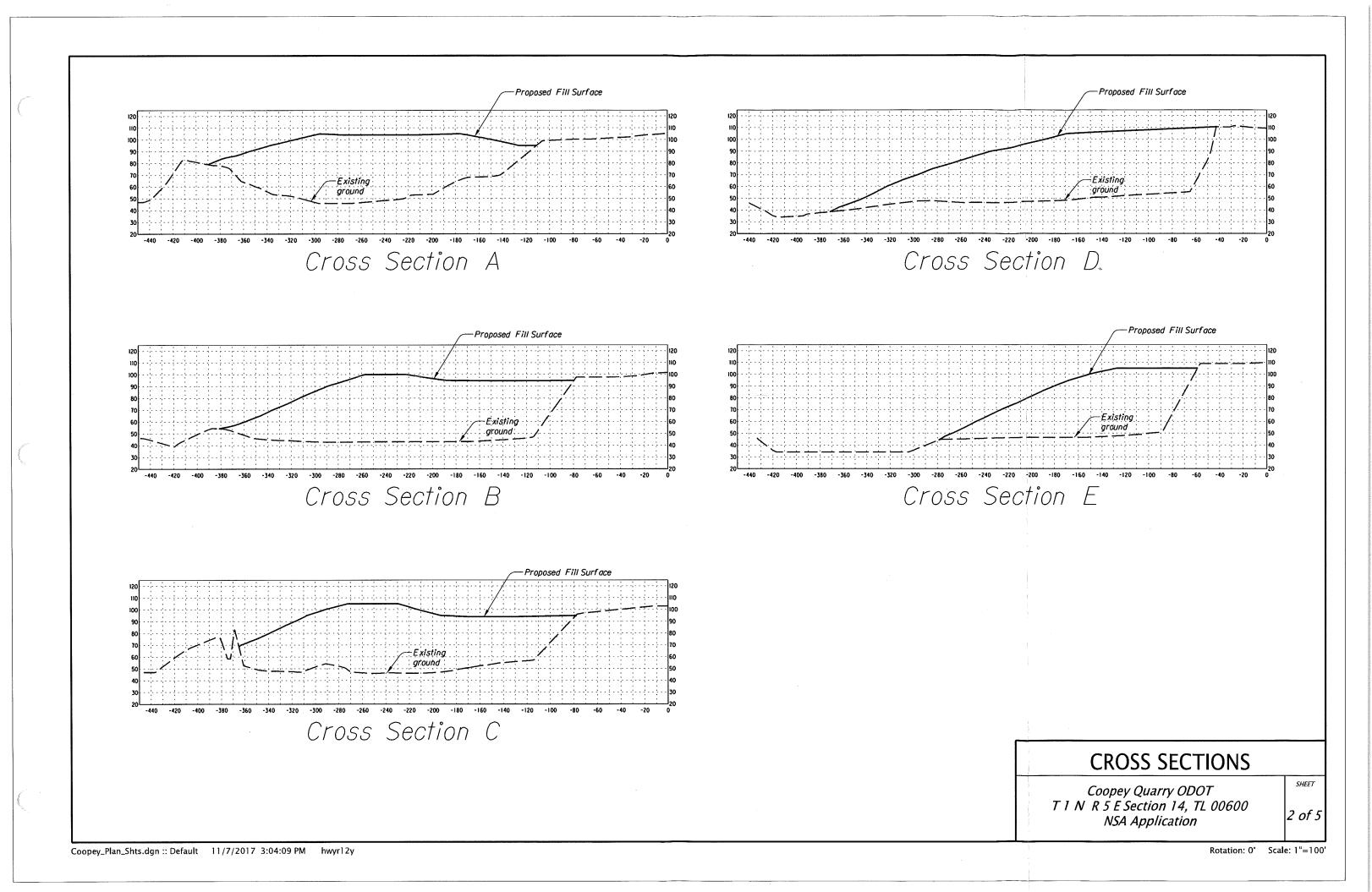
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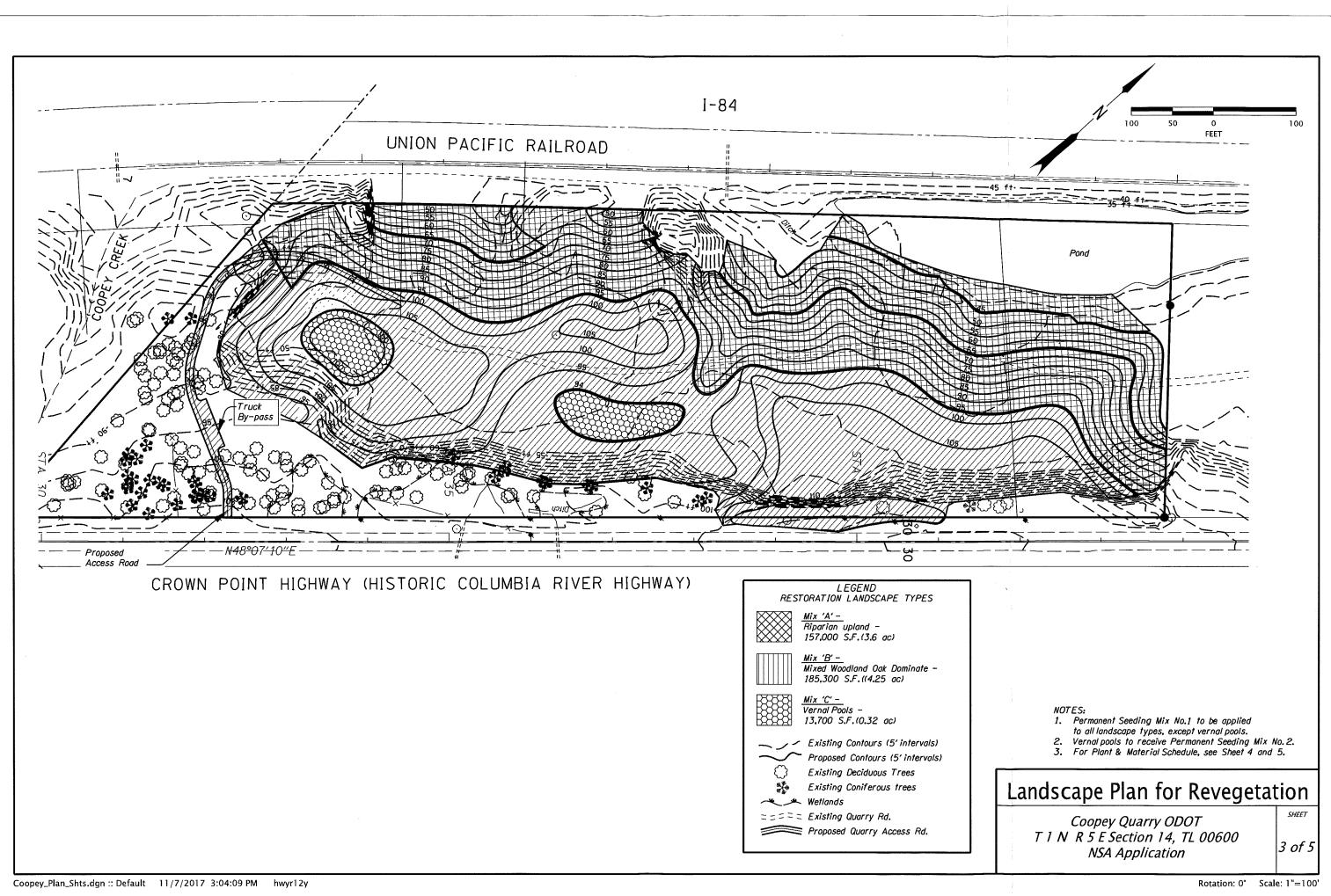




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Plant Type	Botanical Name	Common Name	Size	Spacina	Root Type	Percent Mix	Plant Condition	A.S.N.S.	Layout	Notes	Irrigation		ΤΟΤΑ
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	Acer circinatum	vine maple	D60L	12' O.C.	D6OL Container	5%	Multi-branched	-	As Staked/Approved	Contract grown			210
	Acer macrophyllum	big leaf maple	D60L D60L	12' O.C.	D60L Container	15%	Single trunk		As Staked/Approved	Contract grown	-		70
	Alnus rubra	red alder	1	12' O.C.	D60L Container	5%	Single trunk		As Staked/Approved	Contract grown			70
	Amelanchier alnifolia	serviceberry	D60L	12' 0.C. 12' 0.C.	D6OL Container	5%5%	Single trunk		As Staked/Approved	Contract grown Contract grown			70
	Fraxinus latifolia	Oregon Ash	D60L D60L		D6OL Container	20%	Single trunk Single trunk		As Staked/Approved As Staked/Approved	Contract grown			270
	Populus trichocarpa	black cottonwood		12' 0.C. 12' 0.C.	D6OL Container	25%	Single trunk		As Staked/Approved	Contract grown			350
	Quercus garyana	Oregon white oak	DEOL	12' 0.C.	D6OL Container	15%	Single trunk		As Staked/Approved	Contract grown			210
	Pseudotsugo menziesii	Douglas fir	DEOL	12' O.C.	D6OL Container	5%	Single trunk		As Staked/Approved				70
Mix 'A'	Thuja plicata	western red cedar	DOUL	12 0.0.	D60L Container	5%	Single in Unk		AS STORED Approved	Contract grown		Totat	1.39
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	Cornus sericea	red-osier_dogwood	D40L	6' O.C.	D4OL Container	10%			Groups 3-5	Contract grown			560
	Corylus cornuta	hazelnut	D40L	6' O.C.	D40L Container	15%			Groups 3-5	Contract grown			840
	Holodiscus discolor	ocean spray	D40L D40L	5' O.C.	D40L Container D40L Container	15%			Groups 4-7	Contract grown			840
	Mahonia aquifolium	Oregon Grape	D40L	5' O.C.		5%			Groups 5-9				280
	Polystichum munitum	sword fern	D40L	6' 0.C.	D4OL Container	10%			Groups 4-3	Contract grown			560
	Oemleria cerasiformis	osoberry	D40L	6' O.C.	D4OL Container	10%			Groups 4-3				560
	<u>Ribes sanguineum</u>	red flowering current	D40L D40L	5' O.C.	D40L Container D40L Container	5%			Groups 5-9	Contract grown			28
	Rosa gymnocarpa	baldhip rose	D40L	5' O.C.	D40L Container D40L Container	5%			Groups 5-9 Groups 5-9	Contract grown			28
	Rubus parviflorus	thimbleberry	D40L D40L	6' 0.C.		10%			Groups 5-9 Groups 5-7				56
	Sambucus cerulea	blue elderberry	D40L D40L	5' O.C.	D4OL Container				· · · · · · · · · · · · · · · · · · ·	Contract grown			56
	Symphoricarpos albus	snowberry	DAOL	5 U.C.	D4OL Container	10%		1	Groups 5-7	Contract grown			5,60
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	Acer macrophyllum	big leaf maple	D60L	12' O.C.	D6OL Container	10%	Single trunk		As Staked/Approved		-		160
	Amelanchier alnifolia	serviceberry	DEOL	12' O.C.	D60L Container	10%	Single trunk		As Staked/Approved				16
	Cornus nuttollii	dogwood	D60L	12' O.C.	D60L Container	5%	Single Trunk		As Staked/Approved				80
	Pseudotsuga menziesii	Douglas fir	D60L	12' O.C.	D60L Container	20%	Single trunk	-	As Staked/Approved				33
	Quercus garyana	Oregon white oak	D60L	12' O.C.	D60L Container	50%	Single trunk		As Staked/Approved				820
Mix 'B'	Thu ja plicata	westernr red cedar	D60L	12' O.C.	D60L Container	5%	Single trunk		As Staked/Approved				80
	Total Trees In Mix B											Totat	1.63
	Holodiscus discolor	ocean spray	D40L	6′ O.C.	D40L Container	20%			Groups 3–9	Contract grown			1.32
	Polystichum munitum	sword fern	D40L	5' O.C.	D40L Container	5%			Groups 5–9	Contract grown	- The second sec		33
	Physocarpus capitatus	ninebark	D40L	6' O.C.	D40L Container	20%			Groups 5–9	Contract grown			1.32
	Oemleria cerasiformis	osoberry	D40L	6' O.C.	D40L Container	5%			Groups 4–3	Contract grown			33
	Ribes sanguineum	red flowering current	D40L	6' 0.C.	D40L Container	20%			Groups 4–3	Contract grown			1.32
	Rosa nutkana	nootka rose	D40L		D40L Container	15%			Groups 5–9	Contract grown			99
	Sambucus cerulea	blue elderberry	D40L		D40L Container				Groups 3–5	Contract grown			33
	Symphoricarpos albus	snowberry	D40L		D40L Container	10%			Groups 5–9	Contract grown		A	66
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	Cornus sericea	red-osier dogwood	D40L	6' O.C.	D40L Container	30%			Groups 5-9				12
Mix 'C'	Rubus spectabilis	salmonberry	D40L		D40L Container				Groups 5-9				12
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# PLANT AND MATERIALS

*Coopey Quarry ODOT T 1 N R 5 E Section 14, TL 00600 NSA Application* 

SHEET

4 of 5

Rotation: 0° Scale: 1"=100'

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	Achillea millifolium	common yarrow	Seed				PLS/Acre	0.14			N/A		
	Anaphalis margaritaceae	pearly everlasting	Seed				PLS/Acre	0.08			N/A		
	Asclepias speciosa	showy milkweed	Seed				PLS/Acre	7.36			N/A		
	Aster subspicatus	aster spp.	Seed				PLS/Acre	0.91			N/A		
	Bromus carinatus	mountain brome	Seed				PLS/Acre	16.58			N/A		1
	Collinsia grandiflora	giant blue-eyed Mary	Seed				PLS/Acre	1.33			N/A		
	Deschampsia elongata	slender hairgrass	Seed				PLS/Acre	0.87		·	N/A		]
	Elymus glaucus	blue wildrye	Seed				PL S/Acre	4.37			N/A		7.9
Permanent	Festuca rubra	red fescue	Seed				PLS/Acre	0.79			N/A		1
Seeding Mix	Heuchera glabra	piggyback plant	Seed				PLS/Acre	0.31			N/A		
No.1	Lupinus rivularis	riverbank lupine	Seed				PLS/Acre	41.44			N/A		
	Poa secunda var. secunda	Sandberg's bluegrass	Seed				PLS/Acre	0.16			N/A		
	Prunella vulgaris	self-heal	Seed				PLS/Acre	1.30			N/A		
	Rosa gymnocorpa	baldhip rose	Seed				PLS/Acre	2.68			N/A		
	Solidago canadensis	goldenrod	Seed				PLS/Acre	0.10			N/A		
	Symphoricarpos mollis	creeping fescue	Seed		1		PLS/Acre	1.58	<b>`</b>			Acre	7.9
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	Allium cernuum	nodding onion	Seed				PLS/Acre	4.79			N/A		4
	Agrostis exarata	spike bentgrass	Seed				PLS/Acre	0.28			N/A		4
	Aster subspicatus	Douglas aster	Seed				PLS/Acre	0,43			N/A		-
	Camassia leichtlinii	great Camas	Seed				PLS/Acre	9.90			N/A		4
	Carex stipata vor. stipata	sawbeaked sedge	Seed				PLS/Acre	1.22			N/A		4
	Collinsia grandiflora	giant blue-eyed Mary	Seed	_			PLS/Acre	1.00			N/A		4
	Delphinium nuttallii	Nuttall's larkspur	Seed				PLS/Acre	0.29			N/A		0.3
Permanent	Deschampsia elongata	slender hairgrass	Seed				PLS/Acre	0.41			N/A		- 0.52
Seeding Mix	Downingia elegans	elegant calicof lower	Seed	_			PLS/Acre	0.14			N/A		4
No.2	Lupinus rivularis	riverbank lupine	Seed				PLS/Acre	19.50			N/A		_
	Elymus glaucus	blue wildrye	Seed				PLS/Acre	6.58			N/A		1
	Plagiobothrys figuratus	frogrant popcorn flower	Seed				PLS/Acre	0.51			N/A		1
	Plectritis congesto	sea blush .	Seed				PLS/Acre	0.99			N/A		4
	Poa secunda var. secunda	Sandberg's bluegrass	Seed				PLS/Acre	0.49			N/A		4
	Saxifraga oregana	Oreaon saxifraae	Seed	1			PLS/Acre	2.76			N/A		1

No.

1

Charles Contraction

# PLANT AND MATERIALS

Coopey Quarry ODOT T 1 N R 5 E Section 14, TL 00600 NSA Application

5 of 5

Rotation: 0° Scale: 1"=100'





Department of Transportation

Region 1 Headquarters 123 NW Flanders St Portland, OR 97209-4012 Phone: (503)731-8200 Fax: (503) 731-8259

July 7, 2017

To: Dan Bacon, District 2 C Manager

From: Ben White, ODOT Region 1 Biologist

# RE: Biological Resources Impact Memo Coopey Quarry Disposal Site Maint Number: 17016 Multnomah County, Oregon

The following Biological Resources report satisfies Oregon Department of Transportation's (ODOT) requirement to address potential effects on the Columbia River Gorge National Scenic Area designated species for the land-use permit application administered by Multnomah County. The proposed disposal project is located between I-84 and the Historic Columbia River Highway (HCRH), approximately 2.5 miles west of Multnomah Falls at HCRH mile-post (MP) 15.3, in Multnomah County. The work will occur within Coopey Quarry parcel and adjacent ODOT right-of-way (ROW). The location is classified as a Special Management Area (SMA) in the Columbia River Gorge Management Plan (US Forest Service 1999). The report addresses species and resources only identified in the USFS Region 6 Sensitive Species (2015) as cited in the management plan.



Figure 1. Project Location Map and API

Exhibit A.3.c

# **Project Scope and Area**

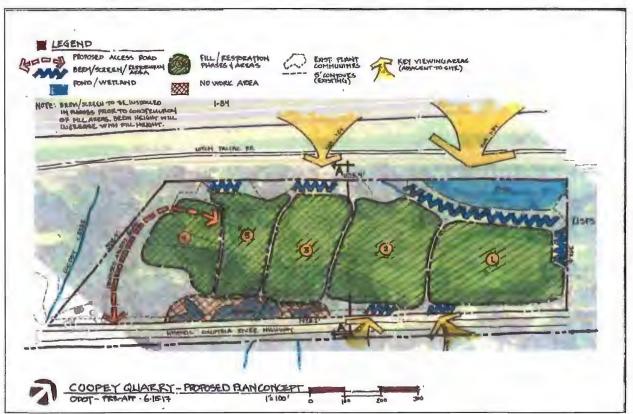


Figure 2. Preliminary disposal fill plan and sequencing showing work zones and berm locations.

The proposed project will create a local disposal site for slide material coming from ODOT owned facilities within the Columbia River Gorge National Scenic Area. In preliminary design, ODOT is planning for planted berms to visually screen the project from both the HCRH and I-84 as well as to act as a sediment barrier between the Beaver Pond and construction. Debris from local landslides will then be deposited in zones as marked in figure 2, starting on the east end of the property with disposal phase 1, and moving east to phase 4 as each area is filled to the final grade.

Access will be improved to the site location. An unimproved, existing access road will be improved for approximately 250 feet from the base of the quarry to up to the top of the hill and then approximately 12ft x 250ft of new roadway will be cut along the western end of the parcel to avoid wetlands to the east to connect to the HCRC. A small 24ft x 30ft truck bypass will be constructed approximately 30 yards from the highway to screen from HCRH view.

After the disposal activities are completed, the site will be graded and planted with native vegetation to mimic the surrounding mixed forest. Water draining from ephemeral wetlands above the quarry will be kept on site in ephemeral ponds as shown in the final grading plan (Figure 3, attached to document)



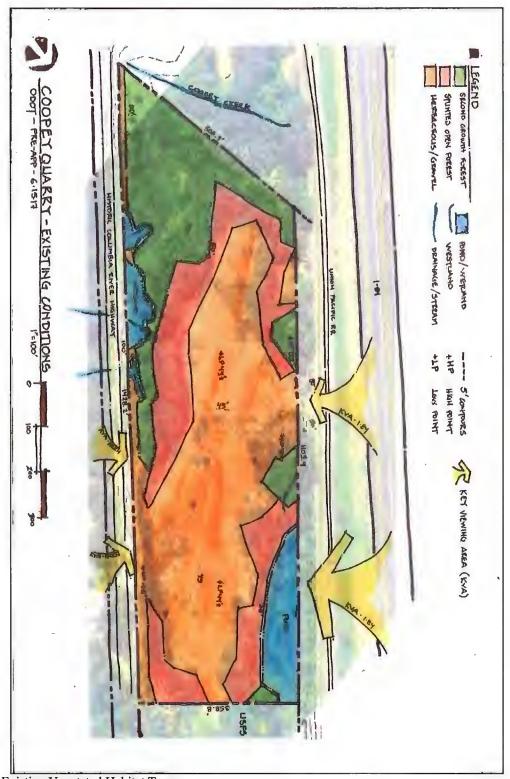


Figure 4. Existing Vegetated Habitat Types



**Figure 5.** Representative photos of habitat within the quarry site including damage from recent mudding scars. Foreground has quarry bottom of mainly gravels over bedrock, background shows the limited cliff habitat and scrub forest. Secondary forest is restricted to above cliff face. Ephemeral runoff ponding from shallow bedrock shown.

The project is located within a quarry site owned by ODOT that was discontinued around 1970 and is bounded on the south by the HCRH and on the north by the railroad and I-84. Vegetative habitat within the project area consists predominantly of three habitat types (Figure 4), secondary forest above the rim of the old quarry consisting of Oregon oak (*Quercus garryana*), Douglas fir (*Pseudotsuga menziesii*), and black cottonwood (*Populus balsamifera*) and some big leaf maple (*Acer macrophyllum*). The understory is patchy made up of predominantly poison oak (*Toxicodendron diversilobum*), English ivy (*Hedera helix*) and snowberry (*Symphoricarpos albus*) with blackberry (*Rubus armeniacus*), herb Robert (*Geranium robertianum*), red osier dogwood (*Cornus stolonifera*) and multiple species of fern being common. Invasives and poison oak were dominant closer to the road, transitioning to a higher native component as you move north.

The stunted forested grows along the base of the cliffs ringing the quarry. This area is mainly comprised of Black cottonwood and Red alder (*Alnus rubra*) with blackberry and grasses, and provides minimal cover and foraging for species in the area.

The majority of the quarry area is sparse. Due to compacted gravels and extremely shallow, poor soils mosses and grasses dominate this area. Seasonal inundation occurs from run-off and ponds seasonally on the quarry floor.

A March 24, 2017 review of the Oregon Biodiversity Index Center (ORBIC) records (GIS) lacked sensitive species occurrences within 1000ft of the project area. The nearest record was for the Steelhead (*Oncorhynchus mykiss*) and Coho salmon (*Oncorhynchus kisutch*) in Coopey Creek just over 1000 feet to the west of the project. In addition, occurrences of, Howells Daisy (*Erigeron howellii*) and Oregon Daisy (*Erigeron oreganus*), approximately 0.35 and 0.45 miles respectively, southeast of the project at the Angel's Rest viewpoint.

The project area contains features have the potential to provide habitat for several sensitive species found in the Columbia River Gorge (Table 1). This assessment is based on potential species distribution and habitat availability. Site visits made on March 3, 2017, April 11, 2017, June 1, 2017, June 20, 2017 and June 27, 2017 did not locate any sensitive, or federally threatened or endangered species within the project with the exception of black swifts (*Cypseloides niger*).

On several site visits, black swifts were seen flying through the project site. Four individuals in total were seen flying in and out of the quarry over I-84. A fissure running along the cliff face could provide nesting habitat for this species, however after an exhaustive binocular search and stationary monitoring during the June 1, 2017 site visit, no signs of nesting by any species was located.

The only terrestrial federally threatened species in this part of the gorge is the Northern Spotted owl (*Strix occidentalis caurina*). Though critical habitat is located 1.35 miles southeast of the project site, the nearest recorded nest location is approximately 3.8 miles southeast of the project location.

# Table 1. List of USFS Region 6 Forester Special Status Species with potential habitat within the project API.

Species	Status (Fed/OR/ORBIC)	Habitat Potentially Impacted	Species Presence
Avian			
Northern spotted owl (Strix occidentalis caurina)	FT/ST/1	Mixed old growth forests with high canopy structure.	No suitable habitat
Black Swift (Cypseloides niger)	-/-/2	Cliffs and crevice	No nesting at location
Vascular Plants			
Howell's bentgrass ( <i>Agrostis howellii</i> )	-/SC/1	Moist Shady cliffs/canyon walls/ talus slopes/Waterfalls	No
Nutall's larkspur (Delphinium nuttallii)	-/-/2	undisturbed dry cliffs/open ground/moist lowlands	No
Howell's daisy (Erigeron howellii)	-/SC/1	Most Rocky Sites	No
Oregon daisy (Erigeron oreganus)	-/SC/1	wet basalt outcroppings / waterfalls	No
Columbia lewisia Lewisia (columbiana var. Columbiana)	-/-/2	grassy balds/rocky/talus/slopes	No
Suksdorf's desert parsley (Lomatium suksdorfii)	-/SC/1	Semi-open to open dry rocky hillsides	No
White fairypoppy ( <i>Meconella oregana</i> )	-/SC/1	Open Grasslands/ moist spring/dry summer	No
Barrett's penstemon (Penstemon barrettiae)	-/SC/1	dry rocky places/basalt cliffs	No
Violet suksdorfia (Suksdorfia violacea)	-/-/2	wet shady areas/ rocks, cliffs, sandy banks	No
Oregon sullivantia (Sullivantia oregana)	-/SC/1	Moist shaded cliffs	No

Fed: (-) = no special status, FE = federally endangered, FT = federally threatened, FC = federal candidate. OR State: (-) = no special status, SE = state endangered, ST = state threatened, SC = state candidate, SV = state vulnerable. USFS: (-) = no special status, FE = federally endangered, FT = federally threatened, SEN = USFS Region 6 sensitive species.

# **Priority Habitats**

The only special habitats found on the parcel include cliffs on the south boundary of the quarry, and including three above the quarry along the southern boundary and one beaver pond in the northeast corner of the parcel. The cliffs are approximately 1,000 linear feet long, of which approximately 500ft is vegetated by several species of fern, English ivy and blackberry and transitions into a vegetated steep slope. The remaining 500ft are relatively unvegetated and contain a fissure running horizontally approximately 15ft from the top. These cliffs are during the excavation of the quarry and were likely created in their final form sometime in the early 70s. As of yet, they do not appear to be providing habitat for any endemic or sensitive species.

Of the wetlands, three are located between the HCRH and the quarry. These wetlands fed from the highway runoff and local groundwater and eventually drain over the cliff onto the quarry floor. The beaver pond is located on the NE corner of the parcel. It is bounded on the north by the RR embankment, and the south and west by the quarry floor and on the east by the USFS property. The banks are dominated with reed canary grass, red alder, and yellow flag iris. No sensitive species were found utilizing this area and this portion of the parcel will not be impacted by disposal activities.

### **Potential Impacts**

Multiple site visits were made to survey for species that either had recorded occurrences or possible habitat within the general area. Neither sensitive nor endangered floras were encountered on site. Several vertebrate species are also known to occur in the general area including the Northern Spotted owl and the Black swift. The site does not include any large old growth conifers/ nor large snags and therefore it is not anticipated that Northern Spotted owl will be impacted.

In addition, there was no bird activity along the cliff face throughout spring and early summer site visits and the project is not expected to impact cliff nesting birds such as black swifts. Finally, Construction noise levels are not expected to exceed current levels due to the project's location between the highways and the railroad. Lastly, ODOT best management practices (BMPs) and erosion control measures will ensure that effects will not exceed the immediate project area.

Project impacts to priority habitats are relegated to the 1000 feet of cliff face, which will be removed by the filling and restoration of the quarry. No removal or fill will occur within any of the wetlands on site. For impacts to the wetland buffers, please see provided mitigation memo.

In conjunction with ODOT's standard and special specifications, ODOT utilize the following actions to will minimize impacts to and enhance habitat within the quarry site.

- 1. Retain felled trees. All trees that are cut down during construction will be left on the parcel as downed woody debris.
- 2. New disturbances to upland forest habitat will be minimized by using existing skid roads where practical. The roadway will be the bare minimum required for equipment access.
- 3. Noxious weed treatment. In accordance with ODOT specifications, noxious weeds within the project site will be treated and removed.
- 4. Once disposal activities are complete, the quarry site will be regraded and restored to a natural setting mimicking the surrounding native vegetated communities, including mixed Oak-Conifer forests and shallow ephemeral ponds. See Restoration plan in permit.

No impacts are expected to Threatened, Endangered, or Sensitive species with this project. Though potential cliff habitat will be lost, it was created as recently as the early 70s and is not currently being utilized. The ephemeral ponding will be replaced with a new shallow ponding complex which will be protected from local access (currently from the forest service property). Altogether, at the end of this project, it is anticipated that there will be a net benefit to endemic gorge species and their habitats.

# References

USDA Forest Service. 1991. Management Plan for the Columbia River Gorge National Scenic Area. USDA forest Service, Hood River, Oregon.

Oregon Natural Heritage Information Center. March 2017. Biotics, Element Occurrence Record Digital Data Set.

USDA Forest Service. 1999, 2004, 2008, 2011, 2015. Regional Forester's (R-6) Sensitive Species List.

Coopey Quarry. ODOT M17016 Wetland and Waters Delineation Report Multnomah County, Oregon



Prepared by:

Oregon Department of Transportation (ODOT) 123 NW Flanders Portland, OR 97209-4012 503-731-8233

July 2017

Exhibit A.3.d

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# Introduction

ODOT is considering Coopey Quarry as a disposal site for landslide debris. The winter of 2016-2017 saw heavy rains in the Columbia River Gorge National Scenic Area (CRGNSA). The rain combine with the steep topography and frequent freezing and thawing resulted in a series of landslides. These landslides have filled ODOT's current permanent and temporary disposal sites. Coopey Quarry represents ODOT's best option for a permanent disposal site in the Gorge. This delineation report documents the locations of wetlands on the Coopey Quarry project site. ODOT current plans will avoid these wetlands.

# A) Landscape Setting and Land Use:

Coopey Quarry is located north of the Historic Columbia River Highway (HCRH) and south of the railroad tracks, just south of I-84 (see Appendix A, Figure 1). The quarry is east of the Bridal Veil exit and east of Bridal Veil Creek. The Columbia River is just to the north of the site about 500 feet. The old quarry bottom is at about the same elevation as I-84 and the railroad tracks. Steep sloped quarry walls extend up from the quarry bottom to the south and west. Above the quarry wall is Garry Oak and Douglas fir dominated forest. The HCRH runs along the southern boundary of the property at about the same elevation as the top of the quarry wall.

The land use is primarily a transportation corridor, with single family homes on large lots and US forest service land as the primary neighbors to the quarry. The quarry has not been used since the 1960s or 1970s. The forested area has a heavily disturbed understory with large amounts of non-native plants. Many of the trees are large and could date back to the 1950s or before.

# B) Site Alterations:

Historic site alterations include construction of the HCRH to the south and the railroad and I-84 to the north. A topographic map from 1935 shows what is likely the pre-quarry topography (Appendix A Figure 5). Since then the site was excavated significantly and leveled creating a steep cliff face. The quarry is identified on ROW maps from late 1930s. Construction workers may have used the rock from the quarry for road or railroad base or for retaining walls. The site was used on and off into the 1960s or 1970s. Today the floor of quarry is basically rock or gravel and has soils no deeper than 4 inches. Vegetation grows in spots particularly near the shaded edge of the floor where there tends to be more soil sluffed from above. The top of the cliff wall is rimmed with forest on native soils. A large pond is located in the north east corner of the property and may have been dug or was once part of the Columbia River floodplain.

# C) Precipitation Data Analysis:

Precipitation data was gathered from the National Weather Service Forecast Office – Portland Oregon web site, using the Daily Climate Report weather information for Troutdale, OR. The rainfall year to date was above normal (Table 1). That was primarily from high rainfall, about 50% above normal, for the three months before the April 18<sup>th</sup> Sampling Date (Table 2). Seasonal effects on hydrologic indicators were considered during the delineation. The WETS table for Bonneville Dam indicated that the growing season extends from February 7 to December 22.

		Table 1. Precipitation	n Data	
Field Dates	Observed Rainfall on Field Date(s) (in.)	Observed Rainfall Two Weeks Prior to Field Date (in.)	Percent of Normal Rainfall for the Water Year to Date (4/18/2017)	Percent of Normal Precipitation for Three Months Prior to the Field Date
January 15, 2015	0.09	2.45	113%	112%

Table 2. Monthly Precipitation Data								
Month	Precipitation	Normal	%/Normal					
Feb-17	8.01	5.09	157%					
Mar-17	7.38	4.64	159%					
Apr-17	5.41	3.85	141%					

# D) Methods:

The routine methodology was used in determining the presence of wetlands and delineating wetland boundaries as described in the *Corps of Engineers Wetland Delineation Manual* (Environmental Laboratory, 1987) and the *Western Mountains, Valleys, and Coast Regional Supplement to the Army Corps of Engineers Manual* (ACOE 2010).

Prior to on-site investigation, the NRCS Soil Mapping data base was reviewed for soil types in the project area (Appendix A, Figure5). The NWI maps for the site were also reviewed (Appendix A, Figure 4). Research was conducted on whether other delineations had been conducted, or if the project area was included in any Local Wetland Inventory. The API was reviewed for evidence of areas that would meet the three wetland field criteria.

Paired plots, and sometimes a row of three, were located close to the wetland boundary to determine key characteristics that differentiated the upland from the wetland. Scattered upland plots documented potential wetland sites that did not meet all three criteria.

Plant communities were evaluated in three foot by three foot square plots for all vegetation classes. These small plots are useful for finding the small details that separate the upland plant community from the wetland plant community and allow for a more accurate delineation. Larger plots are useful for effectively sampling the diversity of trees, but the goal for delineating wetlands is not to characterize the overstory plant community but to find the wetland boundary within a few feet.

Potentially regulated waterways were also identified and flow duration and connections to regulated waters were reviewed during the site investigation. The Ordinary High Water line for each waterway was flagged for survey with blue and white flagging. Wetland boundaries were flagged with pink flagging.

Preliminary Jurisdictional Determinations for the US Army Corps of Engineers (USACE) were based on guidance in *Clean Water Act Jurisdiction Following the U.S. Supreme Court's Decision in Rapanos v. United States & Carabell v. United States.* Preliminary Jurisdictional determinations for the Oregon Department of State Lands (DSL) were made based on Oregon Administrative Rules (OAR) 141-085-0515.

### E) Wetlands and Waters:

The Coopey Quarry site is highly disturbed. The site was extensively excavated from 1930-1970s creating a flat rock quarry floor and cliff walls. Two wetlands (A and B) above the top of the quarry wall have had three ditches trenched through them that drain into the quarry. This water drops from the quarry wall onto piles of rocks, created from freeze and thaw actions over the years and from these piles of rock the water spreads out onto the quarry floor. A seep at the base of the western cliff face drains east to meet the flow from the ditches which spreads out and infiltrates or ponds temporarily in depressions. The soils on the quarry floor are lacking and did not have a depth greater than four inches and therefore did not meet the hydric soil criteria. Even though water is found on the quarry floor during the spring the absence of hydric soils, disqualifies this site from meeting all three wetland criteria. Wetlands that lack hydric soils, need to be analyzed further to see if they meet the criteria for wetlands with problematic (absent hydric soil characteristics) soils (Regional Supplement for Western Mountain Valleys and Coast Problematic Hydric Soils

procedure). Of the problematic soil types, only "recently formed soils" had the potential to apply to this site. To qualify as a recently formed wetland without hydric soils, the wetland by definition has to be recently formed. The ponding on the quarry floor does not qualify as recent, having been in place seasonally for over 40 years. Further, if hydric soils indicators have not developed in that time, they are not likely to develop. Therefore, the ponding on the quarry floor does not qualify as a recently formed wetland and does not meet the criteria for wetlands with problematic (lacking hydric soil characteristics) soils. See datasheets 9, 10, 11, 12, 13 and 15 for the conditions on the quarry floor.

The flow of water across the quarry floor was dispersed enough to prevent formation of channel. In a few instances the water was routed in a tire track. Therefore there was no stream determined to occur in the quarry.

# <u>Wetlands</u>

Four areas on the project site met the three criteria for wetlands (Table 3 and Appendix A Figure 2). These are all small depressions located above the quarry wall.

	Table 3. Wetlands and Ponds								
Feature	Cowardin Class <sup>1</sup>	HGM Class <sup>2</sup>	Lat-Long	Size in API (ac)	Sample Plots				
Wetland A	PEM	Depressional closed nonpermanent	45.56529 -122.16512	0.02	SP 16-17				
Wetland B	PEM	Depressional closed nonpermanent	45.56502 -122.16563	0.20	SP 1-2				
Wetland C	PEM	Depressional closed nonpermanent	45.56476 -122.16606	0.04	SP 3-4				
Wetland D	PFO	Depressional closed nonpermanent	45.56478 -122.16665	0.002	SP 7-8				
Pond E	POW		45.46701 -122.16429	0.58	Not Applicable				

<sup>1</sup> Cowardin et al 1979

<sup>2</sup> Adamus et al 2001

<u>Wetland A:</u> Wetland A is a narrow ditched wetland. It receives water from stormwater runoff from the HCRH and a small depressional wetland south of the HCRH. Water flows north through the wetland and over the quarry wall. The wetland is seasonally wet, drying out on most years by the end of June. The wetland is dominated by reed canarygrass with water parsley in the wetter portions and Douglas spirea along the edge. Large black cottonwood trees are found outside of the wetland to the north. A high water table in April demonstrated the presence of wetland hydrology. The soils are a mottled silt loam indicating seasonal saturation. The Wetland was delineated by a sharp topographic break, soil saturation, presence of mottles and a change from vegetation dominated by reed canary grass to one dominated by Armenian blackberry and Wood's rose.

<u>Wetland B:</u> Wetland B is a narrow ditched wetland. It receives water from stormwater runoff from the HCRH through a culvert under the roadway. Ditches direct water from the wetland to two locations where the water flows north over the quarry wall. The wetland is seasonally wet drying out on most years by June. The wetland is

dominated by reed canarygrass and velvetgrass, with some willow, and black cottonwood. A high water table in April demonstrated the presence of wetland hydrology. The soils are a mottled silt loam indicating seasonal saturation. The Wetland was delineated by a sharp topographic break, soil saturation, presence of mottles and a change from vegetation dominated by reed canary grass to one dominated by Armenian blackberry and Wood's rose.

<u>Wetland C:</u> Wetland C is a small shallow isolated depression. Water collects seasonally from rainfall and runoff from HCRH. The wetland is seasonally wet drying out on most years by June. The wetland is dominated by common broadleaf lupine and common camas. A high water table in April demonstrated the presence of wetland hydrology. The soils are a mottled silt loam indicating seasonal saturation. The Wetland was delineated by a sharp topographic break, soil saturation, presence of mottles and a change from vegetation dominated by Lupine and camas to one dominated by Oak and Snowberry.

<u>Wetland D:</u> Wetland D is a very small shallow isolated depression. This wetland was created when a road to the Quarry prevented water from flowing north. It collects water seasonally from rainfall and runoff. The wetland is seasonally wet drying out on most years by June. The wetland is dominated by Oregon ash and nootka rose. A high water table in April demonstrated the presence of wetland hydrology. The soils are a mottled silt loam indicating seasonal saturation. The Wetland was delineated by a sharp topographic break, soil saturation, presence of mottles and a change from vegetation dominated by Oregon ash to one dominated by Ox-eyed Daisy.

# Ponds

The northeast corner of the quarry is a pond. On the property, the pond has formed on gravel with large boulders on its shore. It appears that it was excavated at some time in its past prior to 1935. The pond extends offsite and wetland conditions, including hydric soils likely exist on adjacent parcels. The pond is fringed with reed, red alder and yellow flag iris. The OHWM was identified by clear debris racks and changes in vegetation from reed canarygrass and red alder to Armenian blackberry.

# F) Deviation from LWI or NWI:

The NWI and LWI map identified the pond but not the wetland areas (Appendix A, Figure 3).

# G) Mapping Method:

The on-site wetland boundaries and all plots were flagged in the field by ODOT wetland professionals using the most appropriate methods to capture the wetland boundaries and locations of wetland data plots accurately. The mapping accuracy of the wetland boundaries is less than 1 meter.

# H) Additional Information:

Preliminary Jurisdictional determinations were made by ODOT staff on the four areas meeting the wetland criteria and the pond (Table 3). Per the DSL regulation (OAR 141-085-0515(6 and 7)), artificially created wetlands and ponds created entirely in uplands are exempt. We have a topographic map of the quarry site in 1935. This map compared to the current topography shows the site was extensively excavated. Any wetland that would have formed on the quarry floor, would be considered exempt by DSL because it was formed in upland by surface mining (OAR 141-085-0515(7)(g)). The small Wetland D formed in the upland areas when a road was created blocking a natural drainage. This wetland was created artificially and should not be regulated by DSL. The other three wetland appear to have formed naturally and should be considered jurisdictional to DSL (OAR 141-85-0515(4)). Ponds are regulated by DSL to their OHWM (OAR 141-85-0515(3)).

Per USACE guidance, all four wetlands areas are isolated and not connected to traditional navigable waters. The four wetlands, which are small and poorly functioning, are unlikely to have a significant nexus or effect on the very

large Columbia River the closest traditional navigable waterway. It is unlikely that the USACE would take jurisdiction over these wetlands. The pond could have been part of the Columbia River. The geomorphologic location would suggest that the pond was once connected to the Columbia River, wetland and floodplain complex and therefore regulated by the USACE. There is no other evidence suggest that it is not. Additional evidence of how the historic nature of the site could change this determination.

	Table 4	. Preliminary Jurisdictional	Determination for Wetlands a	nd Ponds
Feature	Cowardin Class <sup>1</sup>	HGM Class <sup>2</sup>	DSL Determination	USACE Determination
Wetland A-C	РЕМ	Depressional closed nonpermanent	Regulated Wetland(OAR 141-085-0515 (4))	Non Jurisdictional – small low functioning wetland that does not meet nexus.
Wetland D	PFO	Depressional closed nonpermanent	Exempt (Not regulated)– as a an artificially created wetland (OAR 141-085- 0515 (6))	Non Jurisdictional – small low functioning wetland that does not meet nexus.
Pond E	POW		Regulated Pond (OAR 141- 085-0515 (3))	Jurisdictional – potential historic connection to the Columbia River

# I) Results and Conclusions:

Preliminary jurisdictional determinations made by ODOT staff identified a pond regulated by the USACE and DSL and three wetland regulated by DSL. If impacts are expected to any of these wetlands the USACE and DSL can verify and formalize this preliminary determination.

# J) Disclaimer:

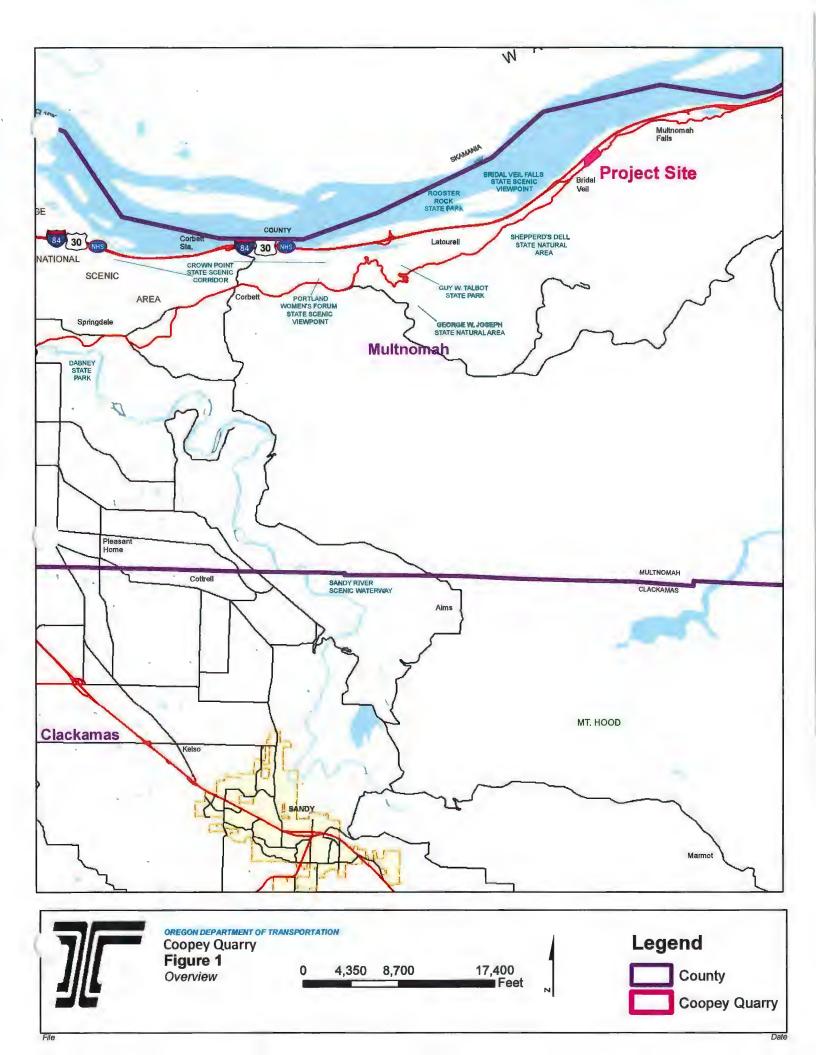
This report documents the investigation, best professional judgment, and conclusions of the investigators. It is correct and complete to the best of our knowledge. It should be considered a Preliminary Jurisdictional Determination of wetlands and other waters and used at your own risk unless it has been reviewed and approved in writing by the Oregon Department of State Lands in accordance with OAR 141-090-0005 through 141-090-0055.

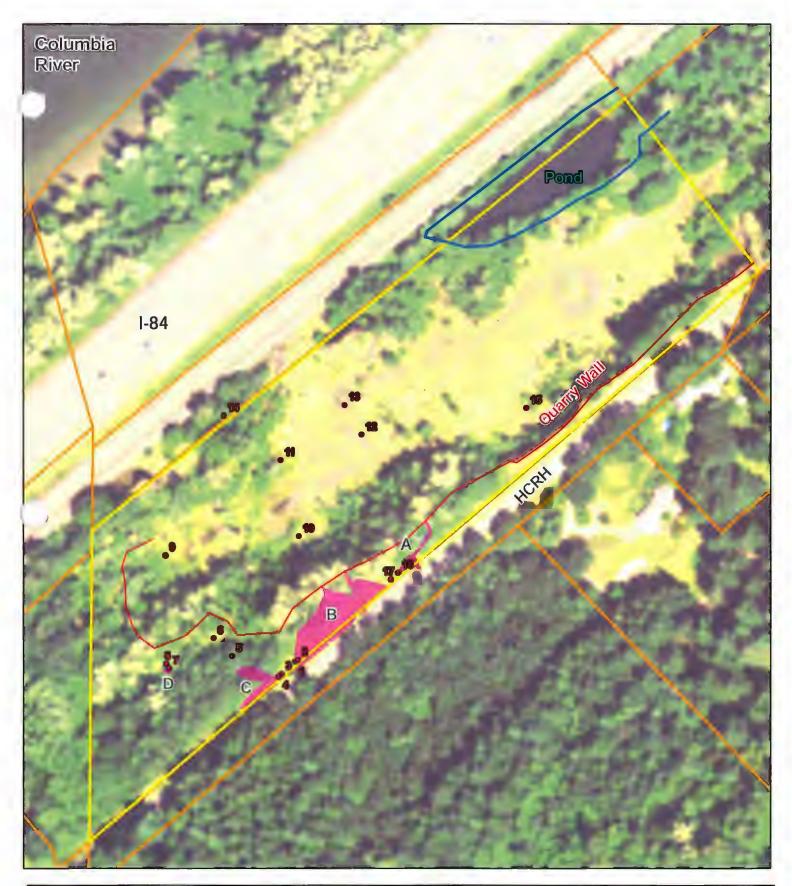
### K) List of Preparers

Ken Sargent	Wetland Specialist, ODOT Region 1	Lead Author
Ben White	Biologist, ODOT Region 1	Technical Reviewer
Mary Young	REC, Region 1	Technical Reviewer

Appendix A Figures

( )

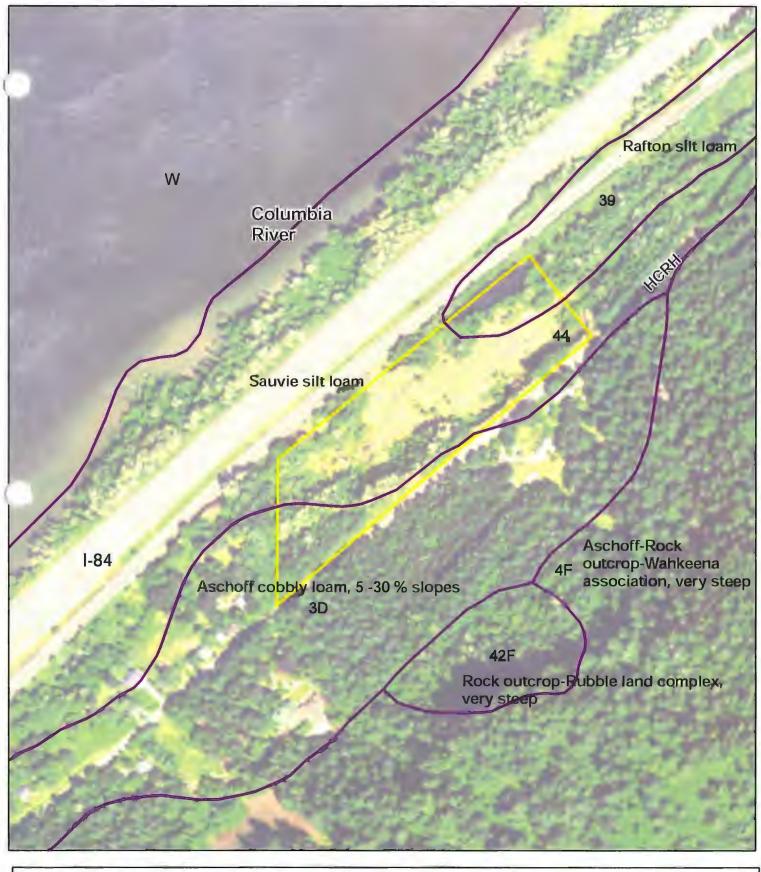




		GON DEPAR	TMENT OF TRANS	SPORTATION	1	Leg	end		
	Fig	gure 2	uarry		4		Wetland	Coopey Quarry	
<u></u>	0	etlands 75	150	300	м		- Pond	 Quarry Wall	
	-			Feet		•	Sample Plots	Taxlots	

Date





7/	OREGON DEPARTMENT OF TRANSPORTATION Coopey Quarry	Legend
]  [	Figure 4 Soil Survey	soilmu_a_or051
	0 162.5 325 650 Feet	Coopey Quarry

File

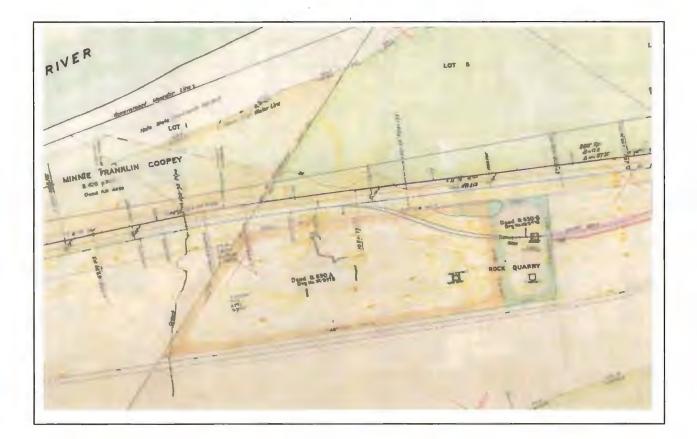


Figure 5. 1935 Topographic Map of Coopey Quarry,

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- C.-

Appendix B Photos



Photo 2. Wetland B looking North from near the HCRH. April 18, 2017

Photo 1. Wetland A looking north from HCRH. June 1, 2017





Photo 3. Wetland C taken from near the HCRH looking northwest. April 18, 2017

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Photo 4. Wetland D looking north west from edge of wetland. 5/31/2017

Photo 5. Pond. Showing debris rack at OHWM. 6/1/2017

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Photo 6. Pond from western tip looking east. 6/1/2017



Photo 7. Quarry Floor on June 1, 2017. Looking west from quarry floor

Photo 8. Quarry floor on April 18, 2017. From above quarry wall looking east.

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Photo 9. Rock face below wetland ditch.

Project/Site: Coopey Quarry	City/County:	Multnomah Cou	nty Sam	pling Date:	4/18/2016	
Applicant/Owner: ODOT Region 1		State: OR	Sampling Point:	1		
Investigator(s): Ken Sargent	Section, T	ownship, Range:	13, T1N, R5E			
Landform (hillslope, terrace, etc.): Terrace	Lo	cal relief (concave,	, convex, none):	concave	Slope (%): 2	
Subregion (LRR): _A	Lat: 45.564	483 Long:	-122.16585	Datum:		
Soil Map Unit Name: Aschoff cobbly loam			NWI class	ification:	Upland	-1.1.1
Are climatic / hydrologic conditions on the site typic	cal for this tim	e of year? Yes _	<u>x</u> No(lfr	10, explain ir	n Remarks.)	
Are Vegetation, Soil, or Hydrolog	y signii	ficantly disturbed?	Are "Normal Ci	rcumstance	s" present? Yes <u>x</u> N	lo
Are Vegetation, Soil, or Hydrolog	y natur	ally problematic?	(If neede	ed, explain a	ny answers in Remarks.)	

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

Hydrophytic Vegetation Present?       Yes       X       No         Hydric Soil Present?       Yes       No       X         Wetland Hydrology Present?       Yes       No       X	Is the Sampled Area within a Wetland? Yes <u>No x</u>
Remarks: Site lacked hydric soils and wetland hydrology.	

\_\_\_\_\_\_

	Absolute	Dominant	Indicator	Dominance Tes	t worksheet:		
Tree Stratum (Plot size:)	<u>% Cover</u>	Species?	<u>Status</u>	Number of Domi That Are OBL, F		3	(A)
1		an tais Manganak		Total Number of			. (7)
2 3				Species Across /		3	(B)
4.			·	Percent of Domir			
•				That Are OBL, F	ACW, or FAC:	100	(A/B)
		= Total Cove	er				
Sapling/Shrub Stratum (Plot size: )		-		Prevalence Inde	x worksheet:		
1. Rosa woodsii	10	Y	FACU	Total % Cover of	: Multip	ly by:	
2. Rubus armeniacus	30	Y	FAC	OBL species	x1=		
3.				FACW species	x 2 =		
4.					100 x 3 =		
5.				FACU species			
		= Total Cove	er	UPL species	<u></u> x 5 =		
<u>Herb Stratum</u> (Plot size: 3'sq )		~		Column Totals:			
1. Dactylis glomerata	10		FACU	Column rotals:	(A)		(B)
2. Daucus carota	20	Y	FAC	Prevalence Index	( = B/A =	>3	
3. Anthoxanthum odoratum	5		FACU				
4. Holcus lanatus	50	Y	FAC	Hydrophytic Ve	getation Indica	tors:	
5.	ATTA 4			1 - Rapid Tes	t for Hydrophyti	c Vegeta	tion
6.				× 2 - Dominanc	e Test is >50%		
7				3 - Prevalenc	e Index is ≤3.0 <sup>1</sup>		
8.				4 - Morpholog	ical Adaptation	s <sup>1</sup> (Provid	le supporting
9.				data in Rema	rks or on a sepa	arate she	et)
10.				5 - Wetland N	Ion-Vascular Pl	ants <sup>1</sup>	
11.				Problematic H	lydrophytic Veg	elation <sup>1</sup> (	Explain)
		= Total Cove	er	<sup>1</sup> Indicators of hyd	Iric soil and wet	land hydr	ology must
Woody Vine Stratum (Plot size:)		-		be present, unles			
1							
2.					14		
		= Total Cove	er	Hydrophytic Vegetation			1.1
% Bare Ground in Herb Stratum		-			res x l	Vo	, i
Remarks: More upland than wetland plants.							
F F F							
							1

SOIL							Sampling Point:	1
		o the depth				r confirm the a	bsence of indicators.)	
Depth	Matrix	0/		Redox Fea		12	<b>T f</b>	Densela
(inches)	Color (moist)		Color (moist)	%	Type'	Loc <sup>2</sup>	Texture	Remarks
	10YR 3/2						Silt loam	
6-16"	10YR 3/2.5-3	80	7.5YR 3/4	20			Gravelly Silt Ioam	
	10TK 5/2.5-5		<u></u>				104111	
							<u></u>	
								particular and a second s
		·						
<sup>1</sup> Type: C=Co	ncentration, D=Depl	etion, RM=F	educed Matrix, CS	=Covered of	or Coated	Sand Grains.	<sup>2</sup> Location: PL=Pore L	ining, M=Matrix.
Hvdric Soil	Indicators: (Applic	able to all L	.RRs. unless othe	wise note	d.)	Ind	icators for Problematic	Hvdric Soils <sup>3</sup> :
Histosol			Sandy Redox (S		,		2 cm Muck (A10)	
	hipedon (A2)		Stripped Matrix (				Red Parent Material (TF	2)
Black His			Loamy Mucky Mi		(except M	ILRA 1)	Very Shallow Dark Surfa	
Hydroge	n Sulfide (A4)		Loamy Gleyed M		•		Other (Explain in Remai	
	Below Dark Surfac	e (A11)	Depleted Matrix (	· ·				
	rk Surface (A12)		_ Redox Dark Surf				<sup>3</sup> Indicators of hydrophyti	
	lucky Mineral (S1)		Depleted Dark S Redox Depression				wetland hydrology must unless disturbed or prob	
Sandy G	leyed Matrix (S4)		Redux Depressio		1		unless disturbed of prod	
Restrictive Lav	ver (if present):							
Type:	, e. ( p. e.e				Hydric	Soil Present?	Yes	No x
Depth (inch	es).				ingane	Con resent:		
			· · ·		I			
Remarks:								
HYDROLOG	Y							
	logy Indicators:							
Primary Indicat	ors (minimum of one	required; cl					ndary Indicators (2 or mo	
V Surface Mr	ator (A 1)		Water-Staine				Vater-Stained Leaves (B	9) (MLRA 1, 2,
x Surface Wa	Table (A2)		MLRA 1, 2, 4 Salt Crust (B		9		<b>A, and 4B</b> ) Prainage Patterns (B10)	
Saturation			Aquatic Inve		313)		ry-Season Water Table	(C2)
Water Mark			Hydrogen Su				aturation Visible on Aeri	
			Oxidized Rhi	zospheres	along Livi	ing		
	Deposits (B2)		Roots (C3)				eomorphic Position (D2)	
Drift Depos	its (B3)		Presence of			S	hallow Aquitard (D3)	
Algal Matio	r Crust (B4)		Recent Iron Soils (C6)	Reduction	n Hilea	F	AC-Neutral Test (D5)	
			Stunted or S	tressed Pla	ints (D1)	「		
Iron Depos	its (B5)		(LRR A)			R	aised Ant Mounds (D6)	(LRR A)
Surface So	il Cracks (B6)		Other (Expla	in in Rema	rks)	F	rost-Heave Hummocks (	D7)
	Visible on Aerial Ima							
Sparsely V	egetated Concave S	urface (B8)						
El al de anna de	( <b>1</b>						· · · · · · · · · · · · · · · · · · ·	
Field Observat		No	Donth (inchas):					
Water Table Pr			<ul> <li>Depth (inches):</li> <li>Depth (inches):</li> </ul>		— I,	Notland Hydr	ology Present? Yes	No x
Saturation Pres			Echan (menes).		—	Wettand Hydro	logy resent: res	
(includes capilla		No	c Depth (inches):					
	ed Data (stream gau				s inspection	ons), if availabl	e:	
Remarks: Dry		~~~~						
1								

Project/Site:Co	opey Quarry	Ci	ty/County:	Multho	mah Cou	inty S	Sampling Date:	4/18/2016		
Applicant/Owner:	ODOT Region 1			State:	OR	Sampling Poi	nt: <u>2</u>			
Investigator(s):	Ken Sargent		Section,	Township,	Range:	13, T1N, R5	<u>E</u>			
Landform (hillslope	e, terrace, etc.): _	Теггасе	L	ocal relief	(concave	, convex, none	e): <u>concave</u>	Slope	(%): _2	2
Subregion (LRR):	Α	La	it:45.50	6479	Long:	-122.16591	Datum:		Aller Aller	
Soil Map Unit Nam	ne: Aschoff cob	bly loam 5-30%	slopes	State - A		NWI c	assification:	PEM		
Are climatic / hydro	ologic conditions o	n the site typica	l for this ti	me of year	?Yes _	<u>x</u> No	(If no, explain i	n Remarks.)		
Are Vegetation	, Soil	, or Hydrology	sigr	nificantly di	sturbed?	Are "Norma	al Circumstance	es" present? Yes	; <u>x</u>	No
Are Vegetation	, Soil	, or Hydrology	nati	urally prob	lematic?	(lf ne	eeded, explain a	any answers in Re	emarks.)	1

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

Hydrophytic Vegetation Present? Yes x No			
Hydric Soil Present? Yes x No	is the Sampled Area within a Wetland? Yes x	No	1993 (J. 1994) 1994 - J. 1994 (J. 1994)
Wetland Hydrology Present? Yes x No	이 가장에 가지 않는 것을 알려 있었다. 또 한 일을 가장을 얻을 수 있는 것이 가장 감정이 가지 않는다. 이 가장 같은 것은 것이 있는 것이 같은 것이 있는 것이 있는 것이 있는 것이 있는 것이 있다. 이 가장 가장이 있는 것이 있 같은 것은 것이 같은 것이 있는 것이 같은 것이 있는 것이 있는 것이 있는 것이 있는 것이 있는 것이 있는 것이 없는 것이 있는 것이 없는 것이 없는 것이 없는 것이 없는 것이 없는 것이 없는 것이 있	-	
Remarks:			

	Absolute	Dominant	Indicator	Dominance Test worksheet:
<u>Tree Stratum</u> (Plot size:)	<u>% Cover</u>	Species?	<u>Status</u>	Number of Dominant Species
1				That Are OBL, FACW, or FAC: (A)
2				Total Number of Dominant
3.				Species Across All Strata: <u>2</u> (B)
4.				Percent of Dominant Species
				That Are OBL, FACW, or FAC: <u>100</u> (A/B)
		= Total Cove	er	
Sapling/Shrub Stratum (Plot size:)				Prevalence Index worksheet:
1. Populus balsamifera (saplings)	30	Y	FAC	Total % Cover of: Multiply by:
	5	* .	FACU	OBL species x 1 =
	5		FACW	FACW species 5 x 2 =
				· · · · · · · · · · · · · · · · · · ·
4				· · · · · · · · · · · · · · · · · · ·
5		= Total Cove	\r	FACU species x 4 =
Horb Stratum (Blot size: 2'sa )			51	UPL species x 5 =
<u>Herb Stratum</u> (Plot size: <u>3'sq</u> )	50	Y	F40	Column Totals: (A) (B)
1. Holcus lanatus	50	Υ		
2. <u>Carex bolanden</u>	5		FAC	Prevalence Index = B/A =
3. Tolmiea menziesii	5		FAC	Hydrophytic Vegetation Indicators:
4. Epilobium ciliatum	5		FAC	
5				1 - Rapid Test for Hydrophytic Vegetation
6				x 2 - Dominance Test is >50%
7				x 3 - Prevalence Index is ≤3.0 <sup>1</sup>
8				4 - Morphological Adaptations <sup>1</sup> (Provide supporting
9				data in Remarks or on a separate sheet)
10.				5 - Wetland Non-Vascular Plants
11.			c	Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
		= Total Cove	er	<sup>1</sup> Indicators of hydric soil and wetland hydrology must
Woody Vine Stratum (Plot size:)				be present, unless disturbed or problematic.
1				
2				
		= Total Cove	er	Hydrophytic Vegetation
% Bare Ground in Herb Stratum				Present? Yes <u>x</u> No
	-			
Remarks: site just meets the wetland vegetation crite	ria			
Temaner energies meete de menane regelation ene				

SOIL							Sampling Poir	t: 2
Profile Desc	cription: (Describe	to the dept	h needed to docum	ent the in	ndicator or	confirm the a	absence of indicators	
Depth	Matrix			Redox Fe				
(inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
0-8"	10YR 2/1	90					Silt loam	
8-16	10YR 2/1	90	10YR 3/4	10	с	M	Silt loam	
			10/10/4					
	····							
							<u> </u>	
						_		
<sup>1</sup> Type: C=C	oncentration, D=Dej	oletion, RM=	Reduced Matrix, CS	=Covered	or Coated	Sand Grains.	<sup>2</sup> Location: PL=Pore	Lining, M≃Matrix.
Hydric Soil	Indicators: (Appli	cable to all	LRRs, unless othe	rwise not	ed )	ind	licators for Problemat	ic Hydric Soils <sup>3,</sup>
Histoso			Sandy Redox (S			inte	2 cm Muck (A10)	io rijune cono :
	pipedon (A2)		Stripped Matrix (				Red Parent Material (	(F2)
	listic (A3)		Loamy Mucky M		) (except Mi	LRA 1)	Very Shallow Dark Su	
	en Sulfide (A4)		Loamy Gleyed N				Other (Explain in Rem	
Deplete	d Below Dark Surfa		Depleted Matrix	(F3)				
	ark Surface (A12)	*****	x Redox Dark Sur				<sup>3</sup> Indicators of hydrophy	
	Mucky Mineral (S1)		Depleted Dark S		7)		wetland hydrology mu	
Sandy G	Gleyed Matrix (S4)		Redox Depression	ons (⊦8)			unless disturbed or pro	opiematic
Restrictive La	ayer (if present):							
Type:					Hydric \$	Soil Present?	Yes x	No
Depth (inc								
emarks:	=)							
YDROLOG	Υ							
	rology Indicators:							
Primary Indica	itors (minimum of or	e required;			(22)		ndary Indicators (2 or r	
Surface M	otor (A4)		Water-Staine				Vater-Stained Leaves (I	39) (MLRA 1, 2,
Surface Water	r Table (A2)		MLRA 1, 2, 4 Salt Crust (B		8)		<b>A, and 4B</b> ) Irainage Pattems (B10)	
Saturation	• •		Aquatic Inver		B13)		ry-Season Water Table	
Water Marl	• •		Hydrogen Su				aturation Visible on Ae	
			Oxidized Rhi					
	Deposits (B2)		Roots (C3)	-	-		Geomorphic Position (D	2)
Drift Depos	sits (B3)		Presence of			S	hallow Aquitard (D3)	
	Ar Cruck (D4)		Recent Iron F	Reduction	in Tilled	-	AC Noutral Tost (DE)	
	or Crust (B4)		Soils (C6) Stunted or Sl	ressed Pl	ants (D1)	F	AC-Neutral Test (D5)	
Iron Depos	its (B5)		(LRR A)	lessed Fi		R	aised Ant Mounds (D6	(LRR A)
	il Cracks (B6)		Other (Explai	in in Rema	arks)		rost-Heave Hummocks	
Inundation	Visible on Aerial Im	agery (B7)						· ,
_ Sparsely V	egetated Concave S	Surface (B8)						
Field Observa	atione				Т			0.00
Surface Water		. No	x Depth (inches)					
Nater Table P		X No			\ v	Netland Hydr	ology Present? Ye	s x No
Saturation Pre					[ "			- <u> </u>
(includes capil		<u>x</u> No	Depth (inches)	: 0				
escribe Recon	ded Data (stream ga	uge, monito	ring well, aerial phot	os, previo	us inspectio	ons), if availab	le:	
			- •	•	•			
emarks:								

- Andrew

Notice of the second

Project/Site: Co	opey Quarry	City/County:	Multnomah Cou	nty Sampli	ng Date:	4/18/2016	
Applicant/Owner:	ODOT Region 1		State: OR	Sampling Point:	3		
Investigator(s):	Ken Sargent	Section, T	ownship, Range:	13, T1N, R5E		and the second	
Landform (hillslope	e, terrace, etc.): <u>Terra</u>	ace Lo	cal relief (concave	convex, none):	convex	Slope (%):	2
Subregion (LRR):	Α	Lat: 45.564	Long:	-122.16593	Datum:		
Soil Map Unit Nam	ne: Aschoff cobbly loa	am 5-30% slopes		NWI classifi	cation:	Upland	
Are climatic / hydro	ologic conditions on the	site typical for this tim	e of year? Yes _	x No (If no,	explain in	Remarks.)	
Are Vegetation	, Soil, or H	-lydrology signif	icantly disturbed?	Are "Normal Circ	umstances'	" present? Yes <u>x</u>	No
Are Vegetation _	, Soil, or H	Hydrology natur	ally problematic?	(If needed,	explain an	y answers in Remark	s.)

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

Hydrophytic Vegetation Present? Yes x No	
Hydric Soil Present? Yes No x	Is the Sampled Area within a Wetland? Yes No
Wetland Hydrology Present? Yes No	
Remarks: Site was dry , lacked true soil layers with rock predom	inating at 4".

\_\_\_\_\_

	Absolute	Dominant	Indicator	Dominance Test worksheet:	
Tree Stratum (Plot size:)	<u>% Cover</u>	Species?	Status	Number of Dominant Species	
1				That Are OBL, FACW, or FAC: (A)	
2				Total Number of Dominant Species Across All Strata: 2 (B)	
3				Percent of Dominant Species	
4				That Are OBL, FACW, or FAC: 100 (A/B)	,
				· · · ·	
		= Total Cove	er	Prevalence Index worksheet:	
Sapling/Shrub Stratum (Plot size:)				Total % Cover of: Multiply by:	
1				OBL species x 1 =	
2					
3				FACW species $10 \times 2 = 20$	
4		n an		FAC species <u>80</u> x 3 = <u>240</u>	
5		- Total Cause		FACU species x 4 =	
		= Total Cove	-1	UPL species $5 \times 5 = 25$	
<u>Herb Stratum</u> (Plot size: <u>3'sq</u> )	40	N I	FAC	Column Totals: <u>95</u> (A) <u>285</u> (B)	
1. Agrostis capillaris	<u>40</u> 30	Y /	FAC FAC	_ Prevalence Index = B/A = 3	
2. Blechnum spicant	10	<u>т</u>	FAC FAC		
<u>Lupinus latifolius</u> Camassia guamash	10		FAC FACW	Hydrophytic Vegetation Indicators:	
4. <u>Camassia quamasn</u> 5. Fritillaria affinis	5		UPL	1 - Rapid Test for Hydrophytic Vegetation	
<u></u>			UFL	× 2 - Dominance Test is >50%	
				$\times$ 3 - Prevalence Index is $\leq 3.0^{1}$	
7				4 - Morphological Adaptations <sup>1</sup> (Provide supportin	
8				data in Remarks or on a separate sheet)	Э
9				5 - Wetland Non-Vascular Plants <sup>1</sup>	
10 11				Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)	
		= Total Cove	 er	Indicators of hydric soil and wetland hydrology must	
Woody Vine Stratum (Plot size:)				be present, unless disturbed or problematic.	
1 ,					
2.					
		= Total Cove	er	Hydrophytic	
% Bare Ground in Herb Stratum		-		Vegetation Present? Yes <u>x</u> No	
	-				
Remarks: site just meets the wetland vegetation crite	eria			1	
)					

Profile Description: (Describe to the depth needed to document t	he indicator or a	onfirm the a	beanco of indicators	1
Depth Matrix Redo	ox Features	ommin the a	psence of indicators.	•)
	% Type <sup>1</sup>	Loc <sup>2</sup>	Texture Gravelley	Remarks
0-4" 10YR 2/1			loam	
<u>4"+</u>		·····	Gravel/Rock	
				·
<sup>1</sup> Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Cov	vered or Coated S	and Grains.	<sup>2</sup> Location: PL=Pore	Lining, M≍Matrix.
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise	e noted.)	Ind	cators for Problemat	ic Hydric Soils <sup>3</sup> :
Histosol (A1) Sandy Redox (S5)			2 cm Muck (A10)	
Histic Epipedon (A2) Stripped Matrix (S6)			Red Parent Material (1	
Black Histic (A3) Loamy Mucky Mineral Hydrogen Sulfide (A4) Loamy Gleyed Matrix	(F1) (except ML (F2)	KA I)	Very Shallow Dark Sui Other (Explain in Rem	arks)
Depleted Below Dark Surface (A11) Depleted Matrix (F3)	v -/			шлај
Thick Dark Surface (A12) Redox Dark Surface (I	F6)		<sup>3</sup> Indicators of hydrophy	vtic venetation and
Sandy Mucky Mineral (S1) Depleted Dark Surface			wetland hydrology mus	
Sandy Gleyed Matrix (S4) Redox Depressions (F			unless disturbed or pro	oblematic
estrictive Layer (if present):				
Туре:	Hydric S	oil Present?	Yes	No x
Depth (inches):				
YDROLOGY				
Vetland Hydrology Indicators: Primary Indicators (minimum of one required; check all that apply)			ndary Indicators (2 or n	
Vetland Hydrology Indicators: rimary Indicators (minimum of one required; check all that apply) Water-Stained Lea		- <u> </u>	ater-Stained Leaves (I	
Vetland Hydrology Indicators: rimary Indicators (minimum of one required; check all that apply) Water-Stained Lea Surface Water (A1) MLRA 1, 2, 4A, ar		• W	ater-Stained Leaves (I A, and 4B)	B9) ( <b>MLRA 1, 2,</b>
Vetland Hydrology Indicators:         rimary Indicators (minimum of one required; check all that apply)         Water-Stained Lea         Surface Water (A1)         High Water Table (A2)	nd 4B)		ater-Stained Leaves (I A, and 4B) rainage Patterns (B10)	B9) ( <b>MLRA 1, 2,</b>
Vetland Hydrology Indicators:         rimary Indicators (minimum of one required; check all that apply)         Water-Stained Lea         Surface Water (A1)         High Water Table (A2)         Saturation (A3)	nd 4B)	: W 4/ D D	ater-Stained Leaves (I A, and 4B) rainage Patterns (B10) ry-Season Water Table	B9) ( <b>MLRA 1, 2,</b> e (C2)
Vetland Hydrology Indicators:         rimary Indicators (minimum of one required; check all that apply)         Surface Water (A1)         High Water Table (A2)         Saturation (A3)         Water Marks (B1)	nd 4B) ntes (B13) Odor (C1)		ater-Stained Leaves (I A, and 4B) rainage Patterns (B10)	B9) ( <b>MLRA 1, 2,</b> e (C2)
Vetland Hydrology Indicators:         rimary Indicators (minimum of one required; check all that apply)         Water-Stained Lea         Surface Water (A1)       MLRA 1, 2, 4A, ar         High Water Table (A2)       Salt Crust (B11)         Saturation (A3)       Aquatic Invertebra         Water Marks (B1)       Hydrogen Sulfide (Oxidized Rhizosph         Sediment Deposits (B2)       Roots (C3)	nd 4B) htes (B13) Odor (C1) heres along Living		ater-Stained Leaves (I A, and 4B) rainage Patterns (B10) ry-Season Water Table aturation Visible on Ae eomorphic Position (Di	B9) ( <b>MLRA 1, 2,</b> e (C2) ríal Imagery (C9)
Vetland Hydrology Indicators:         rimary Indicators (minimum of one required; check all that apply)         Surface Water (A1)         High Water Table (A2)         Saturation (A3)         Water Marks (B1)	nd <b>4B</b> ) Odor (C1) neres along Living iced Iron (C4)		later-Stained Leaves (I A, and 4B) rainage Patterns (B10) ry-Season Water Table aturation Visible on Ae	B9) ( <b>MLRA 1, 2,</b> e (C2) ríal Imagery (C9)
Vetland Hydrology Indicators:         rimary Indicators (minimum of one required; check all that apply)         Water-Stained Lea         Surface Water (A1)       MLRA 1, 2, 4A, ar         High Water Table (A2)       Salt Crust (B11)         Saturation (A3)       Aquatic Invertebra         Water Marks (B1)       Hydrogen Sulfide ( Oxidized Rhizosph         Sediment Deposits (B2)       Roots (C3)         Drift Deposits (B3)       Presence of Reduce Recent Iron Reduce         Algal Mat or Crust (B4)       Soils (C6)	nd <b>4B</b> ) Odor (C1) neres along Living iced Iron (C4) ction in Tilled		ater-Stained Leaves (I A, and 4B) rainage Patterns (B10) ry-Season Water Table aturation Visible on Ae eomorphic Position (Di	B9) ( <b>MLRA 1, 2,</b> e (C2) ríal Imagery (C9)
Vetland Hydrology Indicators:         Irimary Indicators (minimum of one required; check all that apply)         Water-Stained Lea         Surface Water (A1)         High Water Table (A2)         Saturation (A3)         Water Marks (B1)         Sediment Deposits (B2)         Drift Deposits (B3)         Algal Mat or Crust (B4)	nd <b>4B</b> ) Odor (C1) neres along Living iced Iron (C4) ction in Tilled		ater-Stained Leaves (I A, and 4B) rainage Patterns (B10) ry-Season Water Table aturation Visible on Ae eomorphic Position (D) hallow Aquitard (D3) AC-Neutral Test (D5)	B9) ( <b>MLRA 1, 2,</b> e (C2) ríal Imagery (C9) 2)
Vetland Hydrology Indicators:         rimary Indicators (minimum of one required; check all that apply)         Surface Water (A1)       Water-Stained Lea         High Water Table (A2)       Salt Crust (B11)         Saturation (A3)       Aquatic Invertebra         Water Marks (B1)       Hydrogen Sulfide ( Oxidized Rhizosph         Sediment Deposits (B2)       Roots (C3)         Drift Deposits (B3)       Presence of Reduc         Algal Mat or Crust (B4)       Soils (C6)         Iron Deposits (B5)       (LRR A)	nd 4B) Odor (C1) neres along Living iced Iron (C4) ction in Tilled ed Plants (D1)		ater-Stained Leaves (I A, and 4B) rainage Patterns (B10) ry-Season Water Table aturation Visible on Ae eomorphic Position (D hallow Aquitard (D3) AC-Neutral Test (D5) aised Ant Mounds (D6)	B9) (MLRA 1, 2, e (C2) ríal Imagery (C9) 2) ) (LRR A)
Vetland Hydrology Indicators:         rimary Indicators (minimum of one required; check all that apply)         Water-Stained Lea         Surface Water (A1)       MLRA 1, 2, 4A, ar         High Water Table (A2)       Salt Crust (B11)         Saturation (A3)       Aquatic Invertebra         Water Marks (B1)       Hydrogen Sulfide ( Oxidized Rhizosph         Sediment Deposits (B2)       Roots (C3)         Drift Deposits (B3)       Presence of Reduce         Algal Mat or Crust (B4)       Soils (C6)         Iron Deposits (B5)       (LRR A)         Surface Soil Cracks (B6)       Other (Explain in F	nd 4B) Odor (C1) neres along Living iced Iron (C4) ction in Tilled ed Plants (D1)		ater-Stained Leaves (I A, and 4B) rainage Patterns (B10) ry-Season Water Table aturation Visible on Ae eomorphic Position (D) hallow Aquitard (D3) AC-Neutral Test (D5)	B9) (MLRA 1, 2, e (C2) ríal Imagery (C9) 2) ) (LRR A)
Vetland Hydrology Indicators:         rimary Indicators (minimum of one required; check all that apply)         Water-Stained Lea         Surface Water (A1)       MLRA 1, 2, 4A, ar         High Water Table (A2)       Salt Crust (B11)         Saturation (A3)       Aquatic Invertebra         Water Marks (B1)       Hydrogen Sulfide ( Oxidized Rhizosph         Sediment Deposits (B2)       Roots (C3)         Drift Deposits (B3)       Presence of Reduce Recent Iron Reduce Soils (C6)         Algal Mat or Crust (B4)       Soils (C6) Stunted or Stresse (LRR A)	nd 4B) Odor (C1) neres along Living iced Iron (C4) ction in Tilled ed Plants (D1)		ater-Stained Leaves (I A, and 4B) rainage Patterns (B10) ry-Season Water Table aturation Visible on Ae eomorphic Position (D hallow Aquitard (D3) AC-Neutral Test (D5) aised Ant Mounds (D6)	B9) (MLRA 1, 2, e (C2) ríal Imagery (C9) 2) ) (LRR A)
Vetland Hydrology Indicators:         Irimary Indicators (minimum of one required; check all that apply)         Water-Stained Lea         Surface Water (A1)       MLRA 1, 2, 4A, ar         High Water Table (A2)       Salt Crust (B11)         Saturation (A3)       Aquatic Invertebra         Water Marks (B1)       Hydrogen Sulfide (         Sediment Deposits (B2)       Roots (C3)         Drift Deposits (B3)       Presence of Reduce         Algal Mat or Crust (B4)       Soils (C6)         Iron Deposits (B5)       (LRR A)         Surface Soil Cracks (B6)       Other (Explain in F         Inundation Visible on Aerial Imagery (B7)       Sparsely Vegetated Concave Surface (B8)	nd 4B) Odor (C1) neres along Living iced Iron (C4) ction in Tilled ed Plants (D1)		ater-Stained Leaves (I A, and 4B) rainage Patterns (B10) ry-Season Water Table aturation Visible on Ae eomorphic Position (D hallow Aquitard (D3) AC-Neutral Test (D5) aised Ant Mounds (D6)	B9) (MLRA 1, 2, e (C2) ríal Imagery (C9) 2) ) (LRR A)
Vetland Hydrology Indicators:         rimary Indicators (minimum of one required; check all that apply)         Water-Stained Lea         Surface Water (A1)       MLRA 1, 2, 4A, ar         High Water Table (A2)       Salt Crust (B11)         Saturation (A3)       Aquatic Invertebra         Water Marks (B1)       Hydrogen Sulfide ( Oxidized Rhizosph         Sediment Deposits (B2)       Roots (C3)         Drift Deposits (B3)       Presence of Reduce         Algal Mat or Crust (B4)       Soils (C6)         Iron Deposits (B5)       (LRR A)         Surface Soil Cracks (B6)       Other (Explain in F         Inundation Visible on Aerial Imagery (B7)       Sparsely Vegetated Concave Surface (B8)	nd 4B) Odor (C1) neres along Living iced Iron (C4) ction in Tilled ed Plants (D1)		ater-Stained Leaves (I A, and 4B) rainage Patterns (B10) ry-Season Water Table aturation Visible on Ae eomorphic Position (D hallow Aquitard (D3) AC-Neutral Test (D5) aised Ant Mounds (D6)	B9) (MLRA 1, 2, e (C2) ríal Imagery (C9) 2) ) (LRR A)
Vetland Hydrology Indicators:         Irimary Indicators (minimum of one required; check all that apply)         Water-Stained Lea         Surface Water (A1)       MLRA 1, 2, 4A, ar         High Water Table (A2)       Salt Crust (B1)         Saturation (A3)       Aquatic Invertebra         Water Marks (B1)       Hydrogen Sulfide (Oxidized Rhizosph         Sediment Deposits (B2)       Roots (C3)         Drift Deposits (B3)       Presence of Reduce         Algal Mat or Crust (B4)       Soils (C6)         Surface Soil Cracks (B6)       (LRR A)         Surface Soil Cracks (B6)       Other (Explain in F         Inundation Visible on Aerial Imagery (B7)       Sparsely Vegetated Concave Surface (B8)         ield Observations:       Yes       No       x       Depth (inches):         Water Table Present?       Yes       No       x       Depth (inches):	nd 4B) otes (B13) Odor (C1) neres along Living iced Iron (C4) ction in Tilled ed Plants (D1) Remarks)		ater-Stained Leaves (I A, and 4B) rainage Patterns (B10) ry-Season Water Table aturation Visible on Ae eomorphic Position (D hallow Aquitard (D3) AC-Neutral Test (D5) aised Ant Mounds (D6)	B9) (MLRA 1, 2, (a) (c2) (c2) (c9) (C9)
Vetland Hydrology Indicators:         Irimary Indicators (minimum of one required; check all that apply)         Water-Stained Lea         Surface Water (A1)       MLRA 1, 2, 4A, ar         High Water Table (A2)       Salt Crust (B1)         Saturation (A3)       Aquatic Invertebra         Water Marks (B1)       Hydrogen Sulfide (Oxidized Rhizosph         Sediment Deposits (B2)       Presence of Reduc         Drift Deposits (B3)       Presence of Reduc         Algal Mat or Crust (B4)       Soils (C6)         Surface Soil Cracks (B6)       (LRR A)         Surface Soil Cracks (B6)       Other (Explain in F         Inundation Visible on Aerial Imagery (B7)       Sparsely Vegetated Concave Surface (B8)         Ield Observations:       Yes       No       X       Depth (inches):         Vater Table Present?       Yes       No       X       Depth (inches):	nd 4B) otes (B13) Odor (C1) neres along Living iced Iron (C4) ction in Tilled ed Plants (D1) Remarks)		ater-Stained Leaves (I A, and 4B) rainage Patterns (B10) ry-Season Water Table aturation Visible on Ae eomorphic Position (Di hallow Aquitard (D3) AC-Neutral Test (D5) aised Ant Mounds (D6) rost-Heave Hummocks	B9) (MLRA 1, 2, (a) (c2) (c2) (c9) (C9)
Vetland Hydrology Indicators:         Irimary Indicators (minimum of one required; check all that apply)         Water Stained Lea         Surface Water (A1)       MLRA 1, 2, 4A, ar         High Water Table (A2)       Salt Crust (B11)         Saturation (A3)       Aquatic Invertebra         Water Marks (B1)       Hydrogen Sulfide (         Sediment Deposits (B2)       Roots (C3)         Drift Deposits (B3)       Presence of Reduce         Algal Mat or Crust (B4)       Soils (C6)         Surface Soil Cracks (B6)       (LRR A)         Inundation Visible on Aerial Imagery (B7)       Sparsely Vegetated Concave Surface (B8)         ield Observations:       No       x       Depth (inches):         Water Table Present?       Yes       No       x       Depth (inches):	nd 4B) tes (B13) Odor (C1) neres along Living ted Iron (C4) tion in Tilled d Plants (D1) Remarks)	etland Hydro	ater-Stained Leaves (I A, and 4B) rainage Patterns (B10) ry-Season Water Table aturation Visible on Ae eomorphic Position (D: hallow Aquitard (D3) AC-Neutral Test (D5) aised Ant Mounds (D6) rost-Heave Hummocks	B9) (MLRA 1, 2, (a) (c2) (c2) (c9) (C9)
Vetland Hydrology Indicators:         rimary Indicators (minimum of one required; check all that apply)         Surface Water (A1)       Water-Stained Lea         High Water Table (A2)       Salt Crust (B11)         Saturation (A3)       Aquatic Invertebra         Water Marks (B1)       Hydrogen Sulfide (         Sediment Deposits (B2)       Roots (C3)         Drift Deposits (B3)       Presence of Reduc         Algal Mat or Crust (B4)       Soils (C6)         Surface Soil Cracks (B6)       (LRR A)         Inundation Visible on Aerial Imagery (B7)       Sparsely Vegetated Concave Surface (B8)         ield Observations:       Yes       No       x       Depth (inches):         vater Table Present?       Yes       No       x       Depth (inches):	nd 4B) tes (B13) Odor (C1) neres along Living ted Iron (C4) tion in Tilled d Plants (D1) Remarks)	etland Hydro	ater-Stained Leaves (I A, and 4B) rainage Patterns (B10) ry-Season Water Table aturation Visible on Ae eomorphic Position (D: hallow Aquitard (D3) AC-Neutral Test (D5) aised Ant Mounds (D6) rost-Heave Hummocks	B9) (MLRA 1, 2, (a) (c2) (c2) (c9) (C9)
Vetland Hydrology Indicators:         Primary Indicators (minimum of one required; check all that apply)         Water-Stained Lea         Surface Water (A1)       MLRA 1, 2, 4A, ar         High Water Table (A2)       Salt Crust (B1)         Saturation (A3)       Aquatic Invertebra         Water Marks (B1)       Hydrogen Sulfide (Oxidized Rhizosph         Sediment Deposits (B2)       Presence of Reduc         Drift Deposits (B3)       Presence of Reduc         Algal Mat or Crust (B4)       Soils (C6)         Surface Soil Cracks (B6)       (LRR A)         Inundation Visible on Aerial Imagery (B7)       Sparsely Vegetated Concave Surface (B8)         Vater Table Present?       Yes       No       X         Depth (inches):       Yes       No       X       Depth (inches):	nd 4B) tes (B13) Odor (C1) neres along Living ted Iron (C4) tion in Tilled d Plants (D1) Remarks)	etland Hydro	ater-Stained Leaves (I A, and 4B) rainage Patterns (B10) ry-Season Water Table aturation Visible on Ae eomorphic Position (D: hallow Aquitard (D3) AC-Neutral Test (D5) aised Ant Mounds (D6) rost-Heave Hummocks	B9) (MLRA 1, 2, e (C2) rial Imagery (C9) 2) ) (LRR A) ↓ (D7)
Vetland Hydrology Indicators:       minimum of one required; check all that apply)         Surface Water (A1)       Water-Stained Lea         High Water Table (A2)       Salt Crust (B11)         Saturation (A3)       Aquatic Invertebra         Water Marks (B1)       Hydrogen Sulfide 0         Sediment Deposits (B2)       Roots (C3)         Drift Deposits (B3)       Presence of Reduc         Algal Mat or Crust (B4)       Soils (C6)         Surface Soil Cracks (B6)       Other (Explain in F         Inundation Visible on Aerial Imagery (B7)       Sparsely Vegetated Concave Surface (B8)         ield Observations:       No       x       Depth (inches):         urface Water Present?       Yes       No       x       Depth (inches):         scribe Recorded Data (stream gauge, monitoring well, aerial photos, pr	nd 4B) tes (B13) Odor (C1) neres along Living ted Iron (C4) tion in Tilled d Plants (D1) Remarks)	etland Hydro	ater-Stained Leaves (I A, and 4B) rainage Patterns (B10) ry-Season Water Table aturation Visible on Ae eomorphic Position (D: hallow Aquitard (D3) AC-Neutral Test (D5) aised Ant Mounds (D6) rost-Heave Hummocks	B9) (MLRA 1, 2, (a) (c2) (c2) (c9) (C9)
Vetland Hydrology Indicators:       minimum of one required; check all that apply)         Water Stained Lea         Surface Water (A1)       MLRA 1, 2, 4A, ar         High Water Table (A2)       Salt Crust (B11)         Saturation (A3)       Aquatic Invertebra         Water Marks (B1)       Hydrogen Sulfide 0         Sediment Deposits (B2)       Roots (C3)         Drift Deposits (B3)       Presence of Reduce         Algal Mat or Crust (B4)       Soils (C6)         Iron Deposits (B5)       (LRR A)         Surface Soil Cracks (B6)       Other (Explain in F         Inundation Visible on Aerial Imagery (B7)       Sparsely Vegetated Concave Surface (B8)         ield Observations:       No       x       Depth (inches):         urface Water Present?       Yes       No       x       Depth (inches):         aturation Present?       Yes       No       x       Depth (inches):         scribe Recorded Data (stream gauge, monitoring well, aerial photos, pr	nd 4B) tes (B13) Odor (C1) neres along Living ted Iron (C4) tion in Tilled d Plants (D1) Remarks)	etland Hydro	ater-Stained Leaves (I A, and 4B) rainage Patterns (B10) ry-Season Water Table aturation Visible on Ae eomorphic Position (D: hallow Aquitard (D3) AC-Neutral Test (D5) aised Ant Mounds (D6) rost-Heave Hummocks	B9) (MLRA 1, 2, (a) (c2) (c2) (c9) (C9)

The second

Supposed Street

Project/Site: Co	opey Quarry	City/County:	Multnomah Cou	nty Sam	pling Date:	4/18/2016
Applicant/Owner:	ODOT Region 1		State: OR	Sampling Point:	4	
Investigator(s):	Ken Sargent	Section, T	ownship, Range:	13, T1N, R5E		
Landform (hillslope	e, terrace, etc.): <u>Terrace</u>	Lo	cal relief (concave,	convex, none):	concave	Slope (%): _2
Subregion (LRR):	A	Lat: 45.564	179 Long:	-122.16591	Datum:	- 승규는 학교를 도가가 있는 것을 다고 물가가 했다.
Soil Map Unit Nam	ne: Aschoff cobbly loam 5-	30% slopes	아이 관계로 사용하는 것	NWI class	ification:	PEM
Are climatic / hydro	ologic conditions on the site ty	pical for this tim	e of year? Yes _	x No(If n	io, explain ir	n Remarks.)
Are Vegetation	, Soil, or Hydrol	ogy signif	ficantly disturbed?	Are "Normal Ci	rcumstance	s" present? Yes x No
Are Vegetation	, Soil , or Hydrol	ogy natur	ally problematic?	(if neede	d, explain a	ny answers in Remarks.)

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

Hydrophytic Vegetation Present?       Yes       x       No         Hydric Soil Present?       Yes       x       No         Wetland Hydrology Present?       Yes       x       No	Is the Sampled Area within a Wetland? Yes	<u>× No</u>
Remarks:		

	Absolute Dominant Indicator	Dominance Test worksheet:
Tree Stratum (Plot size:)	<u>% Cover Species? Status</u>	Number of Dominant Species
1		That Are OBL, FACW, or FAC: (A)
2		Total Number of Dominant
3		Species Across All Strata: <u>4</u> (B)
4.	· · · ·	Percent of Dominant Species That Are OBL, FACW, or FAC:75 (A/B)
	-	
	= Total Cover	
<u>Sapling/Shrub Stratum</u> (Plot size:)		Prevalence index worksheet:
1		Total % Cover of: Multiply by:
2	The second se	OBL species x 1 =
3		FACW species 40 x 2 = 80
4.	and the second	FAC species $40 \times 3 = 120$
5.		FACU species x 4 =
	= Total Cover	UPL species $20 \times 5 = 100$
Herb Stratum (Plot size: <u>3'sq</u> )		Column Totals: 100 (A) 300 (B)
1. Camassia quamash	40 Y FACW	$\frac{1}{100} (R) = \frac{1}{100} (R)$
2. Lunariua annua	20 Y UPL	Prevalence Index = B/A = 3
3. Tolmiea menziesii	20 Y FAC	
4. Agrosti capillaris	20 Y FACW	Hydrophytic Vegetation Indicators:
5		1 - Rapid Test for Hydrophytic Vegetation
6.		× 2 - Dominance Test is >50%
7.		X 3 - Prevalence Index is ≤3.0 <sup>1</sup>
8.		4 - Morphological Adaptations <sup>1</sup> (Provide supporting
9.		data in Remarks or on a separate sheet)
10.		5 - Wetland Non-Vascular Plants <sup>1</sup>
11.		Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
	= Total Cover	<sup>1</sup> Indicators of hydric soil and wetland hydrology must
Woody Vine Stratum (Plot size: )		be present, unless disturbed or problematic.
1		
2.		
	= Total Cover	Hydrophytic Vegetation
% Bare Ground in Herb Stratum		Present? Yes x No
	-	· · · · · · · · · · · · · · · · · · ·
Remarks: site just meets the wetland vegetation crite	ria	
remained one just meets are weather regetation one		

SOIL							Sampling Poir	
		to the dept	h needed to docu			nfirm the a	bsence of indicators	.)
Depth (inches)	Matrix Color (moist)	%	Color (moist)	Redox Featu %	Ires Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
	,,		······································	······································				
0-8"	10YR 2/1	90	10YR 3/4		<u> </u>	_M	Silt loam	
8"+							Gravel/Rock	
	<u></u>					•		
							·	
<sup>1</sup> Type: C=Co	oncentration, D=Dep	letion, RM=	Reduced Matrix, C	S=Covered or	Coated Sar	nd Grains.	<sup>2</sup> Location: PL=Pore	Lining, M=Matrix.
Hydric Soil	Indicators: (Applic	able to all	LRRs, unless oth	erwise noted.	.)	Ind	icators for Problemat	ic Hydric Soils <sup>3</sup> :
Histosol	(A1)		Sandy Redox (	35)			2 cm Muck (A10)	
	pipedon (A2)		Stripped Matrix	(S6)			Red Parent Material (	
	istic (A3)		Loamy Mucky		xcept MLR		Very Shallow Dark Su	
	en Sulfide (A4) d Beleur Derk Surfee	- (444) -	Loamy Gleyed Depleted Matrix				Other (Explain in Rem	arks)
	d Below Dark Surfac ark Surface (A12)		Depleted Math				<sup>3</sup> Indicators of hydroph	vtic vegetation and
	Mucky Mineral (S1)		Depleted Dark				wetland hydrology mu	
	Gleyed Matrix (S4)		Redox Depress				unless disturbed or pro	
	<i>(11)</i>							
	iyer (if present):						<b>N</b>	N .
Type:					Hydric Sol	il Present?	Yes <u>x</u>	No
Depth (incl	nes):							
IYDROLOG	v							
	ology Indicators:							
	tors (minimum of one	e required; «					ndary Indicators (2 or r	
0.6.14	-1			ed Leaves (B	9) ( <b>except</b>		/ater-Stained Leaves (	B9) ( <b>MLRA 1, 2</b> ,
Surface Wa	ater (A1) <sup>.</sup> Table (A2)		MLRA 1, 2, Salt Crust (	<b>4A, and 4B</b> )			<b>A, and 4B</b> ) rainage Patterns (B10)	N N
Saturation				ertebrates (B1	3)		ry-Season Water Table	
Water Mark				ulfide Odor (C			aturation Visible on Ae	
_				nizospheres al	ong Living			
Sediment D	Deposits (B2)		Roots (C3)				eomorphic Position (D	
Drift Depos	iits (B3)		Presence o		100			2)
				f Reduced Iro			hallow Aquitard (D3)	2)
Algal Mat o	or Crust (B4)			Reduction in		s	hallow Aquitard (D3)	2)
Algal Mat o	or Crust (B4)		Recent Iron Soils (C6)		Tilled	s F	hallow Aquitard (D3) AC-Neutral Test (D5)	
Iron Depos	its (B5)		Recent Iron     Soils (C6)     Stunted or s     (LRR A)	Reduction in Stressed Plant	Tilled is (D1)	s F/ R	hallow Aquitard (D3) AC-Neutral Test (D5) aised Ant Mounds (D6	) (LRR A)
Iron Depos Surface So	its (B5) il Cracks (B6)	1990 (P7)	Recent Iron     Soils (C6)     Stunted or s     (LRR A)	Reduction in	Tilled is (D1)	s F/ R	hallow Aquitard (D3) AC-Neutral Test (D5)	) (LRR A)
Iron Depos Surface So Inundation	its (B5) il Cracks (B6) Visible on Aerial Ima		Recent Iron     Soils (C6)     Stunted or 3     (LRR A)     Other (Expl	Reduction in Stressed Plant	Tilled is (D1)	s F/ R	hallow Aquitard (D3) AC-Neutral Test (D5) aised Ant Mounds (D6	) (LRR A)
Iron Depos Surface So	its (B5) il Cracks (B6)		Recent Iron     Soils (C6)     Stunted or 3     (LRR A)     Other (Expl	Reduction in Stressed Plant	Tilled is (D1)	s F/ R	hallow Aquitard (D3) AC-Neutral Test (D5) aised Ant Mounds (D6	) (LRR A)
Iron Depos Surface So	its (B5) il Cracks (B6) Visible on Aerial Ima egetated Concave S		Recent Iron     Soils (C6)     Stunted or 3     (LRR A)     Other (Expl	Reduction in Stressed Plant	Tilled is (D1)	s F/ R	hallow Aquitard (D3) AC-Neutral Test (D5) aised Ant Mounds (D6	) (LRR A)
Iron Depos Surface So Inundation Sparsely Vo Field Observa Surface Water	its (B5) il Cracks (B6) Visible on Aerial Ima egetated Concave S ations: Present? Yes	urface (B8)	Recent Iron Soils (C6) Stunted or : (LRR A) Other (Expl	Reduction in Stressed Plant ain in Remark	Tilled (s (D1) (s)	S F/ R F/	hallow Aquitard (D3) AC-Neutral Test (D5) aised Ant Mounds (D6 rost-Heave Hummocks	) ( <b>LRR A</b> ) 5 (D7)
Iron Depos Surface So Inundation Sparsely Vo Field Observa Surface Water Water Table P	its (B5) il Cracks (B6) Visible on Aerial Ima egetated Concave S ations: Present? Yes resent? Yes	urface (B8)	Recent Iron Soils (C6) Stunted or (LRR A) Other (Expl	Reduction in Stressed Plant ain in Remark	Tilled (s (D1) (s)	S F/ R F/	hallow Aquitard (D3) AC-Neutral Test (D5) aised Ant Mounds (D6	) ( <b>LRR A</b> ) 5 (D7)
Iron Depos Surface So Inundation Sparsely Vo Field Observa Surface Water Water Table P Saturation Pre	its (B5) il Cracks (B6) Visible on Aerial Ima egetated Concave S ations: Present? Yes resent? Yes isent?	No x No	Recent Iron Soils (C6) Stunted or 3 (LRR A) Other (Expl	Reduction in Stressed Plani ain in Remark s): s):	Tilled (s (D1) (s)	S F/ R F/	hallow Aquitard (D3) AC-Neutral Test (D5) aised Ant Mounds (D6 rost-Heave Hummocks	) ( <b>LRR A</b> ) 5 (D7)
Iron Depos Surface So Inundation Sparsely Vo Field Observa Surface Water Water Table P Saturation Pre (includes capil	its (B5) il Cracks (B6) Visible on Aerial Ima egetated Concave S ations: Present? Yes resent? Yes isent? Yes lary fringe) Yes	No x No x No	Recent Iron Soils (C6) Stunted or S (LRR A) Other (Expl	Reduction in           Stressed Plant           ain in Remark           s):	Tilled Is (D1) S) We	S F/ R F/	hallow Aquitard (D3) AC-Neutral Test (D5) aised Ant Mounds (D6 rost-Heave Hummocks ology Present? Ye	) ( <b>LRR A</b> ) 5 (D7)
Iron Depos Surface So Inundation Sparsely Vo Field Observa Surface Water Water Table P Saturation Pre (includes capil	its (B5) il Cracks (B6) Visible on Aerial Ima egetated Concave S ations: Present? Yes resent? Yes isent?	No x No x No	Recent Iron Soils (C6) Stunted or S (LRR A) Other (Expl	Reduction in           Stressed Plant           ain in Remark           s):	Tilled Is (D1) S) We	S F/ R F/	hallow Aquitard (D3) AC-Neutral Test (D5) aised Ant Mounds (D6 rost-Heave Hummocks ology Present? Ye	) ( <b>LRR A</b> ) 5 (D7)
Iron Depos Surface So Inundation Sparsely Vo Field Observa Surface Water Water Table P Saturation Pre (includes capil	its (B5) il Cracks (B6) Visible on Aerial Ima egetated Concave S ations: Present? Yes resent? Yes isent? Yes lary fringe) Yes	No x No x No	Recent Iron Soils (C6) Stunted or S (LRR A) Other (Expl	Reduction in           Stressed Plant           ain in Remark           s):	Tilled Is (D1) S) We	S F/ R F/	hallow Aquitard (D3) AC-Neutral Test (D5) aised Ant Mounds (D6 rost-Heave Hummocks ology Present? Ye	) ( <b>LRR A</b> ) 5 (D7)
Iron Depos Surface So Inundation Sparsely Vo Field Observa Surface Water Water Table P Saturation Pre (includes capil	its (B5) il Cracks (B6) Visible on Aerial Ima egetated Concave S ations: Present? Yes resent? Yes isent? Yes lary fringe) Yes	No x No x No	Recent Iron Soils (C6) Stunted or S (LRR A) Other (Expl	Reduction in           Stressed Plant           ain in Remark           s):	Tilled Is (D1) S) We	S F/ R F/	hallow Aquitard (D3) AC-Neutral Test (D5) aised Ant Mounds (D6 rost-Heave Hummocks ology Present? Ye	) ( <b>LRR A</b> ) 5 (D7)
Iron Depos Surface So Inundation Sparsely Vo Field Observa Surface Water Water Table P Saturation Pre (includes capil Describe Record	its (B5) il Cracks (B6) Visible on Aerial Ima egetated Concave S ations: Present? Yes resent? Yes isent? Yes lary fringe) Yes	No x No x No	Recent Iron Soils (C6) Stunted or S (LRR A) Other (Expl	Reduction in           Stressed Plant           ain in Remark           s):	Tilled Is (D1) S) We	S F/ R F/	hallow Aquitard (D3) AC-Neutral Test (D5) aised Ant Mounds (D6 rost-Heave Hummocks ology Present? Ye	) ( <b>LRR A</b> ) 5 (D7)
Iron Depos Surface So Inundation Sparsely Vo Field Observa Surface Water Water Table P Saturation Pre (includes capil Describe Record	its (B5) il Cracks (B6) Visible on Aerial Ima egetated Concave S ations: Present? Yes resent? Yes isent? Yes lary fringe) Yes	No x No x No	Recent Iron Soils (C6) Stunted or S (LRR A) Other (Expl	Reduction in           Stressed Plant           ain in Remark           s):	Tilled Is (D1) S) We	S F/ R F/	hallow Aquitard (D3) AC-Neutral Test (D5) aised Ant Mounds (D6 rost-Heave Hummocks ology Present? Ye	) ( <b>LRR A</b> ) 5 (D7)
Iron Depos Surface So Inundation Sparsely Vo Field Observa Surface Water Water Table P Saturation Pre (includes capil Describe Record	its (B5) il Cracks (B6) Visible on Aerial Ima egetated Concave S ations: Present? Yes resent? Yes isent? Yes lary fringe) Yes	No x No x No	Recent Iron Soils (C6) Stunted or S (LRR A) Other (Expl	Reduction in           Stressed Plant           ain in Remark           s):	Tilled Is (D1) S) We	S F/ R F/	hallow Aquitard (D3) AC-Neutral Test (D5) aised Ant Mounds (D6 rost-Heave Hummocks ology Present? Ye	) ( <b>LRR A</b> ) 5 (D7)

and and a

Project/Site: Coopey Quarry	City/County: Multnomah Cou	nty Sam	pling Date:	4/18/2016	
Applicant/Owner: ODOT Region 1	State: OR	Sampling Point:	5		
Investigator(s): Ken Sargent	Section, Township, Range:	13, T1N, R5E			
Landform (hillslope, terrace, etc.): Terrace	Local relief (concave	, convex, none):	concave	Slope (%):	2
Subregion (LRR): A	Lat: 45.56477 Long:	-122.16593	Datum:		
Soil Map Unit Name: Aschoff cobbly loam 5-	10% slopes	NWI clas	sification:	Upland	역회 전문 가격 위험 
Are climatic / hydrologic conditions on the site ty	pical for this time of year? Yes	<u>x</u> No (if	no, explain i	n Remarks.)	
Are Vegetation, Soil, or Hydrol	ogy significantly disturbed?	Are "Normal C	ircumstance	s" present? Yes <u>x</u>	No
Are Vegetation, Soil, or Hydrol	ogy naturally problematic?	(If need	ed, explain a	any answers in Remark	(S.)

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

Hydrophytic Vegetation Present? Yes No x	
Hydric Soil Present? Yes No x	is the Sampled Area within a Wetland? Yes No x
Wetland Hydrology Present? Yes x No	는 사람들은 것은 것은 것을 가지 않는 것을 알려야 한다. 가지 않는 것은 것은 것을 가지 않는 것은 것을 가지 않는 것을 가지 않는 같은 것은
Remarks: Site was dry, facked true soil layers, with rock predom	inating at 4".

\_\_\_\_\_

	Absolute	Dominant	Indicator	Dominance Test worksheet:
Tree Stratum (Plot size:)	% Cover	Species?	<u>Status</u>	Number of Dominant Species
1. Quercus garryana	90	Y	FACU	That Are OBL, FACW, or FAC: (A)
2. Prunus emarginata	30	Y	FACU	Total Number of Dominant
3				Species Across All Strata: <u>6</u> (B)
4				Percent of Dominant Species
				That Are OBL, FACW, or FAC: <u>17</u> (A/B)
		= Total Cove	r	· ·
Sapling/Shrub Stratum (Plot size:)		-		Prevalence Index worksheet:
1. Symphoricarpos albus	5	Y	FACU	Total % Cover of: Multiply by:
2. Rosa woodsii	5	Y	FACU	OBL species x 1 =
3.				FACW species x 2 =
4				FAC species x 3 =
5		<u></u>		FACU species 160 x 4 =
		= Total Cove	Г	UPL species x 5 =
Herb Stratum (Plot size: 3'sq )				
1Geranium robertianum	5	Y	FACU	Column Totals: (A) (B)
2.				Prevalence Index = B/A = >3
3				
4.				Hydrophytic Vegetation Indicators:
5	+			1 - Rapid Test for Hydrophytic Vegetation
6.	······			2 - Dominance Test is >50%
7.				3 - Prevalence Index is ≤3.0 <sup>1</sup>
8.				4 - Morphological Adaptations <sup>1</sup> (Provide supporting
9				data in Remarks or on a separate sheet)
9		······		5 - Wetland Non-Vascular Plants <sup>1</sup>
10	*******			Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
11.		= Total Cove		<sup>1</sup> Indicators of hydric soil and wetland hydrology must
Woody Vine Stratum (Plot size:)			•	be present, unless disturbed or problematic.
1. Hedera helix	30	Y	FACU	
		• • • • • • • • • • • • • • • • • • • •	1700	
2		= Total Cove		Hydrophytic
% Bare Ground in Herb Stratum			•	Vegetation Present? Yes No x
Remarks:				

Histosol (A1)	Sampling Point:	
(Inches)       Color (moist)       %       Type <sup>1</sup> Loc <sup>2</sup> 0.31       10YR 2/1	absence of indicators.)	
3-10"       10YR 2/2	Texture	Remarks
10-14       10Y\$ 3/3       95       10YR 3/2       5       c       M         14+"	Silt Ioam	
10-14       10Y\$ 3/3       95       10YR 3/2       5       c       M         14+"	Silt loam	
14+*	Gravelly	
<sup>1</sup> Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grain         Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)         Histic Epipedon (A2)         Black Histic (A3)         Loamy Mucky Mineral (F1) (except MLRA 1)         Depleted Below Dark Surface (A11)         Depleted Below Dark Surface (A12)         Redox Dark Surface (A12)         Redox Dark Surface (A12)         Sandy Mucky Mineral (S1)         Depleted Dark Surface (A12)         Redox Dark Surface (A12)         Redox Dark Surface (A12)         Redox Dark Surface (A12)         Redox Dark Surface (F6)         Sandy Mucky Mineral (S1)         Deptetid Dark Surface (F7)         Sandy Mucky Mineral (S1)         Deptid (inches):         Type:         Deptid (inches):         Type:         Deptid (inches):         Marks:         Deptid (inches):         Surface Water (A1)         High Water Table (A2)         Satiration (A3)         Water Marks (B1)         Oxidized Rhizospheres along Living         Sediment Deposits (B2)         Drift Deposits (B3)         Presence of Reduced Iron (C4)         Resent Iron Reduction in Tilled </td <td>mixed</td> <td><u></u></td>	mixed	<u></u>
Hydric Soil Indicators:       (Applicable to all LRRs, unless otherwise noted.)         Histosol (A1)       Sandy Redox (S5)         Histic Epipedon (A2)       Stripped Matrix (S6)         Black Histic (A3)       Loarny Mucky Mineral (F1) (except MLRA 1)         Depleted Below Dark Surface (A11)       Depleted Matrix (F3)         Thick Dark Surface (A12)       Redox Dark Surface (F6)         Sandy Mucky Mineral (S1)       Depleted Dark Surface (F7)         Sandy Gleyed Matrix (S4)       Redox Depressions (F8)         estrictive Layer (if present):       Type:         Type:       Hydric Soil Present         Pepth (inches):       Multar 1, 24A, and 4B)         Surface Water (A1)       Multar 1, 24A, and 4B)         High Water Table (A2)       Salt Crust (B1)         Sutration (A3)       Aquatic Invertebrates (B13)         Water Marks (B1)       Oxidized Rhizospheres along Living         Schiment Deposits (B2)       Roots (C3)         Drift Deposits (B5)       Oxidized Rhizospheres along Living         Surface Soil Cracks (B6)       Other (Explain in Remarks)         Innuctation Visible on Aerial Imagery (B7)       Stunted or Stressed Plants (D1)         Surface Soil Cracks (B6)       Other (Explain in Remarks)         Introductor Visible on Aerial Imagery (B7)       Sparsely Vegetated Co	Rock	
Hydric Soil Indicators:       (Applicable to all LRRs, unless otherwise noted.)         Histosol (A1)       Sandy Redox (S5)         Histic Epipedon (A2)       Stripped Matrix (S6)         Black Histic (A3)       Loarny Mucky Mineral (F1) (except MLRA 1)         Depleted Below Dark Surface (A11)       Depleted Matrix (F3)         Thick Dark Surface (A12)       Redox Dark Surface (F6)         Sandy Mucky Mineral (S1)       Depleted Dark Surface (F7)         Sandy Gleyed Matrix (S4)       Redox Depressions (F8)         estrictive Layer (if present):       Type:         Type:       Hydric Soil Present         Pepth (inches):       Multar 1, 24A, and 4B)         Surface Water (A1)       Multar 1, 24A, and 4B)         High Water Table (A2)       Salt Crust (B1)         Sutration (A3)       Aquatic Invertebrates (B13)         Water Marks (B1)       Oxidized Rhizospheres along Living         Schiment Deposits (B2)       Roots (C3)         Drift Deposits (B5)       Oxidized Rhizospheres along Living         Surface Soil Cracks (B6)       Other (Explain in Remarks)         Innuctation Visible on Aerial Imagery (B7)       Stunted or Stressed Plants (D1)         Surface Soil Cracks (B6)       Other (Explain in Remarks)         Introductor Visible on Aerial Imagery (B7)       Sparsely Vegetated Co		<u></u>
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)       Instant Present Presen	ar provide the second se	
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)       Image: Contemportal Stripped Matrix (S6)         Histic Epipedon (A2)       Stripped Matrix (S6)       Image: Contemportal Stripped Matrix (F2)         Black Histic (A3)       Loamy Mucky Mineral (F1) (except MLRA 1)         Hydrogen Sulfide (A4)       Loamy Gleyed Matrix (F2)         Depleted Below Dark Surface (A12)       Redox Dark Surface (F6)         Sandy Mucky Mineral (S1)       Depleted Dark Surface (F7)         sandy Mucky Mineral (S1)       Personame         Depth (inches):       Mineral (S1)         Type:       Murphiling         Depth (inches):       Mineral (S1)         Surface Water (A1)       MuRA 1, 2, 4A, and 4B)         High Water Table (A2)       Salt Crust (B1)         Saturation (A3)       Aquatic Invertebrates (B13)         Water Marks (B1)       Oxidized Rhizospheres along Living         Sediment Deposits (B2)       Presence of Reduced Iron (C4)         Drift Deposits (B3)       Presence of Reduced Iron (C4)         Surface S		······
Histosol (A1)       Sandy Redox (S5)         Histic Epipedon (A2)       Stripped Matrix (S6)         Black Histic (A3)       Loamy Mucky Mineral (F1) (except MLRA 1)         Hydrogen Sulfide (A4)       Loamy Gleyed Matrix (F2)         Depleted Below Dark Surface (A11)       Depleted Matrix (F2)         Thick Dark Surface (A12)       Redox Dark Surface (F6)         Sandy Mucky Mineral (S1)       Depleted Dark Surface (F7)         Sandy Cleyed Matrix (S4)       Redox Depressions (F8)         estrictive Layer (if present):       Hydric Soll Present         Type:       Hydric Soll Present         Depth (inches):       Hydric Soll Present         mark s:       Water Table (A2)         Surface Water (A1)       MLRA 1, 2, 4A, and 4B)         High Water Table (A2)       Salt Crust (B1)         Sutration (A3)       Aquatic Invertebrates (B13)         Water Marks (B1)       Hydrogen Sulfide Odor (C1)         Drift Deposits (B2)       Roots (C3)         Drift Deposits (B3)       Presence of Reduced Iron (C4)         Algal Mat or Crust (B4)       Solit C6)         Surface Soli Cracks (B6)       Other (Explain in Remarks)         Inundation Visible on Aerial Imagery (B7)       Sparsely Vegetated Concave Surface (58)         eld Observations:       Yes       <	<sup>2</sup> Location: PL=Pore L	Lining, M≕Matrix.
Histic Epipedon (A2)       Stripped Matrix (S6)       Image: Composition of the second matrix (S7)         Black Histic (A3)       Loamy Gleyed Matrix (F2)       Image: Composition of the second matrix (F3)         Depleted Below Dark Surface (A11)       Depleted Matrix (F3)       Image: Composition of the second matrix (F3)         Thick Dark Surface (A12)       Redox Dark Surface (F6)       Redox Dark Surface (F7)         Sandy Mucky Mineral (S1)       Depleted Dark Surface (F7)         Sandy Mucky Mineral (S1)       Redox Depressions (F8)         estrictive Layer (if present):       Hydric Soil Present         Type:	dicators for Problematic	c Hydric Soils <sup>3</sup> :
Black Histic (A3)       Loamy Mucky Mineral (F1) (except MLRA 1)         Hydrogen Sulfide (A4)       Loamy Gleyed Matrix (F2)         Depleted Below Dark Surface (A11)       Depleted Matrix (F3)         Thick Dark Surface (A12)       Redox Dark Surface (F6)         Sandy Mucky Mineral (S1)       Depleted Dark Surface (F7)         Sandy Gleyed Matrix (S4)       Redox Depressions (F8)         estrictive Layer (if present):       Type:         Type:       Hydric Soil Present         Depth (inches):       Hydric Soil Present         marks:       Water-Stained Leaves (B9) (except         Surface Water (A1)       MLRA 1, 2, 4A, and 4B)         High Water Table (A2)       Salt Crust (B11)         Saturation (A3)       Aquatic Invertebrates (B13)         Water Marks (B1)       Oxidized Rhizospheres along Living         Sediment Deposits (B2)       Roots (C3)         Drift Deposits (B3)       Presence of Reduced Iron (C4)         Algal Mat or Crust (B4)       Soils (C6)         Surface Soil Cracks (B6)       Other (Explain in Remarks)         Inundation Visible on Aerial Imagery (B7)       Sparely Vegetated Concave Surface (B8)         eld Observations:       Yes       No       X         Irdace Karle Treesent?       Yes       No       X <tr< td=""><td>2 cm Muck (A10)</td><td></td></tr<>	2 cm Muck (A10)	
Hydrogen Sulfide (A4)       Loamy Gleyed Matrix (F2)         Depleted Below Dark Surface (A11)       Depleted Matrix (F3)         Thick Dark Surface (A12)       Redox Dark Surface (F6)         Sandy Mucky Mineral (S1)       Depleted Dark Surface (F7)         Sandy Gleyed Matrix (S4)       Redox Dark Surface (F7)         marks:       Hydrology Indicators:         Type:	Red Parent Material (TF	,
Depleted Below Dark Surface (A11)       Depleted Matrix (F3)         Thick Dark Surface (A12)       Redox Dark Surface (F6)         Sandy Mucky Mineral (S1)       Depleted Dark Surface (F7)         Sandy Mucky Mineral (S1)       Depleted Dark Surface (F7)         sandy Gleyed Matrix (S4)       Redox Depressions (F8)         estrictive Layer (if present):       Hydric Soil Present         Type:	Very Shallow Dark Surfa	
Thick Dark Surface (A12)       Redox Dark Surface (F6)         Sandy Mucky Mineral (S1)       Depleted Dark Surface (F7)         Sandy Gleyed Matrix (S4)       Redox Depressions (F8)         estrictive Layer (if present):       Hydric Soll Present         Type:	Other (Explain in Rema	rks)
Sandy Mucky Mineral (S1)       Depleted Dark Surface (F7)         Sandy Gleyed Matrix (S4)       Redox Depressions (F8)         estrictive Layer (if present):       Hydric Soil Present         Type:	<sup>3</sup> Indicators of hydrophyt	lic versitation and
Sandy Gleved Matrix (S4)	wetland hydrology must	
Type:	unless disturbed or prot	
Type:		
Depth (inches):	? Yes	No x
DROLOGY         etland Hydrology Indicators:         imary Indicators (minimum of one required; check all that apply)       State apply         Surface Water (A1)       MLRA 1, 2, 4A, and 4B)         High Water Table (A2)       Salt Crust (B11)         Saturation (A3)       Aquatic Invertebrates (B13)         Water Marks (B1)       Hydrogen Sulfide Odor (C1)         Sediment Deposits (B2)       Roots (C3)         Drift Deposits (B3)       Presence of Reduced Iron (C4)         Algal Mat or Crust (B4)       Solis (C6)         Surface Soil Cracks (B6)       (LRR A)         Surface Soil Cracks (B6)       Other (Explain in Remarks)         Inundation Visible on Aerial Imagery (B7)       Sparsely Vegetated Concave Surface (B8)         eld Observations:       Yes       No       X         urface Water Present?       Yes       No       X       Depth (inches):       Wetland Hy         uturation Present?       Yes       No       Depth (inches):       12"       Vetland Hy		
DROLOGY         etiand Hydrology Indicators: imary Indicators (minimum of one required; check all that apply)       Setiand Leaves (B9) (except         Water-Stained Leaves (B9) (except         Surface Water (A1)       MLRA 1, 2, 4A, and 4B)         High Water Table (A2)       Salt Crust (B11)         Saturation (A3)       Aquatic Invertebrates (B13)         Water Marks (B1)       Hydrogen Sulfide Odor (C1)         Sediment Deposits (B2)       Roots (C3)         Drift Deposits (B3)       Presence of Reduced Iron (C4)         Algal Mat or Crust (B4)       Soils (C6)         Surface Soil Cracks (B6)       (LRR A)         Iron Deposits (B5)       (LRR A)         Surface Soil Cracks (B6)       Other (Explain in Remarks)         Inundation Visible on Aerial Imagery (B7)       Sparsely Vegetated Concave Surface (B8)         Wetland Hy         Wetland Hy         Live No         x       Depth (inches):         uration Present?       Yes       No         Live Mater Present?         Wetland Hy         Wetland Present?         Sarsely Vegetated Concave Surface (B8)         End Observations:         uration		
rimary Indicators (minimum of one required; check all that apply)       Set         Surface Water (A1)       Water-Stained Leaves (B9) (except         High Water Table (A2)       Salt Crust (B11)         Saturation (A3)       Aquatic Invertebrates (B13)         Water Marks (B1)       Hydrogen Sulfide Odor (C1)         Water Marks (B1)       Oxidized Rhizospheres along Living         Sediment Deposits (B2)       Roots (C3)         Drift Deposits (B3)       Presence of Reduced Iron (C4)         Algal Mat or Crust (B4)       Soils (C6)         Surface Soil Cracks (B6)       Other (Explain in Remarks)         Inundation Visible on Aerial Imagery (B7)       Sparsely Vegetated Concave Surface (B8)         Steld Observations:       Yes       No         water Table Present?       Yes       No         Ater Table Present?       Yes       No         Scribe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if avail		
Surface Water (A1)       MLRA 1, 2, 4A, and 4B)         High Water Table (A2)       Salt Crust (B11)         Saturation (A3)       Aquatic Invertebrates (B13)         Water Marks (B1)       Hydrogen Sulfide Odor (C1)         Sediment Deposits (B2)       Roots (C3)         Drift Deposits (B3)       Presence of Reduced Iron (C4)         Algal Mat or Crust (B4)       Soils (C6)         Surface Soil Cracks (B6)       (LRR A)         Inundation Visible on Aerial Imagery (B7)       Other (Explain in Remarks)         Sparsely Vegetated Concave Surface (B8)       Wetland Hy         eld Observations:       Yes         urface Water Present?       Yes         Yes       No         x       Depth (inches):         aturation Present?       Yes         Scribe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if avait	ondary Indicators (2 or m	
High Water Table (A2)       Salt Crust (B11)         Saturation (A3)       Aquatic Invertebrates (B13)         Water Marks (B1)       Hydrogen Sulfide Odor (C1)         Sediment Deposits (B2)       Roots (C3)         Drift Deposits (B3)       Presence of Reduced Iron (C4)         Algal Mat or Crust (B4)       Soils (C6)         Surface Soil Cracks (B6)       (LRR A)         Surface Soil Cracks (B6)       Other (Explain in Remarks)         Inundation Visible on Aerial Imagery (B7)       Sparsely Vegetated Concave Surface (B8)         ield Observations:       Yes         urface Water Present?       Yes         No       X       Depth (inches):         //ater Table Present?       Yes       No         scribe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if avait	Water-Stained Leaves (B	9) (MLRA 1, 2,
Saturation (A3)       Aquatic Invertebrates (B13)         Water Marks (B1)       Hydrogen Sulfide Odor (C1)         Sediment Deposits (B2)       Roots (C3)         Drift Deposits (B3)       Presence of Reduced Iron (C4)         Algal Mat or Crust (B4)       Soils (C6)         Iron Deposits (B5)       Stunted or Stressed Plants (D1)         Inundation Visible on Aerial Imagery (B7)       Other (Explain in Remarks)         Sparsely Vegetated Concave Surface (B8)       Other (Inches):         ield Observations:       Yes         urface Water Present?       Yes         Yes       No         x       Depth (inches):         /ater Table Present?       Yes         ncludes capillary fringe)       Yes         x       No         x       Depth (inches):         y/ater Table Present?       Yes         x       No         x       Depth (inches):         y/ater Table Present?       Yes         x       No         x       Depth (inches):         y/ater Table Present?       Yes         x       Depth (inches):         y/ater Table Present?       Yes         x       No         x       Depth (inches):<	4A, and 4B)	
Water Marks (B1)       Hydrogen Sulfide Odor (C1)         Sediment Deposits (B2)       Roots (C3)         Drift Deposits (B3)       Presence of Reduced Iron (C4)         Algal Mat or Crust (B4)       Soils (C6)         Iron Deposits (B5)       Stunted or Stressed Plants (D1)         Iron Deposits (B5)       (LRR A)         Surface Soil Cracks (B6)       Other (Explain in Remarks)         Inundation Visible on Aerial Imagery (B7)         Sparsely Vegetated Concave Surface (B8)         etd Observations:         urface Water Present?         Yes       No         Autor Table Present?         Yes       No         Autor Present?       Yes         Yes       No         Autor Table Present?       Yes         Yes       No         Scribe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if avail	Drainage Patterns (B10)	(00)
Sediment Deposits (B2)       Oxidized Rhizospheres along Living         Drift Deposits (B3)       Presence of Reduced Iron (C4)         Algal Mat or Crust (B4)       Soils (C6)         Iron Deposits (B5)       Stunted or Stressed Plants (D1)         Iron Deposits (B5)       Other (Explain in Remarks)         Surface Soil Cracks (B6)       Other (Explain in Remarks)         Inundation Visible on Aerial Imagery (B7)       Sparsely Vegetated Concave Surface (B8)         eld Observations:       No         urface Water Present?       Yes         vaturation Present?       Yes         result of Present?       Yes         Scribe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if avail	Dry-Season Water Table Saturation Visible on Aeri	
Sediment Deposits (B2)       Roots (C3)       Recent Iron Reduced Iron (C4)         Drift Deposits (B3)       Presence of Reduced Iron (C4)         Algal Mat or Crust (B4)       Soils (C6)         Iron Deposits (B5)       Iton Clarcks (B6)         Surface Soil Cracks (B6)       Other (Explain in Remarks)         Inundation Visible on Aerial Imagery (B7)         Sparsely Vegetated Concave Surface (B8)         eld Observations:         urface Water Present?         Yes       No         aturation Present?         Yes       No         aturation Present?         Yes       No         Cuddes capillary fringe)       Yes         Yes       No         Scribe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if avail	Saturation visible on Aen	ai imagery (C9)
Algal Mat or Crust (B4)       Recent Iron Reduction in Tilled         Algal Mat or Crust (B4)       Soils (C6)         Iron Deposits (B5)       (LRR A)         Surface Soil Cracks (B6)       Other (Explain in Remarks)         Inundation Visible on Aerial Imagery (B7)       Sparsely Vegetated Concave Surface (B8)         eld Observations:       No         urface Water Present?       Yes         No       X         Depth (inches):       Wetland Hy         aturation Present?       Yes         ncludes capillary fringe)       Yes         x       No         x       Depth (inches):         1       Inchespondent (inches)         <	Geomorphic Position (D2)	.)
Algal Mat or Crust (B4)       Soils (C6)       Stunted or Stressed Plants (D1)         Iron Deposits (B5)       (LRR A)       Included or Stressed Plants (D1)         Surface Soil Cracks (B6)       Other (Explain in Remarks)       Included or Stressed Plants (D1)         Inundation Visible on Aerial Imagery (B7)       Sparsely Vegetated Concave Surface (B8)       Other (Explain in Remarks)         eld Observations:       Intrace Water Present?       Yes       No       X       Depth (inches):       Wetland Hy         //aturation Present?       Yes       No       X       Depth (inches):       Wetland Hy         aturation Present?       Yes       X       No       Depth (inches):       12"         scribe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if avail       Stressent Plants       14 avail	Shallow Aquitard (D3)	
Iron Deposits (B5)       Stunted or Stressed Plants (D1)         Iron Deposits (B5)       (LRR A)         Surface Soil Cracks (B6)       Other (Explain in Remarks)         Inundation Visible on Aerial Imagery (B7)       Sparsely Vegetated Concave Surface (B8)         eld Observations:       Inface Water Present?         urface Water Present?       Yes         No       X         Depth (inches):       Wetland Hy         aturation Present?       Yes         Includes capillary fringe)       Yes         x       No         Depth (inches):       12"         scribe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if avail		
Iron Deposits (B5)       (LRR A)         Surface Soil Cracks (B6)       Other (Explain in Remarks)         Inundation Visible on Aerial Imagery (B7)       Other (Explain in Remarks)         Sparsely Vegetated Concave Surface (B8)         eld Observations:         urface Water Present?       Yes         No       x       Depth (inches):         aturation Present?       Yes       No         aturation Present?       Yes       No         aturation Present?       Yes       No         scribe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if avail	FAC-Neutral Test (D5)	
Surface Soil Cracks (B6)       Other (Explain in Remarks)         Inundation Visible on Aerial Imagery (B7)         Sparsely Vegetated Concave Surface (B8)         eld Observations:         urface Water Present?       Yes         Yes       No       x         /ater Table Present?       Yes       No         aturation Present?       Yes       No         ncludes capillary fringe)       Yes       x         No       Depth (inches):       12"         scribe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if avail	Raised Ant Mounds (D6)	
Inundation Visible on Aerial Imagery (B7) Sparsely Vegetated Concave Surface (B8) eld Observations: urface Water Present? Yes No X Depth (inches): (ater Table Present? Yes No X Depth (inches): aturation Present? reludes capillary fringe) Yes X No Depth (inches): 12" Scribe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if avail	Frost-Heave Hummocks	
eld Observations: urface Water Present? Yes No x Depth (inches): /ater ⊤able Present? Yes No x Depth (inches): aturation Present? includes capillary fringe) Yes x No Depth (inches): 12" scribe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if avail		
urface Water Present?       Yes       No       x       Depth (inches):       Wetland Hy         ater Table Present?       Yes       No       x       Depth (inches):       Wetland Hy         aturation Present?       Ves       x       No       Depth (inches):       12"         aturation Present?       Yes       x       No       Depth (inches):       12"         accudes capillary fringe)       Yes       x       No       Depth (inches):       12"         scribe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if avail       Yes       Yes       Yes		
fater ⊤able Present? Yes No x Depth (inches): Wetland Hy aturation Present? ncludes capillary fringe) Yes x No Depth (inches): 12" scribe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if avail	<u></u>	
aturation Present? ncludes capillary fringe) Yes <u>x</u> No <u>Depth</u> (inches): <u>12"</u> scribe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if avai		
ncludes capillary fringe) Yes <u>x</u> No <u>Depth</u> (inches): <u>12"</u> scribe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if avai	rology Present? Yes	<u>x</u> No
scribe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if avai		
marks:	ole:	
marks:		
marks:		

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Project/Site:	oopey Quarry	Cit	/County:	Multnomah Cou	nty Sam	pling Date: 4/18	/2016	
Applicant/Owner:	ODOT Region	1	<u>.</u>	State: OR	Sampling Point:	6		
Investigator(s):	Ken Sargent		Section, Tov	wnship, Range:	13, T1N, R5E		de setembre	21123월 1133 · 1
Landform (hillslop	e, terrace, etc.):	Теггасе	Loca	al relief (concave,	convex, none):	CONVEX	Slope (%):	2
Subregion (LRR):	<u>A</u>	La	45,5649	4 Long:	-122.16636	Datum:		
Soil Map Unit Na	me: Aschoff col	obly loam 5-30%	slopes		NWI class	sification: Uplar	nd	사람은 것은 가지 않는다.
Are climatic / hyd	rologic conditions	on the site typical	for this time	of year? Yes	<u>x</u> No(lfr	no, explain in Rem	arks.)	
Are Vegelation	, Soil	, or Hydrology	signific	antly disturbed?	Are "Normal C	ircumstances" pres	ent? Yes <u>x</u>	No
Are Vegetation	, Soil	, or Hydrology	natural	ly problematic?	(If neede	ed, explain any ans	wers in Remark	(S.)

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

Hydrophytic Vegetation Present?       Yes       No         Hydric Soil Present?       Yes       No       x         Wetland Hydrology Present?       Yes       No       x	Is the Sampled Area within a Wetland? Yes No
Remarks:	

	Absolute	Dominant	Indicator	Dominance Test	worksheet:		
Tree Stratum (Plot size:)	<u>% Cover</u>	Species?	<u>Status</u>	Number of Domina		<u> </u>	/ <b></b>
1				That Are OBL, FA	•	2 (	(A)
2				Total Number of D		2	(1)
3				Species Across Al	-	3	(B)
4				Percent of Domina That Are OBL, FA	CW, or FAC:	67	(A/B)
		= Total Cove	r				
Sapling/Shrub Stratum (Plot size: )		-		Prevalence Index	worksheet:		
1. Symphoricarpos albus	5	Y	FACU	Total % Cover of:	Multipl	y by:	
2. Rubus armeniacus	5	Y	FAC	OBL species	x 1 =		
3		· · · · · · · · · · · · · · · · · · ·		FACW species	50 x 2 =	100	
4					5 x 3 =	15	
5				FACU species	40 x 4 =	160	
		= Total Cove	ſ	UPL species	<u>+0</u> x =		
<u>Herb Stratum</u> (Plot size: 3'sq )		-		Column Totals:			(D)
1. Camassia quamash	50	$\mathbf{Y} = \mathbf{v}^{-1}$	FACW		<u>95</u> (A)	(	(D)
2. Daucus carota	20		FACU	Prevalence Index	= B/A =	2.9	
3. Leucanthemum vulgare	15		FACU				
4				Hydrophytic Veg	etation Indica	tors:	
5				1 - Rapid Test	for Hydrophytic	c Vegetatio	n
6.				× 2 - Dominance	Test is >50%	_	
7				X 3 - Prevalence	Index is ≤3.0 <sup>1</sup>		
8		s. 1919. (		4 - Morphologi	cal Adaptations	s <sup>1</sup> (Provide	supporting
9.				data in Remark			)
10.	-	1.5		5 - Wetland No			
11.				Problematic H	ydrophytic Veg	etation <sup>1</sup> (E	xplain)
		= Total Cove	Г	<sup>1</sup> Indicators of hydr			
Woody Vine Stratum (Plot size:)		-		be present, unless	disturbed or p	roblematic	, <sup>11</sup>
1. Hedera helix	30	Y	FACU				
2		Alasia Nasi					
		= Total Cove	Г	Hydrophytic Vegetation			2
% Bare Ground in Herb Stratum		-			es <u>x</u> N	lo	
	_						-
Remarks: site just meets the wetland vegetation crite	eria			L			

Depth (inches)	Matrix	0/	Calax (maint)	Redox Feat	and the second	1 = -2	Taxtura	Demester
(inches)	Color (moist)	%	Calor (moist)	%	Туре	Loc <sup>2</sup>	Texture Gravelly Silt	Remarks
)-2"	10YR 2/1						loam	
2+"							Rock	
				,				
							<u></u>	·····
								<u></u>
T								Lining BduBdatik
	ncentration, D=Depl						<sup>2</sup> Location: PL=Pore	
Hydric Soil I	ndicators: (Applic	able to all I	LRRs, unless othe	rwise noted	.)	Indi	cators for Problemat	lic Hydric Soils':
Histosol		<del></del>	Sandy Redox (S				2 cm Muck (A10)	
Histic Ep Black His	ipedon (A2)		<ul> <li>Stripped Matrix ( Loamy Mucky M</li> </ul>				Red Parent Material ( Very Shallow Dark Su	
	n Sulfide (A4)		Loamy Gleyed N		except mLR/	A I) ;	Other (Explain in Rem	nace (iriz) arks)
	Below Dark Surface	e (A11)	Depleted Matrix					
Thick Da	rk Surface (A12)		Redox Dark Sur	face (F6)			Indicators of hydroph	
	ucky Mineral (S1)		_ Depleted Dark S			,	wetland hydrology mu	st be present,
Sandy G	leyed Matrix (S4)		Redox Depression	ons (⊦8) 			unless disturbed or pro	opiematic
strictive Lay	er (if present):							
Туре:					Hydric Soi	I Present?	Yes	No x
Depth (inch					-		Pt //AM	
				ł				
narks:				I				
DROLOG				I				
DROLOG	logy Indicators:	required: c	heck all that apply)	I		Secor	idary Indicators (2 or r	nore required)
DROLOG		required; c	Water-Staine	ed Leaves (B	9) (except		idary Indicators (2 or r ater-Stained Leaves (	
DROLOG etland Hydro imary Indicato Surface Wat	logy Indicators: ors (minimum of one er (A1)	required; c	Water-Staine MLRA 1, 2, 4	ed Leaves (B 4A, and 4B)	9) (except	W	ater-Stained Leaves ( , and 4B)	B9) (MLRA 1, 2,
DROLOG etland Hydro imary Indicato Surface Wat High Water	<b>logy Indicators:</b> ors (minimum of one er (A1) Table (A2)	required; c	Water-Staine MLRA 1, 2, 4 Salt Crust (B	ed Leaves (B 4A, and 4B) (11)		W 44 Dr	ater-Stained Leaves ( , and 4B) ainage Patterns (B10)	B9) ( <b>MLRA 1, 2</b> , )
DROLOG etland Hydro imary Indicato Surface Wat High Water Saturation (/	logy Indicators: prs (minimum of one er (A1) Table (A2) A3)	required; c	Water-Staine MLRA 1, 2, 4 Salt Crust (B Aquatic Inve	ed Leaves (B 4 <b>A, and 4B</b> ) 11) rtebrates (B1	3)	W 44 Dr Dr	ater-Stained Leaves ( λ, and 4B) ainage Patterns (B10) γ-Season Water Tabl	B9) ( <b>MLRA 1, 2,</b> ) e (C2)
DROLOG etland Hydro imary Indicato Surface Wat High Water	logy Indicators: prs (minimum of one er (A1) Table (A2) A3)	required; c	Water-Staine MLRA 1, 2, 4 Salt Crust (B Aquatic Invel Hydrogen St	ed Leaves (B 4 <b>A, and 4B</b> ) 11) rtebrates (B1 ulfide Odor (C	3) 21)	W 44 Dr Dr	ater-Stained Leaves ( , and 4B) ainage Patterns (B10)	B9) ( <b>MLRA 1, 2,</b> ) e (C2)
DROLOG etland Hydro imary Indicato Surface Wat High Water Saturation (/	logy Indicators: ors (minimum of one er (A1) Table (A2) A3) s (B1)	required; c	Water-Staine MLRA 1, 2, 4 Salt Crust (B Aquatic Inve	ed Leaves (B 4 <b>A, and 4B</b> ) 11) rtebrates (B1 ulfide Odor (C	3) 21)	W 44 Dr Dr Sa	ater-Stained Leaves ( λ, and 4B) ainage Patterns (B10) γ-Season Water Tabl	B9) ( <b>MLRA 1, 2,</b> ) e (C2) rial Imagery (C9)
<b>DROLOG</b> etfand Hydro imary Indicate Surface Wat High Water Saturation (/ Water Marks	logy Indicators: prs (minimum of one er (A1) Table (A2) A3) s (B1) eposits (B2)	required; c	Water-Staine MLRA 1, 2, 4 Salt Crust (B Aquatic Invel Hydrogen SL Oxidized Rhi Roots (C3) Presence of	ed Leaves (B 4 <b>A, and 4B</b> ) 11) Intebrates (B1 Ilfide Odor (C izos <b>p</b> heres a Reduced Iro	3) C1) long Living n (C4)	W 44 Dr Sa Ge	ater-Stained Leaves ( A, and 4B) ainage Patterns (B10) y-Season Water Table aturation Visible on Ae	B9) ( <b>MLRA 1, 2,</b> ) e (C2) rial Imagery (C9)
DROLOG etland Hydro imary Indicato Surface Wat High Water Saturation (/ Water Marks Sediment Do Drift Deposit	logy Indicators: brs (minimum of one er (A1) Table (A2) A3) s (B1) eposits (B2) is (B3)	required; c	Water-Staine MLRA 1, 2, 4 Salt Crust (B Aquatic Invel Hydrogen SL Oxidized Rhi Roots (C3) Presence of Recent Iron I	ed Leaves (B 4 <b>A, and 4B</b> ) 11) Intebrates (B1 Ilfide Odor (C izos <b>p</b> heres a Reduced Iro	3) C1) long Living n (C4)	W 44 Dr Dr Sa Sa Sa	ater-Stained Leaves ( A, and 4B) ainage Patterns (B10) y-Season Water Table aturation Visible on Ae eomorphic Position (D nallow Aquitard (D3)	B9) ( <b>MLRA 1, 2,</b> ) e (C2) rial Imagery (C9)
DROLOG etland Hydro imary Indicate Surface Wat High Water Saturation (/ Water Marks Sediment De	logy Indicators: brs (minimum of one er (A1) Table (A2) A3) s (B1) eposits (B2) is (B3)	required; c	Water-Staine MLRA 1, 2, 4 Salt Crust (B Aquatic Inver Hydrogen SL Oxidized Rhi Roots (C3) Presence of Recent Iron I Soils (C6)	ed Leaves (B 4 <b>A, and 4B</b> ) 111) rtebrates (B1 ulfide Odor (C izos <b>p</b> heres a Reduced Iro Reduction in	3) C1) long Living n (C4) Tilled	W 44 Dr Dr Sa Sa Sa	ater-Stained Leaves ( A, and 4B) ainage Patterns (B10) y-Season Water Table aturation Visible on Ae eomorphic Position (D	B9) ( <b>MLRA 1, 2,</b> ) e (C2) rial Imagery (C9)
DROLOG etland Hydro imary Indicato Surface Wat High Water Saturation (/ Water Marks Sediment Do Drift Deposit Algal Mat or	logy Indicators: ors (minimum of one er (A1) Table (A2) A3) s (B1) eposits (B2) s (B3) Crust (B4)	required; c	Water-Staine MLRA 1, 2, 4 Salt Crust (B Aquatic Inver Hydrogen SL Oxidized Rhi Roots (C3) Presence of Recent Iron I Soils (C6) Stunted or S	ed Leaves (B 4 <b>A, and 4B</b> ) 111) rtebrates (B1 ulfide Odor (C izos <b>p</b> heres a Reduced Iro Reduction in	3) C1) long Living n (C4) Tilled	W 44 Dr Dr Sa Ge Ge F4	ater-Stained Leaves ( A, and 4B) ainage Patterns (B10) y-Season Water Table aturation Visible on Ae ecomorphic Position (D nallow Aquitard (D3) AC-Neutral Test (D5)	B9) ( <b>MLRA 1, 2,</b> ) e (C2) rial Imagery (C9) 2)
DROLOG etland Hydro imary Indicato Surface Wat High Water Saturation (/ Water Marks Sediment De Drift Deposit Algal Mat or Iron Deposit	logy Indicators: ors (minimum of one er (A1) Table (A2) A3) s (B1) eposits (B2) s (B3) Crust (B4)	required; c	Water-Staine MLRA 1, 2, 4 Salt Crust (B Aquatic Inver Hydrogen SL Oxidized Rhi Roots (C3) Presence of Recent Iron I Soils (C6)	ed Leaves (B 4A, and 4B) 111) Intebrates (B1 Ilfide Odor (C izospheres a Reduced Iro Reduced Iro Reduction in tressed Plan	3) 21) long Living n (C4) Tilled ts (D1)	W Dr Dr Sa Ge St F4 Ra	ater-Stained Leaves ( A, and 4B) ainage Patterns (B10) y-Season Water Table aturation Visible on Ae eomorphic Position (D nallow Aquitard (D3)	B9) ( <b>MLRA 1, 2,</b> ) e (C2) rial Imagery (C9) 2) ) (L <b>RR A</b> )
DROLOG etland Hydro imary Indicate Surface Wat High Water Saturation (/ Water Marks Sediment De Drift Deposit Algal Mat or Iron Deposit Surface Soil Inundation V	logy Indicators: prs (minimum of one er (A1) Table (A2) A3) s (B1) eposits (B2) is (B3) Crust (B4) s (B5) Cracks (B6) /isible on Aerial Imag	gery (B7)	Water-Staine MLRA 1, 2, 4 Salt Crust (B Aquatic Inver Hydrogen Su Oxidized Rhi Coxidized Rhi Coxidized Rhi Presence of Recent Iron I Soils (C6) Stunted or S (LRR A)	ed Leaves (B 4A, and 4B) 111) Intebrates (B1 Ilfide Odor (C izospheres a Reduced Iro Reduced Iro Reduction in tressed Plan	3) 21) long Living n (C4) Tilled ts (D1)	W Dr Dr Sa Ge St F4 Ra	ater-Stained Leaves ( A, and 4B) ainage Patterns (B10) y-Season Water Table aturation Visible on Ae eomorphic Position (D nallow Aquitard (D3) AC-Neutral Test (D5) aised Ant Mounds (D6)	B9) ( <b>MLRA 1, 2,</b> ) e (C2) rial Imagery (C9) 2) ) (L <b>RR A</b> )
DROLOG etland Hydro imary Indicate Surface Wat High Water Saturation (/ Water Marks Sediment De Drift Deposit Algal Mat or Iron Deposit Surface Soil Inundation V	logy Indicators: prs (minimum of one er (A1) Table (A2) A3) s (B1) eposits (B2) is (B3) Crust (B4) s (B5) Cracks (B6)	gery (B7)	Water-Staine MLRA 1, 2, 4 Salt Crust (B Aquatic Inver Hydrogen Su Oxidized Rhi Coxidized Rhi Coxidized Rhi Presence of Recent Iron I Soils (C6) Stunted or S (LRR A)	ed Leaves (B 4A, and 4B) 111) Intebrates (B1 Ilfide Odor (C izospheres a Reduced Iro Reduced Iro Reduction in tressed Plan	3) 21) long Living n (C4) Tilled ts (D1)	W Dr Dr Sa Ge St F4 Ra	ater-Stained Leaves ( A, and 4B) ainage Patterns (B10) y-Season Water Table aturation Visible on Ae eomorphic Position (D nallow Aquitard (D3) AC-Neutral Test (D5) aised Ant Mounds (D6)	B9) ( <b>MLRA 1, 2,</b> ) e (C2) rial Imagery (C9) 2) ) (L <b>RR A</b> )
imary Indicate Surface Wat High Water Saturation (/ Water Marks Sediment De Drift Deposit Algal Mat or Iron Deposit Surface Soil Inundation V	logy Indicators: prs (minimum of one er (A1) Table (A2) A3) s (B1) eposits (B2) is (B3) Crust (B4) s (B5) Cracks (B5) Cracks (B5) isible on Aerial Imag getated Concave Su	gery (B7)	Water-Staine MLRA 1, 2, 4 Salt Crust (B Aquatic Inver Hydrogen Su Oxidized Rhi Coxidized Rhi Coxidized Rhi Presence of Recent Iron I Soils (C6) Stunted or S (LRR A)	ed Leaves (B 4A, and 4B) 111) Intebrates (B1 Ilfide Odor (C izospheres a Reduced Iro Reduced Iro Reduction in tressed Plan	3) 21) long Living n (C4) Tilled ts (D1)	W Dr Dr Sa Ge St F4 Ra	ater-Stained Leaves ( A, and 4B) ainage Patterns (B10) y-Season Water Table aturation Visible on Ae eomorphic Position (D nallow Aquitard (D3) AC-Neutral Test (D5) aised Ant Mounds (D6)	B9) ( <b>MLRA 1, 2,</b> ) e (C2) rial Imagery (C9) 2) ) (L <b>RR A</b> )
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Project/Site: Coopey Quarry	City/County: Multnomah Cou	Inty Sampling Date:	4/18/2016
Applicant/Owner: ODOT Region 1	State: OR	Sampling Point: 7	
Investigator(s): Ken Sargent	Section, Township, Range:	13, T1N, R5E	
Landform (hillslope, terrace, etc.):	Local relief (concave	, convex, none): <u>concave</u>	Slope (%): 2
Subregion (LRR): A	Lat: 45.56479 Long:	-122.16664 Datum:	
Soil Map Unit Name: Aschoff cobbly loam 5-:	30% slopes	NWI classification:	PFO
Are climatic / hydrologic conditions on the site typ	bical for this time of year? Yes	x No (If no, explain in	n Remarks.)
Are Vegetation , Soil , or Hydrold	gy significantly disturbed?	Are "Normal Circumstance	s" present? Yes <u>x</u> No
Are Vegetation , Soil , or Hydrold	gy naturally problematic?	(If needed, explain a	ny answers in Remarks.)

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

Hydrophytic Vegetation Present?       Yes       x       No         Hydric Soil Present?       Yes       x       No         Wetland Hydrology Present?       Yes       x       No	Is the Sampled Area within a Wetland? Yes <u>x</u> No
Remarks:	

	Absolute	Dominant	Indicator	Dominance Test worksheet:
<u>Tree Stratum</u> (Plot size: <u>3'sq</u> )	<u>% Cover</u>	Species?	<u>Status</u>	Number of Dominant Species That Are OBL, FACW, or FAC: (A)
1. Fraxinus latifolia	100	<u>Y</u>	FACW	Total Number of Dominant
2				Species Across All Strata: (B)
3				Percent of Dominant Species
				That Are OBL, FACW, or FAC:100 (A/B)
		= Total Cove	er	
Sapling/Shrub Stratum (Plot size: <u>3'sq</u> )				Prevalence Index worksheet:
1. Rosa nutkana	50	Y.	FAC	Total % Cover of: Multiply by:
2				OBL species x 1 =
3				FACW species <u>100</u> x 2 ≃ <u>200</u>
4				FAC species50 x 3 =150
5				FACU species x 4 =
		= Total Cove	er	UPL species x 5 =
Herb Stratum (Plot size:)				Column Totals: <u>150</u> (A) <u>350</u> (B)
1				Prevalence Index = B/A = <3
2				
3				Hydrophytic Vegetation Indicators:
4 5				1 - Rapid Test for Hydrophytic Vegetation
6				x 2 - Dominance Test is >50%
7.				× 3 - Prevalence Index is $≤3.0^1$
8.		and the second		4 - Morphological Adaptations <sup>1</sup> (Provide supporting
9.		1		data in Remarks or on a separate sheet)
10				5 - Wetland Non-Vascular Plants <sup>1</sup>
11	472-000-C			Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
		= Total Cove	ər	<sup>1</sup> Indicators of hydric soil and wetland hydrology must
Woody Vine Stratum (Plot size:)				be present, unless disturbed or problematic.
1				
2				
		= Total Cove	er	Hydrophytic Vegetation
% Bare Ground in Herb Stratum	_			Present? Yes <u>x</u> No
Remarks:				••••••••••••••••••••••••••••••••••••••

Profile Description:       (Description:       (Descri	SOIL							Sampling Poir	nt: 7
(inches)       Color (mole)       %       Type       Lec?       Texture       Remarks         0-16*       10YR 3/2       90       10YR 3/4       5       C       M       Sill barn         0-16*       10YR 3/2       90       10YR 3/4       5       C       M       Sill barn         0-16*       10YR 3/4       5       C       M       Sill barn       Image: Color (mole)       Maintain (mole) <th>Profile Desc</th> <th>ription: (Describe</th> <th>to the dept</th> <th>h needed to docun</th> <th>nent the in</th> <th>ndicator o</th> <th>r confirm the</th> <th>absence of indicators</th> <th>.)</th>	Profile Desc	ription: (Describe	to the dept	h needed to docun	nent the in	ndicator o	r confirm the	absence of indicators	.)
D-16*       10YR 312       50       10YR 314       5       C       M       Sill barn									
Type: C=Concentration, D=Dopletion, RM=Reduced Matrix, CS=Covered or Coaled Sand Grains.       *Location: PL=Pore Lining, M=Matrix.         Hydric Soli Indicators: (Applicable to al LRRs, unless otherwise noted.)       Indicators for Problematic Hydric Solis':         Histogi (A)       Sandy Mucky (Mineral (F))       Sandy Mucky (Mineral (F))         Black Histo Epiped Matrix (SB)       Cam Muck (A10)         Black Histo (A3)       Loamy Gleyed Matrix (F2)       Depited Below Dark Stratec (TF12)         Dipleted Below Dark Stratec (A11)       Depited Below Dark Stratec (TF12)       Trink Dark Surface (A11)         Sandy Mucky Mineral (G1)       Depited Below Dark Stratec (F7)       Trink Dark Surface (A12)       Redox Dark Stratec (F7)         Sandy Mucky Mineral (G1)       Depited Below Dark Stratec (F11)       Popleted Below Dark Stratec (F12)       Trink Dark Surface (A12)         Strate Layer (If present):       Type:	(inches)	Color (moist)	%	Color (moist)	%	Type'	Loc <sup>2</sup>	Texture	Remarks
Type: C=Concentration, D=Dopletion, RM=Reduced Matrix, CS=Covered or Coaled Sand Grains.       *Location: PL=Pore Lining, M=Matrix.         Hydric Soli Indicators: (Applicable to al LRRs, unless otherwise noted.)       Indicators for Problematic Hydric Solis':         Histogi (A)       Sandy Mucky (Mineral (F))       Sandy Mucky (Mineral (F))         Black Histo Epiped Matrix (SB)       Cam Muck (A10)         Black Histo (A3)       Loamy Gleyed Matrix (F2)       Depited Below Dark Stratec (TF12)         Dipleted Below Dark Stratec (A11)       Depited Below Dark Stratec (TF12)       Trink Dark Surface (A11)         Sandy Mucky Mineral (G1)       Depited Below Dark Stratec (F7)       Trink Dark Surface (A12)       Redox Dark Stratec (F7)         Sandy Mucky Mineral (G1)       Depited Below Dark Stratec (F11)       Popleted Below Dark Stratec (F12)       Trink Dark Surface (A12)         Strate Layer (If present):       Type:	0.467	40\/D 2/2			г	~	M	Ciltura	
Hydric Soll Indicators: (Applicable to all LRRs, unless otherwise noted.)       Indicators for Problematic Hydric Solls <sup>1</sup> :         Histos [(A1)       Sandy Redox (S5)       2 cm Muck (A10)         Histos Eppodon (A2)       Stripped Matrix (F3)       Red Parent Material (TT2)         Dipleted Bolow Dark Surface (A11)       Depleted Matrix (F2)       Other (Explain in Remarks)         Thick Dark Surface (A12)       X Redox Dark Surface (F7)       Thick Dark Surface (A12)         Sandy Kucky Mineral (S1)       Depleted Natrix (F2)       Popleted Natrix (F3)         Depleted Bolow Dark Surface (A12)       X Redox Dark Surface (F7)       "Indicators of hydrophytic vegetalian and wetland hydrology must be present, unless disturbed or problematic         Restrictive Layer (If present):       Type:       Hydric Soil Present?       Yes       No         YDROLOGY       Wetland Hydrology Indicators:       Primary Indicators (Indicators (2 or more required)       Water Stalned Leaves (B9) (except       MuRA 1, 2, 4A, and 4B)         High Waler Table (A2)       Salt Crust (B11)       DriveRespectation (G10)       Dark Surface (F2)         Water Marks (B1)       Oxidazed Rhitopheres along Living       Geomorphic Position (D2)         Saturation (A3)       Apaulci Invertebrates (B13)       DriveRespectation (C2)         Saturation (A3)       Chick Rate Reduction in Tiled       Saturation (A3) <t< td=""><td>0-16</td><td>10YR 3/2</td><td>_90</td><td>10YR 3/4</td><td>5</td><td></td><td><u>IVI</u></td><td>Sittioam</td><td></td></t<>	0-16	10YR 3/2	_90	10YR 3/4	5		<u>IVI</u>	Sittioam	
Hydric Soll Indicators: (Applicable to all LRRs, unless otherwise noted.)       Indicators for Problematic Hydric Solls <sup>1</sup> :         Histos [(A1)       Sandy Redox (S5)       2 cm Muck (A10)         Histos Eppodon (A2)       Stripped Matrix (F3)       Red Parent Material (TT2)         Dipleted Bolow Dark Surface (A11)       Depleted Matrix (F2)       Other (Explain in Remarks)         Thick Dark Surface (A12)       X Redox Dark Surface (F7)       Thick Dark Surface (A12)         Sandy Kucky Mineral (S1)       Depleted Natrix (F2)       Popleted Natrix (F3)         Depleted Bolow Dark Surface (A12)       X Redox Dark Surface (F7)       "Indicators of hydrophytic vegetalian and wetland hydrology must be present, unless disturbed or problematic         Restrictive Layer (If present):       Type:       Hydric Soil Present?       Yes       No         YDROLOGY       Wetland Hydrology Indicators:       Primary Indicators (Indicators (2 or more required)       Water Stalned Leaves (B9) (except       MuRA 1, 2, 4A, and 4B)         High Waler Table (A2)       Salt Crust (B11)       DriveRespectation (G10)       Dark Surface (F2)         Water Marks (B1)       Oxidazed Rhitopheres along Living       Geomorphic Position (D2)         Saturation (A3)       Apaulci Invertebrates (B13)       DriveRespectation (C2)         Saturation (A3)       Chick Rate Reduction in Tiled       Saturation (A3) <t< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></t<>									
Hydric Soll Indicators: (Applicable to all LRRs, unless otherwise noted.)       Indicators for Problematic Hydric Solls <sup>1</sup> :         Histos [(A1)       Sandy Redox (S5)       2 cm Muck (A10)         Histos Eppodon (A2)       Stripped Matrix (F3)       Red Parent Material (TT2)         Dipleted Bolow Dark Surface (A11)       Depleted Matrix (F2)       Other (Explain in Remarks)         Thick Dark Surface (A12)       X Redox Dark Surface (F7)       Thick Dark Surface (A12)         Sandy Kucky Mineral (S1)       Depleted Natrix (F2)       Popleted Natrix (F3)         Depleted Bolow Dark Surface (A12)       X Redox Dark Surface (F7)       "Indicators of hydrophytic vegetalian and wetland hydrology must be present, unless disturbed or problematic         Restrictive Layer (If present):       Type:       Hydric Soil Present?       Yes       No         YDROLOGY       Wetland Hydrology Indicators:       Primary Indicators (Indicators (2 or more required)       Water Stalned Leaves (B9) (except       MuRA 1, 2, 4A, and 4B)         High Waler Table (A2)       Salt Crust (B11)       DriveRespectation (G10)       Dark Surface (F2)         Water Marks (B1)       Oxidazed Rhitopheres along Living       Geomorphic Position (D2)         Saturation (A3)       Apaulci Invertebrates (B13)       DriveRespectation (C2)         Saturation (A3)       Chick Rate Reduction in Tiled       Saturation (A3) <t< td=""><td></td><td>******</td><td>·····</td><td></td><td>******</td><td></td><td></td><td></td><td>·</td></t<>		******	·····		******				·
Hydric Soll Indicators: (Applicable to all LRRs, unless otherwise noted.)       Indicators for Problematic Hydric Solls <sup>1</sup> :         Histos [(A1)       Sandy Redox (S5)       2 cm Muck (A10)         Histos Eppodon (A2)       Stripped Matrix (F3)       Red Parent Material (TT2)         Dipleted Bolow Dark Surface (A11)       Depleted Matrix (F2)       Other (Explain in Remarks)         Thick Dark Surface (A12)       X Redox Dark Surface (F7)       Thick Dark Surface (A12)         Sandy Kucky Mineral (S1)       Depleted Natrix (F2)       Popleted Natrix (F3)         Depleted Bolow Dark Surface (A12)       X Redox Dark Surface (F7)       "Indicators of hydrophytic vegetalian and wetland hydrology must be present, unless disturbed or problematic         Restrictive Layer (If present):       Type:       Hydric Soil Present?       Yes       No         YDROLOGY       Wetland Hydrology Indicators:       Primary Indicators (Indicators (2 or more required)       Water Stalned Leaves (B9) (except       MuRA 1, 2, 4A, and 4B)         High Waler Table (A2)       Salt Crust (B11)       DriveRespectation (G10)       Dark Surface (F2)         Water Marks (B1)       Oxidazed Rhitopheres along Living       Geomorphic Position (D2)         Saturation (A3)       Apaulci Invertebrates (B13)       DriveRespectation (C2)         Saturation (A3)       Chick Rate Reduction in Tiled       Saturation (A3) <t< td=""><td></td><td>)</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></t<>		)							
Hydric Soll Indicators: (Applicable to all LRRs, unless otherwise noted.)       Indicators for Problematic Hydric Solls <sup>1</sup> :         Histos [(A1)       Sandy Redox (S5)       2 cm Muck (A10)         Histos Eppodon (A2)       Stripped Matrix (F3)       Red Parent Material (TT2)         Dipleted Bolow Dark Surface (A11)       Depleted Matrix (F2)       Other (Explain in Remarks)         Thick Dark Surface (A12)       X Redox Dark Surface (F7)       Thick Dark Surface (A12)         Sandy Kucky Mineral (S1)       Depleted Natrix (F2)       Popleted Natrix (F3)         Depleted Bolow Dark Surface (A12)       X Redox Dark Surface (F7)       "Indicators of hydrophytic vegetalian and wetland hydrology must be present, unless disturbed or problematic         Restrictive Layer (If present):       Type:       Hydric Soil Present?       Yes       No         YDROLOGY       Wetland Hydrology Indicators:       Primary Indicators (Indicators (2 or more required)       Water Stalned Leaves (B9) (except       MuRA 1, 2, 4A, and 4B)         High Waler Table (A2)       Salt Crust (B11)       DriveRespectation (G10)       Dark Surface (F2)         Water Marks (B1)       Oxidazed Rhitopheres along Living       Geomorphic Position (D2)         Saturation (A3)       Apaulci Invertebrates (B13)       DriveRespectation (C2)         Saturation (A3)       Chick Rate Reduction in Tiled       Saturation (A3) <t< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></t<>									
Hydric Soll Indicators: (Applicable to all LRRs, unless otherwise noted.)       Indicators for Problematic Hydric Solls <sup>1</sup> :         Histos [(A1)       Sandy Redox (S5)       2 cm Muck (A10)         Histos Eppodon (A2)       Stripped Matrix (F3)       Red Parent Material (TT2)         Dipleted Bolow Dark Surface (A11)       Depleted Matrix (F2)       Other (Explain in Remarks)         Thick Dark Surface (A12)       X Redox Dark Surface (F7)       Thick Dark Surface (A12)         Sandy Kucky Mineral (S1)       Depleted Natrix (F2)       Popleted Natrix (F3)         Depleted Bolow Dark Surface (A12)       X Redox Dark Surface (F7)       "Indicators of hydrophytic vegetalian and wetland hydrology must be present, unless disturbed or problematic         Restrictive Layer (If present):       Type:       Hydric Soil Present?       Yes       No         YDROLOGY       Wetland Hydrology Indicators:       Primary Indicators (Indicators (2 or more required)       Water Stalned Leaves (B9) (except       MuRA 1, 2, 4A, and 4B)         High Waler Table (A2)       Salt Crust (B11)       DriveRespectation (G10)       Dark Surface (F2)         Water Marks (B1)       Oxidazed Rhitopheres along Living       Geomorphic Position (D2)         Saturation (A3)       Apaulci Invertebrates (B13)       DriveRespectation (C2)         Saturation (A3)       Chick Rate Reduction in Tiled       Saturation (A3) <t< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></t<>									
Hydric Soll Indicators: (Applicable to all LRRs, unless otherwise noted.)       Indicators for Problematic Hydric Solls <sup>1</sup> :         Histos [(A1)       Sandy Redox (S5)       2 cm Muck (A10)         Histos Eppodon (A2)       Stripped Matrix (F3)       Red Parent Material (TT2)         Dipleted Bolow Dark Surface (A11)       Depleted Matrix (F2)       Other (Explain in Remarks)         Thick Dark Surface (A12)       X Redox Dark Surface (F7)       Thick Dark Surface (A12)         Sandy Kucky Mineral (S1)       Depleted Natrix (F2)       Popleted Natrix (F3)         Depleted Bolow Dark Surface (A12)       X Redox Dark Surface (F7)       "Indicators of hydrophytic vegetalian and wetland hydrology must be present, unless disturbed or problematic         Restrictive Layer (If present):       Type:       Hydric Soil Present?       Yes       No         YDROLOGY       Wetland Hydrology Indicators:       Primary Indicators (Indicators (2 or more required)       Water Stalned Leaves (B9) (except       MuRA 1, 2, 4A, and 4B)         High Waler Table (A2)       Salt Crust (B11)       DriveRespectation (G10)       Dark Surface (F2)         Water Marks (B1)       Oxidazed Rhitopheres along Living       Geomorphic Position (D2)         Saturation (A3)       Apaulci Invertebrates (B13)       DriveRespectation (C2)         Saturation (A3)       Chick Rate Reduction in Tiled       Saturation (A3) <t< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></t<>									
Hydric Soll Indicators: (Applicable to all LRRs, unless otherwise noted.)       Indicators for Problematic Hydric Solls <sup>1</sup> :         Histos [(A1)       Sandy Redox (S5)       2 cm Muck (A10)         Histos Eppodon (A2)       Stripped Matrix (F3)       Red Parent Material (TT2)         Dipleted Bolow Dark Surface (A11)       Depleted Matrix (F2)       Other (Explain in Remarks)         Thick Dark Surface (A12)       X Redox Dark Surface (F7)       Thick Dark Surface (A12)         Sandy Kucky Mineral (S1)       Depleted Natrix (F2)       Popleted Natrix (F3)         Depleted Bolow Dark Surface (A12)       X Redox Dark Surface (F7)       "Indicators of hydrophytic vegetalian and wetland hydrology must be present, unless disturbed or problematic         Restrictive Layer (If present):       Type:       Hydric Soil Present?       Yes       No         YDROLOGY       Wetland Hydrology Indicators:       Primary Indicators (Indicators (2 or more required)       Water Stalned Leaves (B9) (except       MuRA 1, 2, 4A, and 4B)         High Waler Table (A2)       Salt Crust (B11)       DriveRespectation (G10)       Dark Surface (F2)         Water Marks (B1)       Oxidazed Rhitopheres along Living       Geomorphic Position (D2)         Saturation (A3)       Apaulci Invertebrates (B13)       DriveRespectation (C2)         Saturation (A3)       Chick Rate Reduction in Tiled       Saturation (A3) <t< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></t<>									
Hydric Soll Indicators: (Applicable to all LRRs, unless otherwise noted.)       Indicators for Problematic Hydric Solls <sup>1</sup> :         Histos [(A1)       Sandy Redox (S5)       2 cm Muck (A10)         Histos Eppodon (A2)       Stripped Matrix (F3)       Red Parent Material (TT2)         Dipleted Bolow Dark Surface (A11)       Depleted Matrix (F2)       Other (Explain in Remarks)         Thick Dark Surface (A12)       X Redox Dark Surface (F7)       Thick Dark Surface (A12)         Sandy Kucky Mineral (S1)       Depleted Natrix (F2)       Popleted Natrix (F3)         Depleted Bolow Dark Surface (A12)       X Redox Dark Surface (F7)       "Indicators of hydrophytic vegetalian and wetland hydrology must be present, unless disturbed or problematic         Restrictive Layer (If present):       Type:       Hydric Soil Present?       Yes       No         YDROLOGY       Wetland Hydrology Indicators:       Primary Indicators (Indicators (2 or more required)       Water Stalned Leaves (B9) (except       MuRA 1, 2, 4A, and 4B)         High Waler Table (A2)       Salt Crust (B11)       DriveRespectation (G10)       Dark Surface (F2)         Water Marks (B1)       Oxidazed Rhitopheres along Living       Geomorphic Position (D2)         Saturation (A3)       Apaulci Invertebrates (B13)       DriveRespectation (C2)         Saturation (A3)       Chick Rate Reduction in Tiled       Saturation (A3) <t< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></t<>									
Hydric Soll Indicators: (Applicable to all LRRs, unless otherwise noted.)       Indicators for Problematic Hydric Solls <sup>1</sup> :         Histos [(A1)       Sandy Redox (S5)       2 cm Muck (A10)         Histos Eppodon (A2)       Stripped Matrix (F3)       Red Parent Material (TT2)         Dipleted Bolow Dark Surface (A11)       Depleted Matrix (F2)       Other (Explain in Remarks)         Thick Dark Surface (A12)       X Redox Dark Surface (F7)       Thick Dark Surface (A12)         Sandy Kucky Mineral (S1)       Depleted Natrix (F2)       Popleted Natrix (F3)         Depleted Bolow Dark Surface (A12)       X Redox Dark Surface (F7)       "Indicators of hydrophytic vegetalian and wetland hydrology must be present, unless disturbed or problematic         Restrictive Layer (If present):       Type:       Hydric Soil Present?       Yes       No         YDROLOGY       Wetland Hydrology Indicators:       Primary Indicators (Indicators (2 or more required)       Water Stalned Leaves (B9) (except       MuRA 1, 2, 4A, and 4B)         High Waler Table (A2)       Salt Crust (B11)       DriveRespectation (G10)       Dark Surface (F2)         Water Marks (B1)       Oxidazed Rhitopheres along Living       Geomorphic Position (D2)         Saturation (A3)       Apaulci Invertebrates (B13)       DriveRespectation (C2)         Saturation (A3)       Chick Rate Reduction in Tiled       Saturation (A3) <t< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></t<>									
Hydric Soll Indicators: (Applicable to all LRRs, unless otherwise noted.)       Indicators for Problematic Hydric Solls <sup>1</sup> :         Histos [(A1)       Sandy Redox (S5)       2 cm Muck (A10)         Histos Eppodon (A2)       Stripped Matrix (F3)       Red Parent Material (TT2)         Dipleted Bolow Dark Surface (A11)       Depleted Matrix (F2)       Other (Explain in Remarks)         Thick Dark Surface (A12)       X Redox Dark Surface (F7)       Thick Dark Surface (A12)         Sandy Kucky Mineral (S1)       Depleted Natrix (F2)       Popleted Natrix (F3)         Depleted Bolow Dark Surface (A12)       X Redox Dark Surface (F7)       "Indicators of hydrophytic vegetalian and wetland hydrology must be present, unless disturbed or problematic         Restrictive Layer (If present):       Type:       Hydric Soil Present?       Yes       No         YDROLOGY       Wetland Hydrology Indicators:       Primary Indicators (Indicators (2 or more required)       Water Stalned Leaves (B9) (except       MuRA 1, 2, 4A, and 4B)         High Waler Table (A2)       Salt Crust (B11)       DriveRespectation (G10)       Dark Surface (F2)         Water Marks (B1)       Oxidazed Rhitopheres along Living       Geomorphic Position (D2)         Saturation (A3)       Apaulci Invertebrates (B13)       DriveRespectation (C2)         Saturation (A3)       Chick Rate Reduction in Tiled       Saturation (A3) <t< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></t<>									
Hydric Soll Indicators: (Applicable to all LRRs, unless otherwise noted.)       Indicators for Problematic Hydric Solls <sup>1</sup> :         Histos [(A1)       Sandy Redox (S5)       2 cm Muck (A10)         Histos Eppodon (A2)       Stripped Matrix (F3)       Red Parent Material (TT2)         Dipleted Bolow Dark Surface (A11)       Depleted Matrix (F2)       Other (Explain in Remarks)         Thick Dark Surface (A12)       X Redox Dark Surface (F7)       Thick Dark Surface (A12)         Sandy Kucky Mineral (S1)       Depleted Natrix (F2)       Popleted Natrix (F3)         Depleted Bolow Dark Surface (A12)       X Redox Dark Surface (F7)       "Indicators of hydrophytic vegetalian and wetland hydrology must be present, unless disturbed or problematic         Restrictive Layer (If present):       Type:       Hydric Soil Present?       Yes       No         YDROLOGY       Wetland Hydrology Indicators:       Primary Indicators (Indicators (2 or more required)       Water Stalned Leaves (B9) (except       MuRA 1, 2, 4A, and 4B)         High Waler Table (A2)       Salt Crust (B11)       DriveRespectation (G10)       Dark Surface (F2)         Water Marks (B1)       Oxidazed Rhitopheres along Living       Geomorphic Position (D2)         Saturation (A3)       Apaulci Invertebrates (B13)       DriveRespectation (C2)         Saturation (A3)       Chick Rate Reduction in Tiled       Saturation (A3) <t< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></t<>									
Hydric Soll Indicators: (Applicable to all LRRs, unless otherwise noted.)       Indicators for Problematic Hydric Solls <sup>1</sup> :         Histos [(A1)       Sandy Redox (S5)       2 cm Muck (A10)         Histos Eppodon (A2)       Stripped Matrix (F3)       Red Parent Material (TT2)         Dipleted Bolow Dark Surface (A11)       Depleted Matrix (F2)       Other (Explain in Remarks)         Thick Dark Surface (A12)       X Redox Dark Surface (F7)       Thick Dark Surface (A12)         Sandy Kucky Mineral (S1)       Depleted Natrix (F2)       Popleted Natrix (F3)         Depleted Bolow Dark Surface (A12)       X Redox Dark Surface (F7)       "Indicators of hydrophytic vegetalian and wetland hydrology must be present, unless disturbed or problematic         Restrictive Layer (If present):       Type:       Hydric Soil Present?       Yes       No         YDROLOGY       Wetland Hydrology Indicators:       Primary Indicators (Indicators (2 or more required)       Water Stalned Leaves (B9) (except       MuRA 1, 2, 4A, and 4B)         High Waler Table (A2)       Salt Crust (B11)       DriveRespectation (G10)       Dark Surface (F2)         Water Marks (B1)       Oxidazed Rhitopheres along Living       Geomorphic Position (D2)         Saturation (A3)       Apaulci Invertebrates (B13)       DriveRespectation (C2)         Saturation (A3)       Chick Rate Reduction in Tiled       Saturation (A3) <t< td=""><td><sup>1</sup>Type: C=C</td><td>oncentration, D=Dep</td><td>letion, RM=I</td><td>Reduced Matrix, CS</td><td>=Covered</td><td>l or Coated</td><td>Sand Grains.</td><td><sup>2</sup>Location: PL=Pore</td><td>Lining, M=Matrix.</td></t<>	<sup>1</sup> Type: C=C	oncentration, D=Dep	letion, RM=I	Reduced Matrix, CS	=Covered	l or Coated	Sand Grains.	<sup>2</sup> Location: PL=Pore	Lining, M=Matrix.
Histosol (A1)       Sandy Redox (S5)       2 cm Muck (A10)         Histic Epipadon (A2)       Stripped Matrix (S6)       2 cm Muck (A10)         Black Histic (A3)       Loamy Mucky Mineral (F1) (except MLRA 1)       Very Shalled (TF2)         Hydrogen Sulfide (A4)       Loamy Mucky Mineral (F1)       Other (Explain in Remarks)         Depleted Matrix (F2)       Other (Explain in Remarks)       Other (Explain in Remarks)         Sandy Mucky Mineral (S1)       Depleted Matrix (F2) <sup>3</sup> Indicators of hydrophytic vegetation and wetand hydrology must be present, unless disturbed or problematic         Restrictive Layer (if present):       Type:       Hydric Soil Present?       Yes       x       No         Striface Water (A11)       Water-Stained Leaves (80) (except       Water-Stained Leaves (99) (MLRA 1, 2, 4, and 48)       Water Gained Leaves (99) (MLRA 1, 2, 4, and 48)         YDROLOGY       Wetland Hydrology must be required)       Water Gained Leaves (99) (MLRA 1, 2, 4, and 48)       Water Gained Leaves (99) (MLRA 1, 2, 4, and 48)         Stiration (A3)       Aquati Invertebrates along Living       Dory-Season Water Table (C2)       Saturation (X3)         Water Marks (B1)       Ory-Season Water Table (C2)       Saturation Visitle on Aerial Imagery (C9)       Saturation Visitle on Aerial Imagery (C9)         Surface Water Rahe (B2)       Roots (C3)       Geomorphic Position (D2)       Saturation (C3)       <									
Histic Epipedon (A2)       Stripped Matrix (56)       Red Parent Material (TF2)         Black Histic (A3)       Learny Mucky Mineral (F1) (except MLRA 1)       Very Shallow Dark Surface (F12)         Depleted Below Dark Surface (A11)       Depleted Matrix (F3)       Other (Explain in Remarks)         Sandy Mucky Mineral (S1)       Depleted Dark Surface (F7)       wetland hydrology must be present, unless disturbed or problematic         Restrictive Layer (if present):       Type:       Hydric Soil Present?       Yes       x       No         YPROLOGY       Material (A12)       Satificators:       Secondary Indicators (2 or more required)       Water-Stained Leaves (B9) (except       Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)       MulRA 1, 2, 4A, and 4B)       Drainage Patterns (B10)       Water-Stained Leaves (B3) (MLRA 1, 2, 4A, and 4B)       Drainage Patterns (B10)       Drainage Patterns (B10)       Saturation (A3)       Aquatic Invertebrates (B13)       Dry-Season Water Table (C2)       Saturation (X3)       Saturation (X3)       Saturation (X4)       Saturatio	Hydric Soil	Indicators: (Appli	cable to all	LRRs, unless othe	rwise not	ed.)	inc	licators for Problemat	ic Hydric Soils':
Histic Epipedon (A2)       Stripped Matrix (56)       Red Parent Material (TF2)         Black Histic (A3)       Learny Mucky Mineral (F1) (except MLRA 1)       Very Shallow Dark Surface (F12)         Depleted Below Dark Surface (A11)       Depleted Matrix (F3)       Other (Explain in Remarks)         Sandy Mucky Mineral (S1)       Depleted Dark Surface (F7)       wetland hydrology must be present, unless disturbed or problematic         Restrictive Layer (if present):       Type:       Hydric Soil Present?       Yes       x       No         YPROLOGY       Material (A12)       Satificators:       Secondary Indicators (2 or more required)       Water-Stained Leaves (B9) (except       Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)       MulRA 1, 2, 4A, and 4B)       Drainage Patterns (B10)       Water-Stained Leaves (B3) (MLRA 1, 2, 4A, and 4B)       Drainage Patterns (B10)       Drainage Patterns (B10)       Saturation (A3)       Aquatic Invertebrates (B13)       Dry-Season Water Table (C2)       Saturation (X3)       Saturation (X3)       Saturation (X4)       Saturatio	Histoso	L(A1)		Sandv Redox (S	5)			2 cm Muck (A10)	
Black Histic (A3)       Loamy Mucky Minerial (F1) (except MLRA 1)       Very Shallow Dark Surface (TF12)         Depleted Below Dark Surface (A1)       Depleted Matrix (F2)       Other (Explain in Remarks)         Thick Dark Surface (A12)       X       Redox Dark Surface (F2)       'indicators of hydrophytic vegetation and wettand hydrology must be present, unless disturbed or problematic         Sandy Mucky Mineral (S1)       Depleted Dark Surface (F7)       wettand hydrology must be present, unless disturbed or problematic         Restrictive Layer (if present):       Type:									(F2)
Hydrogen Suffice (A4)       Loamy Gleyed Matrix (F2)       Other (Explain in Remarks)         Depleted Below Dark Surface (A12)       X       Redox Dark Surface (F6) <sup>1</sup> Indicators of hydrophytic vegetation and wetlan hydrology must be present, unless disturbed or problematic         Restrictive Layer (If present):       Type:						) (excent N	II RA 1)		
Depleted Below Dark Surface (A11)       Depleted Matrix (F3) <sup>1</sup> Indicators of hydrophytic vegetation and         wetland hydrology must be present,         analy Gleyed Matrix (S4)          Redox Depressions (F8)          Restrictive Layer (if present):         Type:         Type:         Depth (inches):		N 7							
Thick Dark Surface (A12)       X       Redox Dark Surface (F6)       Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic         Sandy Mucky Mineral (S1)       Depleted Dark Surface (F7)       Wetland hydrology must be present, unless disturbed or problematic         Restrictive Layer (if present):       Type:									anoy
Sandy Mucky Mucky Munerial (S1)       Depleted Dark Surface (F7)       wetland hydrology must be present, unless disturbed or problematic         Restrictive Layer (if present):       Type:					• •			<sup>3</sup> Indiactors of hydroph	dia variatation and
						7)		mulcators of hydrophy	yuc vegetation anu
Restrictive Layer (if present):						()			
Type:	(Januy (	Sleyeu Matrix (34)						uniess disturbed of pro	
Type:	Destrictive Le								
Depth (inches):	Restrictive La	iyer (if present):							
Semarks:         YDROLOGY         Wetland Hydrology Indicators:         Primary Indicators (minimum of one required; check all that apply)       Secondary Indicators (2 or more required)         Surface Water (A1)       Water-Stained Leaves (B9) (except         Surface Water Table (A2)       Sail Crust (B11)         Saturation (A3)       Aquatic Invertebrates (B13)         Water Marks (B1)       Hydrogen Sulfide Odor (C1)         Sediment Deposits (B2)       Roots (C3)         Drift Deposits (B3)       Presence of Reduced Iron (C4)         Algal Mat or Crust (B4)       Solis (C6)         Surface Soli Cracks (B6)       (LRR A)         Inundation Visible on Aerial Imagery (B7)         Sparsely Vegetated Concave Surface (B8)         Field Observations:         Surface Water Present?       Yes         No       Depth (inches):         Surface Scalilary fringe)       Yes         No       Depth (inches):         Surface Scalilary fringe)       Yes         Surface Corded Data (stream gauge, monitoring weil, aerial photos, previous Inspections), if available:	Туре:					Hydric	Soil Present?	Yes <u>x</u>	No
YDROLOGY         Wetland Hydrology Indicators:         Primary Indicators (minimum of one required; check all that apply)       Secondary Indicators (2 or more required)         Surface Water (A1)       WLRA 1, 2, 4A, and 4B)       Water-Stained Leaves (B9) (wLRA 1, 2, 4A, and 4B)         High Water Table (A2)       Sail Crust (B11)       Drainage Patterns (B10)         Sutration (A3)       Aquatic invertebrates (B13)       Dry-Season Water Table (C2)         Water Marks (B1)       Hydrogen Sulfde Odor (C1)       Saturation Visible on Aerial Imagery (C9)         Oxidized Rhizospheres along Living       Secondary Indicators (2 or more required)         Sediment Deposits (B2)       Roots (C3)       Geomorphic Position (D2)         Drift Deposits (B3)       Presence of Reduced Iron (C4)       Shallow Aquitard (D3)         Algal Mat or Crust (B4)       Soils (C6)       Stunted or Stressed Plants (D1)       FAC-Neutral Test (D5)         Sunder Stressed R1       Inchesis       Other (Explain in Remarks)       Frost-Heave Hummocks (D7)         Inundation Visible on Aerial Imagery (B7)       Sparsely Vegetated Concave Surface (B8)       Wetand Hydrology Present? Yes x No       Mo         Field Observations:       Surface Water Present? Yes       No       Depth (inches):       Wetand Hydrology Present? Yes x No       Mo         Surface Soililary fringe) Yes       No	Depth (incl	nes):							
YDROLOGY         Wetland Hydrology Indicators:         Primary Indicators (minimum of one required; check all that apply)       Secondary Indicators (2 or more required)         Surface Water (A1)       WLRA 1, 2, 4A, and 4B)       Water-Stained Leaves (B9) (wLRA 1, 2, 4A, and 4B)         High Water Table (A2)       Sail Crust (B11)       Drainage Patterns (B10)         Sutration (A3)       Aquatic invertebrates (B13)       Dry-Season Water Table (C2)         Water Marks (B1)       Hydrogen Sulfde Odor (C1)       Saturation Visible on Aerial Imagery (C9)         Oxidized Rhizospheres along Living       Secondary Indicators (2 or more required)         Sediment Deposits (B2)       Roots (C3)       Geomorphic Position (D2)         Drift Deposits (B3)       Presence of Reduced Iron (C4)       Shallow Aquitard (D3)         Algal Mat or Crust (B4)       Soils (C6)       Stunted or Stressed Plants (D1)       FAC-Neutral Test (D5)         Sunder Stressed R1       Inchesis       Other (Explain in Remarks)       Frost-Heave Hummocks (D7)         Inundation Visible on Aerial Imagery (B7)       Sparsely Vegetated Concave Surface (B8)       Wetand Hydrology Present? Yes x No       Mo         Field Observations:       Surface Water Present? Yes       No       Depth (inches):       Wetand Hydrology Present? Yes x No       Mo         Surface Soililary fringe) Yes       No	lomodes					•			
Wetland Hydrology Indicators:       Primary Indicators (minimum of one required; check all that apply)       Secondary Indicators (2 or more required)         Primary Indicators (minimum of one required; check all that apply)       Water-Stained Leaves (B9) (except       Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)         Surface Water (A1)       MLRA 1, 2, 4A, and 4B)       Water-Stained Leaves (B1)       Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)         Saturation (A3)       Aquatic Invertebrates (B13)       Drainage Patterns (B10)       Dry-Season Water Table (C2)         Water Marks (B1)       Hydrogen Sulfide Odor (C1)       Saturation Visible on Aerial Imagery (C9)       Saturation Visible on Aerial Imagery (C9)         Sediment Deposits (B2)       Presence of Reduced Iron (C4)       Shallow Aquitard (D3)         Algal Mat or Crust (B4)       Solis (C6)       FAC-Neutral Test (D5)         Sturface Soil Cracks (B6)       (LRR A)       Recent Iron Reduction in Tilled         Surface Soil Cracks (B6)       Other (Explain in Remarks)       Frost-Heave Hummocks (D7)         Inundation Visible on Aerial Imagery (B7)       Saturation Present?       Yes       No         Saturation Present?       Yes       No       Depth (inches):       Wetland Hydrology Present?       Yes       x       No         Surface Soil Cracks (B6)       No       Depth (inches):       Mater Table Present?	Ciliana,								
Wetland Hydrology Indicators:       Primary Indicators (minimum of one required; check all that apply)       Secondary Indicators (2 or more required)         Primary Indicators (minimum of one required; check all that apply)       Water-Stained Leaves (B9) (except       Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)         Surface Water (A1)       MLRA 1, 2, 4A, and 4B)       Water-Stained Leaves (B1)       Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)         Saturation (A3)       Aquatic Invertebrates (B13)       Drainage Patterns (B10)       Dry-Season Water Table (C2)         Water Marks (B1)       Hydrogen Sulfide Odor (C1)       Saturation Visible on Aerial Imagery (C9)       Saturation Visible on Aerial Imagery (C9)         Sediment Deposits (B2)       Presence of Reduced Iron (C4)       Shallow Aquitard (D3)         Algal Mat or Crust (B4)       Solis (C6)       FAC-Neutral Test (D5)         Sturface Soil Cracks (B6)       (LRR A)       Recent Iron Reduction in Tilled         Surface Soil Cracks (B6)       Other (Explain in Remarks)       Frost-Heave Hummocks (D7)         Inundation Visible on Aerial Imagery (B7)       Saturation Present?       Yes       No         Saturation Present?       Yes       No       Depth (inches):       Wetland Hydrology Present?       Yes       x       No         Surface Soil Cracks (B6)       No       Depth (inches):       Mater Table Present?									
Wetland Hydrology Indicators:       Primary Indicators (minimum of one required; check all that apply)       Secondary Indicators (2 or more required)         Primary Indicators (minimum of one required; check all that apply)       Water-Stained Leaves (B9) (except       Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)         Surface Water (A1)       MLRA 1, 2, 4A, and 4B)       Water-Stained Leaves (B1)       Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)         Saturation (A3)       Aquatic Invertebrates (B13)       Drainage Patterns (B10)       Dry-Season Water Table (C2)         Water Marks (B1)       Hydrogen Sulfide Odor (C1)       Saturation Visible on Aerial Imagery (C9)       Saturation Visible on Aerial Imagery (C9)         Sediment Deposits (B2)       Presence of Reduced Iron (C4)       Shallow Aquitard (D3)         Algal Mat or Crust (B4)       Solis (C6)       FAC-Neutral Test (D5)         Sturface Soil Cracks (B6)       (LRR A)       Recent Iron Reduction in Tilled         Surface Soil Cracks (B6)       Other (Explain in Remarks)       Frost-Heave Hummocks (D7)         Inundation Visible on Aerial Imagery (B7)       Saturation Present?       Yes       No         Saturation Present?       Yes       No       Depth (inches):       Wetland Hydrology Present?       Yes       x       No         Surface Soil Cracks (B6)       No       Depth (inches):       Mater Table Present?	HYDROLOG	Ϋ́							
Primary Indicators (minimum of one required; check all that apply)       Secondary Indicators (2 or more required)         Surface Water (A1)       MLRA 1, 2, 4A, and 4B)       Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)         High Water Table (A2)       Salt Crust (B11)       Drainage Patterns (B10)         Saturation (A3)       Aquatic Invertebrates (B13)       Dry-Season Water Table (C2)         Water Marks (B1)       Hydrogen Sulfide Odor (C1)       Saturation Visible on Aerial Imagery (C9)         Sediment Deposits (B2)       Roots (C3)       Geomorphic Position (D2)         Drift Deposits (B3)       Presence of Reduced Iron (C4)       Shallow Aquitard (D3)         Algal Mat or Crust (B4)       Solis (C6)       FAC-Neutral Test (D5)         Surface Soil Cracks (B6)       (LRR A)       Other (Explain in Remarks)       Frost-Heave Hummocks (D7)         Sparsely Vegetated Concave Surface (B8)       Depth (inches):       Mater Table Present? Yes x No       Depth (inches):         Saturation Present?       Yes       No       Depth (inches):       Mater Table Present? Yes x No       Depth (inches):         Saturation Present?       Yes       No       Depth (inches):       Mater And Hydrology Present? Yes x No       Mater And AB         Saturation Present?       Yes       No       Depth (inches):       Material Material Material Material Material Material Mate									
Surface Water (A1)       Water-Stained Leaves (B9) (except       Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)         High Water Table (A2)       Salt Crust (B1)       Drainage Patterns (B10)         Saturation (A3)       Aquatic Invertebrates (B13)       Dry-Season Water Table (C2)         Water Marks (B1)       Hydrogen Sulfide Odor (C1)       Saturation Visible on Aerial Imagery (C9)         Sediment Deposits (B2)       Roots (C3)       Geomorphic Position (D2)         Drift Deposits (B3)       Presence of Reduced Iron (C4)       Shallow Aquitard (D3)         Algal Mat or Crust (B4)       Solis (C6)       FAC-Neutral Test (D5)         Surface Soli Cracks (B6)       (LRR A)       Raised Ant Mounds (D6) (LRR A)         Surface Soli Cracks (B6)       Other (Explain in Remarks)       Frost-Heave Hummocks (D7)         Sparsely Vegetated Concave Surface (B8)       Depth (inches):       1         Field Observations:       No       Depth (inches):       1         Water Table Present?       Yes       No       Depth (inches):       1         Saturation Present?       Yes       No       Depth (inches):       1         Saturation Present?       Yes       No       Depth (inches):       1         Water Table Present?       Yes       No       Depth (inches):       1      <	Primary Indica	tors (minimum of on	e required; c	heck all that apply)			Seco	ndary Indicators (2 or r	nore required)
Surface Water (A1)       MLRA 1, 2, 4A, and 4B)       4A, and 4B)         High Water Table (A2)       Sati Crust (B11)       Drainage Patterns (B10)         Saturation (A3)       Aquatic Invertebrates (B13)       Dry-Season Water Table (C2)         Water Marks (B1)       Hydrogen Sulfide Odor (C1)       Saturation Visible on Aerial Imagery (C9)         Oxidized Rhizospheres along Living       Roots (C3)       Geomorphic Position (D2)         Drift Deposits (B3)       Presence of Reduced Iron (C4)       Shallow Aquitard (D3)         Algal Mat or Crust (B4)       Soils (C6)       FAC-Neutral Test (D5)         Surface Soil Cracks (B6)       (LRR A)       Raised Ant Mounds (D6) (LRR A)         Inundation Visible on Aerial Imagery (B7)       Sparsely Vegetated Concave Surface (B8)       Frost-Heave Hummocks (D7)         Field Observations:       No       Depth (inches):       1       Wetland Hydrology Present? Yes x No       No         Saturation Present?       Yes       No       Depth (inches):       1       water Table Present? Yes       No         Saturation Present?       Yes       No       Depth (inches):       1       water Table Present? Yes       No         Saturation Present?       Yes       No       Depth (inches):       1       water Table Present? Yes       No       escribe Recorded Data (stream g			······		d Leaves	(B9) (exce			
High Water Table (A2)       Salt Crust (B11)       Drainage Patterns (B10)         Saturation (A3)       Aquatic Invertebrates (B13)       Dry-Season Water Table (C2)         Water Marks (B1)       Hydrogen Sulfide Odor (C1)       Saturation Visible on Aerial Imagery (C9)         Sediment Deposits (B2)       Roots (C3)       Geomorphic Position (D2)         Drift Deposits (B3)       Presence of Reduced Iron (C4)       Shallow Aquitard (D3)         Algal Mat or Crust (B4)       Soils (C6)       FAC-Neutral Test (D5)         Iron Deposits (B5)       (LRR A)       Raised Ant Mounds (D6) (LRR A)         Surface Soil Cracks (B6)       Other (Explain in Remarks)       Frost-Heave Hummocks (D7)         Field Observations:       No       Depth (inches):       Mater Table Present?       Yes       No         Surface Water Present?       Yes       No       Depth (inches):       Mater Table Present?       Yes       No         Surface Capillary fringe)       Yes       No       Depth (inches):       Mater Table Present?       Yes       No         Secribe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:       Saturations), if available:	Surface Wa	ater (A1)							, (,,,
Saturation (A3)       Aquatic Invertebrates (B13)       Dry-Season Water Table (C2)         Water Marks (B1)       Hydrogen Sulfide Odor (C1)       Saturation Visible on Aerial Imagery (C9)         Sediment Deposits (B2)       Poots (C3)       Geomorphic Position (D2)         Drift Deposits (B3)       Presence of Reduced Iron (C4)       Shallow Aquitard (D3)         Algal Mat or Crust (B4)       Soils (C6)       FAC-Neutral Test (D5)         Iron Deposits (B5)       (LRR A)       Raised Ant Mounds (D6) (LRR A)         Surface Soil Cracks (B6)       Other (Explain in Remarks)       Frost-Heave Hummocks (D7)         Inundation Visible on Aerial Imagery (B7)       Sparsely Vegetated Concave Surface (B8)       Wetland Hydrology Present?         Field Observations:       No       Depth (inches):       Metland Hydrology Present?       Yes       x       No         Saturation Present?       Yes       No       Depth (inches):       metland Hydrology Present?       Yes       x       No         Saturation Present?       Yes       No       Depth (inches):       metland Hydrology Present?       Yes       x       No         Saturation Present?       Yes       No       Depth (inches):       metland Hydrology Present?       Yes       x       No         Saturation Present?       Yes       No <td></td> <td></td> <td></td> <td></td> <td></td> <td>_,</td> <td></td> <td></td> <td></td>						_,			
Water Marks (B1)       Hydrogen Sulfide Odor (C1)       Saturation Visible on Aerial Imagery (C9)         Sediment Deposits (B2)       Roots (C3)       Geomorphic Position (D2)         Drift Deposits (B3)       Presence of Reduced Iron (C4)       Shallow Aquitard (D3)         Algal Mat or Crust (B4)       Soils (C6)       FAC-Neutral Test (D5)         Iron Deposits (B5)       (LRR A)       Raised Ant Mounds (D6) (LRR A)         Surface Soil Cracks (B6)       Other (Explain in Remarks)       Frost-Heave Hummocks (D7)         Inundation Visible on Aerial Imagery (B7)       Sparsely Vegetated Concave Surface (B8)       Depth (inches):         Field Observations:       No       Depth (inches):       Wetland Hydrology Present?       Yes       x       No         Surface scalilary fringe)       Yes       No       Depth (inches):       wetland Hydrology Present?       Yes       x       No         Secribe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:       Saturation Yisible       Saturation Yisible       Saturation Yisible       Saturation Yisible       Saturation Yisible       Yes       x       No						(B13)			
Oxidized Rhizospheres along Living         Sediment Deposits (B2)       Roots (C3)         Drift Deposits (B3)       Presence of Reduced Iron (C4)       Shallow Aquitard (D3)         Algal Mat or Crust (B4)       Soils (C6)       FAC-Neutral Test (D5)         Iron Deposits (B5)       (LRR A)       Raised Ant Mounds (D6) (LRR A)         Surface Soil Cracks (B6)       Other (Explain in Remarks)       Frost-Heave Hummocks (D7)         Inundation Visible on Aerial Imagery (B7)       Sparsely Vegetated Concave Surface (B8)       Depth (inches):       1         Field Observations:       Depth (inches):       1       Wetland Hydrology Present? Yes x No       No         Saturation Present?       Yes       No       Depth (inches):       wetland Hydrology Present? Yes x No       No         Saturation Present?       Yes       No       Depth (inches):       wetland Hydrology Present? Yes x No       No         Saturation Present?       Yes       No       Depth (inches):       wetland Hydrology Present? Yes x No       No         Saturation Present?       Yes       No       Depth (inches):       wetland Hydrology Present? Yes x No       Soils conditions         Saturation Present?       Yes       No       Depth (inches):       wetland Hydrology Present? Yes x No       Soils conditions         Saturatio									
Sediment Deposits (B2)       Roots (C3)       Geomorphic Position (D2)         Drift Deposits (B3)       Presence of Reduced Iron (C4)       Shallow Aquitard (D3)         Algal Mat or Crust (B4)       Soils (C6)       FAC-Neutral Test (D5)         Iron Deposits (B5)       (LRR A)       Raised Ant Mounds (D6) (LRR A)         Surface Soil Cracks (B6)       Other (Explain in Remarks)       Frost-Heave Hummocks (D7)         Inundation Visible on Aerial Imagery (B7)       Sparsely Vegetated Concave Surface (B8)       Depth (inches):         Field Observations:       Depth (inches):       Mater Table Present?       Yes       No         Saturation Present?       Yes       No       Depth (inches):       Wetland Hydrology Present?       Yes       x       No         Saturation Present?       Yes       No       Depth (inches):       Image: Stream gauge, monitoring well, aerial photos, previous inspections), if available:       Set available:								adiation visible on Ae	nai inagery (05)
Drift Deposits (B3)       Presence of Reduced Iron (C4)       Shallow Aquitard (D3)         Algal Mat or Crust (B4)       Soils (C6)       FAC-Neutral Test (D5)         Iron Deposits (B5)       (LRR A)       Raised Ant Mounds (D6) (LRR A)         Surface Soil Cracks (B6)       Other (Explain in Remarks)       Frost-Heave Hummocks (D7)         Inundation Visible on Aerial Imagery (B7)       Sparsely Vegetated Concave Surface (B8)       Depth (inches):         Field Observations:       Surface Water Present?       Yes       No         Depth (inches):       1       Wetland Hydrology Present?       Yes       x       No         Saturation Present?       Yes       No       Depth (inches):       wetland Hydrology Present?       Yes       x       No         Saturation Present?       Yes       No       Depth (inches):       startal photos, previous inspections), if available:	Sodimont [	Donarita (P3)			zospiteres	s along Livi		Comombia Resition (D	מ
Algal Mat or Crust (B4)       Recent Iron Reduction in Tilled					Deduced (	lean (CA)			2)
Algal Mat or Crust (B4)       Soils (C6)       FAC-Neutral Test (D5)         Iron Deposits (B5)       (LRR A)       Raised Ant Mounds (D6) (LRR A)         Surface Soil Cracks (B6)       Other (Explain in Remarks)       Frost-Heave Hummocks (D7)         Inundation Visible on Aerial Imagery (B7)       Sparsely Vegetated Concave Surface (B8)       Frost-Heave Hummocks (D7)         Field Observations:       Depth (inches):       1         Surface Water Present?       Yes       X       No         Depth (inches):       1       Wetland Hydrology Present?       Yes       X       No         Saturation Present?       Yes       No       Depth (inches):       Image: Concerve Surface Saturation Present?       Yes       X       No         Saturation Present?       Yes       No       Depth (inches):       Image: Concerve Surface Saturation Present?       Yes       X       No         escribe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:       Image: Concerve Surface Saturation Present       Yes       Yes       Yes	Dint Depos	aus (Bo)					C	snallow Aquitaru (D3)	
Iron Deposits (B5)       Stunted or Stressed Plants (D1)         Surface Soil Cracks (B6)       Other (Explain in Remarks)         Inundation Visible on Aerial Imagery (B7)       Sparsely Vegetated Concave Surface (B8)         Field Observations:       Depth (inches):         Surface Water Present?       Yes         No       Depth (inches):         Saturation Present?       Yes         No       Depth (inches):         Secribe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	A4	0			Reduction	in illied	-		
Iron Deposits (B5)      (LRR A)      Raised Ant Mounds (D6) (LRR A)         Surface Soil Cracks (B6)      Other (Explain in Remarks)      Frost-Heave Hummocks (D7)         Inundation Visible on Aerial Imagery (B7)      Other (Explain in Remarks)      Frost-Heave Hummocks (D7)         Sparsely Vegetated Concave Surface (B8)      Other (Explain in Remarks)      Frost-Heave Hummocks (D7)         Field Observations:	Algai Mat o	r Crust (B4)				1 (20)	F	AC-Neutral Test (D5)	
Surface Soil Cracks (B6)       Other (Explain in Remarks)       Frost-Heave Hummocks (D7)         Inundation Visible on Aerial Imagery (B7)       Sparsely Vegetated Concave Surface (B8)       Frost-Heave Hummocks (D7)         Field Observations:       Surface Water Present?       Yes       X       No       Depth (inches):       1         Water Table Present?       Yes       No       Depth (inches):       1       Wetland Hydrology Present?       Yes       x       No         Saturation Present?       Yes       No       Depth (inches):       Wetland Hydrology Present?       Yes       x       No         Saturation Present?       Yes       No       Depth (inches):       Image: Concent Present?       Yes       x       No         Saturation Present?       Yes       No       Depth (inches):       Image: Concent Present?       Yes       x       No         Saturation Present?       Yes       No       Depth (inches):       Image: Concent Present?       Yes       x       No         escribe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:       Yes       Yes       Yes		(- (DE)			tressed Pl	ants (D1)	-		
Inundation Visible on Aerial Imagery (B7)         Sparsely Vegetated Concave Surface (B8)         Field Observations:         Surface Water Present?       Yes         Yes       No         Depth (inches):       1         Water Table Present?       Yes         Yes       No         Depth (inches):       1         Water Table Present?       Yes         Saturation Present?       Yes         Saturation Present?       Yes         (includes capillary fringe)       Yes         No       Depth (inches):         escribe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:									
Sparsely Vegetated Concave Surface (B8) Field Observations: Surface Water Present? Yes <u>x</u> No Depth (inches): <u>1</u> Water Table Present? Yes <u>No</u> Depth (inches): Saturation Present? Saturation Present? (includes capillary fringe) Yes <u>No</u> Depth (inches): Eascribe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:				Other (Expla	in in Rema	arks)	F	rost-Heave Hummocks	; (D7)
Field Observations:         Surface Water Present?       Yes       No       Depth (inches):       1									
Surface Water Present?       Yes       x       No       Depth (inches):       1         Water Table Present?       Yes       No       Depth (inches):       Wetland Hydrology Present?       Yes       x       No	_ Sparsely V	egetated Concave S	urface (B8)						
Surface Water Present?       Yes       x       No       Depth (inches):       1         Water Table Present?       Yes       No       Depth (inches):       Wetland Hydrology Present?       Yes       x       No									
Water Table Present?       Yes       No       Depth (inches):       Wetland Hydrology Present?       Yes       x       No         Saturation Present?       Saturation Present?       Wetland Hydrology Present?       Yes       x       No	Field Observa	ations:							
Water Table Present?       Yes       No       Depth (inches):       Wetland Hydrology Present? Yes x No         Saturation Present?       Yes       No       Depth (inches):       Wetland Hydrology Present? Yes x No         Saturation Present?       Yes       No       Depth (inches):       Wetland Hydrology Present? Yes x No         Saturation Present?       Yes       No       Depth (inches):       Wetland Hydrology Present? Yes x No         Saturation Present?       Yes       No       Depth (inches):       Wetland Hydrology Present? Yes x No         Saturation Present?       Yes       No       Depth (inches):       Wetland Hydrology Present? Yes x No         Saturation Present?       Yes       No       Depth (inches):       Wetland Hydrology Present?         Saturation Present?       Yes       No       Depth (inches):       Wetland Hydrology Present?         Saturation Present?       Yes       No       Depth (inches):       Wetland Hydrology Present?         Saturation Present?       Yes       No       Depth (inches):       Wetland Hydrology Present?         Saturation Present?       Yes       No       Depth (inches):       Wetland Hydrology Present?         Saturation Present?       Yes       No       Depth (inches):       Wetland Hydrology Present?	Surface Water								
Saturation Present? (includes capillary fringe) Yes <u>No</u> Depth (inches): escribe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	Water Table P	resent? Yes	No	Depth (inches)	:		Wetland Hydr	ology Present? Ye	s x No
(includes capillary fringe) Yes No Depth (inches): escribe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	Saturation Pre						-		
escribe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			No	Depth (inches)	:				
				ing well, aerial phot	os previo	us inspecti	ons) if availab	le:	
emarks:		and for and and an and an and an and an	-ge, monitor	ing won, actial prior	, provio	as moreou	onoj, n availau		
emarks:									
emarks:									
	Remarks:								

Constantion of

Project/Site: _C	oopey Quarry	City	/County: Multr	omah Cou	inty Sam	pling Date:	4/18/2016	
Applicant/Owner:	ODOT Region 1		State:	OR	Sampling Point:	8		
Investigator(s):	Ken Sargent		Section, Township	o, Range:	13, T1N, R5E			
Landform (hillslop	pe, terrace, etc.):	Terrace	Local relie	f (concave	, convex, none):	convex	Slope (%):	2
Subregion (LRR)	: <u>A</u>	Lat:	45.56481	Long:	-122.16666	Datum:		
Soil Map Unit Na	me: Aschoff cob	bly loam 5-30% s	lopes		NWI class	sification:	Upland	
Are climatic / hyd	Irologic conditions o	n the site typical f	for this time of yea	r? Yes	<u>x</u> No (If i	no, explain in	Remarks.)	
Are Vegetation	, Soil	, or Hydrology	significantly	disturbed?	Are "Normal C	ircumstances	"present? Yes x	No
Are Vegetation	, Soll	, or Hydrology _	naturally pro	blematic?	(If neede	ed, explain an	ny answers in Remark	<b>s</b> .)

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

Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	Yes <u>x</u> Yes Yes	No x No x No x	Is the Sampled Area within a Wetland?	Yes <u>No x</u>
Remarks:				

	Absolute	Dominant	Indicator	Dominance Test worksheet:
Tree Stratum (Plot size:)	<u>% Cover</u>	Species?	<u>Status</u>	Number of Dominant Species
				That Are OBL, FACW, or FAC:(A)
2		ente en Agrica de la		Total Number of Dominant Species Across All Strata: 3 (B)
3				Percent of Dominant Species
4				That Are OBL, FACW, or FAC: 67 (A/B)
		= Total Cove	er	Prevalence index worksheet:
Sapling/Shrub Stratum (Plot size:)	_			
1. Populus balsamifera (seedlings)		Y	FAC	Total % Cover of: Multiply by:
2				OBL species x 1 =
3.				FACW species $50 \times 2 = 100$
4.	A			FAC species $5 \times 3 = 15$
5				FACU species <u>30</u> x 4 = <u>120</u>
		= Total Cove	er	UPL species 15 x 5 = 75
Herb Stratum (Plot size: <u>3'sq</u> )				Column Totals: 100 (A) 310 (B)
1. Camassia quamash	50	<u> </u>	FACW	
2. Lamium purpureum	15		UPL	Prevalence Index = B/A = <u>3.1</u>
3. Leucanthemum vulgare	30	<u> </u>	FACU	
4				Hydrophytic Vegetation Indicators:
5				1 - Rapid Test for Hydrophytic Vegetation
6.				x 2 - Dominance Test is >50%
7				3 - Prevalence Index is ≤3.0 <sup>1</sup>
8				4 - Morphological Adaptations' (Provide supporting
9				data in Remarks or on a separate sheet)
10	<u>,</u>			5 - Wetland Non-Vascular Plants <sup>1</sup>
11				Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
		= Total Cove	er	<sup>1</sup> Indicators of hydric soil and wetland hydrology must
Woody Vine Stratum (Plot size:)				be present, unless disturbed or problematic.
1. <u>Hedera helix</u>	30	Y	FACU	
2		1 1943 (1997) 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		Hydrophytic
		= Total Cove	er	Vegetation
% Bare Ground in Herb Stratum	_			Present? Yes <u>x</u> No
Remarks: site just meets the wetland vegetation crite	eria			1
- <del>-</del>				

SOIL							Sampling Point:	8
Profile Desc	ription: (Describe (	o the dept				onfirm the a	bsence of indicators.)	
Depth	Matrix			Redox Fea	atures			
(inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
							Gravelly Silt	
	10YR 2/1					<u></u>	loam	
2+ <sup>*</sup>							Rock	
			······································		. <u></u>			
					**************************************	,		#101-01-01-01-01-01-01-01-01-01-01-01-01-
<sup>1</sup> Type: C=Co	oncentration, D=Depl	etion, RM=	Reduced Matrix, CS	=Covered	or Coated Sa	nd Grains.	<sup>2</sup> Location: PL=Pore L	ining, M=Matrix.
Hydric Soil	Indicators: (Applic	able to all	LRRs, unless other	rwise note	ed.)	Ind	icators for Problematic	Hvdric Soils <sup>3</sup> :
-					)			
Histosol			Sandy Redox (S				2 cm Muck (A10)	
	pipedon (A2)		Stripped Matrix (				Red Parent Material (TF	
	istic (A3)		Loamy Mucky M		(except MLR	(A 1)	Very Shallow Dark Surfa	
	en Sulfide (A4)		Loamy Gleyed N				Other (Explain in Remai	ks)
	d Below Dark Surfac	e (A11)	Depleted Matrix					
	ark Surface (A12)		Redox Dark Surf				<sup>3</sup> Indicators of hydrophyti	
	/lucky Mineral (S1)	_	Depleted Dark S		)		wetland hydrology must	
Sandy G	Eleyed Matrix (S4)		Redox Depression	ons (F8)			unless disturbed or prob	lematic
					1			
<b>Restrictive La</b>	yer (if present):							
Type:					Hydric So	il Present?	Yes	No x
Depth (inch							100	
Depth (no								
lemarks:								
IYDROLOG	v							
	ology Indicators:							1
	tors (minimum of one	roquirod	oback all that apply)			Soco	ndary Indicators (2 or mo	vice required)
Finally mulca		e required,		dlaguas				
Curfere Min	1 (\ 1)		Water-Staine				Vater-Stained Leaves (B	$\eta$ (WILKA 1, $Z$ ,
Surface Wa			MLRA 1, 2, 4		<b>)</b> )		<b>A, and 4B</b> )	
High Water			Sait Crust (B				rainage Patterns (B10)	
Saturation (			Aquatic Inver				ry-Season Water Table	
Water Mark	(B1)		Hydrogen Su			S	aturation Visible on Aeria	al Imagery (C9)
			Oxidized Rhi	zospheres	along Living			
Sediment D	eposits (B2)		Roots (C3)			G	eomorphic Position (D2)	
Drift Depos			Presence of	Reduced I	ron (C4)		hallow Aquitard (D3)	
·			Recent Iron F	Reduction i	in Tilled		,	
Algal Mat o	r Crust (B4)		Soils (C6)			F	AC-Neutral Test (D5)	
			Stunted or St	tressed Pla	ants (D1)			
Iron Deposi	its (B5)		(LRR A)		···· ·/	R	aised Ant Mounds (D6) (	LRR A)
	il Cracks (B6)		Other (Explai	in in Rema	rks)		rost-Heave Hummocks (	
	Visible on Aerial Ima	(FR) (R7)						/
we have	egetated Concave Si							
	systated Concave St	allane (D0)						
<u></u>	A4				1			
Field Observa								
Surface Water	Present? Yes		x Depth (inches):		1			
Water Table Pr	resent? Yes	No	x Depth (inches):		Wei	tiand Hydro	ology Present? Yes	<u> </u>
Saturation Pres	sent?				1			
(includes capill	lary fringe) Yes	No	x Depth (inches):		[			
escribe Record	ied Data (stream dat	Jae. monito	oring well, aerial phot	os, previou	us inspections	s), if availab	le:	
	( gui	, e, e, e	-0,	-,		,,		
Remarks: Dry								

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Project/Site: Coopey Quarry	City/County:	Multnomah Cou	nty San	pling Date:	4/18/2016	
Applicant/Owner: ODOT Region 1	<u> </u>	State: OR	Sampling Point:	9		
Investigator(s): Ken Sargent	Section, Tov	wnship, Range:	13, T1N, R5E		BERGER AND A	
Landform (hillslope, terrace, etc.):	Loca	al relief (concave,	convex, none):	concave	Slope (	%): _2
Subregion (LRR): A	Lat: 45.5652	9 Long:	-122.16668	Datum:		
Soil Map Unit Name: Sauvie silt loam	사망가 영향 (APP) 7 4		NWI clas	sification:	Upland	
Are climatic / hydrologic conditions on the site typ	oical for this time	of year? Yes	<u>x</u> No (If	no, explain ir	n Remarks.)	
Are Vegetation, Soil, or Hydrolo	gy signific:	antly disturbed?	Are "Normal C	ircumstance	s" present? Yes	<u>x</u> No
Are Vegetation, Soil, or Hydrolo	gy naturall	ly problematic?	(If need	ed, explain a	ny answers in Re	marks.)

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

Hydric Soil Present? Y	Yes <u>x</u> No Yes <u>No x</u> Yes <u>x</u> No <u>x</u>	Is the Sampled Area within a	ı Wetland? Yes	No
Remarks: Site lacked hydric soils (grag gravel.	vel). The site had seasona	I standing water, and wetland ve	egetation growing basically hy	droponically in shallow

#### VEGETATION – Use scientific names of plants.

	Absolute	Dominant	Indicator	Dominance Test worksheet:
Tree Stratum (Plot size:)	<u>% Cover</u>	Species?	<u>Status</u>	Number of Dominant Species
1				That Are OBL, FACW, or FAC: (A)
2				Total Number of Dominant
3				Species Across All Strata: <u>2</u> (B) Percent of Dominant Species
4			:	That Are OBL, FACW, or FAC:100 (A/B)
		= Total Cove	er	
Sapling/Shrub Stratum (Plot size:)				Prevalence Index worksheet:
1,				Total % Cover of: Multiply by:
2				OBL species x 1 =
3				FACW species $40 \times 2 = 80$
4				FAC species 30 x 3 = 90
5.		· · · · ·		FACU species x 4 =
		= Total Cove	eľ	UPL species x 5 =
Herb Stratum (Plot size: 3'sq )				Column Totals: (A)(B)
1. Juncus ensifolius	30	Y	FACW	$\frac{1}{10} = (A) = \frac{1}{10} = (B)$
2. Agrostis stolinfera	30	Y	FAC	Prevalence index = B/A = <3
3. Juncus effusus	10		FACW	
4				Hydrophytic Vegetation Indicators:
5				1 - Rapid Test for Hydrophytic Vegetation
6.				× 2 - Dominance Test is >50%
7.				X 3 - Prevalence Index is ≤3.0 <sup>1</sup>
8,				4 - Morphological Adaptations <sup>1</sup> (Provide supporting
9.				data in Remarks or on a separate sheet)
10				5 - Wetland Non-Vascular Plants <sup>1</sup>
11.				Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
	***************************************	= Total Cove	er	<sup>1</sup> Indicators of hydric soil and wetland hydrology must
Woody Vine Stratum (Plot size: )				be present, unless disturbed or problematic.
1				
2				
		= Total Cove	er	Hydrophytic Vegetation
% Bare Ground in Herb Stratum				Present? Yes <u>x</u> No
Remarks:				L
i tomand.				

I

(inches) C	Matrix Color (moist)	%	Color (moist)	Redox Feat %	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
)-2" 1	0YR 2/1						Gravelly Silt	
<u></u>							loam	
<u> </u>							Rock	
								······
			1					*******
	en	<u></u>			<u></u>			
Type: C=Conce	ntration, D=Deple	 etion, RM=R	Reduced Matrix, CS	=Covered o	r Coaled Sa	nd Grains.	<sup>2</sup> Location: PL=Pore	Lining, M=Matrix.
	-		.RRs, unless other				icators for Problemati	-
Histosol (A1			Sandy Redox (S		.,		2 cm Muck (A10)	c nyunc sons .
Histic Epiped			Stripped Matrix (				Red Parent Material (T	F2)
Black Histic			🗧 Loamy Mucky Mi	ineral (F1) (	except MLR		Very Shallow Dark Sur	
Hydrogen Su	ulfide (A4) Iow Dark Surface	· (A 11)	Loamy Gleyed M Depleted Matrix (				Other (Explain in Rema	arks)
	Surface (A12)	:(ATT)	_ Redox Dark Surf				<sup>3</sup> Indicators of hydrophy	tic vegetation and
Sandy Muck	y Mineral (S1)		Depleted Dark S	urface (F7)			wetland hydrology mus	t be present,
Sandy Gleye	ed Matrix (S4)		Redox Depression	oris (F8)			unless disturbed or pro	blematic
strictive Layer (	(if present):							
Туре:					Hydric So	il Present?	Yes	No x
Depth (inches):								,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
narks:								
DROLOGY etland Hydrolog								
DROLOGY etland Hydrolog		required; cf	heck all that apply) Water-Staine	ed I eaves (F	39) (excent		ndary Indicators (2 or m	
DROLOGY etland Hydrolog	(minimum of one	required; cf	Water-Staine			V	ndary Indicators (2 or m Vater-Stained Leaves (E A, and 4B)	
DROLOGY etland Hydrolog imary Indicators Surface Water High Water Tal	(minimum of one (A1) ble (A2)	required; cł	Water-Staine MLRA 1, 2, 4 Salt Crust (B	<b>4A, and 4B</b> ) (11)			Vater-Stained Leaves (E A, and 4B) Irainage Patterns (B10)	39) ( <b>MLRA 1, 2,</b>
DROLOGY etland Hydrolog imary Indicators Surface Water High Water Tal Saturation (A3)	(minimum of one (A1) ble (A2) )	required; cf	Water-Staine MLRA 1, 2, 4 Salt Crust (B Aquatic Inve	<b>4A, and 4B</b> ) (11) rtebrates (B	13)		Vater-Stained Leaves (E A, and 4B) Irainage Patterns (B10) Iry-Season Water Table	39) ( <b>MLRA 1, 2,</b> e (C2)
DROLOGY etland Hydrolog imary Indicators Surface Water High Water Tal	(minimum of one (A1) ble (A2) )	required; cf	Water-Staine MLRA 1, 2, 4 Salt Crust (B Aquatic Inver Hydrogen St	<b>4A, and 4B</b> ) 111) rtebrates (B ulfide Odor (	13) C1)		Vater-Stained Leaves (E A, and 4B) Irainage Patterns (B10)	39) ( <b>MLRA 1, 2,</b> e (C2)
DROLOGY etland Hydrolog imary Indicators Surface Water High Water Tal Saturation (A3) Water Marks (E	(minimum of one (A1) ble (A2) ) 31)	required; cf	Water-Staine MLRA 1, 2, 4 Salt Crust (B Aquatic Inve	<b>4A, and 4B</b> ) 111) rtebrates (B ulfide Odor (	13) C1)	V 4 D D S	Vater-Stained Leaves (E A, and 4B) Irainage Patterns (B10) Iry-Season Water Table aturation Visible on Aer	39) (MLRA 1, 2, e (C2) rial Imagery (C9)
DROLOGY etland Hydrolog imary Indicators Surface Water High Water Tal Saturation (A3)	(minimum of one (A1) ble (A2) ) 31) osits (B2)	required; cf	Water-Staine MLRA 1, 2, 4 Salt Crust (B Aquatic Inver Hydrogen Su Oxidized Rhi Roots (C3) Presence of	4A, and 4B) 111) rtebrates (B ulfide Odor ( izospheres a Reduced Iro	13) C1) along Living on (C4)	V 4 	Vater-Stained Leaves (E A, and 4B) Irainage Patterns (B10) Iry-Season Water Table	39) (MLRA 1, 2, e (C2) rial Imagery (C9)
DROLOGY etland Hydrolog imary Indicators Surface Water High Water Tal Saturation (A3) Water Marks (E Sediment Depo Drift Deposits (	(minimum of one (A1) ble (A2) ) 31) osits (B2) (B3)	required; cł	Water-Staine MLRA 1, 2, 4 Salt Crust (B Aquatic Inver Hydrogen SL Oxidized Rhi Roots (C3) Presence of Recent Iron	4A, and 4B) 111) rtebrates (B ulfide Odor ( izospheres a Reduced Iro	13) C1) along Living on (C4)		Vater-Stained Leaves (E A, and 4B) Irainage Patterns (B10) Iry-Season Water Table aturation Visible on Aer ieomorphic Position (D2 hallow Aquitard (D3)	39) (MLRA 1, 2, e (C2) rial Imagery (C9)
DROLOGY etland Hydrolog imary Indicators Surface Water High Water Tal Saturation (A3) Water Marks (E Sediment Depo	(minimum of one (A1) ble (A2) ) 31) osits (B2) (B3)	required; cł	Water-Staine MLRA 1, 2, 4 Salt Crust (B Aquatic Inver Hydrogen Su Oxidized Rhi Roots (C3) Presence of Recent Iron I Soils (C6)	4A, and 4B) 111) rtebrates (B ulfide Odor ( izospheres a Reduced Iro Reduction ir	13) C1) along Living on (C4) n Tilled		Vater-Stained Leaves (E A, and 4B) Irainage Patterns (B10) Iry-Season Water Table aturation Visible on Aer Geomorphic Position (D2	39) (MLRA 1, 2, e (C2) rial Imagery (C9)
DROLOGY etland Hydrolog imary Indicators Surface Water High Water Tal Saturation (A3) Water Marks (E Sediment Depo Drift Deposits (	(minimum of one (A1) ble (A2) ) 31) osits (B2) (B3) rust (B4)	required; cł	Water-Staine MLRA 1, 2, 4 Salt Crust (B Aquatic Inver Hydrogen Su Oxidized Rhi Roots (C3) Presence of Recent Iron I Soils (C6) Stunted or S (LRR A)	4A, and 4B) Intebrates (B Ilfide Odor ( izospheres a Reduced Iro Reduction ir tressed Plan	13) C1) along Living on (C4) n Tilled nts (D1)	• • • • • • • • • • • • • • • • • • •	Vater-Stained Leaves (E A, and 4B) Irainage Patterns (B10) Iry-Season Water Table aturation Visible on Aer ieomorphic Position (D2 hallow Aquitard (D3)	39) ( <b>MLRA 1, 2,</b> e (C2) rial Imagery (C9) 2)
DROLOGY etland Hydrolog imary Indicators Surface Water High Water Tal Saturation (A3) Water Marks (E Sediment Depo Drift Deposits ( Algal Mat or Cr Iron Deposits ( Surface Soil Ci	(minimum of one (A1) ble (A2) ) 31) osits (B2) (B3) rust (B4) B5) racks (B6)		Water-Staine MLRA 1, 2, 4 Salt Crust (B Aquatic Inver Hydrogen Su Oxidized Rhi Roots (C3) Presence of Recent Iron I Soils (C6) Stunted or S	4A, and 4B) Intebrates (B Ilfide Odor ( izospheres a Reduced Iro Reduction ir tressed Plan	13) C1) along Living on (C4) n Tilled nts (D1)	V 4 D D S S S S F R	Vater-Stained Leaves (E A, and 4B) Irainage Patterns (B10) Iry-Season Water Table aturation Visible on Aer Reomorphic Position (D2 hallow Aquitard (D3) AC-Neutral Test (D5)	39) (MLRA 1, 2, e (C2) rial Imagery (C9) 2) e (LRR A)
DROLOGY etland Hydrolog imary Indicators Surface Water High Water Tal Saturation (A3) Water Marks (E Sediment Depo Drift Deposits ( Algal Mat or Cr Iron Deposits ( Surface Soil Cr Inundation Visi	(minimum of one (A1) ble (A2) ) 31) osits (B2) (B3) rust (B4) B5) racks (B6) ble on Aerial Ima	gery (B7)	Water-Staine MLRA 1, 2, 4 Salt Crust (B Aquatic Inver Hydrogen Su Oxidized Rhi Roots (C3) Presence of Recent Iron I Soils (C6) Stunted or S (LRR A)	4A, and 4B) Intebrates (B Ilfide Odor ( izospheres a Reduced Iro Reduction ir tressed Plan	13) C1) along Living on (C4) n Tilled nts (D1)	V 4 D D S S S S F R	Vater-Stained Leaves (E A, and 4B) Irainage Patterns (B10) Iry-Season Water Table aturation Visible on Aer Geomorphic Position (D2 hallow Aquitard (D3) AC-Neutral Test (D5) vaised Ant Mounds (D6)	39) (MLRA 1, 2, e (C2) rial Imagery (C9) 2) e (LRR A)
DROLOGY etland Hydrolog imary Indicators Surface Water High Water Tal Saturation (A3) Water Marks (E Sediment Depo Drift Deposits ( Algal Mat or Cr Iron Deposits ( Surface Soil Cr Inundation Visi	(minimum of one (A1) ble (A2) ) 31) osits (B2) (B3) rust (B4) B5) racks (B6)	gery (B7)	Water-Staine MLRA 1, 2, 4 Salt Crust (B Aquatic Inver Hydrogen Su Oxidized Rhi Roots (C3) Presence of Recent Iron I Soils (C6) Stunted or S (LRR A)	4A, and 4B) Intebrates (B Ilfide Odor ( izospheres a Reduced Iro Reduction ir tressed Plan	13) C1) along Living on (C4) n Tilled nts (D1)	V 4 D D S S S S F R	Vater-Stained Leaves (E A, and 4B) Irainage Patterns (B10) Iry-Season Water Table aturation Visible on Aer Geomorphic Position (D2 hallow Aquitard (D3) AC-Neutral Test (D5) vaised Ant Mounds (D6)	39) (MLRA 1, 2, e (C2) rial Imagery (C9) 2) e (LRR A)
DROLOGY etland Hydrolog imary Indicators Surface Water High Water Tal Saturation (A3) Water Marks (E Sediment Depo Drift Deposits ( Algal Mat or Cr Iron Deposits ( Surface Soil Cr Inundation Visi Sparsely Vege	(minimum of one (A1) ble (A2) ) 31) osits (B2) (B3) rust (B4) B5) racks (B6) ble on Aerial Ima tated Concave S s:	gery (B7) urface (B8)	Water-Staine MLRA 1, 2, 4 Salt Crust (B Aquatic Inver Hydrogen Su Oxidized Rhi Roots (C3) Presence of Recent Iron I Soils (C6) Stunted or S (LRR A) Other (Expla	4A, and 4B) Intebrates (B Ilfide Odor ( izospheres a Reduced Iro Reduction ir tressed Plan in in Remar	13) C1) along Living on (C4) n Tilled nts (D1)	V 4 D D S S S S F R	Vater-Stained Leaves (E A, and 4B) Irainage Patterns (B10) Iry-Season Water Table aturation Visible on Aer Geomorphic Position (D2 hallow Aquitard (D3) AC-Neutral Test (D5) vaised Ant Mounds (D6)	39) (MLRA 1, 2, e (C2) rial Imagery (C9) 2) e (LRR A)
DROLOGY etland Hydrolog imary Indicators Surface Water High Water Tal Saturation (A3) Water Marks (E Sediment Depo Drift Deposits ( Algal Mat or Cr Iron Deposits ( Surface Soil Ci Inundation Visi Sparsely Vege	(minimum of one (A1) ble (A2) ) 31) osits (B2) (B3) rust (B4) B5) racks (B6) ble on Aerial Ima tated Concave S s: sent? Yes	gery (B7) urface (B8) X_No	Water-Staine MLRA 1, 2, 4 Salt Crust (B Aquatic Inver Hydrogen Su Oxidized Rhi Roots (C3) Presence of Recent Iron I Soils (C6) Stunted or S (LRR A) Other (Expla	4A, and 4B) Intebrates (B Ilfide Odor ( izospheres a Reduced Iro Reduction ir tressed Plan in in Remar 	13) C1) along Living on (C4) n Tilled nts (D1) ks)	V D S S F F	Vater-Stained Leaves (E A, and 4B) Irainage Patterns (B10) Iry-Season Water Table aturation Visible on Aer Reomorphic Position (D2 hallow Aquitard (D3) AC-Neutral Test (D5) Itaised Ant Mounds (D6) rost-Heave Hummocks	39) ( <b>MLRA 1, 2,</b> (C2) rial Imagery (C9) 2) ( <b>LRR A</b> ) (D7)
DROLOGY etland Hydrolog imary Indicators Surface Water High Water Tal Saturation (A3) Water Marks (E Sediment Depo Drift Deposits ( Algal Mat or Cr Iron Deposits ( Surface Soil Cr Inundation Visi Sparsely Vege eld Observation Inface Water Prese	(minimum of one (A1) ble (A2) ) 31) osits (B2) (B3) rust (B4) B5) racks (B6) ble on Aerial Ima tated Concave S sent? Yes nt? Yes	gery (B7) urface (B8) X_No	Water-Staine MLRA 1, 2, 4 Salt Crust (B Aquatic Inver Hydrogen Su Oxidized Rhi Roots (C3) Presence of Recent Iron I Soils (C6) Stunted or S (LRR A) Other (Expla	4A, and 4B) Intebrates (B Ilfide Odor ( izospheres a Reduced Iro Reduction ir tressed Plan in in Remar 	13) C1) along Living on (C4) n Tilled nts (D1) ks)	V D S S F F	Vater-Stained Leaves (E A, and 4B) Irainage Patterns (B10) Iry-Season Water Table aturation Visible on Aer Geomorphic Position (D2 hallow Aquitard (D3) AC-Neutral Test (D5) vaised Ant Mounds (D6)	39) ( <b>MLRA 1, 2,</b> (C2) rial Imagery (C9) 2) ( <b>LRR A</b> ) (D7)
DROLOGY etland Hydrolog imary Indicators Surface Water High Water Tal Saturation (A3) Water Marks (E Sediment Depo Drift Deposits ( Algal Mat or Cr Iron Deposits ( Surface Soil Ci Inundation Visi Sparsely Vege	(minimum of one (A1) ble (A2) ) 31) osits (B2) (B3) rust (B4) B5) racks (B6) ble on Aerial Ima tated Concave S s: sent? Yes nt? Yes ?	gery (B7) urface (B8) No	Water-Staine MLRA 1, 2, 4 Salt Crust (B Aquatic Inver Hydrogen Su Oxidized Rhi Roots (C3) Presence of Recent Iron I Soils (C6) Stunted or S (LRR A) Other (Expla	4A, and 4B) It of the second	13) C1) along Living on (C4) n Tilled nts (D1) ks)	V D S S F F	Vater-Stained Leaves (E A, and 4B) Irainage Patterns (B10) Iry-Season Water Table aturation Visible on Aer Reomorphic Position (D2 hallow Aquitard (D3) AC-Neutral Test (D5) Itaised Ant Mounds (D6) rost-Heave Hummocks	39) ( <b>MLRA 1, 2,</b> (C2) rial Imagery (C9) 2) ( <b>LRR A</b> ) (D7)
DROLOGY etland Hydrolog imary Indicators Surface Water High Water Tal Saturation (A3) Water Marks (E Sediment Depo Drift Deposits ( Algal Mat or Cr Iron Deposits ( Surface Soil Cr Inundation Visi Sparsely Vege eld Observation Inface Water Present cludes capillary f	(minimum of one (A1) ble (A2) ) 31) osits (B2) (B3) rust (B4) B5) racks (B6) ble on Aerial Ima tated Concave S s: sent? Yes nt? Yes ? fringe) Yes	gery (B7) urface (B8) No No	Water-Staine MLRA 1, 2, 4 Salt Crust (B Aquatic Inver Hydrogen Su Oxidized Rhi Roots (C3) Presence of Recent Iron I Soils (C6) Stunted or S (LRR A) Other (Expla	4A, and 4B) it1) rebrates (B ulfide Odor ( izospheres a Reduced Irc Reduction ir tressed Plan in in Remar :	13) C1) along Living on (C4) n Tilled nts (D1) ks)	•tland Hydr	Vater-Stained Leaves (E A, and 4B) Irainage Patterns (B10) Iry-Season Water Table aturation Visible on Aer ieomorphic Position (D2 hallow Aquitard (D3) AC-Neutral Test (D5) taised Ant Mounds (D6) rost-Heave Hummocks	39) ( <b>MLRA 1, 2,</b> (C2) rial Imagery (C9) 2) ( <b>LRR A</b> ) (D7)
DROLOGY etland Hydrolog imary Indicators Surface Water High Water Tal Saturation (A3) Water Marks (E Sediment Depo Drift Deposits ( Algal Mat or Cr Iron Deposits ( Surface Soil Cr Inundation Visi Sparsely Vege eld Observation Inface Water Present cludes capillary f	(minimum of one (A1) ble (A2) ) 31) osits (B2) (B3) rust (B4) B5) racks (B6) ble on Aerial Ima tated Concave S s: sent? Yes nt? Yes ? fringe) Yes	gery (B7) urface (B8) No No	Water-Staine MLRA 1, 2, 4 Salt Crust (B Aquatic Inver Hydrogen Su Oxidized Rhi Roots (C3) Presence of Recent Iron I Soils (C6) Stunted or S (LRR A) Other (Expla	4A, and 4B) it1) rebrates (B ulfide Odor ( izospheres a Reduced Irc Reduction ir tressed Plan in in Remar :	13) C1) along Living on (C4) n Tilled nts (D1) ks)	•tland Hydr	Vater-Stained Leaves (E A, and 4B) Irainage Patterns (B10) Iry-Season Water Table aturation Visible on Aer ieomorphic Position (D2 hallow Aquitard (D3) AC-Neutral Test (D5) taised Ant Mounds (D6) rost-Heave Hummocks	39) ( <b>MLRA 1, 2,</b> (C2) rial Imagery (C9) 2) ( <b>LRR A</b> ) (D7)
DROLOGY etland Hydrolog imary Indicators Surface Water High Water Tal Saturation (A3) Water Marks (E Sediment Depo Drift Deposits ( Algal Mat or Cr Iron Deposits ( Surface Soil Cr Inundation Visi Sparsely Vege eld Observation Inface Water Present cludes capillary f	(minimum of one (A1) ble (A2) ) 31) osits (B2) (B3) rust (B4) B5) racks (B6) ble on Aerial Ima tated Concave S s: sent? Yes nt? Yes ? fringe) Yes	gery (B7) urface (B8) No No	Water-Staine MLRA 1, 2, 4 Salt Crust (B Aquatic Inver Hydrogen Su Oxidized Rhi Roots (C3) Presence of Recent Iron I Soils (C6) Stunted or S (LRR A) Other (Expla	4A, and 4B) it1) rebrates (B ulfide Odor ( izospheres a Reduced Irc Reduction ir tressed Plan in in Remar :	13) C1) along Living on (C4) n Tilled nts (D1) ks)	•tland Hydr	Vater-Stained Leaves (E A, and 4B) Irainage Patterns (B10) Iry-Season Water Table aturation Visible on Aer ieomorphic Position (D2 hallow Aquitard (D3) AC-Neutral Test (D5) taised Ant Mounds (D6) rost-Heave Hummocks	39) ( <b>MLRA 1, 2,</b> (C2) rial Imagery (C9) 2) ( <b>LRR A</b> ) (D7)

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Project/Site: Coopey Quarry	City/County: Multnom	ah County Sam	pling Date:	4/18/2016	la constante de la constante d
Applicant/Owner: ODOT Region 1	State:	OR Sampling Point:	<u>10 and 10 a</u>		
Investigator(s): Ken Sargent	Section, Township, R	ange: <u>13, T1N, R5E</u>			
Landform (hillslope, terrace, etc.): Terrace	Local relief (c	опсаve, convex, none):	concave	Slope (%):	2
Subregion (LRR):A	Lat: 45.56538 I	ong: <u>-122.16584</u>	Datum:		
Soil Map Unit Name: Sauvie silt Ioam		NWI class	sification:	Upland	
Are climatic / hydrologic conditions on the site typ	ical for this time of year?	Yes <u>x</u> No (If i	no, explain in	Remarks.)	
Are Vegetation, Soil, or Hydrolo	gy significantly dist	urbed? Are "Normal C	ircumstances	s" present? Yes <u>x</u>	No
Are Vegetation, Soil, or Hydrolo	gy naturally problem	matic? (If need	ed, explain a	ny answers in Remark	s.)

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

Hydrophytic Vegetation Present? Yes x No	[발표][[발표][[발표][[발표][[발표][[발표][[발표][[발표]
Hydric Soil Present? Yes No x	Is the Sampled Area within a Wetland? Yes No x
Wetland Hydrology Present? Yes x No	
Remarks: Site lacked hydric soils (gravel). The site had season	al standing water, and wetland vegetation growing basically hydroponically in shallow
aravel.	

	Absolute	Dominant	Indicator	Dominance Tes	t works	heet:	
<u>Tree Stratum</u> (Plot size:)	<u>% Cover</u>	Species?	<u>Status</u>	Number of Domir That Are OBL, F			3 (A)
1.				Total Number of			<u> </u>
2				Species Across A			3 (B)
3				Percent of Domin		ecies	
4				That Are OBL, F	ACW, o	r FAC:	100 (A/B)
		= Total Cove	r				
Sapling/Shrub Stratum (Plot size: )		10141 0010		Prevalence Inde	ex work	sheet:	
1. Populus balsamifera	30	Y S.	FAC	Total % Cover of	r.	Multiply b	iy:
2				OBL species		x1=	
3.				1		x2= _	
4						x3=	
5						x 4 =	
		= Total Cove	٢	UPL species		x 5 =	
Herb Stratum (Plot size: 3'sq )				Column Totals:			(B)
1. Schedonorus arundinaceus	10	Y	FAC	Column rotais.		. (^)	(0)
2. Agrostis stolinfera	20	Υ	FAC	Prevalence Index	<b>x</b> = B/A	=	3
3							
4				Hydrophytic Ve	getatio	n Indicator	s:
5				1 - Rapid Tes	t for Hy	drophytic V	egetation
6				X 2 - Dominanc	e Test i	s >50%	
7				X 3 - Prevalenc			
8		1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 		4 - Morpholog	jical Ad	aptations <sup>1</sup> (	Provide supporting
9	•			data in Rema			
10				5 - Wetland N			
11							ition <sup>1</sup> (Explain)
		= Total Cove	r	<sup>1</sup> Indicators of hyd	lric soil	and wetlan	d hydrology must
Woody Vine Stratum (Plot size:)				be present, unles	ss aistur	bea or proc	semauc.
1						1	
2				Hydrophytic			
		= Total Cove	r	Vegetation			
% Bare Ground in Herb Stratum	-			Present?	Yes	x No	
Remarks: Facultative plant community capable of groups o	owing in uplar	nd or wetland.					

SOIL							Sampling Point	10
Profile Desc	cription: (Describe	to the depth	needed to docum	ent the in	ndicator or	confirm the a	absence of indicators.)	°
Depth	Matrix			Redox Fe				
(inches)	Color (moist)	%	Color (moist)	%	Туре'	Loc <sup>2</sup>	Texture	Remarks
							Gravelly Silt	
	<u>10YR 2/1</u>						loam	
2+"							Rock	
						••	TOCK	
						· · · · ·		
								warmed the second se
								****
-								
<sup>1</sup> Type: C=C	oncentration, D=Depl	etion, RM=R	educed Matrix, CS=	=Covered	or Coated	Sand Grains,	<sup>2</sup> Location: PL=Pore	Lining, M=Matrix.
Hydric Soil	Indicators: (Applic	able to all L	RRs, unless other	wise note	ed.)	Ind	icators for Problemati	c Hydric Soils <sup>3</sup> :
Histoso	J (A4)		Sandy Redox (S5	5	•		2 cm Muck (A10)	•
	Epipedon (A2)		Stripped Matrix (S				Red Parent Material (TI	E-2)
		2002/101-01-00	Loamy Mucky Mi		(overat M		Very Shallow Dark Sur	
	listic (A3) on Sulfido (A4)	·			(aveahr M	LIVA ()		
	en Sulfide (A4)	o (A11)	Loamy Gleyed Ma				Other (Explain in Rema	ика)
	ed Below Dark Surfac )ark Surface (A12)	e (ATT)	Depleted Matrix (				3 malla street street street	(ta vanatat) 1
			Redox Dark Surfa		n		<sup>3</sup> Indicators of hydrophy	lic vegetation and
	Mucky Mineral (S1)		Depleted Dark Su		)		wetland hydrology mus unless disturbed or pro	
Sandy	Gleyed Matrix (S4)		Redox Depressio	ns (F8)	1		unless disturbed of pro	Diematic
Pactrictivo I.								
	ayer (if present):						N	N
Type:					Hydric	Soil Present?	Yes	No <u>x</u>
Depth (inc	thes):							
Remarks:								
HYDROLOG	βY							
	rology Indicators:					****		·
	ators (minimum of one	e required; ch	eck all that apply)			Seco	ndary Indicators (2 or m	ore required)
			Water-Staine	d Leaves	(B9) (exce	pt V	Vater-Stained Leaves (E	9) (MLRA 1, 2,
x Surface V	Vater (A1)		MLRA 1, 2, 4				A, and 4B)	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
	er Table (A2)		Salt Crust (B		,		Drainage Patterns (B10)	
Saturation			Aquatic Inver	tebrates (	(B13)	c	)ry-Season Water Table	(C2)
Water Ma			Hydrogen Su				Saturation Visible on Aer	
			Oxidized Rhi					5 5 ( )
Sediment	Deposits (B2)		Roots (C3)		g		Geomorphic Position (D2	?)
Drift Depo			Presence of I	Reduced	Iron (C4)		Shallow Aquitard (D3)	,
	()		Recent Iron F					
Algal Mat	or Crust (B4)		Soils (C6)			F	AC-Neutral Test (D5)	
· ••0 _• · ••0 t			Stunted or St	ressed Pl	lants (D1)			
Iron Depo	sits (B5)		(LRR A)	,	····· <b>··</b> ··	F	aised Ant Mounds (D6)	(LRR A)
	oil Cracks (B6)		Other (Éxplai	n in Rem	arks)		rost-Heave Hummocks	
	n Visible on Aerial Im	agery (B7)			,			<b>(</b> - · <b>)</b>
	Vegetated Concave S							
,		·						
Field Observa	ations:		AB 1.5		1			
Surface Water		No	x Depth (inches):					
Water Table F		X No	<u>x</u> Depth (inches): Depth (inches):		I.	Netland Hyde	ology Present? Yes	x No
Saturation Pre		INU	Deput (mones).	<u> </u>	I <b>'</b>		anadh i leachtt 162	
(includes capi		x No	Depth (inches):	0				
• •	· • ·					no) if availate		
Jescribe Recor	ded Data (stream gai	uye, monitori	ny well, aeriał photo	os, previo	us inspectio	nis), it availab	ie.	
Remarks: Dry								

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land in

inguist.

Project/Site: _C	oopey Quarry	Cit	y/County:	Multnomah	County	<u>/ Sam</u>	pling Date:	4/18/20	016	
Applicant/Owner:	ODOT Region 1			State: 0	R Sa	ampling Point:				
Investigator(s):	Ken Sargent		Section, To	ownship, Ran	ge: _1	13, T1N, R5E			n in 1965.	
Landform (hillslop	pe, terrace, etc.):	Terrace	Loo	cal relief (con	cave, co	onvex, none):	concave		Slope (%):	2
Subregion (LRR)	: <u>A</u>	La	t: 45.565	84 Lor	ig:	122.16546	Datum:			
Soil Map Unit Na	me: Sauvie silt lo	am				NWI clas	sification:	Upland		
Are climatic / hyd	rologic conditions o	n the site typical	for this time	e of year? Ye	s <u>x</u>	No (If	no, explain ir	n Remark	s.)	
Are Vegetation	, Soil	, or Hydrology	signifi	icantly disturb	ed?	Are "Normal C	ircumstance	s" presen	t? Yes <u>x</u>	No
Are Vegetation	, Soil	, or Hydrology	natura	ally problema	tic?	(If need	ed, explain a	ny answe	rs in Remarks	s.)

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

Hydrophytic Vegetation Present? Yes	No x			
Hydric Soil Present? Yes	No x	is the Sampled Area within a Wetland?	Yes	No x
Wetland Hydrotogy Present? Yes	x No	- 2월 2월 2일 1월 2일 월 2일 월 2월 20일 월 2월 2월 2일 월 2일 - 2일 - 일월 20일 - 1일 일월 20일 월 20일 월 20일 월 20일 월 2일 일 일 일 일 일 - 2일	a segur	
			14 C	
Remarks: Site lacked hydric soils (gravel).	The site had seasona	I standing water, and some vegetation growing		

	Absolute	Dominant	Indicator	Dominance Test worksheet:
Tree Stratum (Plot size:)	<u>% Cover</u>	Species?	<u>Status</u>	Number of Dominant Species
1.				That Are OBL, FACW, or FAC: <u>3</u> (A)
2				Total Number of Dominant Species Across All Strata: 3 (B)
3				Percent of Dominant Species
4				That Are OBL, FACW, or FAC:100 (A/B)
		= Total Cove	r	Prevalence Index worksheet:
Sapling/Shrub Stratum (Plot size:)	45	V	540	Total % Cover of: Multiply by:
1. Rubus armeniacus	15	1. 1. 1. 1. 1.	FAC	OBL species x1 =
2				FACW species x 2 =
3				
4				FAC species x 3 =
5		= Total Cove	г.	FACU species x 4 =
Herb Stratum (Plot size:)		. 1000 0000	•	UPL species x 5 =
1. Festuca rubra	50	al di <b>Y</b>	FAC	Column Totals: (A) (B)
2. Agrostis capillaris	30	Y	FAC	Prevalence Index = B/A =
3.				
4.				Hydrophytic Vegetation Indicators:
5				1 - Rapid Test for Hydrophytic Vegetation
6.		(1) (1) (1) (1) (1) (1) (1) (1) (1) (1)		× 2 - Dominance Test is >50%
7.				X 3 - Prevalence Index is ≤3.0 <sup>1</sup>
8.				4 - Morphological Adaptations <sup>1</sup> (Provide supporting
9				data in Remarks or on a separate sheet)
10.		1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 -		5 - Wetland Non-Vascular Plants
11				Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
		= Total Cove	r	<sup>1</sup> Indicators of hydric soit and wetland hydrology must
Woody Vine Stratum (Plot size:)				be present, unless disturbed or problematic.
1				
2				Hydrophytic
		= Total Cove	r	Vegetation
% Bare Ground in Herb Stratum				Present? Yes <u>x</u> No
				L.
Remarks: Facultative community capable of growing in upland	or wetland			
	or welland,			

Depth .	iption: (Describe to Matrix			Redox Feat				- ·
(inches)	Color (moist)	%	Color (moist)	%	Туре'	Loc <sup>2</sup>	Texture Gravelly Silt	Remarks
)-3"	10YR 2/2						loam	
}+"		*****				,	Rock	
		teres and the second						
	±							
Type: C=Con		etion, RM=R	educed Matrix, CS	S=Covered o	r Coated Sa	nd Grains,	<sup>2</sup> Location: PL=Pore	Lining, M=Matrix
Hydric Soil Ir	ndicators: (Applica	able to all L	RRs. unless othe	erwise noted	d.)	India	cators for Problema	tic Hydric Soils <sup>3</sup> :
Histosol (/			, Sandy Redox (S				cm Muck (A10)	
	pedon (A2)		Stripped Matrix				Red Parent Material (	
Black Hist	tic (A3) ı Sulfide (A4)	mennidia	Loamy Mucky M Loamy Gleyed M		except MLR		/ery Shallow Dark Su Other (Explain in Rem	
	Below Dark Surface	e (A11)	_ Depleted Matrix			(	Zitiel (Explain in Rem	iains)
	k Surface (A12)		Redox Dark Sur	face (F6)			Indicators of hydroph	
	ucky Mineral (S1) eyed Matrix (S4)		Depleted Dark S Redox Depressi				vetland hydrology mu Inless disturbed or pr	
								obicinate
-	er (if present):							
Туре:					Hydric Sol	il Present?	Yes	_ NoX
Denth (inche								
Depth (inche narks:	·s):				<u> </u>			
narks:	,				<u> </u>			
narks: DROLOGY etland Hydrol		required; ch			I		dary Indicators (2 or 1	
DROLOGY etland Hydrol imary Indicato	r logy Indicators: rs (minimum of one	required; ch	Water-Stain	ed Leaves (	B9) (except	W	ater-Stained Leaves (	
DROLOGY etland Hydrol mary Indicator Surface Wat	r logy Indicators: rs (minimum of one ter (A1)	required; ch	Water-Stain MLRA 1, 2,	ed Leaves ( 4A, and 4B)		Wa 4A	ater-Stained Leaves ( , and 4B)	B9) (MLRA 1, 2,
DROLOGY etland Hydrol imary Indicato Surface Wat High Water Saturation (/	, logy Indicators: rs (minimum of one ter (A1) Table (A2) A3)	required; ch	Water-Stain MLRA 1, 2, Salt Crust (I Aquatic Inve	ed Leaves ( <b>4A, and 4B</b> B11) ertebrates (B	) (13)	Wi 4A Dr Dr	ater-Stained Leaves ( <b>, and 4B</b> ) ainage Patterns (B10) y-Season Water Tabl	B9) <b>(MLRA 1, 2,</b> ) e (C2)
DROLOGY etland Hydrol mary Indicato Surface Wat High Water	, logy Indicators: rs (minimum of one ter (A1) Table (A2) A3)	required; ch	Water-Stain MLRA 1, 2, Salt Crust (I Aquatic Inve Hydrogen S	ed Leaves ( 4 <b>A, and 4B</b> ) B11) ertebrates (B Sulfide Odor (	) (C1)	Wi 4A Dr Dr	ater-Stained Leaves ( <b>, and 4B</b> ) ainage Patterns (B10)	B9) <b>(MLRA 1, 2,</b> ) e (C2)
DROLOGY etland Hydrol imary Indicato Surface Wat High Water Saturation (/	logy Indicators: rs (minimum of one ter (A1) Table (A2) A3) s (B1)	required; ch	Water-Stain MLRA 1, 2, Salt Crust (I Aquatic Inve Hydrogen S	ed Leaves ( <b>4A, and 4B</b> B11) ertebrates (B	) (C1)	Wa 4A Dr Dr Sa	ater-Stained Leaves ( <b>, and 4B</b> ) ainage Patterns (B10) y-Season Water Tabl	B9) (MLRA 1, 2, ) e (C2) erial Imagery (C9)
DROLOGY etland Hydrol imary Indicator Surface Wat High Water Saturation (A Water Marks	logy Indicators: rs (minimum of one ter (A1) Table (A2) A3) s (B1) eposits (B2)	required; ch	Water-Stain MLRA 1, 2, Salt Crust (I Aquatic Inve Hydrogen S Oxidized Rh Roots (C3) Presence of	ed Leaves () 4 <b>A, and 4B</b> B11) ertebrates (B Sulfide Odor ( hizospheres f Reduced In	) (C1) along Living on (C4)		ater-Stained Leaves ( <b>, and 4B</b> ) ainage Patterns (B10 y-Season Water Tabl turation Visible on Ae	B9) (MLRA 1, 2, ) e (C2) erial Imagery (C9)
DROLOGY etland Hydrol imary Indicato Surface Wat High Water Saturation (/ Water Marks Sediment De Drift Deposit	logy Indicators: rs (minimum of one ter (A1) Table (A2) A3) s (B1) eposits (B2) ts (B3)	required; cl	Water-Stain MLRA 1, 2, Salt Crust (I Aquatic Inve Hydrogen S Oxidized Rh Roots (C3) Presence of Recent Iron	ed Leaves ( <b>4A, and 4B</b> B11) ertebrates (B Sulfide Odor ( hizospheres	) (C1) along Living on (C4)		ater-Stained Leaves ( a, and 4B) ainage Patterns (B10 y-Season Water Tabl turation Visible on Ae comorphic Position (D allow Aquitard (D3)	B9) (MLRA 1, 2, ) e (C2) erial Imagery (C9)
DROLOGY etland Hydrol imary Indicato Surface Wat High Water Saturation (/ Water Marks Sediment De Drift Deposit Algal Mat or	logy Indicators: rs (minimum of one ter (A1) Table (A2) A3) s (B1) eposits (B2) ts (B3) Crust (B4)	required; ch	Water-Stain MLRA 1, 2, Salt Crust (I Aquatic Inve Hydrogen S Oxidized Rh Roots (C3) Presence of Recent Iron Soils (C6) Stunted or S	ed Leaves () 4 <b>A, and 4B</b> B11) ertebrates (B Sulfide Odor ( hizospheres f Reduced In	) (C1) along Living on (C4) n Tilled		ater-Stained Leaves ( a, and 4B) ainage Patterns (B10) y-Season Water Tabl turation Visible on Ae comorphic Position (D allow Aquitard (D3) C-Neutral Test (D5)	B9) (MLRA 1, 2, ) e (C2) srial Imagery (C9) )2)
DROLOGY etland Hydrol mary Indicator Surface Wat High Water Saturation (/ Water Marks Sediment De Drift Deposit Algal Mat or Iron Deposit	r logy Indicators: rs (minimum of one ter (A1) Table (A2) A3) s (B1) eposits (B2) ts (B3) Crust (B4) rs (B5)	required; ch	Water-Stain MLRA 1, 2, Salt Crust (I Aquatic Inve Hydrogen S Oxidized Rt Roots (C3) Presence of Recent Iron Soils (C6) Stunted or S (LRR A)	ed Leaves (I 4A, and 4B B11) ertebrates (B Sulfide Odor ( hizospheres f Reduced Ir Reduction in Stressed Pla	) (C1) along Living on (C4) n Tilled nts (D1)		ater-Stained Leaves ( a, and 4B) ainage Patterns (B10) y-Season Water Tabl turation Visible on Ae comorphic Position (D allow Aquitard (D3) AC-Neutral Test (D5) vised Ant Mounds (D6)	B9) (MLRA 1, 2, ) e (C2) mal Imagery (C9) )2)
DROLOGY etland Hydrol mary Indicator Surface Wat High Water Saturation (/ Water Marks Sediment De Drift Deposit Algal Mat or Iron Deposit Surface Soil Inundation V	/ logy Indicators: irs (minimum of one ter (A1) Table (A2) A3) s (B1) eposits (B2) ts (B3) Crust (B4) is (B5) I Cracks (B6) /isible on Aerial Ima	gery (B7)	Water-Stain MLRA 1, 2, Salt Crust (I Aquatic Inve Hydrogen S Oxidized Rt Roots (C3) Presence of Recent Iron Soils (C6) Stunted or S (LRR A)	ed Leaves (I 4A, and 4B B11) ertebrates (B Sulfide Odor ( nizospheres f Reduced Irr Reduction in	) (C1) along Living on (C4) n Tilled nts (D1)		ater-Stained Leaves ( a, and 4B) ainage Patterns (B10) y-Season Water Tabl turation Visible on Ae comorphic Position (D allow Aquitard (D3) C-Neutral Test (D5)	B9) (MLRA 1, 2, ) e (C2) mal Imagery (C9) )2)
narks: DROLOGY etland Hydrol imary Indicator Surface Wat High Water Saturation (/ Water Marks Sediment De Drift Deposit Algal Mat or Iron Deposit Surface Soil Inundation V	rs (minimum of one ter (A1) Table (A2) A3) s (B1) eposits (B2) ts (B3) Crust (B4) is (B5)	gery (B7)	Water-Stain MLRA 1, 2, Salt Crust (I Aquatic Inve Hydrogen S Oxidized Rt Roots (C3) Presence of Recent Iron Soils (C6) Stunted or S (LRR A)	ed Leaves (I 4A, and 4B B11) ertebrates (B Sulfide Odor ( hizospheres f Reduced Ir Reduction in Stressed Pla	) (C1) along Living on (C4) n Tilled nts (D1)		ater-Stained Leaves ( a, and 4B) ainage Patterns (B10) y-Season Water Tabl turation Visible on Ae comorphic Position (D allow Aquitard (D3) AC-Neutral Test (D5) vised Ant Mounds (D6)	B9) (MLRA 1, 2, ) e (C2) mal Imagery (C9) )2)
narks: DROLOGY etland Hydrol imary Indicator Surface Wat High Water Saturation (/ Water Marks Sediment De Drift Deposit Algal Mat or Iron Deposit Surface Soil Inundation V Sparsely Ver	r logy Indicators: irs (minimum of one ter (A1) Table (A2) A3) s (B1) eposits (B2) ts (B3) Crust (B4) is (B5) Cracks (B6) /isible on Aerial Ima igetated Concave Si ions:	gery (B7) urface (B8)	Water-Stain MLRA 1, 2, Salt Crust (I Aquatic Inve Hydrogen S Oxidized Rt Roots (C3) Presence of Recent Iron Soils (C6) Stunted or S (LRR A) Other (Expla	ed Leaves (I 4A, and 4B B11) ertebrates (B Sulfide Odor ( hizospheres f Reduced Ird Reduction in Stressed Pla ain in Remar	) (C1) along Living on (C4) n Tilled nts (D1)		ater-Stained Leaves ( a, and 4B) ainage Patterns (B10) y-Season Water Tabl turation Visible on Ae comorphic Position (D allow Aquitard (D3) AC-Neutral Test (D5) vised Ant Mounds (D6)	B9) (MLRA 1, 2, ) e (C2) mal Imagery (C9) )2)
narks: DROLOGY etland Hydrol imary Indicator Surface Water Saturation (/ Water Marks Sediment De Drift Deposit Algal Mat or Iron Deposit Surface Soil Inundation V Sparsely Ver eld Observation Irace Water P	Iogy Indicators: Irs (minimum of one ter (A1) Table (A2) A3) s (B1) eposits (B2) ts (B3) Crust (B4) S (B5) Cracks (B6) /isible on Aerial Ima getated Concave So fons: Present? Yes	gery (B7) urface (B8) No	Water-Stain MLRA 1, 2, Salt Crust (I Aquatic Inve Hydrogen S Oxidized Rt Roots (C3) Presence of Recent Iron Soils (C6) Stunted or S (LRR A) Other (Explain X Depth (inches	ed Leaves (i <b>4A, and 4B</b> B11) ertebrates (B sulfide Odor ( hizospheres f Reduced Iro Reduction in Stressed Pla ain in Remar	) (C1) along Living on (C4) n Tilled nts (D1) tks)	Wa Dr Dr Sa Ge FA FA Fra	ater-Stained Leaves ( a, and 4B) ainage Patterns (B10) y-Season Water Table turation Visible on Ae comorphic Position (D allow Aquitard (D3) AC-Neutral Test (D5) nised Ant Mounds (D6 post-Heave Hummocks	B9) (MLRA 1, 2, ) e (C2) mail Imagery (C9) )2) )2) )3) (LRR A) s (D7)
DROLOGY etland Hydrol imary Indicato Surface Wate High Water Saturation (/ Water Marks Sediment De Drift Deposit Algal Mat or Iron Deposit Surface Soil Inundation V Sparsely Ver eld Observation Irface Water Presenturation Present	logy Indicators: rs (minimum of one ter (A1) Table (A2) A3) s (B1) eposits (B2) ts (B3) Crust (B4) rs (B5) Crust (B4) is (B5) Cracks (B6) /isible on Aerial Ima getated Concave Si cons: Present? Yes sent? Yes	gery (B7) urface (B8) No	Water-Stain     MLRA 1, 2,     Salt Crust (I     Aquatic Inve     Hydrogen S     Oxidized Rh     Roots (C3)     Presence of     Recent Iron     Soils (C6)     Stunted or S     (LRR A)     Other (Explain      x     Depth (inches     x     Depth (inches     x     )	ed Leaves ( <b>4A, and 4B</b> B11) ertebrates (B Sulfide Odor ( hizospheres) f Reduced Irr Reduction in Stressed Pla airr in Remar	) (C1) along Living on (C4) n Tilled nts (D1) tks)	Wa Dr Dr Sa Ge FA FA Fra	ater-Stained Leaves ( a, and 4B) ainage Patterns (B10) y-Season Water Table turation Visible on Ae comorphic Position (D allow Aquitard (D3) AC-Neutral Test (D5) nised Ant Mounds (D6 post-Heave Hummocks	B9) (MLRA 1, 2, ) e (C2) mal Imagery (C9) )2)
narks: DROLOGY etland Hydrol imary Indicator Surface Water Saturation (/ Water Marks Sediment De Drift Deposit Algal Mat or Iron Deposit Surface Soil Inundation V Sparsely Ver eld Observation Irface Water Pre- ater Table Pre- cludes capillar	logy Indicators: rs (minimum of one ter (A1) Table (A2) A3) s (B1) eposits (B2) ts (B3) Crust (B4) rs (B5) Crust (B4) is (B5) Cracks (B6) /isible on Aerial Ima getated Concave Si cons: Present? Yes sent? Yes	gery (B7) urface (B8) No No 2 No	Water-Stain     MLRA 1, 2,     Salt Crust (I     Aquatic Inve     Hydrogen S     Oxidized Rh     Roots (C3)     Presence of     Recent Iron     Soils (C6)     Stunted or S     (LRR A)     Other (Explain      x Depth (inchess     Depth (	A constraints of the second se	) (C1) along Living on (C4) n Tilled nts (D1) tks)	Wa           4A           Dr           Dr           Sa	ater-Stained Leaves ( a, and 4B) ainage Patterns (B10) y-Season Water Tabl turation Visible on Ae comorphic Position (D allow Aquitard (D3) aC-Neutral Test (D5) bised Ant Mounds (D6 bost-Heave Hummocks logy Present? Ye	B9) (MLRA 1, 2, ) e (C2) mail Imagery (C9) )2) )2) )3) (LRR A) s (D7)
DROLOGY etland Hydrol imary Indicato Surface Water High Water Saturation (/ Water Marks Sediment De Drift Deposit Algal Mat or Iron Deposit Surface Soil Inundation V Sparsely Ver etd Observation Inface Water P ater Table Pre- cludes capillar	logy Indicators: rs (minimum of one ter (A1) Table (A2) A3) s (B1) eposits (B2) ts (B3) Crust (B4) rs (B5) Crust (B4) is (B5) Crust (B6) /isible on Aerial Ima getated Concave Si ons: Present? Yes sent? Yes ent? ry fringe) Yes	gery (B7) urface (B8) No No 2 No	Water-Stain     MLRA 1, 2,     Salt Crust (I     Aquatic Inve     Hydrogen S     Oxidized Rh     Roots (C3)     Presence of     Recent Iron     Soils (C6)     Stunted or S     (LRR A)     Other (Explain      x Depth (inchess     Depth (	A constraints of the second se	) (C1) along Living on (C4) n Tilled nts (D1) tks)	Wa           4A           Dr           Dr           Sa	ater-Stained Leaves ( a, and 4B) ainage Patterns (B10) y-Season Water Tabl turation Visible on Ae comorphic Position (D allow Aquitard (D3) aC-Neutral Test (D5) bised Ant Mounds (D6 bost-Heave Hummocks logy Present? Ye	B9) (MLRA 1, 2, ) e (C2) mail Imagery (C9) )2) )2) )3) (LRR A) s (D7)
DROLOGY etland Hydrol imary Indicato Surface Water High Water Saturation (/ Water Marks Sediment De Drift Deposit Algal Mat or Iron Deposit Surface Soil Inundation V Sparsely Ver etd Observath Inface Water P ater Table Pre- turation Prese cludes capillar	logy Indicators: rs (minimum of one ter (A1) Table (A2) A3) s (B1) eposits (B2) ts (B3) Crust (B4) rs (B5) Crust (B4) is (B5) Crust (B6) /isible on Aerial Ima getated Concave Si ons: Present? Yes sent? Yes ent? ry fringe) Yes	gery (B7) urface (B8) No No 2 No	Water-Stain     MLRA 1, 2,     Salt Crust (I     Aquatic Inve     Hydrogen S     Oxidized Rh     Roots (C3)     Presence of     Recent Iron     Soils (C6)     Stunted or S     (LRR A)     Other (Explain      x Depth (inchess     Depth (	A constraints of the second se	) (C1) along Living on (C4) n Tilled nts (D1) tks)	Wa           4A           Dr           Dr           Sa          Sa	ater-Stained Leaves ( a, and 4B) ainage Patterns (B10) y-Season Water Tabl turation Visible on Ae comorphic Position (D allow Aquitard (D3) aC-Neutral Test (D5) bised Ant Mounds (D6 bost-Heave Hummocks logy Present? Ye	B9) (MLRA 1, 2, ) e (C2) mail Imagery (C9) )2) )2) )3) (LRR A) s (D7)

Section of the sectio

Project/Site: Coopey Quarry	City/County:	Multnomah Cou	inty Sampling Date:	4/18/2016
Applicant/Owner: ODOT Region 1		State: OR	Sampling Point: 12	
Investigator(s): Ken Sargent	Section, 7	Fownship, Range:	13, T1N, R5E	
Landform (hillslope, terrace, etc.): Terrace	Lo	cal relief (concave	, convex, none): <u>concave</u>	Slope (%):
Subregion (LRR): _A	Lat: 45.56	584 Long:	-122.16546 Datum:	
Soil Map Unit Name: Sauvie silt loam		전 철말 한 한 것 같은 것 같이 했다.	NWI classification:	Upland
Are climatic / hydrologic conditions on the site typ	oical for this tim	ne of year? Yes	x No (If no, explain i	n Remarks.)
Are Vegetation, Soil, or Hydrolo	gy signi	ificantly disturbed?	Are "Normal Circumstance	es" present? Yes <u>x</u> No
Are Vegetation, Soil, or Hydrolo	gy natu	rally problematic?	(If needed, explain a	any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <u>No x</u>		
Hydric Soil Present?     Yes     No     x       Wetland Hydrology Present?     Yes     x     No	Is the Sampled Area within a Wetland? Yes	s <u>X</u>
Remarks: Site lacked hydric soils (gravel). The site had seasona	I standing water and no vegetation growing	

	Absolute Dominant Indicator	Dominance Test worksheet:
<u>Tree Stratum</u> (Plot size: ) 1	<u>% Cover Species? Status</u>	Number of Dominant Species That Are OBL, FACW, or FAC: (A)
2		Total Number of Dominant Species Across All Strata: (B)
3.		Percent of Dominant Species
4		That Are OBL, FACW, or FAC: (A/B)
	= Total Cover	
Sapling/Shrub Stratum (Plot size:)		Prevalence Index worksheet:
1	· · · · ·	Total % Cover of: Multiply by:
2.		OBL species x 1 =
3.		FACW species x 2 =
4.		FAC species x 3 =
5.		FACU species x 4 =
	= Total Cover	UPL species x 5 =
Herb Stratum (Plot size:)		Column Totals: (A) (B)
1		
2		Prevalence Index = B/A =
3		
4	A STALL AND A STALL AN	Hydrophytic Vegetation Indicators:
5.		1 - Rapid Test for Hydrophytic Vegetation
6.		2 - Dominance Test is >50%
7		3 - Prevalence Index is ≤3.0 <sup>1</sup>
8		4 - Morphological Adaptations <sup>1</sup> (Provide supporting
9.		data in Remarks or on a separate sheet)
10		5 - Wetland Non-Vascular Plants <sup>1</sup>
11		Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
	= Total Cover	<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic,
Woody Vine Stratum (Plot size:)		be present, unless disturbed or problematic.
1		
2		Hydrophytic
	= Total Cover	Vegetation
% Bare Ground in Herb Stratum	_	Present? Yes <u>No x</u>
Remarks:		
No Vegetation		

			Sampling Point	; 12
Profile Description: (Describe to the o			the absence of indicators.)	) .
Depth <u>Matrix</u>	Redox Featu		<del></del>	- ·
(inches) Color (moist) %	Color (moist) %		c <sup>2</sup> Texture	Remarks
			Gravelly Silt	
0-3" 10YR 2/2			loam	
3+"			Rock	
the second se				
<sup>1</sup> Type: C=Concentration, D=Depletion, F	RM=Reduced Matrix, CS=Covered or	Coated Sand Gra	ins. <sup>2</sup> Location: PL=Pore	Lining, M=Matrix.
Hydric Soil Indicators: (Applicable to	all LRRs, unless otherwise noted.	3	Indicators for Problemati	c Hydric Soils <sup>3</sup> :
•		7		e riguine come r
Histosol (A1)	Sandy Redox (S5)		2 cm Muck (A10)	
Histic Epipedon (A2)	Stripped Matrix (S6)		Red Parent Material (T	
Black Histic (A3)	Loamy Mucky Mineral (F1) (e	xcept MLRA 1)	Very Shallow Dark Sur	tace (TE12)
Hydrogen Sulfide (A4)	Loamy Gleyed Matrix (F2)		Other (Explain in Rema	arks)
Depleted Below Dark Surface (A11)				
Thick Dark Surface (A12)	Redox Dark Surface (F6)		<sup>3</sup> Indicators of hydrophy	
Sandy Mucky Mineral (S1)	Depleted Dark Surface (F7)		wetland hydrology mus	t be present,
Sandy Gleyed Matrix (S4)	Redox Depressions (F8)		unless disturbed or pro	blematic
Restrictive Layer (if present):				
Туре:		Hydric Soil Pres	ent? Yes	No x
				NO <u> </u>
Depth (inches):				
YDROLOGY				
YDROLOGY Wetland Hydrology Indicators:				
	ed; check all that apply)		Secondary Indicators (2 or m	
Vetland Hydrology Indicators:	ed; check all that apply) Water-Stained Leaves (B		Secondary Indicators (2 or m Water-Stained Leaves (E	
Vetland Hydrology Indicators: Primary Indicators (minimum of one requir	Water-Stained Leaves (B			
Vetland Hydrology Indicators: Primary Indicators (minimum of one requir Surface Water (A1)	Water-Stained Leaves (B MLRA 1, 2, 4A, and 4B)		Water-Stained Leaves (E 4A, and 4B)	39) (MLRA 1, 2,
Vetland Hydrology Indicators: Primary Indicators (minimum of one requir Surface Water (A1) High Water Table (A2)	Water-Stained Leaves (B MLRA 1, 2, 4A, and 4B) Salt Crust (B11)	9) (except –	Water-Stained Leaves (E 4A, and 4B) Drainage Patterns (B10)	39) (MLRA 1, 2,
Vetland Hydrology Indicators: Primary Indicators (minimum of one requir Surface Water (A1) High Water Table (A2) Saturation (A3)	Water-Stained Leaves (B MLRA 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B1	9) (except 	Water-Stained Leaves (E 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table	39) ( <b>MLRA 1, 2,</b> : (C2)
Vetland Hydrology Indicators: rimary Indicators (minimum of one requir Surface Water (A1) High Water Table (A2)	Water-Stained Leaves (B MLRA 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B1 Hydrogen Sulfide Odor (0	9) (except 	Water-Stained Leaves (E 4A, and 4B) Drainage Patterns (B10)	39) ( <b>MLRA 1, 2,</b> : (C2)
Vetland Hydrology Indicators: Primary Indicators (minimum of one requir Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1)	Water-Stained Leaves (B MLRA 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B1 Hydrogen Sulfide Odor (0 Oxidized Rhizospheres a	9) (except 	Water-Stained Leaves (E <b>4A, and 4B</b> ) Drainage Patterns (B10) Dry-Season Water Table Saturation Visible on Aer	39) (MLRA 1, 2, 9 (C2) rial Imagery (C9)
Vetland Hydrology Indicators: Irimary Indicators (minimum of one requir Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2)	Water-Stained Leaves (B MLRA 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B1 Hydrogen Sulfide Odor (C Oxidized Rhizospheres a Roots (C3)	9) (except	Water-Stained Leaves (E <b>4A, and 4B</b> ) Drainage Patterns (B10) Dry-Season Water Table Saturation Visible on Aer Geomorphic Position (D2	39) (MLRA 1, 2, 9 (C2) rial Imagery (C9)
Vetland Hydrology Indicators: Primary Indicators (minimum of one requir Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1)	Water-Stained Leaves (B MLRA 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B1 Hydrogen Sulfide Odor (0 Oxidized Rhizospheres a Roots (C3) Presence of Reduced Iro	9) (except 	Water-Stained Leaves (E <b>4A, and 4B</b> ) Drainage Patterns (B10) Dry-Season Water Table Saturation Visible on Aer	39) (MLRA 1, 2, 9 (C2) rial Imagery (C9)
Vetland Hydrology Indicators: 'rimary Indicators (minimum of one requir Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3)	Water-Stained Leaves (B MLRA 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B1 Hydrogen Sulfide Odor (C Oxidized Rhizospheres a Roots (C3) Presence of Reduced Iro Recent Iron Reduction in	9) (except 	Water-Stained Leaves (E <b>4A, and 4B</b> ) Drainage Patterns (B10) Dry-Season Water Table Saturation Visible on Aer Geomorphic Position (D2 Shallow Aquitard (D3)	39) (MLRA 1, 2, 9 (C2) rial Imagery (C9)
Vetland Hydrology Indicators: Primary Indicators (minimum of one requir Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2)	Water-Stained Leaves (B MLRA 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B1 Hydrogen Sulfide Odor (C Oxidized Rhizospheres a Roots (C3) Presence of Reduced Iro Recent Iron Reduction in Soils (C6)	9) (except	Water-Stained Leaves (E <b>4A, and 4B</b> ) Drainage Patterns (B10) Dry-Season Water Table Saturation Visible on Aer Geomorphic Position (D2	39) (MLRA 1, 2, 9 (C2) rial Imagery (C9)
Vetland Hydrology Indicators: 'rimary Indicators (minimum of one requir — Surface Water (A1) — High Water Table (A2) — Saturation (A3) — Water Marks (B1) _ Sediment Deposits (B2) _ Drift Deposits (B3) _ Algal Mat or Crust (B4)	Water-Stained Leaves (B MLRA 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B1 Hydrogen Sulfide Odor (C Oxidized Rhizospheres a Roots (C3) Presence of Reduced Iro Recent Iron Reduction in Soils (C6) Stunted or Stressed Plan	9) (except	Water-Stained Leaves (E 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table Saturation Visible on Aer Geomorphic Position (D2 Shallow Aquitard (D3) FAC-Neutral Test (D5)	39) ( <b>MLRA 1, 2,</b> : (C2) rial Imagery (C9) 2)
Vetland Hydrology Indicators: 'rimary Indicators (minimum of one requir — Surface Water (A1) — High Water Table (A2) — Saturation (A3) — Water Marks (B1) — Sediment Deposits (B2) — Drift Deposits (B3) — Algal Mat or Crust (B4) — Iron Deposits (B5)	Water-Stained Leaves (B MLRA 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B1 Hydrogen Sulfide Odor (( Oxidized Rhizospheres a Roots (C3) Presence of Reduced Iro Recent Iron Reduction in Soils (C6) Stunted or Stressed Plan (LRR A)	9) (except	Water-Stained Leaves (E 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table Saturation Visible on Aer Geomorphic Position (D2 Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6)	39) (MLRA 1, 2, e (C2) rial Imagery (C9) 2) • (LRR A)
Vetland Hydrology Indicators: 'rimary Indicators (minimum of one requir — Surface Water (A1) — High Water Table (A2) — Saturation (A3) — Water Marks (B1) — Sediment Deposits (B2) — Drift Deposits (B3) — Algal Mat or Crust (B4) — Iron Deposits (B5) — Surface Soil Cracks (B6)	Water-Stained Leaves (B MLRA 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B1 Hydrogen Sulfide Odor (( Oxidized Rhizospheres a Roots (C3) Presence of Reduced Iro Recent Iron Reduction in Soils (C6) Stunted or Stressed Plan (LRR A) Other (Explain in Remark	9) (except	Water-Stained Leaves (E 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table Saturation Visible on Aer Geomorphic Position (D2 Shallow Aquitard (D3) FAC-Neutral Test (D5)	39) (MLRA 1, 2, e (C2) rial Imagery (C9) 2) • (LRR A)
Vetland Hydrology Indicators:         'rimary Indicators (minimum of one requir	Water-Stained Leaves (B MLRA 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B1 Hydrogen Sulfide Odor (( Oxidized Rhizospheres a Roots (C3) Presence of Reduced Iro Recent Iron Reduction in Soils (C6) Stunted or Stressed Plan (LRR A) Other (Explain in Remark B7)	9) (except	Water-Stained Leaves (E 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table Saturation Visible on Aer Geomorphic Position (D2 Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6)	39) (MLRA 1, 2, e (C2) rial Imagery (C9) 2) • (LRR A)
Vetland Hydrology Indicators: 'rimary Indicators (minimum of one requir — Surface Water (A1) — High Water Table (A2) — Saturation (A3) — Water Marks (B1) — Sediment Deposits (B2) — Drift Deposits (B3) — Algal Mat or Crust (B4) — Iron Deposits (B5) — Surface Soil Cracks (B6)	Water-Stained Leaves (B MLRA 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B1 Hydrogen Sulfide Odor (( Oxidized Rhizospheres a Roots (C3) Presence of Reduced Iro Recent Iron Reduction in Soils (C6) Stunted or Stressed Plan (LRR A) Other (Explain in Remark B7)	9) (except	Water-Stained Leaves (E 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table Saturation Visible on Aer Geomorphic Position (D2 Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6)	39) (MLRA 1, 2, e (C2) rial Imagery (C9) 2) • (LRR A)
Vetland Hydrology Indicators: Primary Indicators (minimum of one requir Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6) Inundation Visible on Aerial Imagery ( Sparsely Vegetated Concave Surface	Water-Stained Leaves (B MLRA 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B1 Hydrogen Sulfide Odor (( Oxidized Rhizospheres a Roots (C3) Presence of Reduced Iro Recent Iron Reduction in Soils (C6) Stunted or Stressed Plan (LRR A) Other (Explain in Remark B7)	9) (except	Water-Stained Leaves (E 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table Saturation Visible on Aer Geomorphic Position (D2 Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6)	39) (MLRA 1, 2, e (C2) rial Imagery (C9) 2) • (LRR A)
Vetland Hydrology Indicators:         Primary Indicators (minimum of one requir         Surface Water (A1)         High Water Table (A2)         Saturation (A3)         Water Marks (B1)         Sediment Deposits (B2)         Drift Deposits (B3)         Algal Mat or Crust (B4)         Iron Deposits (B5)         Surface Soil Cracks (B6)         Inundation Visible on Aerial Imagery (Imagery Vegetated Concave Surface	Water-Stained Leaves (B MLRA 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B1 Hydrogen Sulfide Odor (C Oxidized Rhizospheres a Roots (C3) Presence of Reduced Iro Recent Iron Reduction in Soils (C6) Stunted or Stressed Plan (LRR A) Other (Explain in Remark B7) (B8)	9) (except	Water-Stained Leaves (E 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table Saturation Visible on Aer Geomorphic Position (D2 Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6)	39) (MLRA 1, 2, e (C2) rial Imagery (C9) 2) • (LRR A)
Vetland Hydrology Indicators:         'rimary Indicators (minimum of one requir	Water-Stained Leaves (B MLRA 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B1 Hydrogen Sulfide Odor (( Oxidized Rhizospheres a Roots (C3) Presence of Reduced Iro Recent Iron Reduction in Soils (C6) Stunted or Stressed Plan (LRR A) Other (Explain in Remark B7) (B8)	9) (except	Water-Stained Leaves (E 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table Saturation Visible on Aer Geomorphic Position (D2 Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) Frost-Heave Hummocks	39) ( <b>MLRA 1, 2,</b> rial Imagery (C9) 2) ( <b>LRR A</b> ) (D7)
Vetland Hydrology Indicators:         Primary Indicators (minimum of one requir         Primary Indicators (minimum of one requir         Surface Water (A1)         High Water Table (A2)         Saturation (A3)         Water Marks (B1)         Sediment Deposits (B2)         Drift Deposits (B3)         Algal Mat or Crust (B4)         Iron Deposits (B5)         Surface Soil Cracks (B6)         Inundation Visible on Aerial Imagery (in Sparsely Vegetated Concave Surface         Field Observations:         Surface Water Present?         Yes         Yeter Table Present?	Water-Stained Leaves (B MLRA 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B1 Hydrogen Sulfide Odor (C Oxidized Rhizospheres a Roots (C3) Presence of Reduced Iro Recent Iron Reduction in Soils (C6) Stunted or Stressed Plan (LRR A) Other (Explain in Remark B7) (B8)	9) (except	Water-Stained Leaves (E 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table Saturation Visible on Aer Geomorphic Position (D2 Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) Frost-Heave Hummocks	39) ( <b>MLRA 1, 2,</b> e (C2) rial Imagery (C9) 2) • ( <b>LRR A</b> )
Vetland Hydrology Indicators:         Primary Indicators (minimum of one requir         Primary Indicators (minimum of one requir         Strace Water (A1)         High Water Table (A2)         Saturation (A3)         Water Marks (B1)         Sediment Deposits (B2)         Drift Deposits (B3)         Algal Mat or Crust (B4)         Iron Deposits (B5)         Surface Soil Cracks (B6)         Inundation Visible on Aerial Imagery (Indicators:         Surface Water Present?         Yes         Stater Table Present?         Yes         Saturation Present?	Water-Stained Leaves (B         MLRA 1, 2, 4A, and 4B)         Salt Crust (B11)         Aquatic Invertebrates (B1         Hydrogen Sulfide Odor (C         Oxidized Rhizospheres a         Roots (C3)         Presence of Reduced Iro         Recent Iron Reduction in         Soils (C6)         Stunted or Stressed Plan         (LRR A)         Other (Explain in Remark         B7)         (B8)	9) (except	Water-Stained Leaves (E 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table Saturation Visible on Aer Geomorphic Position (D2 Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) Frost-Heave Hummocks	39) ( <b>MLRA 1, 2,</b> e (C2) rial Imagery (C9) 2) e ( <b>LRR A</b> ) (D7)
Vetland Hydrology Indicators:         Primary Indicators (minimum of one requir         Surface Water (A1)         High Water Table (A2)         Saturation (A3)         Water Marks (B1)         Sediment Deposits (B2)         Drift Deposits (B3)         Algal Mat or Crust (B4)         Iron Deposits (B5)         Surface Soil Cracks (B6)         Inundation Visible on Aerial Imagery (Interfection Sparsely Vegetated Concave Surface         Field Observations:         Surface Water Present?	Water-Stained Leaves (B         MLRA 1, 2, 4A, and 4B)         Salt Crust (B11)         Aquatic Invertebrates (B1         Hydrogen Sulfide Odor (C         Oxidized Rhizospheres a         Roots (C3)         Presence of Reduced Iro         Roots (C6)         Stunted or Stressed Plan         (LRR A)         Other (Explain in Remark         B7)         (B8)	9) (except	Water-Stained Leaves (E 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table Saturation Visible on Aer Geomorphic Position (D2 Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) Frost-Heave Hummocks	39) ( <b>MLRA 1, 2,</b> e (C2) rial Imagery (C9) 2) e ( <b>LRR A</b> ) (D7)
Vetland Hydrology Indicators:         Primary Indicators (minimum of one requir         Primary Indicators (minimum of one requir         Strace Water (A1)         High Water Table (A2)         Saturation (A3)         Water Marks (B1)         Sediment Deposits (B2)         Drift Deposits (B3)         Algal Mat or Crust (B4)         Iron Deposits (B5)         Surface Soil Cracks (B6)         Inundation Visible on Aerial Imagery (Indicators:         Surface Water Present?         Yes         Stater Table Present?         Yes         Saturation Present?	Water-Stained Leaves (B         MLRA 1, 2, 4A, and 4B)         Salt Crust (B11)         Aquatic Invertebrates (B1         Hydrogen Sulfide Odor (C         Oxidized Rhizospheres a         Roots (C3)         Presence of Reduced Iro         Recent Iron Reduction in         Soils (C6)         Stunted or Stressed Plan         (LRR A)         Other (Explain in Remark         B7)         (B8)         No       x         Depth (inches):         No       Depth (inches):         X       Depth (inches):	9) (except	Water-Stained Leaves (E         4A, and 4B)         Drainage Patterns (B10)         Dry-Season Water Table         Saturation Visible on Aer         Geomorphic Position (D2         Shallow Aquitard (D3)         FAC-Neutral Test (D5)         Raised Ant Mounds (D6)         Frost-Heave Hummocks	39) ( <b>MLRA 1, 2,</b> rial Imagery (C9) 2) ( <b>LRR A</b> ) (D7)
Vetland Hydrology Indicators:         Primary Indicators (minimum of one requir         Primary Indicators (minimum of one requir         Strace Water (A1)         High Water Table (A2)         Saturation (A3)         Water Marks (B1)         Sediment Deposits (B2)         Drift Deposits (B3)         Algal Mat or Crust (B4)         Iron Deposits (B5)         Surface Soil Cracks (B6)         Inundation Visible on Aerial Imagery (I         Sparsely Vegetated Concave Surface         Field Observations:         Surface Water Present?         Yes         Saturation Present?         Yes         Saturation Present?         Yes         Saturation Present?	Water-Stained Leaves (B         MLRA 1, 2, 4A, and 4B)         Salt Crust (B11)         Aquatic Invertebrates (B1         Hydrogen Sulfide Odor (C         Oxidized Rhizospheres a         Roots (C3)         Presence of Reduced Iro         Recent Iron Reduction in         Soils (C6)         Stunted or Stressed Plan         (LRR A)         Other (Explain in Remark         B7)         (B8)         No       x         Depth (inches):         No       Depth (inches):         X       Depth (inches):	9) (except	Water-Stained Leaves (E         4A, and 4B)         Drainage Patterns (B10)         Dry-Season Water Table         Saturation Visible on Aer         Geomorphic Position (D2         Shallow Aquitard (D3)         FAC-Neutral Test (D5)         Raised Ant Mounds (D6)         Frost-Heave Hummocks	39) ( <b>MLRA 1, 2,</b> rial Imagery (C9) 2) ( <b>LRR A</b> ) (D7)
Vetland Hydrology Indicators:         Primary Indicators (minimum of one requir         Primary Indicators (minimum of one requir         Strace Water (A1)         High Water Table (A2)         Saturation (A3)         Water Marks (B1)         Sediment Deposits (B2)         Drift Deposits (B3)         Algal Mat or Crust (B4)         Iron Deposits (B5)         Surface Soil Cracks (B6)         Inundation Visible on Aerial Imagery (I         Sparsely Vegetated Concave Surface         Field Observations:         Surface Water Present?         Yes         Saturation Present?         Yes         Saturation Present?         Yes         Saturation Present?	Water-Stained Leaves (B         MLRA 1, 2, 4A, and 4B)         Salt Crust (B11)         Aquatic Invertebrates (B1         Hydrogen Sulfide Odor (C         Oxidized Rhizospheres a         Roots (C3)         Presence of Reduced Iro         Recent Iron Reduction in         Soils (C6)         Stunted or Stressed Plan         (LRR A)         Other (Explain in Remark         B7)         (B8)         No       x         Depth (inches):         No       Depth (inches):         X       Depth (inches):	9) (except	Water-Stained Leaves (E         4A, and 4B)         Drainage Patterns (B10)         Dry-Season Water Table         Saturation Visible on Aer         Geomorphic Position (D2         Shallow Aquitard (D3)         FAC-Neutral Test (D5)         Raised Ant Mounds (D6)         Frost-Heave Hummocks	39) ( <b>MLRA 1, 2,</b> rial Imagery (C9) 2) ( <b>LRR A</b> ) (D7)
Vetland Hydrology Indicators:         Primary Indicators (minimum of one requir         Primary Indicators (minimum of one requir         Surface Water (A1)         High Water Table (A2)         Saturation (A3)         Water Marks (B1)         Sediment Deposits (B2)         Drift Deposits (B3)         Algal Mat or Crust (B4)         Iron Deposits (B5)         Surface Soil Cracks (B6)         Inundation Visible on Aerial Imagery (includes capillary fringe)         Yes         Saturation Present?         Yes         Yes         Yes         Yes         Yes         Saturation Present         Yes         Yes         Saturation Present         Yes         Yes         Yes         Yes	Water-Stained Leaves (B         MLRA 1, 2, 4A, and 4B)         Salt Crust (B11)         Aquatic Invertebrates (B1         Hydrogen Sulfide Odor (C         Oxidized Rhizospheres a         Roots (C3)         Presence of Reduced Iro         Recent Iron Reduction in         Soils (C6)         Stunted or Stressed Plan         (LRR A)         Other (Explain in Remark         B7)         (B8)         No       x         Depth (inches):         No       Depth (inches):         X       Depth (inches):	9) (except	Water-Stained Leaves (E         4A, and 4B)         Drainage Patterns (B10)         Dry-Season Water Table         Saturation Visible on Aer         Geomorphic Position (D2         Shallow Aquitard (D3)         FAC-Neutral Test (D5)         Raised Ant Mounds (D6)         Frost-Heave Hummocks	39) ( <b>MLRA 1, 2,</b> rial Imagery (C9) 2) ( <b>LRR A</b> ) (D7)
Vetland Hydrology Indicators:         Primary Indicators (minimum of one requir         Primary Indicators (minimum of one requir         Strace Water (A1)         High Water Table (A2)         Saturation (A3)         Water Marks (B1)         Sediment Deposits (B2)         Drift Deposits (B3)         Algal Mat or Crust (B4)         Iron Deposits (B5)         Surface Soil Cracks (B6)         Inundation Visible on Aerial Imagery (I         Sparsely Vegetated Concave Surface         Field Observations:         Surface Water Present?         Yes         Saturation Present?         Yes         Saturation Present?         Yes         Saturation Present?	Water-Stained Leaves (B         MLRA 1, 2, 4A, and 4B)         Salt Crust (B11)         Aquatic Invertebrates (B1         Hydrogen Sulfide Odor (C         Oxidized Rhizospheres a         Roots (C3)         Presence of Reduced Iro         Recent Iron Reduction in         Soils (C6)         Stunted or Stressed Plan         (LRR A)         Other (Explain in Remark         B7)         (B8)         No       x         Depth (inches):         No       Depth (inches):         X       Depth (inches):	9) (except	Water-Stained Leaves (E         4A, and 4B)         Drainage Patterns (B10)         Dry-Season Water Table         Saturation Visible on Aer         Geomorphic Position (D2         Shallow Aquitard (D3)         FAC-Neutral Test (D5)         Raised Ant Mounds (D6)         Frost-Heave Hummocks	39) ( <b>MLRA 1, 2,</b> rial Imagery (C9) 2) ( <b>LRR A</b> ) (D7)
Vetland Hydrology Indicators:         Primary Indicators (minimum of one requir         Surface Water (A1)         High Water Table (A2)         Saturation (A3)         Water Marks (B1)         Sediment Deposits (B2)         Drift Deposits (B3)         Algal Mat or Crust (B4)         Iron Deposits (B5)         Surface Soil Cracks (B6)         Inundation Visible on Aerial Imagery (in Sparsely Vegetated Concave Surface         Surface Water Present?         Yes         Saturation Present?         Yes	Water-Stained Leaves (B         MLRA 1, 2, 4A, and 4B)         Salt Crust (B11)         Aquatic Invertebrates (B1         Hydrogen Sulfide Odor (C         Oxidized Rhizospheres a         Roots (C3)         Presence of Reduced Iro         Recent Iron Reduction in         Soils (C6)         Stunted or Stressed Plan         (LRR A)         Other (Explain in Remark         B7)         (B8)         No       x         Depth (inches):         No       Depth (inches):         X       Depth (inches):	9) (except	Water-Stained Leaves (E         4A, and 4B)         Drainage Patterns (B10)         Dry-Season Water Table         Saturation Visible on Aer         Geomorphic Position (D2         Shallow Aquitard (D3)         FAC-Neutral Test (D5)         Raised Ant Mounds (D6)         Frost-Heave Hummocks	39) ( <b>MLRA 1, 2,</b> rial Imagery (C9) 2) ( <b>LRR A</b> ) (D7)
Vetland Hydrology Indicators:         rimary Indicators (minimum of one requir         Surface Water (A1)         High Water Table (A2)         Saturation (A3)         Water Marks (B1)         Sediment Deposits (B2)         Drift Deposits (B3)         Algal Mat or Crust (B4)         Iron Deposits (B5)         Surface Soil Cracks (B6)         Inundation Visible on Aerial Imagery (         Sparsely Vegetated Concave Surface         ield Observations:         urface Water Present?         Yes         aturation Present?         Yes         aturation Present?         Yes         scribe Recorded Data (stream gauge, model)	Water-Stained Leaves (B         MLRA 1, 2, 4A, and 4B)         Salt Crust (B11)         Aquatic Invertebrates (B1         Hydrogen Sulfide Odor (C         Oxidized Rhizospheres a         Roots (C3)         Presence of Reduced Iro         Recent Iron Reduction in         Soils (C6)         Stunted or Stressed Plan         (LRR A)         Other (Explain in Remark         B7)         (B8)         No       x         Depth (inches):         No       Depth (inches):         X       Depth (inches):	9) (except	Water-Stained Leaves (E         4A, and 4B)         Drainage Patterns (B10)         Dry-Season Water Table         Saturation Visible on Aer         Geomorphic Position (D2         Shallow Aquitard (D3)         FAC-Neutral Test (D5)         Raised Ant Mounds (D6)         Frost-Heave Hummocks	39) ( <b>MLRA 1, 2,</b> (C2) rial Imagery (C9) 2) ( <b>LRR A</b> ) (D7)
Vetland Hydrology Indicators:         rimary Indicators (minimum of one requir         Surface Water (A1)         High Water Table (A2)         Saturation (A3)         Water Marks (B1)         Sediment Deposits (B2)         Drift Deposits (B3)         Algal Mat or Crust (B4)         Iron Deposits (B5)         Surface Soil Cracks (B6)         Inundation Visible on Aerial Imagery (         Sparsely Vegetated Concave Surface         Vater Table Present?         Yes         Autor Present?         Yes         Saturation Present?         Yes         Saturation Present?         Saturation Present?         Yes         Saturation Present?         Head Present?         Yes         Saturation Present?         Yes         Saturation Present? <t< td=""><td>Water-Stained Leaves (B         MLRA 1, 2, 4A, and 4B)         Salt Crust (B11)         Aquatic Invertebrates (B1         Hydrogen Sulfide Odor (C         Oxidized Rhizospheres a         Roots (C3)         Presence of Reduced Iro         Recent Iron Reduction in         Soils (C6)         Stunted or Stressed Plan         (LRR A)         Other (Explain in Remark         B7)         (B8)         No       x         Depth (inches):         No       Depth (inches):         X       Depth (inches):</td><td>9) (except</td><td>Water-Stained Leaves (E         4A, and 4B)         Drainage Patterns (B10)         Dry-Season Water Table         Saturation Visible on Aer         Geomorphic Position (D2         Shallow Aquitard (D3)         FAC-Neutral Test (D5)         Raised Ant Mounds (D6)         Frost-Heave Hummocks</td><td>39) (<b>MLRA 1, 2,</b> rial Imagery (C9) 2) (<b>LRR A</b>) (D7)</td></t<>	Water-Stained Leaves (B         MLRA 1, 2, 4A, and 4B)         Salt Crust (B11)         Aquatic Invertebrates (B1         Hydrogen Sulfide Odor (C         Oxidized Rhizospheres a         Roots (C3)         Presence of Reduced Iro         Recent Iron Reduction in         Soils (C6)         Stunted or Stressed Plan         (LRR A)         Other (Explain in Remark         B7)         (B8)         No       x         Depth (inches):         No       Depth (inches):         X       Depth (inches):	9) (except	Water-Stained Leaves (E         4A, and 4B)         Drainage Patterns (B10)         Dry-Season Water Table         Saturation Visible on Aer         Geomorphic Position (D2         Shallow Aquitard (D3)         FAC-Neutral Test (D5)         Raised Ant Mounds (D6)         Frost-Heave Hummocks	39) ( <b>MLRA 1, 2,</b> rial Imagery (C9) 2) ( <b>LRR A</b> ) (D7)

Project/Site: Coopey Quarry	City/County: Multnomah Cou	nty Sampling Date:	4/18/2016	
Applicant/Owner: ODOT Region 1	State: OR	Sampling Point: 13		an sha sha sa m
Investigator(s): Ken Sargent	Section, Township, Range:	13, T1N, R5E		
Landform (hillslope, terrace, etc.):	Local relief (concave,	convex, none): <u>concave</u>	Slope (%):	2
Subregion (LRR): A	Lat: 45.56584 Long:	-122.16546 Datum:		
Soil Map Unit Name: Sauvie silt loam		NWI classification:	Upland	
Are climatic / hydrologic conditions on the site typi	ical for this time of year? Yes _	x No (If no, explain in	Remarks.)	
Are Vegetation, Soil, or Hydrolog	gy significantly disturbed?	Are "Normal Circumstance:	s" present? Yes <u>x</u>	No
Are Vegetation, Soil, or Hydrolog	gy naturally problematic?	(If needed, explain a	ny answers in Remarks	.)

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

Hydrophytic Vegetation Present?       Yes       x       No         Hydric Soil Present?       Yes       No       x         Wetland Hydrology Present?       Yes       No       x	Is the Samp	led Area within a Wetland?	Yes	<u>No x</u>
Remarks:	-			

VEGETATION – Use scientific names of	f plants.			
Tree Stratum (Plot size: )	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1 / I /	<u> /// OUVCI</u>			Number of Dominant Species That Are OBL, FACW, or FAC: (A)
2				Total Number of Dominant
3				Species Across All Strata: (B)
4				Percent of Dominant Species That Are OBL, FACW, or FAC: (A/B)
Sapling/Shrub Stratum (Plot size: )		= Total Cove	er.	Prevalence Index worksheet:
1. Populus balsamifera (saplings)	10	Y	FAC	Total % Cover of: Multiply by:
2. Fraxinus latifolia	10	Y	FACW	OBL species x 1 =
3.				FACW species 10 x 2 =
4				FAC species 20 x 3 =
5				FACU species x 4 =
		= Total Cove	er	
Herb Stratum (Plot size:)				UPL species x 5 = Column Totals: (A) (B)
1. Schedonorus arundinaceus	10	Y	FAC	
2				Prevalence Index = B/A = <3
3				
4				Hydrophytic Vegetation Indicators:
5		· · ·		1 - Rapid Test for Hydrophytic Vegetation
6		<u> </u>		X 2 - Dominance Test is >50%
7				X 3 - Prevalence Index is ≤3.0 <sup>1</sup>
8		1.51		4 - Morphological Adaptations <sup>1</sup> (Provide supporting
9				data in Remarks or on a separate sheet)
10				5 - Wetland Non-Vascular Plants <sup>1</sup>
11				Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
		= Total Cove	er	<sup>1</sup> Indicators of hydric soil and wetland hydrology must
Woody Vine Stratum (Plot size:)				be present, unless disturbed or problematic.
1				
2				Hydrophytic
		= Total Cove	er	Vegetation
% Bare Ground in Herb Stratum				Present? Yes <u>x</u> No
Remarks:				
No Vegetation				

Profile Descr							Sampling Point:	
TTOILC DOGCI	iption: (Describe t	o the dept	h needed to docum	ent the in	dicator or co	onfirm the a	absence of indicators.)	
Depth	Matrix	•		Redox Fea			,	
(inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
	<b> </b>						Rock spalls	
							and gravel to	
0"							surface	
	. <u></u>	<u></u>				<u></u>		
	······································		<u></u>				· · · · · · · · · · · · · · · · · · ·	
					<u> </u>			
<sup>1</sup> Type: C=Co	ncentration, D=Deple	etion, RM=	Reduced Matrix, CS	=Covered	or Coated Sa	nd Grains.	<sup>2</sup> Location: PL=Pore L	ining, M=Matrix.
Hydric Soil I	ndicators: (Applic	able to all	LRRs, unless other	rwise note	ed.)	Ind	icators for Problematic	Hydric Soils':
Histosol	(A1)		Sandy Redox (St	5)			2 cm Muck (A10)	
	ipedon (A2)		Stripped Matrix (	,			Red Parent Material (TF	2)
Black His			Loamy Mucky Mi		(except MLR	Δ 1)	Very Shallow Dark Surfa	
	n Sulfide (A4)		Loamy Gleyed M		(CACCPT MEN	(A I)	Other (Explain in Remar	
	Below Dark Surface	- (	Depleted Matrix (					K3)
		= (ATT) _					3	
	rk Surface (A12)	_	Redox Dark Surfa				<sup>3</sup> Indicators of hydrophyti	
	ucky Mineral (S1)		_ Depleted Dark St		)		wetland hydrology must	
Sandy G	leyed Matrix (S4)		Redox Depressio	ons (⊦8)			unless disturbed or prob	lematic
estrictive Lay	/er (if present):							
Туре:					Hydric So	il Present?	Yes	No x
Depth (inche	1							
marks:					1			
Vetland Hydro	ology Indicators:	required:	check all that apply)			Seco	ndan/ Indicators (2 or mo	re required)
Vetland Hydro		required; o		d Leaves (	B9) (avcant		ndary Indicators (2 or mo	
Vetland Hydro rimary Indicato	blogy Indicators: ors (minimum of one	required; o	Water-Staine			V	Vater-Stained Leaves (BS	
Vetland Hydro Primary Indicato	ology Indicators: ors (minimum of one ter (A1)	required; o	Water-Stained MLRA 1, 2, 4	A, and 4B		V	Vater-Stained Leaves (B9 <b>A, and 4B</b> )	
Vetland Hydro rimary Indicato Surface Wat High Water	ology Indicators: ors (minimum of one ter (A1) Table (A2)	required; o	Water-Stained MLRA 1, 2, 4 Salt Crust (B1	<b>A, and 4</b> B 11)	)	V 4 D	Vater-Stained Leaves (B9 <b>A, and 4B</b> ) trainage Patterns (B10)	) (MLRA 1, 2,
Vetland Hydro rimary Indicato Surface Wat High Water Saturation (A	ology Indicators: ors (minimum of one ter (A1) Table (A2) A3)	required; o	Water-Stained MLRA 1, 2, 4 Salt Crust (B1 Aquatic Invert	A, and 48 11) tebrates (E	313)	V X D	Vater-Stained Leaves (B9 <b>A, and 4B</b> ) Irainage Patterns (B10) Iry-Season Water Table (	9) ( <b>MLRA 1, 2</b> ,
Vetland Hydro rimary Indicato Surface Wat High Water	ology Indicators: ors (minimum of one ter (A1) Table (A2) A3)	required; o	Water-Stainer MLRA 1, 2, 4 Salt Crust (B1 Aquatic Invert Hydrogen Sul	<b>A, and 4B</b> 11) tebrates (E Ifide Odor	) 313) (C1)	V X D	Vater-Stained Leaves (B9 <b>A, and 4B</b> ) trainage Patterns (B10)	) ( <b>MLRA 1, 2,</b> C2)
Vetland Hydro Primary Indicato Surface Wat High Water Saturation (A Water Marks	ology Indicators: ors (minimum of one ter (A1) Table (A2) A3) s (B1)	required; o	Water-Stainer MLRA 1, 2, 4 Salt Crust (B1 Aquatic Invert Hydrogen Sul Oxidized Rhiz	<b>A, and 4B</b> 11) tebrates (E Ifide Odor	) 313) (C1)	× D S	Vater-Stained Leaves (BS <b>A, and 4B</b> ) prainage Patterns (B10) pry-Season Water Table ( aturation Visible on Aeria	)) (MLRA 1, 2, C2) al Imagery (C9)
Vetland Hydro Primary Indicato Surface Wat High Water Saturation (A Water Marks Sediment De	ology Indicators: ors (minimum of one ter (A1) Table (A2) A3) s (B1) eposits (B2)	required; d	Water-Stainer MLRA 1, 2, 4 Salt Crust (B1 Aquatic Invert Hydrogen Sul Oxidized Rhiz Roots (C3)	<b>A, and 4B</b> 11) tebrates (E lfide Odor zospheres	) 313) (C1) along Living		Vater-Stained Leaves (BS A, and 4B) Prainage Patterns (B10) Pry-Season Water Table ( aturation Visible on Aeria Seomorphic Position (D2)	)) (MLRA 1, 2, C2) al Imagery (C9)
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Project/Site: Coopey Quarry	City/County: Multnomah Cou	nty Sampling Date:	4/19/2016
Applicant/Owner: ODOT Region 1	State: OR	Sampling Point: 14	
Investigator(s): Ken Sargent	Section, Township, Range:	13, T1N, R5E	
Landform (hillslope, terrace, etc.): Depression	Local relief (concave,	convex, none): concave	Slope (%): <u>2</u>
Subregion (LRR): A	Lat: 45.56483 Long:	-122.16585 Datum:	
Soil Map Unit Name: Sauvie silt Ioam		NWI classification:	Upland
Are climatic / hydrologic conditions on the site type	pical for this time of year? Yes _	x No (If no, explain ir	n Remarks.)
Are Vegetation, Soil, or Hydrolo	ogy significantly disturbed?	Are "Normal Circumstance	s" present? Yes <u>x</u> No
Are Vegetation , Soil , or Hydrolo	pgy naturally problematic?	(If needed, explain a	ny answers in Remarks.)

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

Hydrophytic Vegetation Present?       Yes       x       No         Hydric Soil Present?       Yes       No       x         Wetland Hydrology Present?       Yes       No       x	Is the Sampled Area within a Wetland? Yes _	<u>No x</u>
Remarks:		

\_\_\_\_\_

	Absolute Dominant Indicator	Dominance Test worksheet:
Tree Stratum (Plot size:)	<u>% Cover Species? Status</u>	Number of Dominant Species
1. Populus balsamifera	100 Y FAC	That Are OBL, FACW, or FAC: (A)
2		Total Number of Dominant
3		Species Across All Strata: <u>2</u> (B)
4		Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)
	= Total Cover	
Sapling/Shrub Stratum (Plot size:)		Prevalence Index worksheet:
1. Cornus sericea	50 Y FACW	Total % Cover of: Multiply by:
2		OBL species x 1 =
3	and the second	FACW species x 2 =
4		FAC species x 3 =
5.		FACU species x 4 =
	= Total Cover	UPL species x 5 =
Herb Stratum (Plot size:)		
1		Column Totals: (A) (B)
2.		Prevalence Index = B/A = <3
3.		
4		Hydrophytic Vegetation Indicators:
5		1 - Rapid Test for Hydrophytic Vegetation
6		× 2 - Dominance Test is >50%
7		X 3 - Prevalence Index is ≤3.0 <sup>1</sup>
8		4 - Morphological Adaptations <sup>1</sup> (Provide supporting
9.		data in Remarks or on a separate sheet)
10		5 - Wetland Non-Vascular Plants <sup>1</sup>
11		Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
	= Total Cover	<sup>1</sup> <sup>1</sup> Indicators of hydric soil and wetland hydrology must
Woody Vine Stratum (Plot size:)		be present, unless disturbed or problematic.
1		s 1 }
2.	in the second	
	= Total Cover	Hydrophytic
% Bare Ground in Herb Stratum		Vegetation Present? Yes <u>x</u> No
	-	
Remarks:		

	Color (moist)	%	Color (moist)	Redox Fea %	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
0-6	10YR 2/1	<u> </u>					Silt loam	
<u> </u>	10YR 3/2	98	10YR 3/4	2			 Silt loam	
	1011( 3/2							
Type: C=Con	centration, D=Dep	letion, RM=		S=Covered	or Coated Sa	nd Grains.	<sup>2</sup> Location: PL=Por	e Lining, M=Matrix.
			LRRs, unless oth				cators for Problema	-
Histosol (A Histic Epip Black Hist Hydrogen	A1) pedon (A2)		Sandy Redox ( Stripped Matrix Loamy Mucky f Loamy Gleyed Depleted Matrix	S5) (S6) Vineral (F1) Matrix (F2)			2 cm Muck (A10) Red Parent Material Very Shallow Dark S Other (Explain in Rer	(TF2) urface (TF12)
Thick Darl	k Surface (A12) icky Mineral (S1) eyed Matrix (S4)		Redox Dark Su Depleted Dark Redox Depress	rface (F6) Surface (F7	)		<sup>3</sup> Indicators of hydropl wetland hydrology m unless disturbed or p	ust be present,
			·	. ,			·	
_	er (if present):							N
Туре:					Hydric So	il Present?	Yes	No x
Depth (inches	S).							
Depth (inche: narks:	s):				I			
narks: /DROLOGY /etland Hydrol	, ogy Indicators:	e required;	check all that apply	)		Secor	ndary Indicators (2 or	more required)
narks: <b>DROLOGY</b> retland Hydrold rimary Indicator	ogy Indicators: rs (minimum of one	e required;	Water-Stair	ed Leaves (	(B9) (except	W	idary Indicators (2 or later-Stained Leaves	
narks: <b>DROLOGY</b> <b>etland Hydrol</b> imary Indicator Surface Wate	, ogy Indicators: rs (minimum of one er (A1)	e required;	Water-Stair MLRA 1, 2,	ed Leaves ( 4A, and 4B		V.	/ater-Stained Leaves A, and 4B)	(B9) ( <b>MLRA 1, 2,</b>
narks: <b>DROLOGY</b> <b>/etland Hydrol</b> - rimary Indicator Surface Wate High Water T	, ogy Indicators: rs (minimum of one er (A1) able (A2)	e required;	Water-Stair <b>MLRA 1, 2,</b> Salt Crust (	ied Leaves ( <b>4A, and 4B</b> B11)	3)	W	/ater-Stained Leaves <b>A, and 4B</b> ) rainage Patterns (B10	(B9) ( <b>MLRA 1, 2,</b> 0)
narks: <b>DROLOGY</b> <b>etland Hydrol</b> imary Indicator Surface Wate	, ogy Indicators: rs (minimum of one er (A1) able (A2) 3)	e required;	Water-Stair MLRA 1, 2, Salt Crust ( Aquatic Inve Hydrogen S	ed Leaves ( 4 <b>A, and 4B</b> B11) ertebrates (E Sulfide Odor	3) 313) (C1)	× D	/ater-Stained Leaves A, and 4B)	(B9) ( <b>MLRA 1, 2,</b> 0) ble (C2)
marks: <b>DROLOGY</b> <b>fetland Hydrol</b> - rimary Indicator Surface Wate High Water T Saturation (A Water Marks Sediment Dep	, rs (minimum of one er (A1) able (A2) 3) (B1) posits (B2)	e required;	Water-Stair MLRA 1, 2, Salt Crust ( Aquatic Invo Hydrogen S Oxidized Rł Roots (C3)	ed Leaves ( 4A, and 4B B11) ertebrates (E Sulfide Odor hizospheres	3) 313) (C1) along Living	× D × D S G	/ater-Stained Leaves A, and 4B) rainage Patterns (B10 ry-Season Water Tab aturation Visible on A eomorphic Position (I	(B9) ( <b>MLRA 1, 2,</b> 0) ole (C2) erial Imagery (C9)
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marks: (DROLOGY /etland Hydrol- rimary Indicator Surface Wate High Water T Saturation (A: Water Marks Sediment Deposits Algal Mat or (C Iron Deposits Surface Soil (C Inundation Vis Sparsely Veg ield Observatio	ogy Indicators: rs (minimum of one er (A1) able (A2) 3) (B1) posits (B2) 6 (B3) Crust (B4) crust (B4) (B5) Cracks (B6) isible on Aerial Ima jetated Concave S	agery (B7) urface (B8)	Water-Stair MLRA 1, 2, Salt Crust ( Aquatic Inve Hydrogen S Oxidized Rł Roots (C3) Presence o Recent Iron Soils (C6) Stunted or S (LRR A) Other (Expl	ed Leaves ( 4A, and 4B B11) ertebrates (E ulfide Odor nizospheres f Reduced Ir Reduction i Stressed Pla ain in Rema	3) (C1) along Living ron (C4) in Tilled ants (D1)	₩ 4/ × D D S S S 	/ater-Stained Leaves A, and 4B) rainage Patterns (B10 ry-Season Water Tab aturation Visible on A eomorphic Position (I nallow Aquitard (D3) AC-Neutral Test (D5) aised Ant Mounds (D	(B9) ( <b>MLRA 1, 2,</b> D) le (C2) erial Imagery (C9) D2) 6) ( <b>LRR A</b> )
marks: (DROLOGY fetland Hydrol rimary Indicator Surface Wate High Water T Saturation (A Water Marks Sediment Deposits Algal Mat or (A Iron Deposits Surface Soil ( Inundation Vis Sparsely Veg feld Observation Vater Table Pre-	, ogy Indicators: rs (minimum of one er (A1) Table (A2) 3) (B1) posits (B2) s (B3) Crust (B4) (B5) Crust (B4) (B5) Cracks (B6) isible on Aerial Ima jetated Concave S ons: resent? Yes	agery (B7) urface (B8) No	Water-Stair MLRA 1, 2, Salt Crust ( Aquatic Inve Hydrogen S Oxidized Rł Roots (C3) Presence o Recent Iron Soils (C6) Stunted or S (LRR A) Other (Expl	ed Leaves ( 4A, and 4B B11) ertebrates (E sulfide Odor nizospheres f Reduced In Reduction i Stressed Pla ain in Rema	a) (C1) along Living ron (C4) in Tilled ants (D1) rks)	W 4/ 2 D 9 3 3 3 3 3 4 4 5 4 5 4 5 4 5 7 4 5 1 5 7 4 5 7 1 5 1 5 1 5 1 5 1 5 1 5 1 5 1 5 1 5	Vater-Stained Leaves A, and 4B) rainage Patterns (B10 ry-Season Water Tab aturation Visible on A eomorphic Position (I nallow Aquitard (D3) AC-Neutral Test (D5) aised Ant Mounds (D rost-Heave Hummock	(B9) ( <b>MLRA 1, 2,</b> D) le (C2) erial Imagery (C9) D2) 6) ( <b>LRR A</b> )
marks: <b>DROLOGY</b> <b>/etland Hydrol</b> - rimary Indicator Surface Wate High Water T Saturation (A: Water Marks Sediment Deposits Algal Mat or C Iron Deposits Surface Soil C Inundation Vis Sparsely Veg	ogy Indicators: rs (minimum of one ar (A1) able (A2) 3) (B1) posits (B2) s (B3) Crust (B4) crust (B4) cracks (B6) isible on Aerial Ima jetated Concave S ons: resent? Yes sent? Yes	agery (B7) urface (B8) No No	Water-Stair MLRA 1, 2, Salt Crust ( Aquatic Inve Hydrogen S Oxidized Rł Roots (C3) Presence o Recent Iron Soils (C6) Stunted or S (LRR A) Other (Expl	ed Leaves ( <b>4A, and 4B</b> B11) ertebrates (E Sulfide Odor nizospheres f Reduced Ir Reduction i Stressed Pla ain in Rema	a) (C1) along Living ron (C4) in Tilled ants (D1) rks)	W 4/ 2 D 9 3 3 3 3 3 4 4 5 4 5 4 5 4 5 7 4 5 1 5 7 4 5 7 1 5 1 5 1 5 1 5 1 5 1 5 1 5 1 5 1 5	Vater-Stained Leaves A, and 4B) rainage Patterns (B10 ry-Season Water Tab aturation Visible on A eomorphic Position (I nallow Aquitard (D3) AC-Neutral Test (D5) aised Ant Mounds (D rost-Heave Hummock	(B9) ( <b>MLRA 1, 2,</b> D) le (C2) erial Imagery (C9) D2) 6) (LRR A) (S (D7)
marks: (DROLOGY) (etland Hydrol- rimary Indicator Surface Wate High Water T Saturation (A: Water Marks Sediment Dep Drift Deposits Algal Mat or (C Iron Deposits Surface Soil (C Inundation Via Sparsely Veg (etld Observation urface Water Pre- vater Table Pre- aturation Prese includes capillar	ogy Indicators: rs (minimum of one ar (A1) able (A2) 3) (B1) posits (B2) s (B3) Crust (B4) crust (B4) crosts (B6) sible on Aerial Ima jetated Concave S ons: resent? Yes sent? Yes ent? Yes	agery (B7) urface (B8) No No	Water-Stair         MLRA 1, 2,         Salt Crust (         Aquatic Inversion         Hydrogen S         Oxidized RH         Roots (C3)         Presence or         Recent Iron         Soils (C6)         Stunted or S         (LRR A)         Other (Expl         Depth (inchess         X       Depth (inchess	ed Leaves ( <b>4A, and 4B</b> B11) ertebrates (E Sulfide Odor nizospheres f Reduced Ir Reduction i Stressed Pla ain in Rema	alang Living (C1) along Living ron (C4) in Tilled ants (D1) rks)	₩ 4/ 2 0 0 5 3 3 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	Vater-Stained Leaves A, and 4B) rainage Patterns (B10 ry-Season Water Tab aturation Visible on A eomorphic Position (I nallow Aquitard (D3) AC-Neutral Test (D5) aised Ant Mounds (D rost-Heave Hummock	(B9) ( <b>MLRA 1, 2,</b> D) le (C2) erial Imagery (C9) D2) 6) (LRR A) (S (D7)
marks: (DROLOGY) (etland Hydrol- rimary Indicator Surface Wate High Water T Saturation (A: Water Marks Sediment Dep Drift Deposits Algal Mat or (C Iron Deposits Surface Soil (C Inundation Via Sparsely Veg (etld Observation urface Water Pre- vater Table Pre- aturation Prese includes capillar	ogy Indicators: rs (minimum of one ar (A1) able (A2) 3) (B1) posits (B2) s (B3) Crust (B4) crust (B4) crosts (B6) sible on Aerial Ima jetated Concave S ons: resent? Yes sent? Yes ent? Yes	agery (B7) urface (B8) No No	Water-Stair     MLRA 1, 2,     Salt Crust (     Aquatic Inve     Hydrogen S     Oxidized RH     Roots (C3)     Presence o     Recent Iron     Soils (C6)     Stunted or S     (LRR A)     Other (Expl )      X Depth (inches     X Depth (inches	ed Leaves ( <b>4A, and 4B</b> B11) ertebrates (E Sulfide Odor nizospheres f Reduced Ir Reduction i Stressed Pla ain in Rema	alang Living (C1) along Living ron (C4) in Tilled ants (D1) rks)	₩ 4/ 2 0 0 5 3 3 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	Vater-Stained Leaves A, and 4B) rainage Patterns (B10 ry-Season Water Tab aturation Visible on A eomorphic Position (I nallow Aquitard (D3) AC-Neutral Test (D5) aised Ant Mounds (D rost-Heave Hummock	(B9) ( <b>MLRA 1, 2,</b> D) le (C2) erial Imagery (C9) D2) 6) (L <b>RR A</b> ) (S (D7)

Cinema i

Project/Site: Co	opey Quarry	City	//County:	Multro	mah Cou	inty	Sampling Dat	e: <u>4/19/2</u>	2016	
Applicant/Owner:	ODOT Region	<u>1 (1997) - 1997</u>		State:	_OR	Sampling P	oint: <u>15</u>		Alter Market	
Investigator(s):	Ken Sargent		Section,	Township,	Range:	13, T1N, F	<b>₹5</b> E			
Landform (hillslope	e, terrace, etc.):	Terrace	<u> </u>	ocal relief	(concave	, convex, noi	ne): <u>concav</u>	<b>)</b>	Slope (%):	2
Subregion (LRR):	Α	Lat	: 45.5	6598	Long:	-122.1644	42 Datum	C		
Soil Map Unit Nam	ne: Sauvie silt l	oam		a na manana ang sa	en la servi	NW	l classification:	Upland		arthe af the co
Are climatic / hydro	ologic conditions o	on the site typical	for this ti	me of year	?Yes	x No	_ (If no, explai	n in Remarl	ks.)	
Are Vegetation	, Soil	, or Hydrology	sigi	nificantly di	sturbed?	Are "Norr	mal Circumstan	ces" presei	nt? Yes <u>x</u>	No
Are Vegetation _	, Soil	, or Hydrology	nat	urally probl	lematic?	(lf	needed, explai	n any answ	ers in Remarl	(S.)

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

Hydrophytic Vegetation Present?       Yes       x       No         Hydric Soil Present?       Yes       No       x         Wetland Hydrology Present?       Yes       x       No	Is the Sampled Area within a Wetland? Yes	No <u>x</u>
Remarks:		

	Absolute Dominant Indicator	Dominance Test worksheet:
Tree Stratum (Plot size:) 1.	<u>% Cover Species? Status</u>	Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)
······································		Total Number of Dominant
	h the second sec	Species Across All Strata: 2 (B)
3 4		Percent of Dominant Species
· · · · · · · · · · · · · · · · · · ·		That Are OBL, FACW, or FAC: <u>100</u> (A/B)
	= Total Cover	
<u>Sapling/Shrub Stratum</u> (Plot size:)		Prevalence Index worksheet:
1. Populus balsamifera (saplings)	40 Y FACW	Total % Cover of: Multiply by:
2		OBL species x 1 =
3		FACW species x 2 =
4		FAC species x 3 =
5		FACU species x 4 =
	= Total Cover	UPL species x 5 =
Herb Stratum (Plot size:)		Column Totals: (A) (B)
1. <u>Camassia quamash</u>	80 Y FAC	
2. Cichorium intybus	2	Prevalence Index = B/A = <3
3		
4.		Hydrophytic Vegetation Indicators:
5	The Apple of the A	1 - Rapid Test for Hydrophytic Vegetation
6		× 2 - Dominance Test is >50%
7		× 3 - Prevalence Index is ≤3.0 <sup>1</sup>
8		4 - Morphological Adaptations <sup>1</sup> (Provide supporting
9.		data in Remarks or on a separate sheet)
10		5 - Wetland Non-Vascular Plants <sup>1</sup>
11.		Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
	= Total Cover	<sup>1</sup> Indicators of hydric soil and wetland hydrology must
Woody Vine Stratum (Plot size:)		be present, unless disturbed or problematic.
1		
2.	i se	· · · · · · · · · · · · · · · · · · ·
	= Total Cover	Hydrophytic Vegetation
% Bare Ground in Herb Stratum		Present? Yes x No
Remarks:		

			Sampling Point	
	t the indicator of dox Features	or confirm the a	absence of indicators.)	
(inches) Color (moist) % Color (moist)	% Туре	Loc <sup>2</sup>	Texture	Remarks
0-2 10YR 2/1			Silt Ioam	
<u>2+-</u>			Rock	
			Mile (	
				A
<sup>1</sup> Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=C	overed or Coate	d Sand Grains.	<sup>2</sup> Location: PL=Pore I	ining, M=Matrix.
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwis	se noted.)	Ind	icators for Problemation	: Hvdric Soils <sup>3</sup> :
Histosol (A1) Sandy Redox (S5)	,		2 cm Muck (A10)	· · · <b>,</b> · · · · · · · · · · · ·
Histic Epipedon (A2) Stripped Matrix (S6)			Red Parent Material (TI	
Black Histic (A3) Loamy Mucky Miner Hydrogen Sulfide (A4) Loamy Gleyed Matr		MLRA 1)	Very Shallow Dark Surf Other (Explain in Rema	
Depleted Below Dark Surface (A11) Depleted Matrix (F3		********		ikay
Thick Dark Surface (A12) Redox Dark Surface			<sup>3</sup> Indicators of hydrophyl	
Sandy Mucky Mineral (S1) Depleted Dark Surfa Sandy Gleyed Matrix (S4) Redox Depressions			wetland hydrology must unless disturbed or prol	
Restrictive Layer (if present):				
Type: Depth (inches):	Hydri	c Soil Present?	Yes	No x
emarks:				
YDROLOGY		44444,000,000,000,000,000,000,000,000,0		
<b>Wetland Hydrology Indicators:</b> Primary Indicators (minimum of one required; check all that apply)		Seco	ndary Indicators (2 or m	ore required)
Water-Stained L		ept V	Vater-Stained Leaves (B	
_ Surface Water (A1) MLRA 1, 2, 4A, High Water Table (A2) Salt Crust (B11)			A, and 4B)	
Saturation (A3) Saturation (A3)			rainage Patterns (B10) ry-Season Water Table	(C2)
Water Marks (B1) Hydrogen Sulfid	le Odor (C1)	s	aturation Visible on Aeri	
Sediment Deposits (B2) Oxidized Rhizos Coxidized Rhizos	spheres along Liv		eomorphic Position (D2)	)
Drift Deposits (B3) Presence of Rec			hallow Aquitard (D3)	, ,
Algal Mat or Crust (B4) Recent Iron Red Soils (C6)	duction in Tilled	-	AC-Neutral Test (D5)	
_ Algar Mat of Clust (64) Solis (Co) Stunted or Stres	sed Plants (D1)	F	AC-Neutrar rest (D5)	
_ Iron Deposits (B5) (LRR A)	<b>.</b>		aised Ant Mounds (D6)	
Surface Soil Cracks (B6) Other (Explain ir Inundation Visible on Aerial Imagery (B7)	n Remarks)	F	rost-Heave Hummocks (	(D7)
Sparsely Vegetated Concave Surface (B8)				
ield Observations:				
Field Observations: Surface Water Present? Yes No x Depth (inches):				
Vater Table Present? Yes x No Depth (inches):	2	Wetland Hydr	ology Present? Yes	x No
Saturation Present?				
includes capillary fringe) Yes <u>No</u> Depth (inches): escribe Recorded Data (stream gauge, monitoring well, aerial photos,		tions) if availab	e'	
see a see and the second subset in the second se	Freihen unshen			
emarks: Dry but appears to hold water for short periods of time				
marks: Dry but appears to hold water for short periods of time				

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Project/Site: Coopey Quarry	City/County:	Multnomah Cou	Inty Sampling Date:	4/19/2016
Applicant/Owner: ODOT Region 1		State: OR	Sampling Point: 16	
Investigator(s): Ken Sargent	Section,	Township, Range:	13, T1N, R5E	
Landform (hillslope, terrace, etc.): Terrace	L	ocal relief (concave	, convex, none): <u>concave</u>	Slope (%):
Subregion (LRR): A	Lat: 45.56	6524 Long:	-122.16521 Datum:	
Soil Map Unit Name: <u>Sauvie silt loam</u>		일양양자 과학자 문서	NWI classification:	PEM
Are climatic / hydrologic conditions on the site ty	pical for this tir	me of year? Yes	<u>x</u> No (If no, explain i	n Remarks.)
Are Vegetation, Soil, or Hydrold	ogy sign	nificantly disturbed?	Are "Normal Circumstance	es" present? Yes <u>x</u> No
Are Vegetation, Soil, or Hydrold	ogy natu	urally problematic?	(If needed, explain a	any answers in Remarks.)

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

Hydrophytic Vegetation Present?       Yes       x       No         Hydric Soil Present?       Yes       x       No         Wetland Hydrology Present?       Yes       x       No	Is the Sampled Area within a Wetland? Yes <u>x</u> No
Remarks:	

	Absolute Do	minant Ind	dicator	Dominance Test worksheet:
<u>Tree Stratum</u> (Plot size: ) 1	<u>% Cover Sr</u>	<u>ecies?</u> <u>S</u>	<u>Status</u>	Number of Dominant Species That Are OBL, FACW, or FAC:2(A)
2				Total Number of Dominant
3				Species Across All Strata: 2 (B)
4				Percent of Dominant Species That Are OBL, FACW, or FAC: (A/B)
	= T	otal Cover		Prevalence Index worksheet:
Sapling/Shrub Stratum (Plot size:)				Total % Cover of: Multiply by:
1		an Salatan		OBL species         20         x 1 =
2				
3				FACW species 80 x 2 =
4				FAC species x 3 =
5		otal Cover		FACU species x 4 =
<u>Herb Stratum</u> (Plot size: 3'sq )		Ulai COVEI		UPL species x 5 =
	70	Y FA	ACW	Column Totals: <u>100</u> (A) <u>300</u> (B)
Phalaris arundinacea     Oenanthe sarmentosa		·. ·.	DBL	Prevalence Index = B/A = <3
3. Spirea Douglasii		· · · · · · · · · · · · · · · · · · ·	ACW	
4				Hydrophytic Vegetation Indicators:
5	1. 1. 1. 1. 1.			1 - Rapid Test for Hydrophytic Vegetation
6.				× 2 - Dominance Test is >50%
7.				× 3 - Prevalence Index is $≤3.0^{1}$
8				4 - Morphological Adaptations <sup>1</sup> (Provide supporting
9				data in Remarks or on a separate sheet)
10.	194 194			5 - Wetland Non-Vascular Plants <sup>1</sup>
11.				Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
		otal Cover		<sup>1</sup> Indicators of hydric soil and wetland hydrology must
Woody Vine Stratum (Plot size:)				be present, unless disturbed or problematic.
1		····		
2				Hydrophytic
		otal Cover		Vegetation
% Bare Ground in Herb Stratum	-			Present? Yes <u>x</u> No
Remarks:				

inches)	Color (moist)	%	Color (moist)	Redox Fea %	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
-8"	10YR 2/1						Silt loam	·····
-16"	10YR 2/1	_90	10YR 3/4			_M	Silt loam	
								<b></b>
	8-9-9-9-1-9-4				hand also consistent and consistent and			
							·····	
			Deduced Matrix CC				21	
	oncentration, D=Dep						<sup>2</sup> Location: PL=Pore	-
•	I Indicators: (Applie	caple to all			ia.)		cators for Problemati	ic Hydric Solls":
— Histoso Histic F	I (A1) pipedon (A2)		Sandy Redox (S Stripped Matrix (				2 cm Muck (A10) Red Parent Materiał (T	-F2)
	listic (A3)		Loamy Mucky M		(except MLF		Very Shallow Dark Sur	
	en Sulfide (A4)		Loamy Gleyed N	Aatrix (F2)	· •		Other (Explain in Rema	
	ed Below Dark Surface		Depleted Matrix x Redox Dark Surf				3	45
	ark Surface (A12) Mucky Mineral (S1)		Depleted Dark Sun				<sup>3</sup> Indicators of hydrophy wetland hydrology mus	
	Gleyed Matrix (S4)		Redox Depressi				unless disturbed or pro	
								******
	ayer (if present):					il Present?	Yaa x	No
Type: Depth (inc	hor):				riyaric So	ni Presentr	Yes <u>x</u>	No
Depti (inc	nog,							
arks:								
DROLOG	ŝŶ							
		e required; (					ndary Indicators (2 or n	
DROLOC Mand Hyd mary Indica	SY rology Indicators: ators (minimum of on	e required; (	Water-Staine	ed Leaves (		- w	ater-Stained Leaves (E	
DROLOC tland Hyd mary Indica Surface W	SY rology Indicators: ators (minimum of on ater (A1)	e required; (	Water-Staine MLRA 1, 2, 4	ed Leaves ( 4A, and 4B		W	ater-Stained Leaves (E A, and 4B)	39) ( <b>MLRA 1, 2,</b>
DROLOC tland Hyd nary Indica Surface W High Wate	SY rology Indicators: ators (minimum of on ater (A1) r Table (A2)	e required; (	Water-Staine	ed Leaves ( 4 <b>A, and 4B</b> (11)	)		ater-Stained Leaves (E	39) ( <b>MLRA 1, 2,</b>
DROLOC Itland Hyd mary Indica Surface W High Wate Saturation	<b>SY</b> rology Indicators: ators (minimum of on ater (A1) r Table (A2) (A3)	e required; (	Water-Staine MLRA 1, 2, 4 Salt Crust (B Aquatic Inver Hydrogen Su	ed Leaves ( 4 <b>A, and 4B</b> 11) rtebrates (E ulfide Odor	) 313) (C1)		ater-Stained Leaves (E A, and 4B) rainage Patterns (B10)	39) ( <b>MLRA 1, 2,</b> e (C2)
DROLOC Itland Hyd mary Indica Surface W High Wate Saturation Water Mar	<b>SY</b> rology Indicators: ators (minimum of on ater (A1) r Table (A2) (A3) ks (B1)	e required; (	Water-Staine MLRA 1, 2, 4 Salt Crust (B Aquatic Inver Hydrogen Su Oxidized Rhi	ed Leaves ( 4 <b>A, and 4B</b> 11) rtebrates (E ulfide Odor	) 313) (C1)		ater-Stained Leaves (E A, and 4B) rainage Patterns (B10) ry-Season Water Table aturation Visible on Ae	39) ( <b>MLRA 1, 2,</b> e (C2) rial Imagery (C9)
DROLOC tland Hyd mary Indica Surface W High Wate Saturation Water Mar Sediment	<b>SY</b> rology Indicators: ators (minimum of on ater (A1) r Table (A2) (A3) ks (B1) Deposits (B2)	e required; (	Water-Staine MLRA 1, 2, 4 Salt Crust (B Aquatic Inver Hydrogen Su Oxidized Rhi Roots (C3)	ed Leaves ( 4 <b>A, and 4B</b> (11) rtebrates (E ulfide Odor izospheres	313) (C1) along Living	- W 44 Dr Dr Sr G	ater-Stained Leaves (E A, and 4B) rainage Patterns (B10) ry-Season Water Table aturation Visible on Ae eomorphic Position (D2	39) ( <b>MLRA 1, 2,</b> e (C2) rial Imagery (C9)
DROLOC tland Hyd nary Indica Surface W High Wate Saturation Water Mar Sediment Drift Depor	GY rology Indicators: ators (minimum of on ater (A1) r Table (A2) (A3) ks (B1) Deposits (B2) sits (B3)	e required; (	Water-Staine MLRA 1, 2, 4 Salt Crust (B Aquatic Inver Hydrogen Su Oxidized Rhi	ed Leaves ( 4A, and 4B (11) rtebrates (E ulfide Odor izospheres Reduced Ir	) 313) (C1) along Living ron (C4)	- W 44 Dr Dr Sr G	ater-Stained Leaves (E A, and 4B) rainage Patterns (B10) ry-Season Water Table aturation Visible on Ae	39) ( <b>MLRA 1, 2,</b> e (C2) rial Imagery (C9)
DROLOC tland Hyd mary Indica Surface W High Wate Saturation Water Mar Sediment Drift Depor	<b>SY</b> rology Indicators: ators (minimum of on ater (A1) r Table (A2) (A3) ks (B1) Deposits (B2)	e required; (	Water-Staine MLRA 1, 2, 4 Salt Crust (B Aquatic Inver Hydrogen Su Oxidized Rhi Roots (C3) Presence of Recent Iron I Soils (C6)	ed Leaves ( 4 <b>A, and 4B</b> 11) rtebrates (E ulfide Odor izospheres Reduced Ir Reduction i	) (C1) along Living ron (C4) n Tilled		ater-Stained Leaves (E A, and 4B) rainage Patterns (B10) ry-Season Water Table aturation Visible on Ae eomorphic Position (D2	39) ( <b>MLRA 1, 2,</b> e (C2) rial Imagery (C9)
DROLOC tland Hyd mary Indica Surface W High Wate Saturation Water Mar Sediment Drift Depor	GY rology Indicators: ater (A1) r Table (A2) (A3) ks (B1) Deposits (B2) sits (B3) or Crust (B4)	e required; (	Water-Staine MLRA 1, 2, 4 Salt Crust (B Aquatic Inver Hydrogen Su Oxidized Rhi Roots (C3) Presence of Recent Iron I Soils (C6) Stunted or St	ed Leaves ( 4 <b>A, and 4B</b> 11) rtebrates (E ulfide Odor izospheres Reduced Ir Reduction i	) (C1) along Living ron (C4) n Tilled		ater-Stained Leaves (E A, and 4B) rainage Patterns (B10) ry-Season Water Table aturation Visible on Aer eomorphic Position (D2 hallow Aquitard (D3) AC-Neutral Test (D5)	39) ( <b>MLRA 1, 2,</b> 9 (C2) rial Imagery (C9) 2)
DROLOC Manay Indica Surface W High Wate Saturation Water Mar Sediment Drift Depo Algal Mate Iron Depos	GY rology Indicators: ators (minimum of on- ater (A1) r Table (A2) (A3) ks (B1) Deposits (B2) sits (B3) or Crust (B4) sits (B5)	e required; (	Water-Staine MLRA 1, 2, 4 Salt Crust (B Aquatic Inver Hydrogen SL Oxidized Rhi Roots (C3) Presence of Recent tron I Soils (C6) Stunted or Sl (LRR A)	ed Leaves ( 4A, and 4B 11) rtebrates (E Ilfide Odor izospheres Reduced Ir Reduced Ir Reduction i tressed Pla	al13) (C1) along Living ron (C4) n Tilled ants (D1)		ater-Stained Leaves (E A, and 4B) rainage Patterns (B10) ry-Season Water Table aturation Visible on Aer eomorphic Position (D2 hallow Aquitard (D3) AC-Neutral Test (D5) aised Ant Mounds (D6)	39) ( <b>MLRA 1, 2,</b> ∋ (C2) rial Imagery (C9) 2) ) (LRR <b>A</b> )
DROLOC Manay Indica Surface W High Wate Saturation Water Mar Sediment Drift Depo Algal Mat o Iron Depos Surface So	GY rology Indicators: ater (A1) r Table (A2) (A3) ks (B1) Deposits (B2) sits (B3) or Crust (B4)		Water-Staine MLRA 1, 2, 4 Salt Crust (B Aquatic Inver Hydrogen Su Oxidized Rhi Roots (C3) Presence of Recent Iron I Soils (C6) Stunted or St	ed Leaves ( 4A, and 4B 11) rtebrates (E Ilfide Odor izospheres Reduced Ir Reduced Ir Reduction i tressed Pla	al13) (C1) along Living ron (C4) n Tilled ants (D1)		ater-Stained Leaves (E A, and 4B) rainage Patterns (B10) ry-Season Water Table aturation Visible on Aer eomorphic Position (D2 hallow Aquitard (D3) AC-Neutral Test (D5)	39) ( <b>MLRA 1, 2,</b> ∋ (C2) rial Imagery (C9) 2) ) (LRR <b>A</b> )
DROLOC tland Hyd mary Indica Surface W High Wate Saturation Water Mar Sediment Drift Depos Algal Mat Iron Depos Surface So Inundation	GY rology Indicators: ators (minimum of on- ater (A1) r Table (A2) (A3) ks (B1) Deposits (B2) sits (B3) or Crust (B4) sits (B5) pil Cracks (B6)	igery (B7)	Water-Staine MLRA 1, 2, 4 Salt Crust (B Aquatic Inver Hydrogen SL Oxidized Rhi Roots (C3) Presence of Recent tron I Soils (C6) Stunted or Sl (LRR A)	ed Leaves ( 4A, and 4B 11) rtebrates (E Ilfide Odor izospheres Reduced Ir Reduced Ir Reduction i tressed Pla	al13) (C1) along Living ron (C4) n Tilled ants (D1)		ater-Stained Leaves (E A, and 4B) rainage Patterns (B10) ry-Season Water Table aturation Visible on Aer eomorphic Position (D2 hallow Aquitard (D3) AC-Neutral Test (D5) aised Ant Mounds (D6)	39) ( <b>MLRA 1, 2,</b> ∋ (C2) rial Imagery (C9) 2) ) (LRR <b>A</b> )
DROLOC Manay Indica Surface W High Wate Saturation Water Mar Sediment Drift Depos Algal Mat of Iron Depos Surface So Inundation Sparsely W	<b>SY</b> rology Indicators: ators (minimum of on- ater (A1) r Table (A2) (A3) ks (B1) Deposits (B2) sits (B3) or Crust (B4) sits (B5) oil Cracks (B6) Visible on Aerial Ima 'egetated Concave S	igery (B7)	Water-Staine MLRA 1, 2, 4 Salt Crust (B Aquatic Inver Hydrogen SL Oxidized Rhi Roots (C3) Presence of Recent tron I Soils (C6) Stunted or Sl (LRR A)	ed Leaves ( 4A, and 4B 11) rtebrates (E Ilfide Odor izospheres Reduced Ir Reduced Ir Reduction i tressed Pla	al13) (C1) along Living ron (C4) n Tilled ants (D1)		ater-Stained Leaves (E A, and 4B) rainage Patterns (B10) ry-Season Water Table aturation Visible on Aer eomorphic Position (D2 hallow Aquitard (D3) AC-Neutral Test (D5) aised Ant Mounds (D6)	39) ( <b>MLRA 1, 2,</b> ∋ (C2) rial Imagery (C9) 2) ) (LRR <b>A</b> )
mary Indica Surface W High Wate Saturation Water Mar Sediment Drift Depos Algal Mat Iron Depos Surface So Inundation	GY rology Indicators: ators (minimum of on- ater (A1) r Table (A2) (A3) ks (B1) Deposits (B2) sits (B3) or Crust (B4) sits (B5) oil Cracks (B6) Visible on Aerial Ima 'egetated Concave S ations:	igery (B7) urface (B8)	Water-Staine MLRA 1, 2, 4 Salt Crust (B Aquatic Inver Hydrogen SL Oxidized Rhi Roots (C3) Presence of Recent tron I Soils (C6) Stunted or Sl (LRR A)	ed Leaves ( 4A, and 4B 11) rtebrates (E Ilfide Odor izospheres Reduced Ir Reduced Ir Reduction i tressed Pla in in Rema	al13) (C1) along Living ron (C4) n Tilled ants (D1)		ater-Stained Leaves (E A, and 4B) rainage Patterns (B10) ry-Season Water Table aturation Visible on Aer eomorphic Position (D2 hallow Aquitard (D3) AC-Neutral Test (D5) aised Ant Mounds (D6)	39) ( <b>MLRA 1, 2,</b> ∋ (C2) rial Imagery (C9) 2) ) ( <b>LRR A</b> )
DROLOC tland Hyd mary Indica Surface W High Wate Saturation Water Mar Sediment Drift Depos Surface So Inundation Sparsely W td Observ frace Wate Iter Table F	GY rology Indicators: ators (minimum of on- ater (A1) r Table (A2) (A3) ks (B1) Deposits (B2) sits (B3) or Crust (B4) sits (B5) oil Cracks (B6) Visible on Aerial Ima (egetated Concave S ations: r Present? Yes	ngeny (B7) urface (B8) No	Water-Staine MLRA 1, 2, 4 Salt Crust (B Aquatic Inver Hydrogen SL Oxidized Rhi Roots (C3) Presence of Recent tron I Soils (C6) Stunted or SI (LRR A) Other (Expla	ed Leaves ( <b>4A, and 4B</b> 11) rtebrates (E Ilfide Odor izospheres Reduced Ir Reduced Ir Reduction i tressed Pla in in Rema ):	alang Living (C1) along Living ron (C4) n Tilled ints (D1) rks)		ater-Stained Leaves (E A, and 4B) rainage Patterns (B10) ry-Season Water Table aturation Visible on Aer eomorphic Position (D2 hallow Aquitard (D3) AC-Neutral Test (D5) aised Ant Mounds (D6)	39) ( <b>MLRA 1, 2,</b> (C2) rial Imagery (C9) 2) ( <b>LRR A</b> ) (D7)
DROLOC tland Hyd mary Indica Surface W High Wate Saturation Water Mar Sediment Drift Depo Algal Mat Iron Depos Surface So Inundation Sparsely W dObserv frace Wate turation Pro	SY rology Indicators: ators (minimum of on- ater (A1) r Table (A2) (A3) ks (B1) Deposits (B2) sits (B3) or Crust (B4) sits (B5) oil Cracks (B6) Visible on Aerial Ima (egetated Concave S ations: r Present? Yes esent?	ngeny (B7) urface (B8) No No	Water-Staine     MLRA 1, 2, 4     Salt Crust (B     Aquatic Inver     Hydrogen Su     Oxidized Rhi     Roots (C3)     Presence of     Recent tron I     Soils (C6)     Stunted or St     (LRR A)     Other (Expla      x     Depth (inches)	ed Leaves ( <b>4A, and 4B</b> 11) rtebrates (E ulfide Odor izospheres Reduced Ir Reduction i tressed Pla in in Rema ):	alang Living (C1) along Living ron (C4) n Tilled ints (D1) rks)		ater-Stained Leaves (E A, and 4B) rainage Patterns (B10) ry-Season Water Table aturation Visible on Aer eomorphic Position (D2 hallow Aquitard (D3) AC-Neutral Test (D5) aised Ant Mounds (D6) rost-Heave Hummocks	39) ( <b>MLRA 1, 2,</b> (C2) rial Imagery (C9) 2) ( <b>LRR A</b> ) (D7)
DROLOC tland Hyd mary Indica Surface W High Wate Saturation Water Mar Sediment Drift Depos Algal Mat Iron Depos Surface So Inundation Sparsely W the other Table F turation Pre- Cludes capi	SY rology Indicators: ators (minimum of on- ater (A1) r Table (A2) (A3) ks (B1) Deposits (B2) sits (B3) or Crust (B4) sits (B5) oil Cracks (B6) Visible on Aerial Ima (egetated Concave S) ations: r Present? Yes esent? Yes esent? Yes	ngery (B7) urface (B8) No No No	Water-Staine     MLRA 1, 2, 4     Salt Crust (B     Aquatic Inver     Hydrogen Su     Oxidized Rhi     Roots (C3)     Presence of     Recent tron I     Soils (C6)     Stunted or St     (LRR A)     Other (Expla      x     Depth (inches)     Depth (inches)	ed Leaves ( <b>4A, and 4B</b> 11) rtebrates (E ulfide Odor izospheres Reduced Ir Reduction i tressed Pla in in Rema ): ):	(C1) along Living ron (C4) n Tilled ints (D1) rks)		ater-Stained Leaves (E A, and 4B) rainage Patterns (B10) ry-Season Water Table aturation Visible on Aer eomorphic Position (D2 hallow Aquitard (D3) AC-Neutral Test (D5) aised Ant Mounds (D6) rost-Heave Hummocks	39) ( <b>MLRA 1, 2,</b> (C2) rial Imagery (C9) 2) ( <b>LRR A</b> ) (D7)
DROLOC tland Hyd mary Indica Surface W High Wate Saturation Water Mar Sediment Drift Depos Algal Mat Iron Depos Surface So Inundation Sparsely W the other Table F turation Pre- Cludes capi	SY rology Indicators: ators (minimum of on- ater (A1) r Table (A2) (A3) ks (B1) Deposits (B2) sits (B3) or Crust (B4) sits (B5) oil Cracks (B6) Visible on Aerial Ima (egetated Concave S ations: r Present? Yes esent?	ngery (B7) urface (B8) No No No	Water-Staine     MLRA 1, 2, 4     Salt Crust (B     Aquatic Inver     Hydrogen Su     Oxidized Rhi     Roots (C3)     Presence of     Recent tron I     Soils (C6)     Stunted or St     (LRR A)     Other (Expla      x     Depth (inches)     Depth (inches)	ed Leaves ( <b>4A, and 4B</b> 11) rtebrates (E ulfide Odor izospheres Reduced Ir Reduction i tressed Pla in in Rema ): ):	(C1) along Living ron (C4) n Tilled ints (D1) rks)		ater-Stained Leaves (E A, and 4B) rainage Patterns (B10) ry-Season Water Table aturation Visible on Aer eomorphic Position (D2 hallow Aquitard (D3) AC-Neutral Test (D5) aised Ant Mounds (D6) rost-Heave Hummocks	39) ( <b>MLRA 1, 2,</b> (C2) rial Imagery (C9) 2) ( <b>LRR A</b> ) (D7)
DROLOC tland Hyd mary Indica Surface W High Wate Saturation Water Mar Sediment Drift Depos Surface So Inundation Sparsely W to Observe face Wate ter Table F turation Pre- Cludes capi cribe Recon	SY rology Indicators: ators (minimum of on- ater (A1) r Table (A2) (A3) ks (B1) Deposits (B2) sits (B3) or Crust (B4) sits (B5) oil Cracks (B6) Visible on Aerial Ima (egetated Concave S) ations: r Present? Yes esent? Yes esent? Yes	ngery (B7) urface (B8) No No No	Water-Staine     MLRA 1, 2, 4     Salt Crust (B     Aquatic Inver     Hydrogen Su     Oxidized Rhi     Roots (C3)     Presence of     Recent tron I     Soils (C6)     Stunted or St     (LRR A)     Other (Expla      x     Depth (inches)     Depth (inches)	ed Leaves ( <b>4A, and 4B</b> 11) rtebrates (E ulfide Odor izospheres Reduced Ir Reduction i tressed Pla in in Rema ): ):	(C1) along Living ron (C4) n Tilled ints (D1) rks)		ater-Stained Leaves (E A, and 4B) rainage Patterns (B10) ry-Season Water Table aturation Visible on Aer eomorphic Position (D2 hallow Aquitard (D3) AC-Neutral Test (D5) aised Ant Mounds (D6) rost-Heave Hummocks	39) ( <b>MLRA 1, 2,</b> (C2) rial Imagery (C9) 2) ( <b>LRR A</b> ) (D7)
DROLOC tland Hyd mary Indica Surface W High Wate Saturation Water Mar Sediment Drift Depos Algal Mat Iron Depos Surface So Inundation Sparsely W the other Table F turation Pre- Cludes capi	SY rology Indicators: ators (minimum of on- ater (A1) r Table (A2) (A3) ks (B1) Deposits (B2) sits (B3) or Crust (B4) sits (B5) oil Cracks (B6) Visible on Aerial Ima (egetated Concave S) ations: r Present? Yes esent? Yes esent? Yes	ngery (B7) urface (B8) No No No	Water-Staine     MLRA 1, 2, 4     Salt Crust (B     Aquatic Inver     Hydrogen Su     Oxidized Rhi     Roots (C3)     Presence of     Recent tron I     Soils (C6)     Stunted or St     (LRR A)     Other (Expla      x     Depth (inches)     Depth (inches)	ed Leaves ( <b>4A, and 4B</b> 11) rtebrates (E ulfide Odor izospheres Reduced Ir Reduction i tressed Pla in in Rema ): ):	(C1) along Living ron (C4) n Tilled ints (D1) rks)		ater-Stained Leaves (E A, and 4B) rainage Patterns (B10) ry-Season Water Table aturation Visible on Aer eomorphic Position (D2 hallow Aquitard (D3) AC-Neutral Test (D5) aised Ant Mounds (D6) rost-Heave Hummocks	39) ( <b>MLRA 1, 2,</b> (C2) rial Imagery (C9) 2) ( <b>LRR A</b> ) (D7)

No.

Sciarco

Project/Site: Co	opey Quarry	City/Coun	ty: Multnomah Cou	inty Sampling	g Date: 🔄	4/18/2016	an de la company de la comp
Applicant/Owner:	ODOT Region 1		State:OR	Sampling Point: 1	7		
Investigator(s):	Ken Sargent	Sectio	n, Township, Range:	13, T1N, R5E			
Landform (hillslope	e, terrace, etc.): Te	rrace	Local relief (concave	, convex, none): <u>co</u>	ncave	Slope (%):	2
Subregion (LRR):	Α	Lat: <u>45</u>	.5652 Long:	-122.16525 D	Datum:		
Soil Map Unit Nam	e: Aschoff cobbly	loam		NWI classifica	ation: U	Jpland	· 같아? [1] : : : : : : : : : : : : : : : : : : :
Are climatic / hydro	ologic conditions on th	ne site typical for this	time of year? Yes	x No (If no, e	explain in R	Remarks.)	
Are Vegetation	, Soil, o	r Hydrology 🔜 s	ignificantly disturbed?	Are "Normal Circun	nstances"	present? Yes <u>x</u>	No
Are Vegetation	, Soil, o	r Hydrology r	aturally problematic?	(If needed, e	xplain any	answers in Remark	(S.)

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

Hydrophytic Vegetation Present?       Yes       No         Hydric Soil Present?       Yes       No         Wetland Hydrology Present?       Yes       No	x x x	Sampled Area within a	a Wetland? Yes _	<u>No x</u>
Remarks:				

	Absolute	Dominant	Indicator	Dominance Test worksheet:
<u>Tree Stratum</u> (Plot size:) 1	<u>% Cover</u>	Species?	<u>Status</u>	Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)
2.				Total Number of Dominant
3.				Species Across All Strata: (B)
4				Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50</u> (A/B)
		= Total Cove	<u>ار</u>	
Sapling/Shrub Stratum (Plot size:)				Prevalence Index worksheet:
1. Rosa woodsii	30	<b>Y</b>	FACU	Total % Cover of: Multiply by:
2. Rubus armeniacus	30	Y	FAC	OBL species x 1 =
3				FACW species x 2 =
4.		1		FAC species 50 $\times 3 = 300$
5				FACU species 61 x 4 = 100
		= Total Cove	r	UPL species $x 5 =$
Herb Stratum (Plot size: <u>3'sq</u> )				Column Totals: (A) (B)
1. Vicia cracca	1		FACU	
2. Daucus carota	20	Y Y	FAC	Prevalence Index = B/A = >3
3.				
4.				Hydrophytic Vegetation Indicators:
5		11. 11.		1 - Rapid Test for Hydrophytic Vegetation
6.				2 - Dominance Test is >50%
7.				3 - Prevalence Index is ≤3.0 <sup>1</sup>
8		1.1.1		4 - Morphological Adaptations <sup>1</sup> (Provide supporting
9.				dala in Remarks or on a separate sheet)
10.				5 - Wetland Non-Vascular Plants <sup>1</sup>
11.	******			Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
		= Tolal Cove	۲.	<sup>1</sup> Indicators of hydric soil and wetland hydrology must
Woody Vine Stratum (Plot size:)		-		be present, unless disturbed or problematic.
1. Hedera helix	30	$\mathbf{Y}^{-1}$	FACU	
2				
•••••••••••••••••••••••••••••••••••••••		= Total Cove	r	Hydrophytic State
% Bare Ground in Herb Stratum				Présent? Yes <u>No x</u>
Remarks: More upland than wetland plants.				
remarker more upland than metana planter				

Depth	Matrix			Redox Feat	ures	nfirm the al		-
(inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
)-3"	10YR 2/1						Silt loam	
}"+							Quarry spalls	
						. <u></u>		
					********			
		·······						<u>.</u>
Type: C=Con	centration, D=Depl	etion, RM=	Reduced Matrix, CS	S=Covered o	r Coated Sa	nd Grains.	<sup>2</sup> Location: PL=Pore	Lining, M=Matrix
Hydric Soil In	dicators: (Annlic	able to all	LRRs, unless othe	erwise noter	1.)	Indi	cators for Problemat	ic Hydric Soils <sup>3</sup> :
Histosol (/			Sandy Redox (S		,		2 cm Muck (A10)	
	pedon (A2)		Stripped Matrix	(S6)		F	Red Parent Material (1	
Black Hist	tic (A3)		Loamy Mucky M		except MLR		/ery Shallow Dark Su	
_ ` `	Sulfide (A4) Below Dark Surface	- (A 11) —	Loamy Gleyed I Depleted Matrix	• •		(	Other (Explain in Rem	arks)
	k Surface (A12)	e (ATT)	Redox Dark Sur			3	Indicators of hydrophy	vtic vegetation an
	icky Mineral (S1)		Depleted Dark S	Surface (F7)		V	vetland hydrology mu	st be present,
Sandy Gle	eyed Matrix (S4)		Redox Depress	ions (F8)		ιι	unless disturbed or pro	oblematic
strictive Lave	er (if present):							
Туре:			÷ -		Hydric Soi	il Present?	Yes	No <u>x</u>
Depth (inche	s):							
arks:								
narks:				,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,				
narks:								
narks:								
DROLOGY								
DROLOGY etland Hydrol	ogy Indicators:	e required: c	heck all that apply			Secon	dary Indicators (2 or n	nore required)
DROLOGY etland Hydrol	ogy Indicators:	e required; c	heck all that apply Water-Stain	) ed Leaves (E	39) (except		dary Indicators (2 or n ater-Stained Leaves (I	
DROLOGY etland Hydrol imary Indicator Surface Wate	ogy Indicators: rs (minimum of one er (A1)	e required; c	Water-Stain MLRA 1, 2,	ed Leaves (E 4A, and 4B)	, ,	- Wa 4A	ater-Stained Leaves (I , and 4B)	B9) (MLRA 1, 2,
DROLOGY etland Hydrol imary Indicato Surface Wate High Water T	ogy Indicators: rs (minimum of one er (A1) fable (A2)	e required; c	Water-Stain MLRA 1, 2, Salt Crust (E	ed Leaves (E <b>4A, and 4B</b> ) 311)	, (	Wa 4A Dr	ater-Stained Leaves (I , <b>and 4B</b> ) ainage Patterns (B10)	B9) (MLRA 1, 2,
DROLOGY etland Hydrol imary Indicato Surface Wate High Water T Saturation (A	ogy Indicators: rs (minimum of one er (A1) able (A2) 3)	e required; c	Water-Stain MLRA 1, 2, Salt Crust (E Aquatic Inve	ed Leaves (E <b>4A, and 4B</b> ) 311) ertebrates (B	13)	Wi 4A Dr Dr	ater-Stained Leaves (I a, <b>and 4B</b> ) ainage Patterns (B10) y-Season Water Table	B9) ( <b>MLRA 1, 2,</b> ∋ (C2)
DROLOGY etland Hydrol imary Indicato Surface Wate High Water T	ogy Indicators: rs (minimum of one er (A1) able (A2) 3)	e required; c	Water-Stain MLRA 1, 2, Salt Crust (E Aquatic Inve Hydrogen S	ed Leaves (E <b>4A, and 4B</b> ) 311) ertebrates (B ulfide Odor (	13) C1)	Wi 4A Dr Dr	ater-Stained Leaves (I , <b>and 4B</b> ) ainage Patterns (B10)	B9) ( <b>MLRA 1, 2,</b> ∋ (C2)
DROLOGY etland Hydrol imary Indicato Surface Wate High Water T Saturation (A	ogy Indicators: rs (minimum of one er (A1) able (A2) 3) (B1)	e required; c	Water-Stain MLRA 1, 2, Salt Crust (E Aquatic Inve Hydrogen S	ed Leaves (E <b>4A, and 4B</b> ) 311) ertebrates (B	13) C1)		ater-Stained Leaves (I a, <b>and 4B</b> ) ainage Patterns (B10) y-Season Water Table	B9) (MLRA 1, 2, e (C2) rial Imagery (C9)
DROLOGY etland Hydrol imary Indicator Surface Wate High Water T Saturation (A Water Marks	ogy Indicators: rs (minimum of one er (A1) able (A2) 3) (B1) posits (B2)	e required; c	Water-Stain MLRA 1, 2, Salt Crust (E Aquatic Inve Hydrogen S Oxidized Rh Roots (C3) Presence of	ed Leaves (E <b>4A, and 4B</b> ) 311) ertebrates (B ulfide Odor ( aizospheres a Reduced Irc	13) C1) along Living on (C4)		ater-Stained Leaves (I a, <b>and 4B</b> ) ainage Patterns (B10) y-Season Water Table turation Visible on Ae	B9) (MLRA 1, 2, e (C2) rial Imagery (C9)
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## Coopey Quarry ODOT M17016 Mitigation Report

## Multnomah County, Oregon



Prepared by:

Oregon Department of Transportation (ODOT) Region 1 123 NW Flanders Portland, OR 97209-4012 503-731-8427

November 8, 2017

Exhibit A.3.e

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Appendix A: Coopey Quarry Reclamation Plan

i

## 1. Introduction

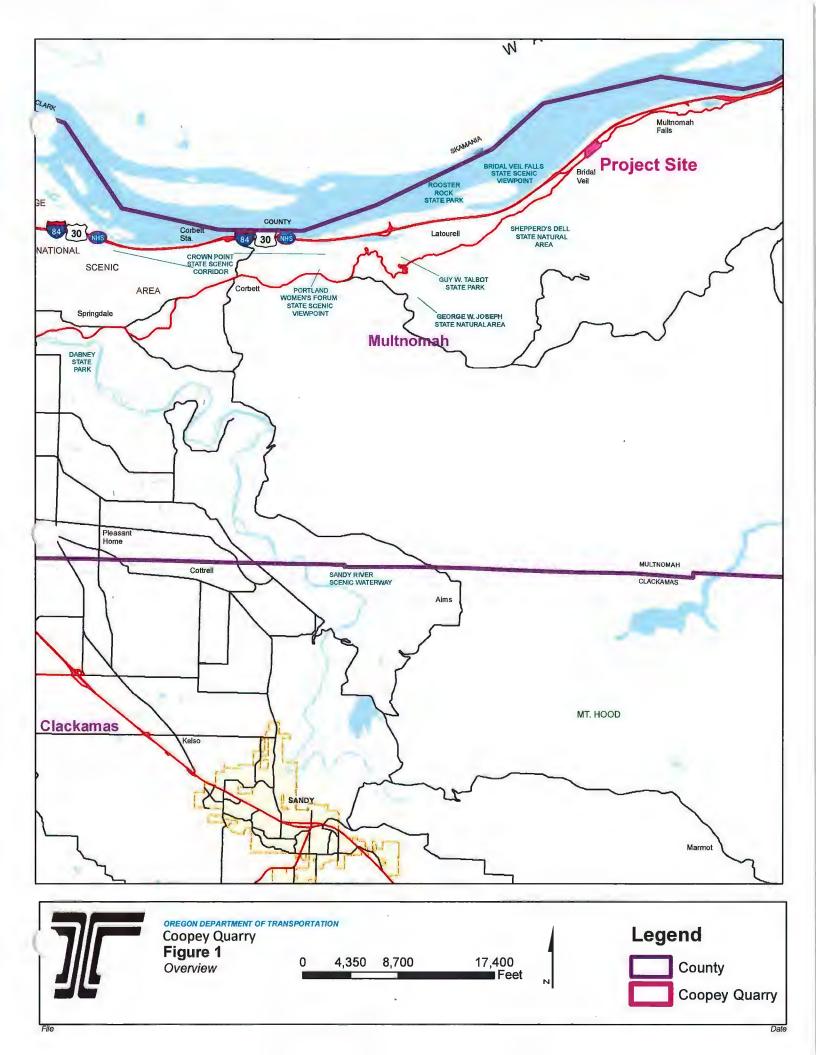
ODOT is considering Coopey Quarry as a disposal site for landslide debris (**Figure 1, next page**). The winter of 2016-2017 saw heavy rains in the Columbia River Gorge National Scenic Area (CRGNSA). The rain combined with the steep topography and frequent freezing and thawing resulted in a series of landslides. These landslides have filled ODOT's current permanent and temporary disposal sites. In addition, the Eagle Creek fire of this past summer has created more slides and debris. Barren slopes have increased the potential for more slides this coming winter. Coopey Quarry represents ODOT's best option for a permanent disposal site in the Gorge. It could take five to thirty years to fill the quarry. This will depend on how much slide debris is produced in the Gorge which fluctuates considerably from year to year. To access the old quarry site, a new roadway is proposed through existing buffer around priority habitats. This mitigation report documents impacts to the priority habitats and buffers and proposes mitigation for these impacts in compliance with Multnomah County's CRGNSA Ordinance, Chapter 38.

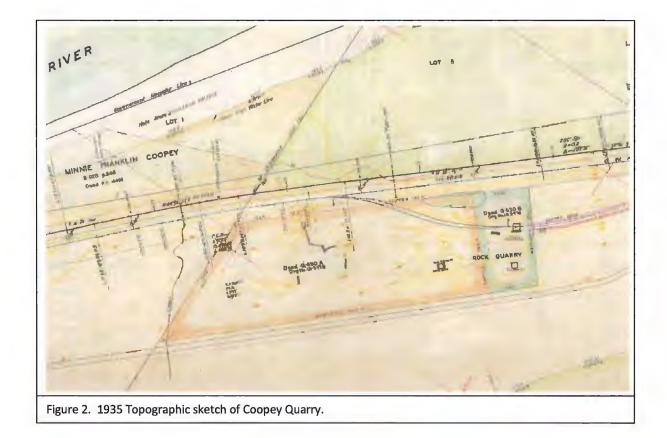
Coopey Quarry was chosen as a potential disposal site in part because of its disturbed nature. Historic site alterations include construction of the Historic Columbia River Highway (HCRH) to the south and the railroad and I-84 to the north. A topographic map from 1935 shows the likely pre-guarry topography (Figure 2). Since then, the site was excavated significantly creating a steep cliff face and flat quarry floor. The quarry is identified on ROW maps from late 1930s. The site was used on and off into the 1960s or 1970s. Today the floor of the guarry is rock or gravel with some interstitial soils; where soils are no deeper than 4 inches. Grasses, weeds, moss and lichen cover most of the quarry floor. Within the quarry floor, woody vegetation grows in spots particularly near the shaded southern edge of the floor where there tends to be more soil sluffed from above (Photo 1). Red alder (Alnus rubra), Himalayan blackberry (Rubus armeniacus), California brome (Bromus carinatus) are the common dominants with patches of chickory (Cichorium intybus), common camas (Camassia guamash) and black cottonwood (Populus balsamifera) saplings. The top of the cliff wall is rimmed with forest on native soils. This forest is dominated by Oregon oak (Quercus garryana), Douglas fir (Pseudotsuga menziesii), and black cottonwood (Populus balsamifera) with some big leaf maple (Acer macrophyllum). The understory is patchy made up of predominantly poison oak (Toxicodendron diversilobum), English ivy (Hedera helix) and snowberry (Symphoricarpos albus) with blackberry (Rubus armeniacus), herb Robert (Geranium robertianum), red osier dogwood (Cornus stolonifera) and multiple species of fern being common.



**Photo 1.** Photo of Coopey Quarry from center of site looking southeast.

Coopey Quarry Mitigation Report





## 2. Priority Habitats

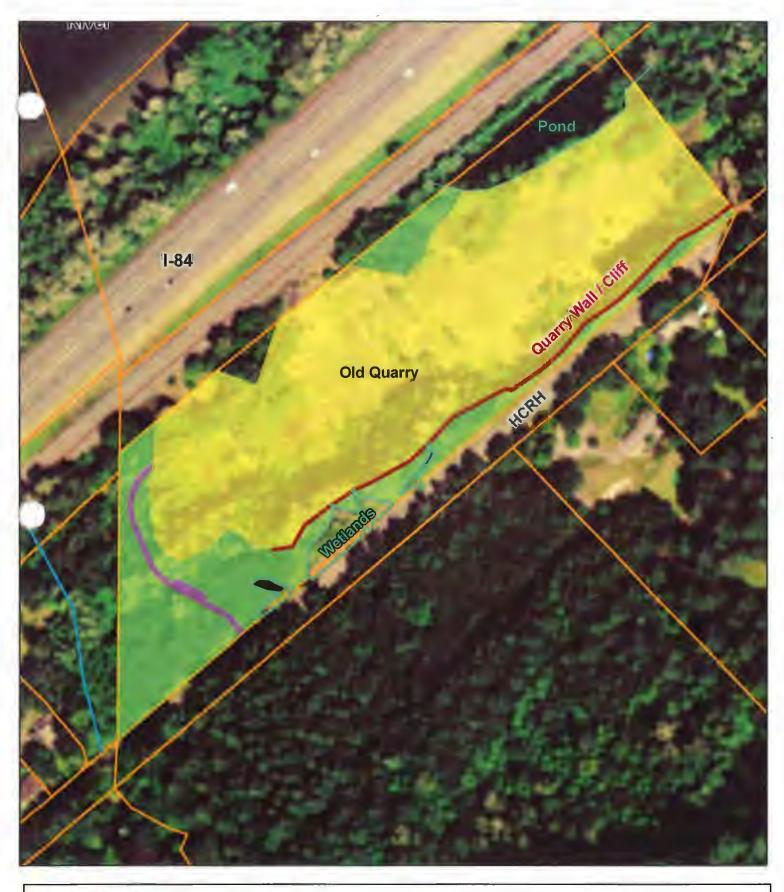
Several Priority Habitats, as defined by Multnomah County Code (MCC Chapter 38) are located on the project site (**Figure 3**). A large pond is located in the northeast corner of the property and may have been dug in what once was part of the Columbia River floodplain. The shores of the pond are gravel with large boulders indicating that the pond was excavated. Three seasonal wetlands are located along the southern property line, adjacent to the HCRH (See Wetland Delineation Report). Coopey Creek is located off site to the west and appears to be perennial.

The quarry wall, although man-made, provides cliff habitat. The cliffs are approximately 1,000 linear feet long and 20-50 feet tall, of which approximately 500 feet is vegetated by several species of fern, English ivy and blackberry and transitions into a vegetated steep slope. The remaining 500 feet are relatively un-vegetated and contain a fissure running horizontally approximately 15 feet from the top. There are no sensitive plant or wildlife sites on the property (See Biological Resource Impact Memo).

## 3. Buffers

The pond, wetlands, Coopey Creek and the quarry wall (cliff) were all considered to require a 200 foot NSA buffer. Previously developed areas that provide few if any buffer functions were excluded. This is similar to the NSA analysis used for ODOT's HCRH Trail: Wyeth to Starvation Creek. For the Wyeth to Starvation Creek Trail, existing but abandoned roadways (HCRH) and a gravel parking area were considered existing structures and not buffer. For the Coopey Quarry site, the old quarry was considered and previously developed existing structure. This area is mostly gravel and after fifty years has had some regrowth of vegetation in some areas that may provide "de minimis" buffer functions. Without intervention to restore the site establishment of soils, forest growth and a functioning buffer are centuries away. Excluding the wetlands, pond, and Quarry, the remaining area is mostly buffer (Appendix A, Figure 2). The buffers for different resources overlapped and merged with other buffers. Buffers were not separated by resource.

Coopey Quarry Mitigation Report



		GON DEPAR	RTMENT OF TRANS	PORTATION	1	Legend	
	Fig	gure 3			1	Regulated Wetland	Quarry Wall
	0	80	160	320	м	Stream	Quarry Area
	-			Feet		Combined Buffer	Impact Area
File	-						Date

## 4. Impacts

No impacts are proposed to wetlands or the pond.

The man-made quarry wall / cliff face will be lost when the disposal site is filled. The quarry wall is about 20-50 feet high and extends 1,000 feet along the southern edge of the project. The wall is not currently used by nesting birds and does not support sensitive cliff dwelling plant species. However, there is potential for this quarry wall to support nesting birds and support cliff dwelling sensitive plant species in the future.

Buffer impacts were determined by calculating the area of the access road passing through the existing buffer. This includes a ten foot lane plus two feet on each side for additional impacts from fill slopes and grading. The access road will impact 0.15 acre of buffer. This impact is not permanent and ODOT will restore the roadway once the disposal site is filled, which is estimated to take between 5-30 years.

The buffer is second growth forest consisting of Oregon white oak (Quercus garryana), Douglas fir (Pseudotsuga menziesii), and black cottonwood and some big leaf maple (Acer macrophyllum) (**Photo 2**). The understory is patchy made up of predominantly poison oak (Toxicodendron diversilobum), English ivy (Hedera helix) and snowberry (Symphoricarpos albus) with blackberry (Rubus armeniacus) and herb Robert (Geranium robertianum).



Photo 2. Photo of buffer habitat. 4/11/2017

## 5. Mitigation

The project will remove 1,000 linear feet of man-made quarry wall/cliff and 0.15 acre of NSA buffer.

As mitigation for these impacts ODOT will

- Restore Coopey Quarry creating 7.26 acres of buffer
- Restore the original 0.15 acre of buffer impact.
- Remove English Ivy and Himalayan blackberry from 2.60 acre of existing NSA buffer

### Approach

The overall goal is to restore a forested hillslope on the current quarry site. Key design elements include

- 1) Retaining pond and wetlands
- 2) Using vegetated berms to hide disposal activity from I-84 travelers
- 3) Creating topography similar to what the site was like in 1935
- 4) Creating ephemeral ponds to increase plant community and habitat diversity

Coopey Quarry Mitigation Report The Coopey Creek Disposal Site Reclamation Plan (**Appendix A**) will start with planting berms along I-84. These initial berms are designed to hide disposal activity from I-84 travelers. The berms will be planted on the north slopes with native tree species shortly after construction. Other initial restoration activities will include removal of English Ivy and Himalayan blackberry from the retained buffers.

The existing pond shoreline is ringed with smaller red alder, willow, Douglas fir and black cottonwood trees with an understory of Himalayan blackberry (Photo 3). The rocky very shallow soils limit plant growth. ODOT proposes to remove the Himalayan blackberry and retain the larger trees.

ODOT will restore the quarry site continuously as it gets filled. ODOT proposes to fill the quarry from the east to the west in phases (Figure 4). We are anticipating about five phases that create cells within the disposal site. The berms along I-84 will be increased as the cells are filled. When a cell is completely filled, it will be restored with a foot of topsoil, compost and native forest plantings. When the final phase is complete and the cell is filled, ODOT will remove the access road and replant the access route.

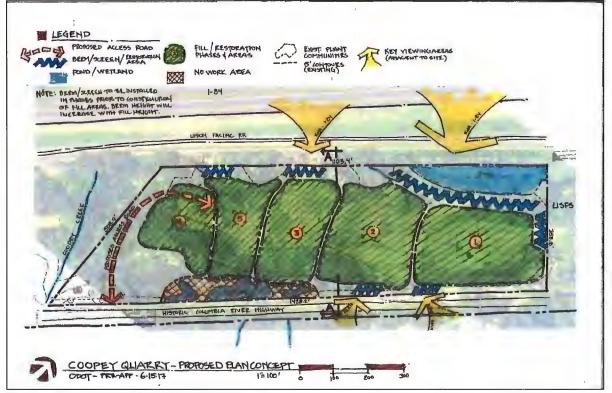


Figure 4. Coopey Quarry restoration concept.



Photo 3. Pond edge. 3/30/2017

Coopey Quarry Mitigation Report M17016 November 2017 ODOT will create some shallow depressions on top the restoration site. These depressions will have hard compacted subspoils with only a shallow soil layer (<6") on the surface to favor herbaceous growth. These shallow depressions will be fed by rainfall and runoff. At least one will receive runoff from the existing wetlands. These ponds will hold water seasonally increase the hydraulic diversity of the site and increase plant diversity. These depressions will be seeded with a variety of native grasses and herbs including common camas (Camassia quamash) and Lupine (Lupinus latifolius). See Reclamation Plan for more details.

The Reclamation Plan (Appendix A) identifies the initial palette of woody plant species selected for the site. The landscape to the south and upslope of the HCRH near the site was the reference landscape that was used to help direct plant selection. The Reclamation Plan shows the proposed grades and includes a landscaping plan identifying the final plant species selected and shows the general planting locations. ODOT will plant the native overstory with Oregon White Oak and Douglas fir. Western red cedar and black cottonwood will increase the diversity of the overstory. High habitat quality shrub species (hazelnut, thimbleberry, snowberry, Oregon grape, oso berry, and serviceberry) were chosen to provide good wildlife food sources. Vine maple and oceanspray were selected to provide habitat for small passerine birds.

Downed large wood along the pond edge and within the buffer could be placed to provide wildlife habitat. It was not included because there was concern the wood could be considered a fire hazard. Further discussion of wood use on the site is warranted before a final decision.

## 6. Performance Standards and Monitoring

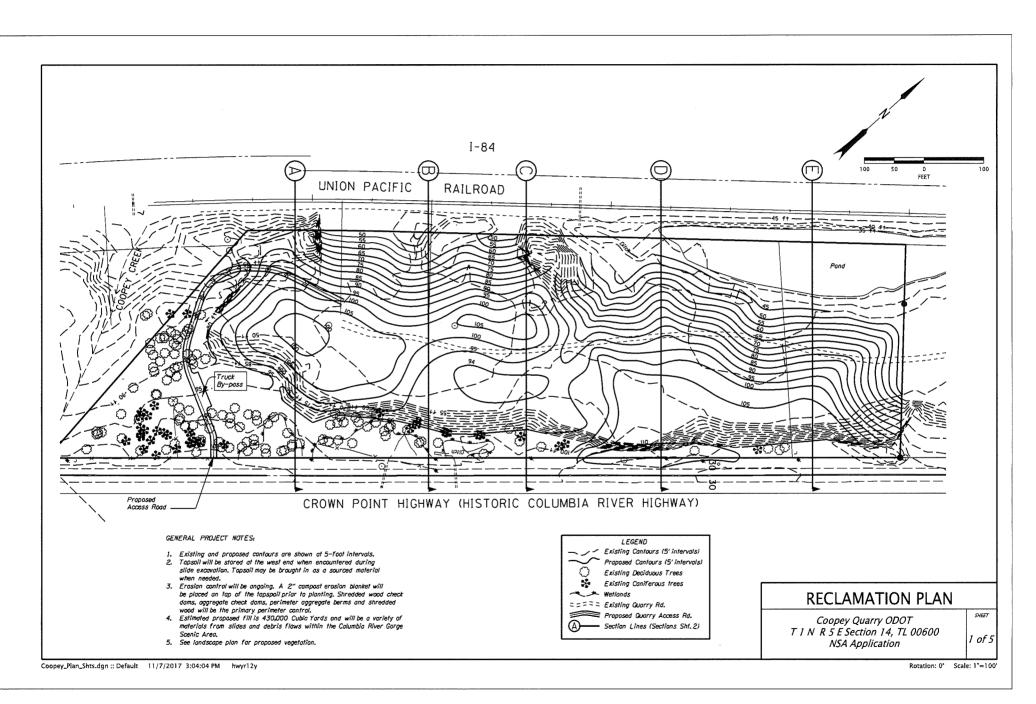
The performance standards described below provide benchmarks for measuring achievement of the goals and objectives of the mitigation site on year five.

- 1. Cover. Percent Cover of native species shall exceed 70 percent.
- 2. Diversity. Five or more species will be present in native plant cover and contribute to at least 5 percent of total cover.
- Noxious weed cover. Noxious weed cover (see Oregon Noxious Weed Lists A and B) will be reduced below 10%.
- 4. Planting Density. Initial plantings within the restoration site shall total 200 native woody stems per acre.

ODOT will quantitatively monitor the restoration site on years 1, 3 and 5 after completion of the disposal site. If all the performance standards are achieved in less, ODOT may terminate monitoring with approval of the review agencies after year 3. Qualitative assessments of the will occur on years 2 and 4. Restoration site maintenance may be necessary and could occur each year.

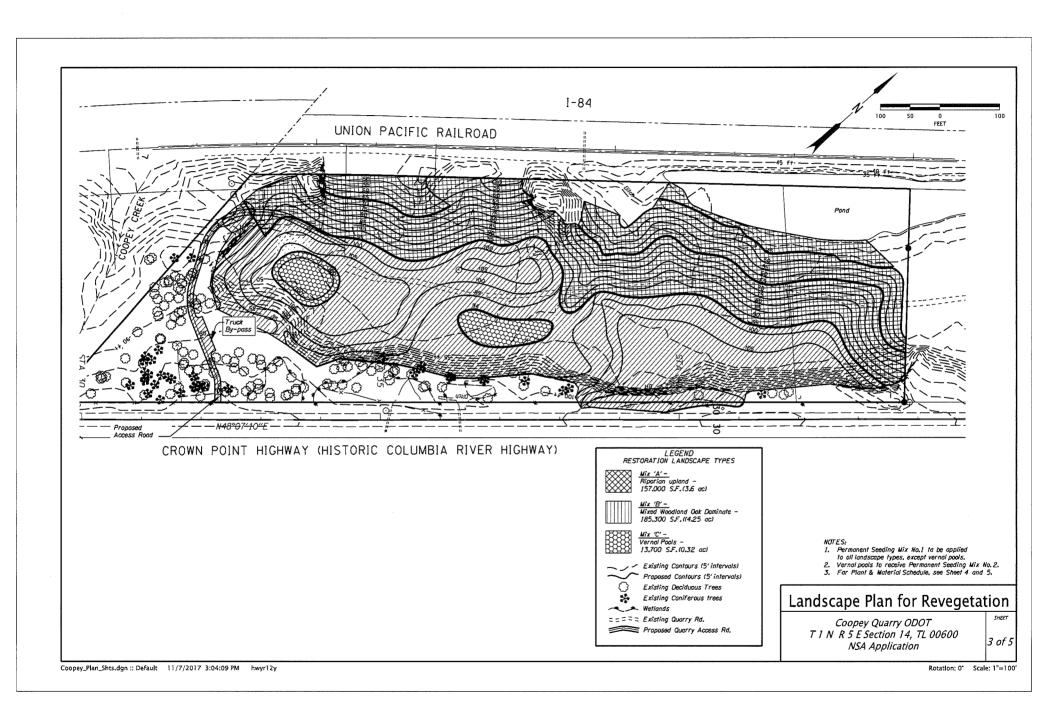
Appendix A: Coopey Quarry Reclamation Plan

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Proposed Fill Surface Proposed Fill Surface ground -420 -400 -160 -140 -120 -260 -240 -220 -200 -160 -140 -120 -120 -300 -280 -260 -240 -220 -200 -180 -160 -140 -120 +100 Cross Section A Cross Section D Proposed Fill Surfoce Proposed Fill Surface Existing -Existina around ground -220 -240 Cross Section B Cross Section E Proposed Fill Surface Existing -240 -220 -200 -180 -260 -160 -140 -120 -100 -80 Cross Section C **CROSS SECTIONS** Coopey Quarry ODOT T 1 N R 5 E Section 14, TL 00600 NSA Application SHEET 2 of 5 Coopey\_Plan\_Shts.dgn :: Default 11/7/2017 3:04:09 PM hwyr12y Rotation: 0\* Scale: 1"=100'



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		PLANT and MATER	1	-						palana			
Plant Type	Botanical Name	Comman Name	Size	Spacing	Root Type	Percent Mix	Plant Condition	A.S.N.S	. Layout	Notes	Irrigation		
			DEOL	12º O.C.	D60L Container	5%	Multi-branched		As Slaked/Approved	Contract grown			
	Acer circinatum	vine maple	DEOL	12' O.C.	DEOL Container	15%	Single trunk		As Stated/Approved	Contract grown			
	Acer mocrophyllum	big leaf maple	DEOL	12' O.C.	D60L Container	5%	Single trunk		As Staked/Approved	Contract grown			
	Ainus rubra Amelanchier alnifolia	red alder serviceberry	DEOL	12' O.C.	D60L Container	5%	Single trunk		As Slaked/Approved	Contract grown			
	Fraxinus latitolia	Oregon Ash	D60L	12' O.C.	D60L Container	5%	Single trunk		As Slaked/Approved	Contract grown	++-		-+
	Papulus trichocarpa	black cottonwood	DEOL	12' O.C.	D60L Cantainer	20%	Single trunk		As Slaked/Approved	Contract grown			-+
	Quercus aervang	Oregon white oak	DEOL	12'OC.	D60L Container	25%	Single trunk		As Staked/Approved	Contract grown	++		
	Pseudotsuoa menziesii	Doualas fir	DEOL	12' O.C.	D60L Container	15%	Single trunk		As Staked/Approved	Contract grown	1 1		
1124 141	Thuia plicata	western red cedar	DEOL	12' O.C.	D60L Container	5%	Single trunk		As Staked/Approved	Contract grown	1		
M/A A	Total Trees In Mix A	western reg began	1	12 0.01	poor comana							Total	-
	Cornus serices	red-osier dogwood	DHOL	6'ac.	040L Container	5%			Groups 5-9	Contract grown			
	Corvius cornuta	hazelnut	D40L	6' O.C.	040L Container	10%			Groups 3-5	Contract grown			
	Holodiscus discolor	ocean spray	D40L	6' O.C.	D40L Container	15%			Groups 3-5	Contract grown			
	Mahania aavitalium	Oregon Grape	D40L	5' O.C.	D40L Container	15%			Groups 4-7	Contract grown	1 1		
	Polystichum munitum	sword fern	D40L	5'0C.	D40L Container	5%			Groups 5-9	Contract grown			
	Oemleria cerasiformis	osoberry	D40L	6' O.C.	D40L Container	10%		1	Groups 4-3	Contract grown			_
	Ribes sanouineum	red flowering current	D40L	6' O.C.	D40L Cantainer	10%			Groups 4-3	Contract grown			
	Rosa avmnocar.pa	baldhip rose	DHOL	5' O.C.	D40L Container	5%			Groups 5-9	Contract grown			
	Rubus parvitiorus	thimbleberry	DHOL	5'0C.	D40L Container	5%			Groups 5-9	Contract grown			
	Sampucus cerulea	blue elderberry	DHOL	6'0C.	040L Container	10%			Groups 5-7	Contract grown			
	Symphoricarpas albus	snowberry	D40L	5'OC.	D40L Container	10%			Groups 5-7	Contract grown			
	Total Shrubs In Mix A											Totol	_
	4	At a track marks	DEOL	12.05	D60L Container	10%	Single trunk	1	As Staked/Approved		1 1		<b>—</b>
	Acer mocrophyllum Amelanchier alnifolia	big leaf maple	DEOL	12' O.C.	D60L Container	10%	Single trunk		As Staked/Approved				
	Cornus nuttallii	serviceberry dogwood	DEOL	12' O.C.	D60L Container	5%	Single trunk		As Stated/Approved		+		
		000000			DODE COMONICA						1		
	Pseudotsuga menziesii	Doualas fir	DEOL	12' O.C.	DGOL Container	20%	Single trunk		As Staked/Approved				
	Quercus garyang	Oregon white oak	DEOL	12'00.	D60L Container	50%	Single trunk		As Staked/Approved				
Mix 'B'	Thuia plicata	westernr red cedar	DEOL	12º 0.C.	D60L Container	5%	Single trunk		As Staked/Approved				
	Total Trees In Mix B		<b>.</b>									Tatal	-
Plant Type Mix 'A' Mix 'B' Mix 'C'	Holodiscus discolor	ocean spray	D40L	6' O.C.	D4OL Container	20%	Τ	Т	Groups 3-9	Contract grown	1 1		$\neg$
	Polystichum munitum	sword fern	D40L	5' O.C.	D40L Container	5%			Groups 5~9	Contract grown	1		-
	Physocorpus capitolus	ninebark	D40L	6° 0.C.	D40L Container	20%	Ι	1	Groups 5-9	Contract grown			-
	Oemleria cerasiformis	osoberry	D40L	6' O.C.	D40L Container	5%			Groups 4-3	Contract grown			$\neg$
	Ribes sanguineum	red flowering current	D40L	6' O.C.	D4OL Cantainer	20%			Groups 4–3	Contract grown			
	Rosa nutkana	nootka rose	D40L	5' O.C.	D40L Cantainer	15%			Groups 5-9	Contract grown			
	Sambucus cerulea	blue elderberry	D40L	6' 0.C.	D40L Container	5%			Groups 3-5	Contract grown			
	Symphoricarpos albus	snawberry	D40L	5' O.C.	040L Container	10%			Groups 5-9	Contract grawn			
	Total Shrubs In Mix B												
	Cornus sericea	red-osier doawood	DHOL	6' 0.C.	D40L Container	30%		T	Groups 5-9		T		—т
11:2 10	Rubus spectabilis	saimonberry	DAOL	6' O.C.	D40L Container	30%			Groups 5-9				+
MIX C	Salix spo	salix spp.	DHOL	6' O.C.	040L Container	40%		t	Groups7-12				-+
	Total In Shrubs Mix C	- SULX SUD.	1 0.00		proc compliant		1	·					

PLANT AND MATERIALS

Coopey Quarry ODOT T 1 N R 5 E Section 14, TL 00600 N5A Application

4 of 5

SHEET

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Plant Type	Botanical Name	Common Name	Size	Spacing	Root Type	Percent Nix	Plant Condition	A.S.N.S.	Layout	Notes	Irrigation	Sheet Number & Quantity	TOTAL
	L					4							
	Achillea millifolium	common yarrow	Seed				PLS/Acre	0.14			H/A		
	Anaphalis margaritaceae	pearly everlasting	Seed				PLS/Acre	80.0			A/A		
	Asclepias speciosa	showy milkwood	Sead				PLS/Acre	7.36			N/A		
	Aster subspicatus	aster sop.	Seed				PLS/Acre	0.91			N/A		
	Bromus carinaius	mountain brome	Seed				PLS/Acre	16.58			N/A		
	Collinsia grandifiora	giant Nue-eved Mary	Seed				FLS/Acre	1.33			N/A		
	Deschampsia elongata	slender hairarass	Seed				PLS/Acre	0.87			H/A		
	Elvinus alaucus	blue wildrve	Seed				PLS/Acre	4.37			N/A		7.9
Permanent	Festuca rubra	red fescue	Seed				PLS/Acre	0.75			H/A		
Seeding Mix	Heuchera alabra	piggyback plant	Seed				FLS/Acre	0.31			N/A		
No.1	Lupinus rivuloris	riverbank lupine	Seed				PLS/Acre	41.44			N/A		
	Poa secunda var. secunda	Sandberg's bluearass	Seed				PLS/Acre	0.16			N/A		
	Prunella vulgaris	self-heal	Seed				PLS/Acre	1.30			H/A		1
	Rosa avitnocarpa	baidhip rose	Saed				PLS/Acre	2.68			N/A		
	Solidooo conodensis	goldenrod	Seed				PLS/Acre	Q.10			NZA		
	Symphoricarpos mollis	creeping fescue	Seed				PLS/Acre	1.58				Acre	7,9
						, <u> </u>						*F****	
	Allium cernuum	nodding onion	Seed				PLS/Acre	4.79			K/A		
	Agrostis exercite	spike bentgrass	Seed			1	PLS/Acre	0.28			H/A		
	Aster subspicatus	Douglas aster	Seed				PLS/Acre	0.43			N/A		
	Camassia leichtlinii	areat Camas	Seed				PLS/Acre	9.90			N/A		
	Carex stipata vor. stipata	sawbeaked sedge	Seed				PLS/Acre	1.22			N/A		
	Collinsia arandil'Iora	gight blue-eved Morv	Seed				PL S/Acre	1.00			N/A		
	Delphinium nuttallii	Nuttail's larkspur	Seed				PLS/Acre	0.29			N/A		
Permonent	Deschampsia elonaata	slender hairgrass	Seed				PL S/Acre	0.41			N/A		0.32
Seeding Mix	Downingia elegons	elegant calicof lower	Seed				PLS/Acre	0.14			N/A		
No.2	Lupinus rivuloris	riverbank lupine	Sood				PLS/Acre	19.50			NZA		1
	Elvinus olaccus	blue wildrve	Seed				PLS/Acre	6.58			N/A		1
	Plagiobathrys Figuratus	fragrant popcorn_flower	Seed				PLS/Acro	0.51			N/A		
	Plectrillis congesta	sea blush	Seed				PLS/AD'S	0.99			N/A		1
	Pog socunda var. secunda	Sandbera's bluearass	Seed				PLS/Acre	0.49			N/A		J
	Sexifrana organia	Oreaan saxifraae	Seed	1			PLS/Acre	2.76			N/A		

PLANT AND MATERIALS

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Coopey Quarry ODOT T 1 N R S E Section 14, TL 00600 NSA Application

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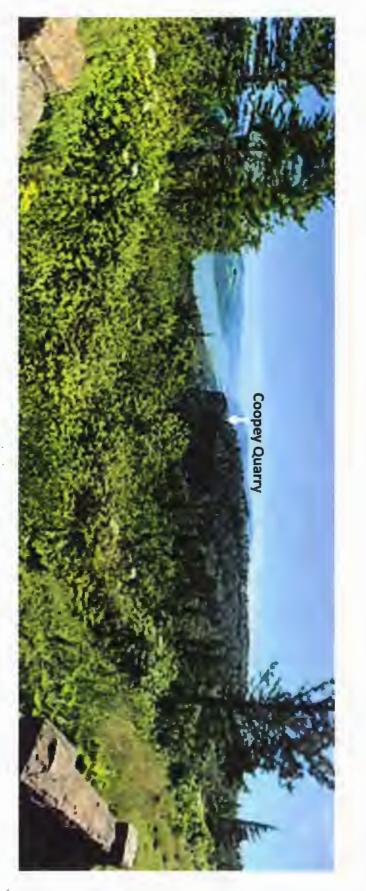
# **KEY VIEWING AREAS**

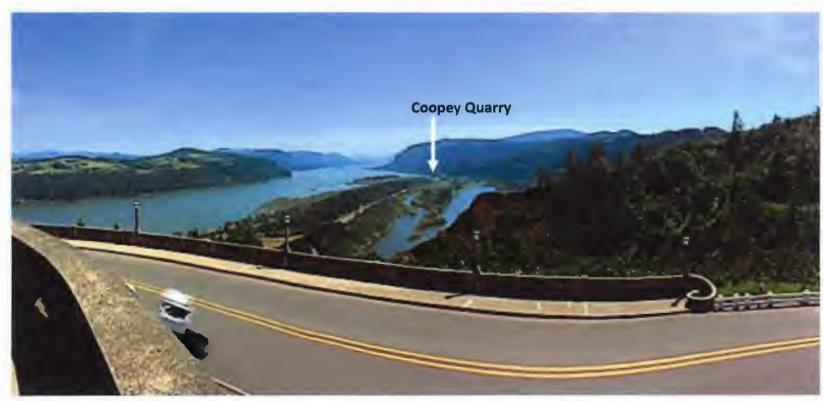




# KEY VIEWING AREA Portland Women's Forum

Panoramic photo from Portland Women's Forum





# Panoramic photo from Crown Point

KEY VIEWING AREA Crown Point







# KEY VIEWING AREA Cape Horn

SR-14 and Trail Viewpoints









# KEY VIEWING AREA Cape Horn SR-14 Views –Eastbound



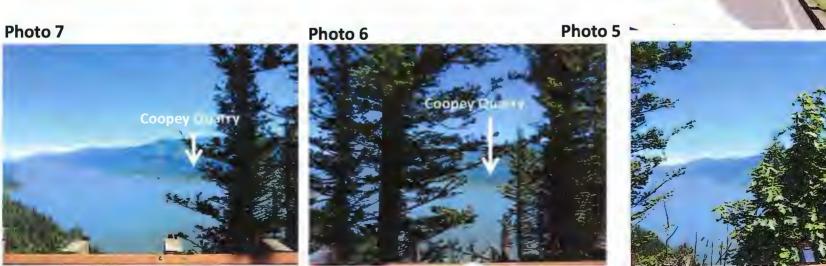


Photo 1

Photo 2

Photo 4







Photo 10

# KEY VIEWING AREA Cape Horn SR-14 Views – Eastbound

Photo 11



Photo 14 Coopey Quarry







Photo 16

# Coopey Quarry



Photo 17

# KEY VIEWING AREA Cape Horn SR-14 Views – Eastbound

Photo 18



Photo 21











Photo 23



Photo 24

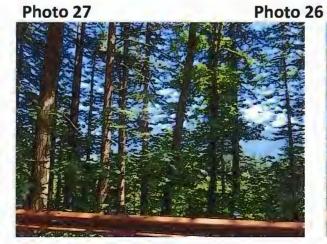
Photo 25

# KEY VIEWING AREA SR-14 Views along the highway-Eastbound

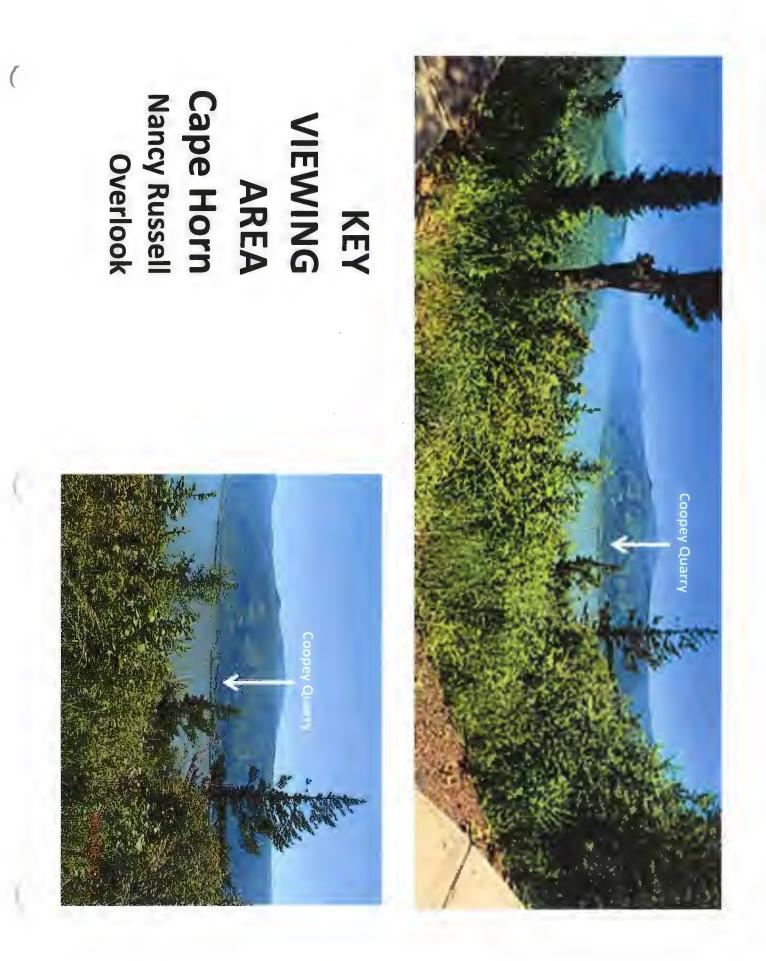
Coopey Quarry

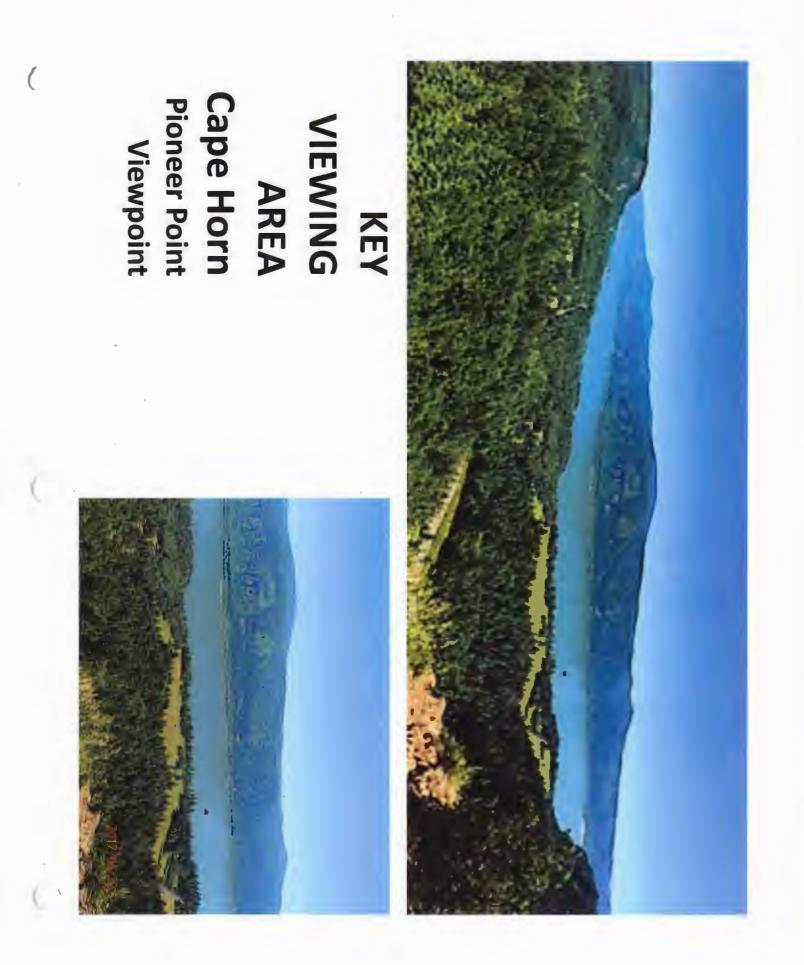
Photo 28











# KEY VIEWING AREA HCRH Eastbound



EB HCRH - Approach to Coopey Quarry

EB HCRH - Coopey Quarry – Berm conceals quarry





EB HCRH - Coopey Quarry is below edge of highway

EB HCRH – Past Coopey Quarry location



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# KEY VIEWING AREA HCRH Westbound



WB HCRH - Approach to Coopey Quarry

WB HCRH - Coopey Quarry is below the highway, screened by the rock cut



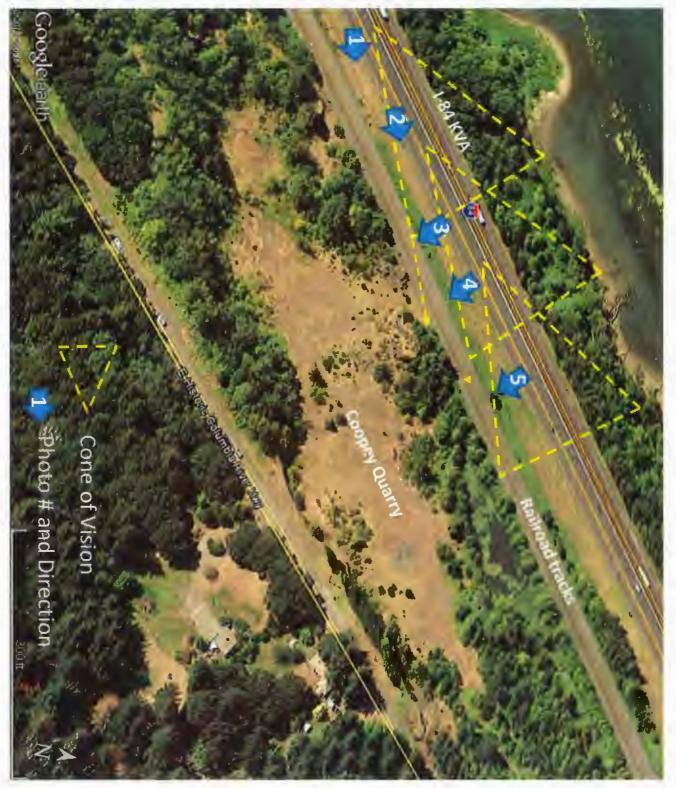


WB HCRH - Coopey Quarry is below edge of highway

WB HCRH - Coopey Quarry is below the elevation of the highway, screened by the trees.



# KEY VIEWING AREAS I-84 KVA Eastbound



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PP 2

# KEY VIEWING AREAS



PP 4





PP 3

# KEY VIEWING AREAS I-84 KVA Westbound







# KEY VIEWING AREAS PHOTOS - I-84 KVA Westbound









Department of Transportation Highway Division/Technical Services Geo-Environmental Section, MS#6 4040 Fairview Industrial Dr SE Salem, OR 97302 Phone: (503) 986-3252 Fax: (503) 986-3249

> Exhibit A.3.g

November 8, 2017

To: Mary Young Region 1 Environmental Coordinator Oregon Department of Transportation

From: Roy Watters 2 ODOT Archaeologist

RE: Maintenance Memo – No Effect Coopey Quarry Disposal Site T1N, R5E, Section 14; Bridal Veil Quad Multnomah County, Oregon ODOT Key No. M17016

The Oregon Department of Transportation (ODOT) proposes to convert Coopey Quarry, a stateowned parcel previously used as a material source, into a disposal site for material generated by landslides and other maintenance activities within the Columbia River Gorge. ODOT is planning on restoring the quarry to match the existing landscape contours and to restore the vegetation as each segment of the quarry is filled to capacity (Project Area Map). ODOT Maintenance will need to cut a 12-foot wide, 250-foot long access road from the Historic Columbia River Highway (HCRH) into the quarry to obtain access to the quarry floor (APE Map). The quarry is located within the Columbia River Gorge National Scenic Area (NSA).

Following the NSA General Management Area (GMA) Cultural Resources Review Criteria (MCC 38.7045) for large-scale uses, the Museum of Natural and Cultural History (OSMA) was contracted to conduct a cultural resource inventory of the project area on August 7 and 8, 2017. Their survey identified that previous operation of the quarry has disturbed more than 90% of the APE (McAlister and Connolly 2017). The surface survey identified domestic debris, appearing to be late 1960s to the 1970s in age, which was dumped in the southwest portion of the quarry. Materials noted include a trailer, tires, refrigerators, galvanized pipe, garden equipment, carpeting, and domestic refuse. A subsurface investigation was conducted along the proposed access road leading from the HCRH into the quarry. No historic sites or features were noted during the current investigation. No further work was recommended.

Given the scope of the project, the highly disturbed context and negative survey results, impacts to archaeological resources are unlikely. Therefore, no further archaeological investigations are required and the project can proceed.

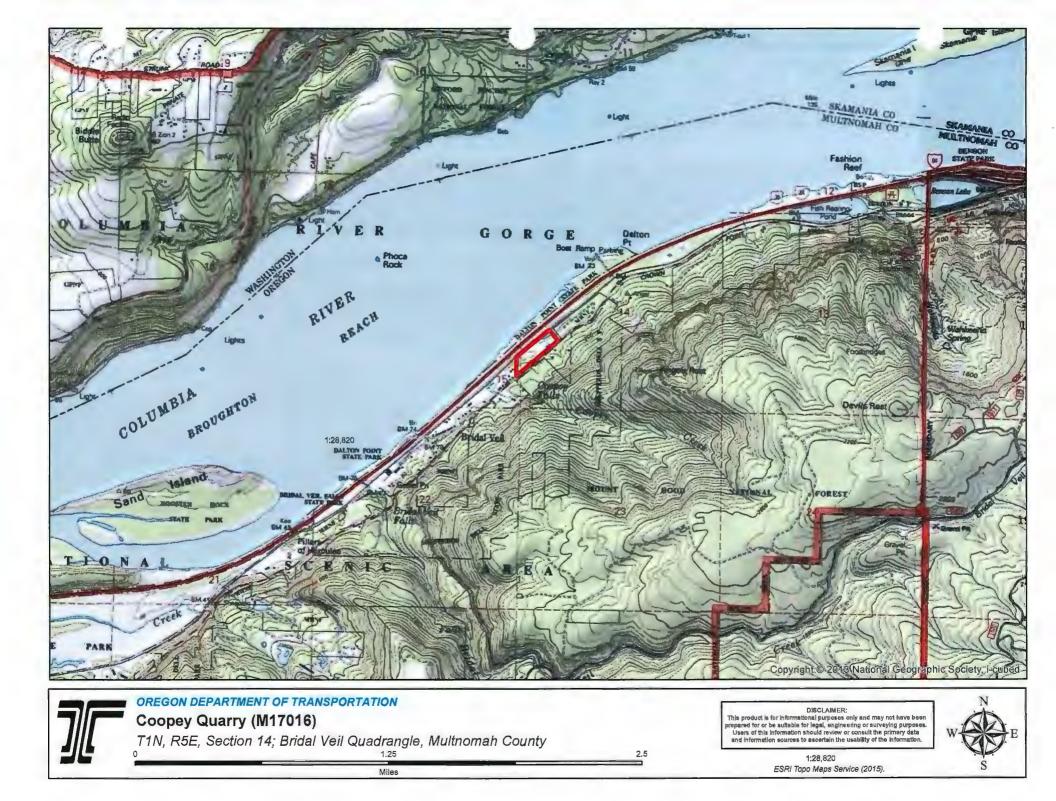
If you have any questions, please contact Roy Watters, ODOT Archaeologist, at 503-986-3375, or roy.watters@odot.state.or.us.

## Attachments:

McAlister, Kaylon, and Thomas Connolly

2017 Coopey Quarry: Archaeological Investigation with Technical Report, Multnomah County (ODOT Key M17016; Museum Report No. 2017-051). Museum of Natural & Cultural History, University of Oregon.





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## UNIVERSITY OF OREGON

County: Multnomah Legal location: Sec. 14 of T1N R5E USGS quads: Bridal Veil 7.5' series USGS Project type: Pedestrian survey, Subsurface Reconnaissance Survey area: Approx. 10.6 acres AP-2377 Permit: Findings: Negative OSMA Records:

September 15, 2017

TO: Roy Watters, Archaeologist Oregon Department of Transportation Geo-Environmental Services 4040 Fairview Industrial Drive SE Salem, OR 97302-1142

FR: Kaylon McAlister and Thomas Connolly

# RE: Coopey Quarry: Archaeological Investigation with Technical Report, Multnomah County (ODOT Key M17016; Museum Report No. 2017-051)

The Coopey Quarry is located in Multnomah County, bordering the north side of the Historic Columbia River Highway (HCRH) between MP 15.15 and MP 15.4 (Figures 1 and 2). It was established as a quarry in 1906 for railroad construction, and later purchased by a private construction company for use during building of the HCRH. The quarry was purchased by the Oregon Department of Transportation (ODOT) in 1939 and used as a material source for building the water-level highway and interstate highway during the 1950s and '60s. Its use as a quarry was abandoned by the early 1970s, and ODOT now intends to use the 10.6 acre parcel as a disposal site, and to eventually reclaim the property to a more natural condition. As part of the planned project to fill and rehabilitate the quarry, the ODOT will build an access road in the southwestern corner of the parcel, which will link to an existing access ramp cut into the western edge of the quarry wall.

The quarry is within the Columbia River Gorge National Scenic Area (NSA), and a cultural resource inventory of the parcel must follow the General Management Area (GMA) Cultural Resources Review Criteria (MCC 38.7045) for large-scale uses, including subsurface exploratory survey in areas of potential impact to previously undisturbed terrain.

It is expected that for most of the project area, structures or artifacts associated with the 1906-1960s quarry operations will be the most likely cultural expressions present. Based on historic aerial photos (Figure 3), it is estimated that less than two acres of the 10.6 acre property, primarily in the southwest corner, have potential for earlier historic or prehistoric cultural materials.

### **Project Setting**

The project area is located just east of the historic community of Bridal Veil, in Multnomah County. It is bordered on the south by the Historic Columbia River Highway and on the north by the Union Pacific Railroad and I-84 corridors. It appears on the Bridal Veil USGS map in section 14 of Township 1N, Range 5E, Willamette Meridian. The project area is located on a secondary terrace above the Columbia River, and is bounded to the west by Coopey Creek. Coopey Creek, though displaying large

### **MUSEUM OF NATURAL & CULTURAL HISTORY**

& Oregon State Museum of Anthropology · 1224 University of Oregon · Eugene, OR 97403-1224 Collections (541) 346-5120 · Public Programs (541) 346-3024 · Research (541) 346-3031

An equal opportunity, affirmative action institution committed to cultural diversity and compliance with the Americans with Disabilities Act



Figure 1. General location of the Coopey Quarry parcel east of Portland (Bridal Veil USGS map).



Figure 2. Aerial view of the 10.6 acre Coopey Quarry parcel, Multnomah County.

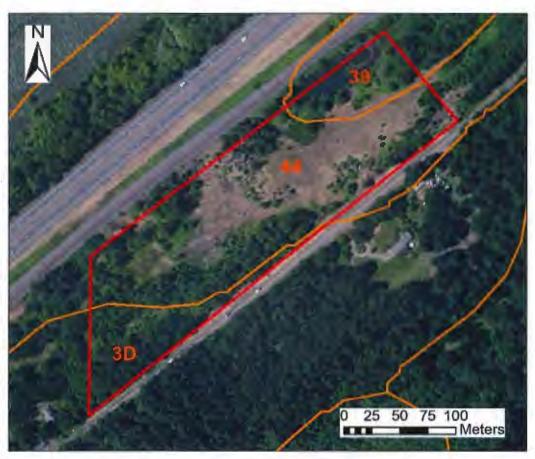


Figure 3. Map showing the mapped soil units within the current project area.

variations in seasonal flow rates, is a perennial stream. The terrain rises steeply to the south of the project area, gaining 2000 ft. in less than a half mile along the Coopey Creek watershed, to an overlook named Angels Rest. The Columbia River is located 500 feet to the north of the project area and may have periodically inundated portions of the project area prehistorically, prior to the massive water control efforts upriver during the early 20<sup>th</sup> century.

The physiography of the Columbia Gorge greatly affects local climate and vegetation, and provides a unique corridor for plant and animal migration between the typically arid east and maritime west. The high relief created by the deeply eroded Columbia River Gorge also places varied botanical zones in close proximity. The current project APE lies at the northern extent of the Western Cascades physiographic region. Vegetation cover is mapped as a forested region in the *Tsuga hetrophylla* Zone, the mesic Douglas fir/western hemlock forests typical of the west side of the Cascades. Within the current project vicinity, the steep hills extending to the south of the APE consist of Douglas fir-dominated conifer forests. Interspersed with Douglas fir, within and continuing to the north of the project APE to the Columbia River, are riparian areas with cottonwood, Oregon ash, big leaf maple, western red cedar, and various shrubs. Thickets of blackberry, wild hazelnut, and English ivy, burdock and fern occupy much of the understory within the project area at present (Franklin and Dyrness 1988).

Soils in the project area have been mapped by the Natural Resources Conservation Service (Figure 3; NRCS 2017). The majority of the project area has been previously excavated by quarrying

activities, but the soil mapping provides information on the original setting. Most of the parcel is mapped as Sauvie silt loam (soil unit 44) and Rafton silt loam (soil map unit 39), which form on flood plains from a parent material of recent alluvium with some mixing of volcanic ash in areas experiencing season flooding. The relatively undisturbed southwest corner of the parcel is mapped as Aschoff cobbly loam (soil map unit 3D) which forms in parent material of colluvium derived from andesite and basalt mixed with volcanic ash, eroding from the steep canyon walls to the south.

### **Cultural Background**

• The Five Mile Rapids site near The Dalles provides the most complete cultural record for the Columbia River corridor, spanning some 11,000 years. The site contained thousands of salmon bones in its earliest levels, providing evidence that salmon harvesting has been important from the time of the earliest human presence in the region (Cressman et al. 1960; Butler 1993). Within the Columbia Gorge proper, however, the archaeological record is largely limited to more recent times, a legacy of the extensive landslide and flooding processes which have combined to inhibit the preservation and discovery of more ancient sites.

Excavations have shown that archaeological sites in the vicinity of Cascade Locks tend to postdate the Bonneville Landslide, which is believed to post-date ca. AD 1425 (O'Connor and Burns 2009) and probably occurred as late as AD 1700 (Orr et al. 1992:154; Pringle et al. 2002). At all but two sites, Bradford Island and Clahclehlah Village (45SA11), occupations appear to have ceased prior to historic contact. This apparent population decline is likely the result of the introduction of exotic infectious diseases (Boyd 1999), which devastated populations and precipitated consolidation of some formerly independent bands into composite communities. The work at Clahclehlah suggests that the earliest occupants built oval pithouses, indistinguishable from those found throughout the Columbia Plateau. Overlying these oval pithouses are rectangular plank houses, more consistent with Chinookan houses found downstream and along the Pacific coast. This change in house form may signal increasing Chinookan influence up the Columbia River corridor in late pre-contact times (Beckham et al. 1988).

Chinookans occupied the project corridor in the nineteenth century. On the Oregon side, villages were documented in the Cascades-Bonneville Dam vicinity (Cascades Chinook), and in the neighborhood of Hood River (Hood River/Dog River Chinook). Winter villages-typically featuring oblong, gabled-roofed, upright-cedar plank houses aligned in rows parallel to the river-were connected to one another through trade, political ties, and marriage (Silverstein 1990). The Chinook diet was balanced primarily between fishing and root/berry gathering. Fishing was productive from March to November. Hunting of large and small game was often coordinated with root and berry harvests, when these activities would not conflict with salmon fishing (Silverstein 1990:533-546). The Cascades Chinook Indians, who controlled the Cascades area, exacted tolls from river travelers (Ruby and Brown 1992).

The first contact between Indians and whites in the project vicinity was in 1805, when the Lewis and Clark party made its way down River. In 1806 they passed upstream on their return trip. By 1811 fur trappers of the Northwest Company had descended the Columbia River from Canada, and trappers for the Pacific Fur Company had ascended the river from Fort Astoria.

Smallpox swept through the region in the latter 1700s, and again just prior to the Lewis and Clark visit in 1805-06. Another devastating wave of disease swept through the Lower Columbia region in the 1830s, eliminating entire villages (Beckham 1984:39-44). Estimated to have had a population exceeding 10,000 in the 1770s, only 233 Chinookans were listed on reservation rolls in the 1930s (French and French 1998:374). Other epidemics may have preceded these historically documented diseases by centuries; introduced to the Americas by the Spanish Conquest or by trade ships plying the coasts, Native

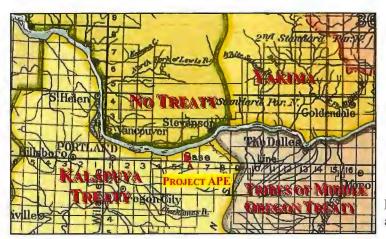


Figure 4. Ceded lands in the project area; base map after Royce (1899).

populations may have experienced devastating population declines beginning in the 16th century (Campbell 1990; Dobyns 1983; Ramenofsky 1987).

The great population movement associated with the Oregon Trail began in the 1840s, and by 1845 5000 people had made their way down the Columbia to take up land in Oregon. By 1850 the town of Cascades was established on the river's north bank at the upper Cascades, with construction of a store.

The year 1855 was pivotal for the area's native groups. The Oregon shore from the Cascades downriver to the Portland Basin was ceded in 1855 under terms of the "Treaty with the Kalapuya, Etc." executed at Dayton, Oregon (Figure 4). Participants included the "Wah-lal-la band of Tum-waters," commonly identified as Cascades Indians, who controlled the Columbia shore downriver from the Cascades of the Columbia (Kappler 1904). Also in 1855, the area from the Cascades and upstream was ceded under terms of the "Treaty with the Tribes of Middle Oregon," which included The Dalles, Dog (Hood) River and "Ki-gal-twal-la band of Wascoes" who occupied the Columbia shore between the Cascades and Hood River.

The Yakama Treaty was also signed in 1855, which ceded lands on the north side of the river approximately east of Wind Mountain. The Yakama Treaty included the Wishram, as well as the Sahaptin-speaking Klickitat, Cayuse, Umatilla, Walla Walla, Nez Perce, and Yakama. Treaty negotiations with groups north of the Columbia and downriver from Wind Mountain (including Chinook and Chehalis) failed, and the U.S. took possession of these lands without any treaty; the Shoalwater Bay and Chehalis reservations were established by executive order in 1866 to accommodate these groups.

Though divided by the treaties, most of the people who lived in the Columbia River corridor spoke Kiksht, the Upper Chinook language. Following the treaties, some Wishram and Wascos continued to live near their traditional homes along the river. Most Wishram were enrolled at Yakama, and "most of the others were assigned to the Warm Springs Reservation in central Oregon" (French and French 1998:360). The Cascades Indians who participated in the Dayton Treaty went initially to the Oregon Coast (Siletz) Reservation, then to Grand Ronde when the reservation was created by executive order in 1857. Because of the dispersal of the people of the Columbia River corridor, descendants with ancient ties and enduring interest in the project area are now affiliated with multiple modern tribal communities.

The treaties did not resolve conflicts. The Yakama Treaty called for the relocation of treaty participants "within one year after the ratification of this treaty" (the 1855 treaty was ratified in 1859), but Washington governor Isaac Stevenson declared Indian lands open for white settlement within two weeks of the treaty signing. And, in spite of assurances that white miners and settlers would not be allowed to

5

trespass on tribal lands, the discovery of gold on the newly formed Yakama Reservation lured invading miners; some stole Indian horses or greatly mistreated Indian women. Some treaty participants, under the Yakama leader Kamiakin, actively opposed this betrayal. A number of violent encounters, initially with trespassing miners, escalated to a series of raids and counter raids known as the Yakama War.

In 1856 the Cascades portage became a target, as development of the portage was regarded as an unlawful usurpation of one of the Indians' most important fisheries. Military officers soon came to recognize that their control of the Cascades denied the Indians critical food and economic stability, significantly weakening their position. The Indians attacked on March 26, killing 17 and burning the Bradford sawmill and lumberyard, as well as several houses and a warehouse under construction. The following day a contingent of dragoons under Lt. Philip Sheridan arrived; most of the Natives scattered, but some surrendered without a fight. Nine of the prisoners who had surrendered were executed by hanging (Wilma 2007; Healy 2010). According to one eye witness, "The local Indians who were hung had been on friendly terms to the white locals... They were of the Cascade tribe. The motive behind the hangings was anger and racism. Quite a few of the white settlers had lost relatives besides homes in the attack and there was some kind of revenge wanted, and as the Yakimas had all returned back to their land, the Cascades were the only Indians to take revenge on, even though they were innocent" (Iman 2008).

As part of the treaties ratified in 1859, the right to fish at "usual and accustomed" places was reserved for the tribes. These fishing rights were upheld in 1905 and 1919 by the U. S. Supreme Court. Construction of the Bonneville Dam began in 1933, and the Bonneville pool inundated approximately 37 traditional fishing sites. In 1939, an agreement was negotiated to provide in-lieu fishing areas. Although implementation was delayed by World War II, by the 1950s five sites had been developed by the Army Corps of Engineers for preferential priority use by tribal fishers. The Bonneville Power Administration expanded the Bonneville Dam by constructing the second powerhouse on the north side of Bradford Island. As part of the feasibility studies for the increased capacity, the level of the Bonneville pool was raised further, which prompted the lawsuit *Confederated Tribes of the Umatilla Indian Reservation v. Callaway* in 1972. At issue was the effect on certain of the in-lieu sites and on fish migration. The settlement of the lawsuit, and subsequent lawsuits, led to the development of additional fishing access and support facilities (U.S. Army Corps of Engineers 1994).

A pack trail was reportedly present through the Columbia Gorge along the Oregon side by the mid-1850s (likely following an older Indian trail), but this was impractical for moving serious quantities of freight. The federal government began to explore a route through the gorge in 1855 for a wagon road from Fort Vancouver to The Dalles, favoring the north bank of the river; the head surveyor for the project characterized the south bank as a "wild & broken range of country, untrod by man or beast" (George H. Derby 1856, cited in Beckham et al. 1988). By 1855, Col. Joseph S. Ruckel (Ruckle in some sources) and a partner were operating the steamboat *Fashion* between Portland and the Cascades, and an allied steamboat operator was running the *Wasco* above the Cascades which allowed them to avoid the difficult terrain while still moving goods and people (Gill 1924:177-178). Ruckel can also be credited for building the first of several portage roads to help move goods around several dangerous sections of the river.

The discovery of gold in eastern Oregon in the early 1860s lured thousands to the gold fields, as well as others intent on farming and ranching to support the growing numbers. As developments progressed east of the Cascade Range, the need for a reliable connecting road became more acute, and public sentiment for a public road rose as rates charged by the ferry and portage monopolies increased.

The Territorial legislature passed legislation to build a road from The Dalles to the Sandy River as early as 1856, but the sections built by Ruckel and his partners around the Cascades were the only elements realized. Building the wagon road was a growing concern, especially to people east of the Cascades who were eager for better—and more economical—links to the lower Columbia and Willamette Valley. The Dalles *Weekly Mountaineer* ran articles complaining about the monopoly of the Oregon Steam and Navigation Co., whom owned the steamships and controlled access to the portages, characterizing the company as "vampires of commerce," and eastern Oregonians launched a "free the Columbia River" movement to advocate for better transportation options.

Efforts to build a road were renewed by the state legislature in 1870, but it was not until October of 1872 that the first \$50,000 (in the form of promissory warrants) "for the purpose of constructing a road up the south bank of the Columbia River, from near the mouth of Sandy, in Multnomah county, to The Dalles, in Wasco county" was authorized (Oregon, State of 1872). A route was surveyed from September 1 to October 1 of 1873, and work commenced in 1874. An additional \$50,000 appropriation was made by the legislature during the 1876 session. The Portland *Oregonian* (August 6, 1878) reported that the road was finished and in use from The Dalles to a point one mile below the lower Cascades, and again on Jan 6, 1879, characterized the road as finished except for the segment from Sandy to the lower Cascades.

The catalyst for completion of an updated road came with the development of the automobile. In 1913, after viewing the private experimentation and development of road building technique carried out by entrepreneur Samuel Hill, a Good Roads supporter and a principal advocate for a quality road through the gorge, and assisted by noted road engineer Samuel Lancaster and Major H. L. Bowlby (who would become the first State Highway Engineer), the Oregon State Highway commission was born. Portions of the new Columbia River Highway would follow the original wagon road and the segment from Sandy to Hood River, which passes just south the current project area, was completed in 1915 (Davison and Knapp 2010; Hadlow 2000).

By the 1930s, the limitations of a touring highway for commercial truck traffic were increasingly apparent, and designs for a faster, water-level route were started. The new two-lane road (US Highway 30) was completed by 1953. The Interstate Highway system, now considered the largest public works project in history, was launched in 1956. Design standards were focused on speed, safety, and efficiency, including features such as controlled access and lane separations. The new freeway partially incorporated the earlier US 30 roadbed. The section between Portland and The Dalles, initially designated as Interstate 80N and later renamed Interstate 84, was largely in place by1963, but not completed to interstate standards until 1969 (Hadlow 2000; Kramer 2004). The construction of these later, water-level roads damaged or destroyed large portions of the original Columbia River Highway, particularly between Dodson and Hood River.

The current project area is just east of the historic community of Bridal Veil. Legend has it that while traveling on the Columbia River a passenger on the sternwheeler, *Baily Gatzert*, saw Bridal Veil Falls and remarked that it looked like a "delicate, misty bride's veil." As the years went by people began to refer to this spot along the Columbia River Gorge as Bride's Veil, Oregon. When the first post office opened in about 1886, and the railroad built a small station there, the community was officially named Bridal Veil. McArthur and McArthur (2006) credit the name of Bridal Veil to no one in particular, only noting that "the romantically inclined never fail to name at least one water fall in the state Bridal Veil."

Bridal Veil was established in 1886, beginning with the Bridal Veil Falls Lumbering Company sawmill, located about a mile up Larch Mountain. The company operated in Bridal Veil and the surrounding area from 1886-1936. A mile and half up the timber-rich mountain was the logging town of Palmer. Palmer and Bridal Veil shared common ownership as company mill towns. Together, the two towns produced lumber and were codependent. A V-shaped log flume was built for the rough cut timber to get down the mountain to the planing mill at the railroad tracks in Bridal Veil (Nesbit 2006). After timber was logged on the mountain, it was brought to the Palmer sawmill. As the rough-cut lumber exited the Palmer mill it traveled down the flume the mile and a half to the finishing mill in Bridal Veil. The dependency between the two towns ended in 1936 when the mill at Palmer was shut down.

In 1936, fire struck the mill as the timber resources on Larch Mountain were running out. The Bridal Veil Falls Lumbering Company ended its ownership of the mill and ceased to operate in the town. In 1937, the entire town and its mills were bought by a company that became Bridal Veil Lumber and Box Company, which made wooden cheese boxes for Kraft Food Company. The company continued to operate in Bridal Veil until 1960 when it closed its doors. Today the boxes made in Bridal Veil are considered collectible antiques (Nesbit 2006). From 1955 to 1960, the company's president, Leonard Kraft, published a newsletter that covered such issues as business and prospects but also provided society information about potluck dinners, who was sick, who was visiting in Bridal Veil, and who had marked a recent anniversary with the company. Bridal Veil Lumber & Box Co. News Letter was the company newsletter, it also became a general newspaper for Bridal Veil and its 100 residents. The mill continued to operate under various owners through 1988.

In 1990, the Trust for Public Land acquired Bridal Veil and its buildings. Despite a ten-year fight from the Crown Point Country Historical Society to preserve the mill houses and buildings in Bridal Veil, the trust had them demolished in 2001.

#### Previous Archaeology in the Project Vicinity

There have been no previous archaeological investigations within or overlapping the current project APE and there are no previously recorded archaeological resources within the project area. There are, however, several archaeological sites recorded within close proximity of the quarry.

Site 35MU108, the Coopey Creek Site, is a lithic scatter and possible temporary camp located high above the Columbia River on an upper terrace of the canyon walls approximately 0.2 miles to the south of the quarry location (Boyton 1997). Thick ground cover obscures much of the site which is only visible due to the exposure provided by the hiking trail to Angels Rest.

Site 35MU132 is the historic town side of Bridal Veil located approximately 0.5 miles to the southwest of the project APE. Features noted on the site form include historic structural remains of the logging camp and sawmill, a refuse scatter, and the presence of the historic cemetery (Fagan 1988a). The site was revisited and subjected to subsurface testing in 1999 and 2001; a site record update was created at that time (McIIrath 2002). During the 1999 investigation five shovel probes and 73 shovel tests were excavated around the margins of 16 buildings slated for demolition. During the 2001 investigation 51 shovel tests and 10 backhoe trenches were excavated in areas not previously investigated.

Site 35MU137, the Dead Horse Site, is located approximately 0.2 miles to the northeast of the project area on the shores of the Columbia River. The site is normally inundated by the river so when the water level is low, there is very little vegetation obscuring the surface of the ground. The site consists of a complex arrangement of wooden slats, wooden stakes and posts, historic debris, and the remains of a horse in a confined area on the flat, silty beach. The site is historic aged and is comprised of domestic refuse (Fagan 1988b).

#### **Current Investigation**

Prior to the investigation a background literature search of documents, site forms, and survey records was conducted and aerial photographs were scrutinized. Archaeological pedestrian survey of the proposed project area was conducted August 7 and 8, 2017 by the University of Oregon's Museum of Natural and Cultural History archaeologists Kaylon McAlister and Rick Jensen. During the course of the

field work portion of the investigation 100% of the project area was subjected to pedestrian survey with additional subsurface exploration, in the form of exploratory shovel probes, conducted along a proposed access road near the west rim of the quarry pit.

The quarry was established as a quarry in 1906 for railroad construction, and later purchased by a private construction company for use during building of the Historic Columbia River Highway. The Final Report on Real Property Negotiations, by the Oregon State Highway Commission in 1939, indicates that the pit had been operated for years by the Warren Construction Co.

The first aerial photograph of the project area dates to 1935 and shows an access road to the northern portion of the parcel from the railroad bounding the northern edge of the quarry, as well as an access road entering the quarry from the east (Figure 5). The photograph also indicates that the earlier excavations began in the eastern portion of what would be become the much larger quarry pit. Soon after this, in 1939, the property was purchased from Minnie Franklin Coopey (9.24 acres for \$2,755) and First National Bank of Portland (1.6 acres and easement for \$495) by the Oregon State Highway Commission.

In 1951 a request to utilize a spring on the State's quarry property, which included the installation of a water line, was made by Mrs. W. J. Butcher of Corbett. The request was granted though was revocable at any time at the request of the Highway Commission should they need use of the area.

The next available aerial photograph of the project area dates to 1961 and indicates a vastly expanded quarry pit, as well as the new two lane interstate highway to the north (Figure 6). It shows stockpiled rock/gravels and a well developed access road on the eastern edge of the excavation and continuing to the northeast before intersecting with Highway 30 (the Historic Columbia River Highway), well outside the project area.

The next available aerial photograph of the project area dates to 1977; the quarry appears to be no longer in use at this time, as vegetation has begun to reclaim many portions of the southern and western

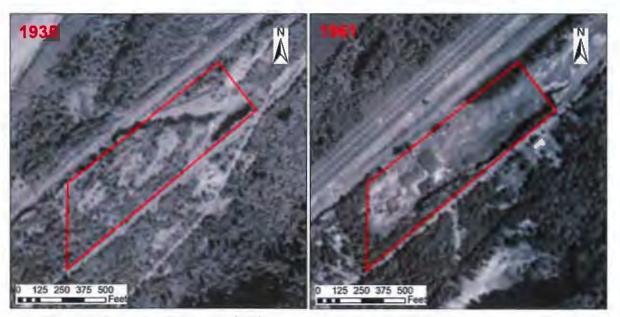


Figure 5. 1935 aerial photograph showing minimal excavations in the Coopey Quarry.

Figure 6. 1961 Photograph showing extensive quarrying of Coopey Quarry.



Figure 7. 1977 photograph appearing to show excavations at the quarry had ceased.

Figure 8. Modern satellite imagery showing additional vegetation growth in the quarry.

portion of the quarry (Figure 7). The access road connecting the eastern portion of the quarry to Highway 30 is still visible, but vegetation has increased substantially in this area as well. The primary change between the 1977 photograph and modern satellite imagery (Figure 8) is additional vegetation growth along the boundaries of the quarry pit.

## **Pedestrian Survey**

Prior to the subsurface investigation, a pedestrian survey of the project area was conducted. Transects were walked at 20 meter intervals where possible with additional scrutiny in the southwestern corner of the APE as this appeared to be the only portion of the current project area not previously impacted by quarrying activities. Surface visibility ranged from excellent within the quarry, in areas of exposed gravel, and in the access roadbeds, to poor and non-existent areas to the west and south of the quarry (Figures 9 and 10). Dense vegetation along the periphery of the quarry floor and in the forest surrounding the quarry created the limited surface visibility in these areas.

Vegetation noted includes a mixed canopy of cottonwood, Big Leaf maple, Douglas fir, birch, ash, and wild hazelnut. The under story in the forested areas was very dense and included ferns, Burdock, poison oak, blackberry, trillium, and ivy. Within the quarried areas grows various field grasses, cattails near the areas with standing water, blackberries thickets, and dense moss.

Disturbances to the project area are cover more than 90% of the APE due to the previous quarrying activities conducted here. These include the removal of a large quantity of gravels and rock, and construction of east and west access roads. Dumping of domestic debris, appearing to be late 1960s to the 1970s in age, has occurred in the southwest portion of the quarry. Materials noted include a trailer, tires, refrigerators, galvanized pipe, garden equipment, carpeting, and domestic refuse (Figure 11).



Figure 9. Dense vegetation limited surface visibility in the southwest portion of the APE.





Figure 11. A large pile of modern debris has been dumped over the quarry edge and rests in the southwest portion of the quarry.

Figure 10. The quarry floor offered many areas of exposed ground surface.

Among the domestic items recorded were two bottle bases, which have an Owen-Illinois "I-inan-O" logo used from the 1950s into the 21<sup>st</sup> century (Figure 12). The "21" left of the logo is a factory code for the Portland, Oregon plant which has operated continuously since 1956; the "2" to the right of the logo is a date code, indicating production in a year ending in 2 after 1960, but the decade is uncertain (Lockhart 2004; Lockhart and Hoenig 2015). Another artifact identified is part of a Mattel Toy Co. VRROOM! X-15 recumbent trike from the mid 1960s (Figure 13). In summary, dumped items may date as early as the mid 1960s, but the dumping episode certainly post-dates that time, likely after the quarry was abandoned in the early 1970s.

Additonal cultural material noted during the pedestrian survey is limited to a length of cable rope near the ponds in the northern portion of the quarried area, and shattered glass bottles as a result of target shooting in the central portion of the project area (Figure 14). Neither of these items could be identified as having antiquity to classify as historic.



Figure 12. Bottle bases with the Owens-Illinois plant in Portland, Oregon produced during the latter half of the 20<sup>th</sup> century.



Figure 13. Part of a Mattel Co. VRROOM! X-15 trike from the mid 1960s.

### Subsurface Exploration

The subsurface investigation of the proposed route of the new access road to the quarry was conducted on August 8, 2017. Five 30x30 cm exploratory probes were excavated in the southwest portion of the project area, along the proposed access road alignment. Probes were placed at 10 meter intervals along the proposed route. All excavated sediments were passed through 1/8" hardware screen. All exploratory probes were excavated to at least 50 cm depth, in 10 cm intervals, and only terminated upon reaching two consecutive sterile levels when applicable.

Sediment encountered during the subsurface investigation is consistent with those mapped by the NRCS (mapped as 3D); cobbly and very cobbly loam capped by an organic layer of decomposing plant material. Rock was subrounded to subangular and ranged from pebble to cobble in size in a medium brown loam matrix (Figure 15). Excavations began in the south, adjacent to the highway right-of-way and continued to the north, toward an existing quarry access road. Sediment became increasingly rocky and



Figure 14. Location of probes and cultural material noted within the current project area.



Figure 15. Probes 1, 2, and 3, showing the cobbly loam sediment matrix.

shallow as the subsurface investigation approached the existing quarry access road and the land surface, while completely obscured by thick ground cover, appeared hummockier and was likely disturbed by historic quarry activities. Exploratory 4 was terminated at level 4 due to a rock impasse while probe 5, just adjacent to the existing access road, was terminated at level two because of rock impasse. During the course of the subsurface investigation a single artifact, a short piece of non-diagnostic metal strapping, was recovered from Level 1 of Probe 2.

#### **Summary and Recommendations**

Archaeological pedestrian survey and subsurface exploration of the proposed project area was conducted on August 7 and 8, 2017 by the University of Oregon's Museum of Natural and Cultural History archaeologists Kaylon McAlister and Rick Jensen. With plans to rehabilitate the quarry, and to use the quarried area as a possible fill disposal site, the ODOT requested the archaeological investigations to ensure no cultural materials would be impacted. While the vast majority of the project area has been previously impacted by historic quarrying activities, plans include building an access road through an area in the southwest corner of the parcel which appears only minimally disturbed. Subsurface exploration using 30x30 cm exploratory probes, was conducted along the proposed road corridor.

No historic sites or features were noted during the current investigation. A dump of domestic debris was identified. Although a few of the items present could date as early as the mid-1960s, the dump episode itself likely dates from the early 1970s or later.

No additional subsurface archaeological investigations are recommended prior to the current planned construction project. If, however, in the course of construction activity, previously unidentified prehistoric or historic cultural remains are exposed in areas not previously mentioned—such as concentrations of fire-cracked rock, charcoal, chipped or ground stone tools, animal bones, bottles and cans, or building foundations—work should be halted immediately at that location until a qualified archaeologist can be consulted. This caution applies especially to Indian burials, which are specifically protected under Oregon law (ORS 97.745). Disturbance to such graves is prohibited, even "through inadvertence, including construction."

Distribution:

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#### References

#### Beckham, Stephen Dow

1984 "This Place is Romantic and Wild:" An Historical Overview of the Cascades Area, Fort Cascades, and the Cascades Townsite, Washington Territory. Heritage Research Associates Report No. 27, on file at the Oregon State Historic Preservation Office, Salem.

#### Beckham, Stephen Dow, Rick Minor, Kathryn Anne Toepel and Jo Reese

1988 Prehistory and History of the Columbia River Gorge National Scenic Area, Oregon and Washington. Heritage Research Associates Report No. 75, on file at the Oregon State Historic Preservation Office, Salem.

#### Boyd, Robert T.

1999 The Coming of the Spirit of Pestilence: Introduced Infectious Diseases and Population Decline among Northwest Coast Indians, 1774-1874. University of British Columbia Press and University of Washington Press, Vancouver and Seattle.

#### Boyton, Michael

1997 Site 35MU108, Coopey Creek Site, Record Form, on file at the Oregon State Historic Preservations Office.

#### Butler, Virginia L.

1993 Natural vs. Cultural Salmonid Remains: Origin of The Dalles Roadcut Bones, Columbia River, Oregon. *Journal of Archaeological Science* 20:1-24.

#### Campbell, Sarah K.

- 1990 PreColumbian Culture History in the Northern Columbia Plateau, AD 1500-1900. Garland, New York.
- Cressman, Luther S., with contributions by D. L. Cole, W. A. Davis, T. M. Newman, and D. J. Scheans
- 1960 *Cultural Sequences at The Dalles, Oregon: A contribution to Pacific Northwest Prehistory.* Transactions of the American Philosophical Society 50(10).

#### Davison, Danae and Barbara Knapp

2010 Cultural Landscape Inventory: Shellrock Mountain to Ruthton Point, Historic Columbia River Highway. Document on file at the Oregon Department of Transportation, Salem

#### Dobyns, Hemry F.

1983 Their Number Became Thinned: Native American Population Dynamics in Eastern North America. University of Tennessee Press, Knoxville.

#### Fagan, John

- 1988a Site 35MU130/OR-MU-27, Bridal Veil Site, Record Form, on file at the Oregon State Historic Preservation Office, Salem.
- 1988b Site 35MU167/OR-MU167, Dead Horse Site, Record Form, on file at the Oregon State Historic Preservation Office, Salem.

### Franklin, Jerry F. and C.T. Dyrness

1988 Natural vegetation of Oregon and Washington. Oregon State University Press, Corvallis.

French, David H. and Kathrine S. French

1998 Wasco, Wishram and Cascades. In *Plateau: Handbook of North American Indians, Volume 12*, edited by Deward E. Walker, Jr., pp. 360-377. Smithsonian Institution, Washington, D.C.

#### Gill, Frank B.

1924 Oregon's First Railway: The Oregon Portage Railroad at the Cascades of the Columbia River. *The Quarterly of the Oregon Historical Society* 25(3):171-235.

#### Hadlow, Robert W.

2000 National Historic Landmark Nomination: Columbia River Highway. Document on file at the Oregon Department of Transportation, Salem.

#### Healy, Don

2010 Yakama Nation History. Electronic document, accessed August 2, 2013: http://www.yakamanation-nsn.gov/history3.php.

#### Iman, Steve

2008 Iman Family Notes, with excerpts from correspondence with James Windsor. Electronic document accessed August 5, 2013: http://www.imanfamily.net/skamania/windsor.html.

# Kappler, Charles J.

1904 *Indian Affairs: Laws and Treaties: Volume II, Treaties.* Compiled and edited by Charles J. Kappler. U.S. Government Printing Office, Washington, D.C.

#### Kramer, George

2004 The Interstate Highway System in Oregon: A Historic Overview. Document on file at the Oregon Department of Transportation, Salem.

#### Lockhart, Bill

2004 The Dating Game: Owens-Illinois Glass Co. Bottles and Extras 15(3):24-27.

#### Lockhart, Bill and Russ Hoenig

2015 The Bewildering Array of Owens-Illinois Glass Co. Logos and Codes. Electronic document accessed September 14, 2017: https://sha.org/bottle/pdffiles/OwensIll\_BLockhart.pdf.

#### McArthur Lewis A. and Lewis L. McArthur

2006 Oregon Geographic Names, Sixth Edition. Oregon Historic Society Press, Portland.

#### McIlrath, Laura

2002 Bridal Veil Historical Archaeological Testing, 1999 and 2001. Site form on file at the Oregon SHPO under site number 35MU00132.

#### Nesbit, Sharon

2006 The Story of a Ghost Town. The Gresham Outlook. July 12, 2006

#### NRCS (Natural Resources Conservation Services)

2017 http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx. Electronically accessed 8/31/2017.

## O'Connor, Jim E. and Scott F. Burns

2009 Cataclysms and Controversy—Aspects of the Geomorphology of the Columbia River Gorge. In *Volcanoes to Vineyards: Geologic Field Trips through the Dynamic Landscape of the Pacific* 

*Northwest*, edited by Jim E. O'Connor, Rebecca J. Dorsey, and Ian P. Madin, pp. 237-251. Geological Society of America, Boulder, Colorado.

# Oregon, State of

1872 Acts and Resolutions of the Legislative Assembly of the State of Oregon passed at the Seventh Regular Session—1872, and Decisions of the Supreme Court. Eugene Semple, State Printer, Salem, Oregon.

Orr, Elizabeth L., William N. Orr, and Ewart M. Baldwin

1992 Geology of Oregon, 4th Edition. Kendall/Hunt, Duguque, Iowa.

Geology Society of America Abstracts with Programs 35(5):A-34.

Pringle, Patrick T., Jim E. O'Connor, Robert L. Schuster, Nathaniel D. Reynolds, and Alex C. Bourdeau
 2002 Tree-Ring Analysis of Subfossil Trees from the Bonneville Landslide Deposit and the
 "Submerged Forest of the Columbia River Gorge" described by Lewis and Clark [abstract].

#### Ramenofsky, Ann F.

- 1987 Vectors of Death: The Archaeology of European Contact. University of New Mexico Press, Albuquerque.
- Ruby, Robert H. and John A. Brown

1992 A Guide to the Indian Tribes of the Pacific Northwest. University of Oklahoma Press, Norman.

## Silverstein, Michael

1990 Chinookans of the Lower Columbia. In *Northwest Coast: Handbook of North American Indians, Vol. 17*, edited by Deward E. Walker, Jr., pp. 533-546. Smithsonian Institution, Washington, D.C.

U.S. Army Corps of Engineers, Portland District

1994 Land Acquisition Study, Public Law 100-581, Title IV, Columbia River Treaty Fishing Access Sites.

#### Wilma, David

2007 Native Americans Attack Americans at the Cascades of the Columbia on March 26, 1856. Electronic document accessed on August 5, 2013: http://www.historylink.org/index.cfm?DisplayPage=output.cfm&file\_id=5190.

# OREGON INVENTORY OF HISTORIC PROPERTIES ORS 358.653 LEVEL OF EFFECT FORM

Agency/Project: Oregon De	partment of Transportat	ion/Coopey Disposa	ll Site Project. ODOT Maintenan	ce No. M17016
Property Name: Columbia Riv	er Highway National Hi	storic Landmark Dis	trict, NRIS 83004168	
Street Address: Historic Colur Historic Mile I	김 아이는 것은 것을 알았는 것을 깨끗했다. 이 가지 않는 것이 없는 것이 없다.		City, County: Bridal Veil vic., N	Aultnomah
Preliminary Finding of Effect	_	Properties Adversely Af	fected Historic Properties A	dversely Affected
State Historic Preservation				
	Do Not Concur:			
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#### INTRODUCTION

This statement of finding is made pursuant to the requirements of Oregon Revised Statute 358.653. It discusses the effect of the Coopey Disposal Site Project on the Columbia River Highway National Historic Landmark District, NRIS 83004168. It is the finding of the Oregon Department of Transportation that the project will have No Adverse Effect on the Columbia River Highway (CRH) National Historic Landmark (NHL) District. ORS 358.653 states that "Any state agency or political subdivision responsible for real property of historic significance in consultation with the State Historic Preservation Officer shall institute a program to conserve the property and assure that such property shall not be inadvertently transferred, sold, demolished, substantially altered or allowed to deteriorate." The owners of the CRH NHL district include the Oregon Department of Transportation, the Oregon Parks and Recreation Department, and the USDA Forest Service.

#### **PROJECT DESCRIPTION**

ODOT proposes to convert Coopey Quarry, a state owned parcel previously used as a quarry for basalt, into a disposal site for material generated from landslides and other maintenance activities. Coopey Quarry was active as far back as the first decade of the 20th century, when it provided rock for the Oregon-Washington Railroad and Navigation Company for reworking its nearby mainline, which dated from 1882. By the teens, a private contractor obtained some from the quarry to construct the Columbia River Highway. The quarry's south boundary buts up against the north right-of-way line of the Historic Columbia River Highway, which is the northern boundary of the CRH NHL district at this location.

Right-of-way maps and land sale records indicate that the Oregon State Highway Department acquired the quarry parcel in 1939 and used rock from it to construct Interstate 84. By the 1970s, the quarry had been mined out and an access easement through a nearby private parcel to the east had expired. The Coopey Disposal Site Project will reclaim and restore the quarry to match existing landforms and generally conform with the topographic survey data from the ODOT right-of-way map from the 1935. Since historical access to the quarry from the parcel to the east is no longer available, the Coopey Disposal Site Project calls for a new access road coming directly north from the HCRH near the west end of the quarry parcel. Coopey Quarry is not eligible for the National Register of Historic Places.

ODOT is planning to create planted berms to visually screen the project area from both the CRH NHL district and Interstate 84. The agency's crews will deposit debris from local landslides as marked in Figure 3, starting on the eastern end of the property with disposal phase 1, and generally moving west as each area is filled to the final grade.

The project will also cut a 12-foot-wide, 250-foot-long access road from the HCRH into the quarry. The location, at the western end of the quarry, avoids wetlands to the east to connect to the highway.

After the disposal activities are completed, ODOT will grade the site and plant it with native vegetation to complement the surrounding mixed forest.

#### **IDENTIFICATION AND DESCRIPTION OF HISTORIC PROPERTY**

#### Columbia River Highway National Historic Landmark District

The CRH NHL district is located in the state of Oregon, along the south side of the Columbia River between the cities of Troutdale (14.2 miles east of Portland) and The Dalles (88 miles east of Portland). The Columbia River Highway was the first modern highway in the Pacific Northwest and the first scenic highway in the United States. The road became a trunk route from Portland's large commercial center to eastern Oregon and points beyond. The highway's alignment remains true to the plan that Samuel C. Lancaster, Samuel Hill, and others envisioned for its original configuration. The road was the pinnacle of early-20th-century rural highway design created to take visitors to the Columbia River Gorge's most breathtaking and beautiful

Agency/Project: Oregon Department of Transportation/Coopey Dispo	osal Site Project. ODOT Maintenance No. M17016
Property Name: Columbia River Highway National Historic Landmark Di	istrict
Street Address: Historic Columbia River Highway Historic Mile Post 29.4	City, County: Bridal Veil vic., Multnomah

natural wonders and scenic vistas. Construction on the CRH took place from 1913 to 1922. The Keeper of the National Register listed the "Columbia River Highway Historic District" on December 12, 1983 (NRIS 83004168). On May 16, 2000, Secretary of the Interior Bruce Babbitt designated major portions of the Columbia River Highway as a National Historic Landmark. The project location is within both the NR and NHL districts.

The CRH NHL district is narrow and linear shaped. It runs 73.8 miles, the length of the original highway from the Sandy River to The Dalles. The nominated highway within that 73.8-mile distance is 51 of the extant 55 miles. The NHL district is divided into three discontinuous segments. Segment 1 includes the road and contributing features from the Sandy River to Warrendale (HMP 14.2 to 38.5). Segment 2 includes the road and contributing features from Tanner Creek to Cascade Locks (HMP 41.7 to 45.8). Segment 3 includes the road and contributing features from Hood River to The Dalles (HMP 65.8 to 88.4).

The 1983 National Register nomination for the Columbia River Highway Historic District defined a linear resource that was 60feet wide (30-feet either side of the roadway's centerline) and equal to its original right-of-way. The district was wider at several locations to incorporate slopes, other geological or highway-related engineering features, and the public recreation areas intertwined with the route's history. The district also traversed cities and communities on the streets where the CRH passed. There, the district was confined to the curb line or edge of pavement. The NHL district relies on the same general boundary definitions, but has excluded short, isolated segments of the NR district in Multnomah and Hood River counties that did not possess high integrity. (This accounts for the 51 vs. 55 miles of extant road noted above.) The NHL district has 54 contributing features (buildings, structures, and objects). Coopey Quarry is not a contributing feature of the NHL district.

The CRH NHL district meets **NHL Criterion 1** as an outstanding example of modern highway development in 20th-century America for its pioneering advances in road design. These include the adherence to grade and curve standards, and the use of comprehensive drainage systems, dry and mortared masonry walls, reinforced-concrete bridges, and asphaltic concrete pavement on a rural, mountain road during the formative years of modern highway building in the United States. The district meets **NHL Criterion 4** as the single most important contribution to the fields of civil engineering and landscape architecture by Samuel C. Lancaster and as an exemplar example of American landscape architecture, specifically as the first scenic highway in the United States. The CRH's aesthetic and engineering achievements greatly influenced the design and construction of other scenic highways, including national park roads, in the 1920s and 1930s. A combination of advanced engineering with landscape architectural elements as embodied in the CRH put in practice the concept of "landscape engineering" in modern highway design a decade before it was employed by the National Park Service on the Going-to-the-Sun Road and throughout the national park system.

The CRH, and its associated designed landscape, was a technical and civic achievement of its time, successfully mixing sensitivity to the magnificent landscape with ambitious engineering. In the CRH, Lancaster emulated the European style carriage roads in the Columbia River Gorge, while also designing and constructing a highway to advanced engineering standards. Throughout the route, Lancaster and subsequent locating engineers held fast to a design protocol that he developed after years of practical engineering experience and experimentation. It included accepting no grade greater than 5 percent, nor laying out a curve with less than a 200-foot turning radius. The use of reinforced-concrete bridges, combined with masonry guard walls and retaining walls, both on the road and on associated pedestrian trails, brought together the new with the old—the most advanced highway structures with the tried and tested, and all made by hand.

Multnomah County constructed the portion of the CRH within its jurisdiction, under the direction of Lancaster, from the Sandy River to the Hood River County line, beginning in the fall of 1913. It opened for traffic in 1915 and a patented Warrenite asphaltic concrete pavement in 1916. The rest of the highway, in Hood River and Wasco counties, opened a few miles at a time, from west to east, through 1922.

#### AVOIDANCE ALTERNATIVES CONSIDERED (including No Build Alternative and Minimization Efforts)

#### **EVALUATION OF EFFECTS**

#### No Build Alternative

The No Built Alternative does not meet the Coopey Disposal Site Project's purpose and need statement. Without an access road from the CRH, ODOT cannot reclaim and restored the quarry, which is the purpose of the project.

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#### **Build Alternative**

### Application of the Criteria of Adverse Effect (36 CFR 800.5)

An application of the Criteria of Adverse Effect required evaluating the project for both how it affects Segment 1 of the CRH NHL district and how it affects the entire NHL district.

#### Affects to Segment 1 of the Columbia River Highway National Register Historic District

The activities called out in the Coopey Disposal Site Project include reclaiming Coopey Quarry and building an access road. ODOT will accomplish the quarry reclamation over an indeterminate amount of time that could range from a few years to a few decades, depending on the availability of fill material. Much more definite is the need for direct access to the quarry from the CRH. The project will accomplish this with a single-lane gravel road that heads north from the north shoulder of the highway. (See Figure 1). Reclaiming the quarry will have No Effect on the NHL district. Construction of the road will result in No Adverse Effect on Segment 1 of the CRH NHL district, which includes about 24.3 miles of CRH roadway from Troutdale to Warrendale.

The project will affect a twelve foot-wide segment of the NHL district from the edge of pavement of the Columbia River Highway to the north edge of the 60-foot-wide right-of-way (30 feet either side of roadway centerline. The project will preserve those materials, features, finishes, spaces, and spatial relationships that, together, give this Columbia River Highway NHL segment its historic character.

The Coopey Disposal Site Project will not introduce any atmospheric or audible elements that diminish the significant historic features of this segment of the NHL district. It will not neglect this segment of the district, nor will it transfer the property out of federal ownership [the portion of the NHL district within the project's Area of Potential Effect is not under federal ownership].

#### Affects to the entire Columbia River Highway National Historic Landmark District

The reclamation activities called out in the Coopey Disposal Site Project will have No Effect on the CRH NHL district, which includes 51 of the 74 original miles of roadway from Troutdale to The Dalles. Construction of the access road to the quarry will result in No Adverse Effect on the CRH NHL district. (See activities called out above.)

The project will affect a twelve foot-wide segment of the NHL district from the edge of pavement of the Columbia River Highway to the north edge of its 60-foot-wide right-of-way (30 feet either side of roadway centerline). The project will preserve those materials, features, finishes, spaces, and spatial relationships that, together, give the CRH NHL district its historic character.

The Coopey Disposal Site Project will not introduce any atmospheric or audible elements that diminish the significant historic features of the NHL district as a whole. It will not neglect the district, nor will it transfer the property out of federal ownership [the portion of the NHL district within the project's Area of Potential Effect is not under federal ownership].

#### COORDINATION AND PUBLIC INVOLVEMENT

ODOT informed the neighbors and interested parties, including the Tribes and agencies, of its pre-application conference for its Columbia River Gorge National Scenic Area permit with the Multnomah County Land Use Planning Department. The project will be on the agenda for upcoming Historic Columbia River Highway Advisory Committee meetings, which take place quarterly.

#### CONCLUSION

It is the determination of the Oregon Department of Transportation that pursuant to ORS 358.653, the Coopey Disposal Site Project will have No Adverse Effect on the Columbia River Highway National Historic Landmark District (Segment 1 of the NHL district or the entire NHL district). ODOT recommends a Finding of No Historic Properties Adversely Affected for the Coopey Disposal Site Project.

#### REFERENCES

National Historic Landmark Nomination, Columbia River Highway Historic District, Multnomah, Hood River, and Wasco counties, Oregon, National Register #83004168, by Robert W. Hadlow, 2000.

National Register of Historic Places Nomination, Columbia River Highway Historic District, Multhomah, Hood River, and Wasco counties, Oregon, National Register #83004168, by Dwight A. Smith, 1983.

Surveyor/Agency: <u>Robert W. Hadlow, Ph.D., Oregon Dept. of Transportation</u> Date Recorded: <u>August 2017</u> Section 106 Level of Effect

Agency/Project: Oregon Department of Transportation/Coopey Disposal Site Project. ODOT Maintenance No. M17016

Property Name: Columbia River Highway National Historic Landmark District				
Street Address: Historic Columbia River Highway Historic Mile Post 29.4	City, County: Bridal Veil vic., Multnomah			



Figure 1. Project Location Map.

 Agency/Project:
 Oregon Department of Transportation/Coopey Disposal Site Project. ODOT Maintenance No. M17016

 Property Name:
 Columbia River Highway National Historic Landmark District

 Street Address:
 Historic Columbia River Highway

 City
 Coupty:

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Historic Mile Post 29.4

City, County: Bridal Veil vic., Multnomah

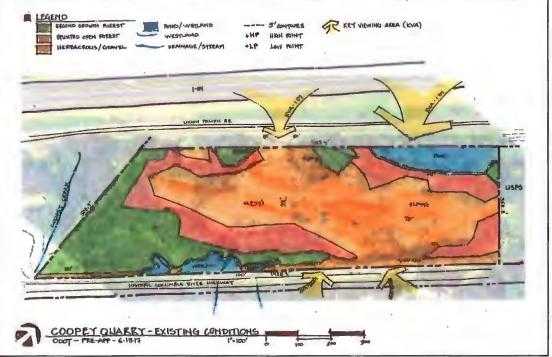


Figure 2. Existing Conditions at Cooley Quarry.

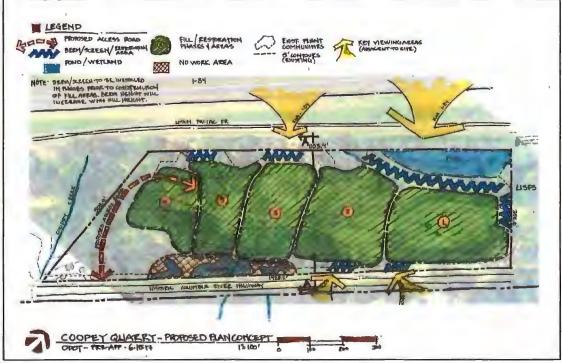


Figure 3. Proposed Plan Concept at Coopey Quarry showing location for the access road at west end of the quarry.

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Figure 4. Topographic Map of Coopey Quarry from 1935.



Figure 5. Existing Topography at Coopey Quarry.

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Property Name	Columbia River Highwa	y National Historic Landmark Distr	ict
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Historic Mile Post 29.4	City, County: Bridal Veil vic., Multnomah

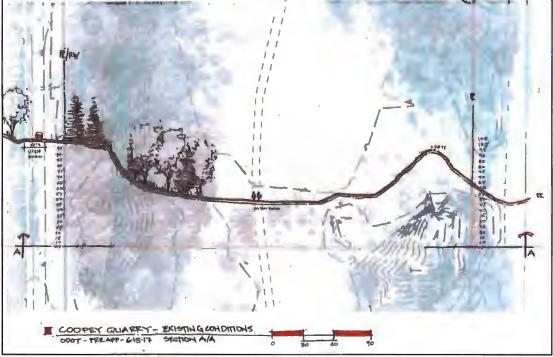


Figure 6. Existing Conditions at Coopey Quarry

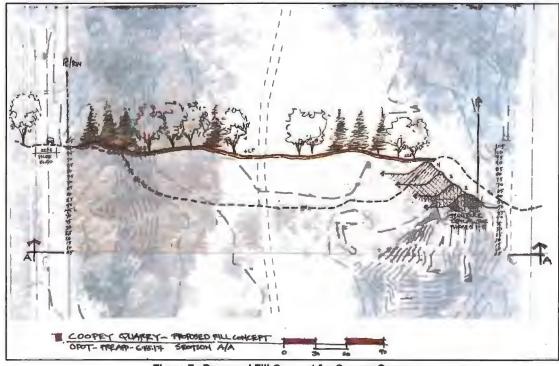


Figure 7. Proposed Fill Concept for Coopey Quarry

Agency/Project: Oregon Department of Transportation/Coopey Disposal Site Project. ODOT Maintenance No. M17016

Property Name: Columbia River Highway National Historic Landmark District

Street Address: Historic Columbia River Highway Historic Mile Post 29.4 City, County: Bridal Veil vic., Multnomah



Photo 1. Looking north at the proposed Coopey Quarry access road, where it will connect with north side of CRH NHL District.



Photo 2. Looking west along the Historic Columbia River Highway (in the CRH NHL) showing location where quarry access road will enter highway.

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Property Name: Columbia River Highway National Historic Landmark District

Street Address: Historic Columbia River Highway Historic Mile Post 29.4

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Photo 3. Looking SE at Coopey Quarry floor, CRH NHL beyond vegetation above basalt cliffs at the right.



Photo 4. Looking West at Coopey Quarry floor. Cliffs and vegetation and CRH NHL to the left.

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Photo 5. Looking NW from CRH NHL district toward Coopey Quarry. Vegetation obstructs view of quarry.



Photo 6. Looking North from CRH NHL towards Coopey Quarry.

# **Coopey Disposal Site**

# Feasibility and Suitability Analysis

# **Oregon Department of Transportation**

# **Columbia River Gorge National Scenic Area Application**

The Coopey Quarry is a state owned abandoned quarry used during the development of Interstate 84 through the 1940s and 1950s as a gravel source for the construction of the water level route through the Gorge. The site sits south of Interstate 84 and UPRR and north of the Historic Columbia River Highway. The site is zone GSF 40. A disposal site can be permitted as a conditional use within this zone. According to Chapter 38 of MCC the applicant is required to demonstrate that it is not practicable to locate the site outside the Scenic Area or inside an Urban Area.

ODOT is proposing to use the abandoned quarry as a disposal site with the intent of eventually reclaiming the site to its pre-quarry condition using native fill material. The material used to fill the quarry will be native to the Gorge generated from during geologic events and subsequent maintenance activities within the roadway prism. Material will include rocks, soil and woody material.

ODOT maintenance staff identified the need for a new disposal site in the Columbia River Gorge following recent geologic activities and extreme weather conditions. Winter weather causes rock fall and trees to fall across the roadway requiring removal by ODOT staff.

All ODOT managed existing disposal sites are at capacity and/or are permitted for temporary storage. A long term solution to store debris is needed within the Columbia River Gorge. The Coopey Quarry was identified as a practicable alternative due to its size, ability access, scenic subordinance, location (its close proximity to where much of the debris is being generated) and the opportunity to reduce scenic impacts.

Just this past spring a major slide event occurred in the vicinity of the Coopey Quarry which closed the Historic Columbia River Highway for several weeks. On March 15, 2017 a debris flow at milepost 16.63 blocked the highway. The highway was closed overnight and several weeks following. While clearing the roadway on March 16, 2017, two more debris flows occurred in close succession. Work was suspended. The highway remained closed and ODOT staff scheduled a helicopter reconnaissance the following day to locate and evaluate the source of the debris flow. The flight revealed that the source was a large, shallow landslide located at the top of the drainage. ODOT is monitoring this slide but it is likely that future debris flows will

Exhibit A.3.h occur in this vicinity necessitating the need for a nearby disposal site in preparation for the upcoming rainy season.

ODOT geologists have prepared a survey of existing ODOT owned lands that could provide opportunities to store materials. Seven sites were identified within the I-84 corridor. The matrix is attached. Additionally, ODOT has a stock pile "bone yard" area within the city limits of Cascade Locks. This area is not ideal for long term storage because it is required for temporary storage of sanding and sweeping material and construction staging.

The Columbia River Gorge is a geologically dynamic place. Transportation through the Gorge is critical. Removal of debris that falls on or across the road is an important function of the Oregon Department of Transportation to maintain access for life and safety through the Gorge. Expedited removal of debris is paramount during emergency events. The Coopey Quarry is located in the Gorge, an area prone to landslides and geologic events. During severe weather events multiple slides or debris flows may occur impacting the transportation corridors. Proximity between the event and the disposal site is critical. The faster the ODOT maintenance trucks can haul and remove the debris from the travel way the faster the road can be opened for emergency vehicles and police.

Sites outside the Columbia Gorge National Scenic Area would require extensive travel time. ODOT staff reached out to Multnomah County Road Maintenance Crews. Multnomah County presently trucks their road debris to a disposal site in the Portland West Hills. Trucking debris to the West Hills of Portland is not practicable assuming the life line function of ODOT's facilities. Geologic events most often occur during winter. Keeping the transportation corridors open is critical during these times. Access for police and emergency vehicles is very important to public safety especially during emergency events. Interstate 84 and the Historic Columbia River Highway are critical transportation corridors though the Gorge.

Closures of these facilities (I-84 and HCRH) require long detours (SR-14/Hwy 26 around Mt Hood) which may also be impacted by slides and rock fall during severe weather conditions. During winter operations maintenance crews have access to only one dump truck. The other trucks in the fleet are set up with plows and sanding equipment necessary to maintain access through the Gorge. During these times maintenance staffing is limited and often spread across the region plowing or sanding to maintain access on the Interstate or along the Historic Columbia River Highway. With one truck available, a flagger and loader operator would need to sit idle waiting for the truck to return from a site located outside the National Scenic Area. The Coopey Quarry is ideally located near I-84 and the Historic Columbia River Highway. The site has limited scenic visibility and provides an area to store debris which will allow the degraded site to be reclaimed over time.

	Querra (Site News	Legention	De la de			Visible from I-84, SR 14,	C1	A	Applicant Findings
	Quarry/Site Name	Location	Description		Impacts	or HCRH?	Size	Access	Applicant Findings
W file #43519	Fountain Slide	I-84 MP 49.4, Hood River County	Currently an active site - disturbed area is 200 feet wide by 400 feet long/Used for temporary storage by ODOT maintenance.	3N 8E 34	Not visisble	No		Via gated access road (locked) that connects to an abandoned section of the Historic Columbia River Highway. The easement was temporary and expired in 1971	
W file #17802, 01365	Mitchell Point Talus	I-84 MP 58.8, Hood River County. 100 meters south o I-84	Original easement to site is no longer avialable - would need to get another (?) easement/Future location of the HCRH State Trail.	1	Recreaton Impacts	Yes - from I-84, SR 14, Columbia River, and Union Pacific mainline/future HCRH State Trail	12.93 acres	0.71 acre Haul Road easement - original easement to the site is no longer available	Not practicable. Future aligment of HCRH State Trail.
W <mark>#</mark> 1R-2-803	Corbett Quarry	I-84 MP 21.89, Multnomah County. Take Exit 22 to Corbett Hill Road, proceed 177 feet. Site is on right and visisble from Highway.		1N 4E 27	visible from I-84	I-84	25.48 acres	Access by locked gate	Not practicable. Quarry floor is not lar enough. Maintenance currently uses i as temporary storage area.
W# 1R-4-538	Dodson Material Source	I-84, east and take the Dodson Exit MP 35. The site is located on the south side of Frontage Road near Tumalt Creek.	Potential crushed aggregate and riprap source. Inactive mine plan permit as of 1976. The site is strewn with fragments of basalt talus ranging size from 3" to 6" in size.		Visible from i-84 and HCRH	I-84 HCRH	v	Site is located on south side of 160 Frontage Road.	Not for debris storage. Active slide location.
8-5-1117	Good Earth Talus	Take Exit 28, 2 miles east of Coopey Quarry	Access from HCRH on tight corner just west of Multnomah Falls. Purchased in 1958 from Stebco, Inc. Mature trees stand in the borrow area. Property is an areas that is very steep and overgrown.	1N 5E 13	Visible from HCRH	HCRH			Not practicable. Steep. Vegetated. Owned by OPRD
R-1-1008	Yeon Talus Pit	On the south side of 84 east of Moffett Creek	Property is really just a talus slope next to I-84. The HCRH State Trail traverses the site.	2N 7E 31	visible from I- 84/recreation impacts	HCRH state Trail		284.48 HCRH State Trail	Not practicalbe. HCRH State Trail has been developed in this location.
R-2-959	Wilhelm Filler Pit		waste site. Maintenance has placed a berm of slide material along the north side of property.	1N 3E 25	visible from I-84	HCRH		86.24 From Jordan Road	Applicable. Permitted for temporary storage of materials following the 1990 Dodson debris flow.

# COOPEY DISPOSAL SITE FEASIBILITY AND SUITABILTY ANALYSIS OF COMPARABLE ODOT SITES IN THE COLUMBIA RIVER GORGE NSA

•	Cascade Locks Bone Yard	WaNaPa, Cascade Locks across from Cascade Locks maintenance facility.	Used for temporary storage for sanding and sweeping material and construction staging.	Partially visible from I- 84		
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No additional capacity. Construction staging, sanding and sweeping material storage in addition and storage of road maintenance supplies.

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