

Remedial Action Plan

Lithia Springs Property
555 Emigrant Creek Road
Ashland, Jackson County, Oregon
ECSI ID 5384



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Sign-off Sheet

This document entitled, **Remedial Action Plan**, was prepared by **Stantec Consulting Services Inc. (Stantec)** on behalf of the **City of Ashland (referred to as "the Client")** for specific application to the Lithia Springs Property located at 555 Emigrant Creek Road in Ashland, Oregon. Any reliance on this document by a third party is strictly prohibited. The material in this document reflect Stantec's professional judgment in light of the scope, schedule and other limitations stated in the document and in the contract between Stantec and the Client.

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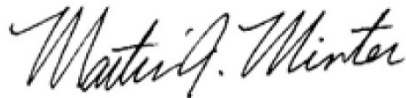
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Acronyms & Abbreviations

AGC	Ashland Gun Club
B&C	Brown & Caldwell
bgs	below ground surface
BMPs	Best Management Practices
CFR	code of federal regulations
City	City of Ashland
CWMP	Compensatory Wetland Mitigation Plan
DEQ	Oregon Department of Environmental Quality
DSL	Oregon Department of State Lands
ECSI	Environmental Cleanup Site Information
ESCP	Erosion & Sediment Control Plan
ERA	Ecological Risk Assessment
GPS	global positioning system
HAZWOPER	Hazardous Waste Operations and Emergency Response
ITRC	Interstate Technology & Regulatory Council
JBR	JBR Environmental Consultants, Inc.
kg	kilogram
LUCS	Land Use Compatibility Statement
memo	Memorandum
mg	milligram
msl	mean sea level
NFA	No Further Action
NPDES	National Pollutant Discharge Elimination System
OAR	Oregon Administrative Rule
OSHA	Occupational Safety and Health Administration
OSR	Open Space Reserve
QA/QC	quality assurance/quality control
RA	Remedial Action
RAP	Remedial Action Plan
RBC	risk-based concentration
RMS	Risk Management Strategy
SLV	screening level value
Stantec	Stantec Consulting Services Inc.
USCOE	United States Army Corps of Engineers
VCP	Voluntary Cleanup Program
XRF	x-ray fluorescence

1.0 INTRODUCTION

On behalf of the City of Ashland, Oregon (City), Stantec Consulting Services Inc. (Stantec), prepared this Remedial Action Plan (RAP) for a portion of the Lithia Springs Property (referred to herein as “the Property”). The Property is owned by the City and located at 555 Emigrant Creek Road in Ashland, Oregon (**Figure 1**). Approximately half of the Property, including the area proposed for the remedial action, is leased to the Ashland Gun Club (AGC) for use as an active shooting range.

This RAP was prepared to define the scope of work and methodology that will be used for conducting a remedial action in the area including most of jurisdictional Wetland 3 (hereinafter referred to as Wetland 3b), Wetland 5, and a 10-foot buffer circumscribing the boundary of the two wetlands (collectively referred to as the “Remedial Action (RA) Project Area”; **Figure 2**). The RA Project Area is located within the active shotfall area of the shooting range. The remedial action will be performed in conjunction with planned wetland mitigation activities on the Property. A description of wetland delineation activities performed on the Property is provided in **Section 2.3.2**.

The purpose of the remedial action is to minimize the potential for any impacted soil to remain in, or migrate out of, the RA Project Area. The scope of this RAP was developed based on conversations with personnel from the Oregon Department of Environmental Quality (DEQ) and information provided in guidance documents for shooting ranges prepared by the United States Environmental Protection Agency (EPA 2005), and Interstate Technology & Regulatory Council (ITRC 2003 and ITRC 2005). The City is currently preparing a Compensatory Wetland Mitigation Plan (CWMP) and Removal/Fill Permit application for submittal to the Oregon Department of State Lands (DSL) and the United States Army Corps of Engineers (USCOE). Environmental cleanup/restoration activities within the RA Project Area will be performed in order to obtain the removal/fill permits with the DSL and USCOE. Effective Best Management Practices (BMPs) are being implemented (or are planned) for long-term maintenance of the Property as an active shooting range operated by the AGC. The *Environmental Stewardship Plan, which establishes the BMPs for the shooting range*, is provided in **Appendix A**.

Remedial action activities will include the tasks identified below:

- 1) Lead shot reclamation from the RA Project Area.
- 2) Confirmation soil sampling within the RA Project Area.
- 3) Data evaluation using statistical methods.
- 4) Shot/soil segregation and recycling/reuse.
- 5) Drainage installation.
- 6) Backfilling and site restoration of the RA Project Area.

As discussed in detail in **Section 4.0**, the focus of the remedial action is removal of lead shot from the RA Project Area based on visual observation in shallow soil and/or surficial soil where shot is visible (i.e., up to 3 inches).

1.1 Remedial Action Objectives

The objectives of the remedial action described in this RAP are as follows:

- Remove lead shot and/or surficial soil where shot is visible in the RA Project Area to eliminate potential surface soil exposures and the exposure pathway for potential migration of contaminated material to ecological and human receptors.
- Create an upland environment in which further lead shot deposition will not migrate and can be managed using BMPs.
- Use the previously collected data and future data collected during confirmation sampling (upon completion of lead shot reclamation activities) to demonstrate compliance with applicable DEQ screening levels for completion of a remedial action (under Oregon Administrative Rule [OAR] 340-122-090).
- If statistical compliance is not demonstrated, cover the RA Project Area with an engineered cap to eliminate potential exposure pathways to residual metal concentrations exceeding applicable DEQ screening levels, or conduct additional soil removal to bring the soil residual concentrations within compliance.

2.0 SITE DESCRIPTION AND BACKGROUND

2.1 Description of Property and Project Area

The Property is located at 555 Emigrant Creek Road in Ashland, Oregon (**Figure 1**), approximately 3/4 miles outside of City limits, and includes a 69.7-acre area owned by the City. A recent survey map of the Property is provided in **Appendix B**. The RA Project Area lies south of Emigrant Creek and is primarily located in tax lot number 400 (Willamette Meridian), Township 39 South, Range 1 East, Section 12 and tax lot number 800 (Willamette Meridian), Township 39 South, Range 2 East, Section 7, in Jackson County. The northern portion of the Property (former Miller Trust Property) was recently purchased by the City and incorporated into the Property boundary (shown on the survey map provided in **Appendix B**).

Since 1968, the City has leased approximately 32 acres of the Property to the AGC for use as an active shooting range (**Figure 2**). The leased boundary of the AGC is listed as Site 5384 in the DEQ Environmental Cleanup Site Information (ECSI) Database and was defined as “the Site” in the *Site Characterization Work Plan* submitted to DEQ (JBR 2011). The shooting range consists of six rifle and pistol ranges, one archery range, and one shotgun and skeet shooting range.

The Property lies on a relatively level alluvial terrace along the south side of Emigrant Creek and is surrounded by rural residential properties on all four sides. The average elevation of the Property is approximately 1,920 feet above mean sea level (msl). The Property slopes gently to the north toward Emigrant Creek and the southern portion of the Property rises steeply toward Emigrant Creek Road. The Property is predominantly clear of woody vegetation except for riparian areas. Most upland areas are kept mowed and free of shrubs. Adjacent properties to the east and west are higher in elevation and form a basin around the Property.

For the purpose of this RAP, the RA Project Area includes most of jurisdictional Wetland 3b, all of Wetland 5, and a 10-foot buffer circumscribing the boundary of the wetlands. The RA Project Area is located in the active trap and skeet shotfall areas of the AGC shooting range (**Figure 2**) and includes the area where removal/fill activities are planned as part of wetland mitigation activities.

2.2 Site History

The Property was first used in the early 1900s by Ashland residents who believed medicinal value existed from the mineral waters located on the Property. Plans were prepared to build a resort and several wells were installed to pump mineral water (referred to as the “Lithia Springs wells”). The resort was never constructed due to lack of funding, and only one well remains active (**Figure 2**). A dry ice manufacturing facility operated on the Property from 1944 to 1950 and resulted in the construction of several buildings and additional wells, mainly on the northeastern portion of the Property. Building foundations from the dry ice facility are still present. A small area in the central portion of the Property was utilized as a motor-cross track in the 1960s and appears to have operated until the early 1970s. In 1968, the AGC leased approximately 32 acres of the Property to develop a shooting range (**Figure 2**). Since 1968, the AGC has created multiple firing areas that currently include six rifle and pistol ranges, one archery range, and one shotgun and skeet range. Historical aerial photographs between 1939 and 2005 were presented and discussed in the *Site Characterization Work Plan* (JBR 2011).

2.3 Summary of Previous Investigations

Site investigations conducted on the Property on behalf of the City since 2009 are described below.

2.3.1 Levels I/II - Ecological Risk Assessment

Brown and Caldwell (B&C) completed a *Level I - Scoping Ecological Risk Assessment (ERA) Report* in July 2009 (B&C 2009) and a *Level II ERA Report* in 2010 (B&C 2010), in general accordance with DEQ guidance (DEQ 1998 and DEQ 2001). The results of the Level I ERA indicated that sufficient evidence existed for potential impacts to soil, groundwater, surface water and/or sediments from AGC activities. The Level I ERA also identified ecologically important plant and animal species and their associated habitat that are either present on the Property or within the two-mile study radius.

The Level II ERA involved an inventory of potentially present ecological receptors, including: a botanical inventory; preliminary wetland assessment; wildlife inventory; sensitive, rare, threatened, or endangered species assessment; and an evaluation of sensitive environments on the Property. As part of the Level II ERA, B&C also conducted the following: surface water and sediment sampling from Emigrant Creek; x-ray fluorescence (XRF) scanning for lead in soil in the shooting range berms; soil sampling from the shooting range berms; and soil and groundwater sampling from the skeet shooting range.

Upon completion of the Level II ERA activities, B&C concluded the following:

- Further ecological evaluation was required based on elevated concentrations of metals reported in the rifle and pistol range berms.
- There was no evidence supporting further ecological evaluation of metals or organic chemicals in the shotgun and skeet range.
- Surface water and sediment samples from Emigrant Creek did not indicate impacts to Emigrant Creek from Gun Club activities.
- There was no potential for contact between ecological receptors and groundwater based on the groundwater sample collected from the test pit in the shotgun and skeet range.

After completion of the B&C *Level II ERA Report*, the City entered into the DEQ voluntary cleanup program (VCP; DEQ 2010) to facilitate obtaining DEQ technical guidance and review of the Level II ERA Report (B&C 2010). DEQ reviewed the B&C *Level II ERA Report* and conducted a site visit on January 13, 2011. DEQ then prepared a File Review Memorandum (Memo), dated January 20, 2011 (DEQ 2011), in which data gaps and additional characterization activities determined necessary by DEQ to determine the potential risk to human or ecological receptors at the site were detailed.

The DEQ Memo included the following suggestions:

- Vertical extent of contamination within the rifle and pistol range berms and pit and range floor sampling.
- Grid-based soil sampling of the shotgun and skeet range within the maximum shofall area.

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- An evaluation of groundwater quality to determine if contaminated groundwater exists on the Property and has the potential to discharge to Emigrant Creek.
- If groundwater on the Property is contaminated, additional evaluation of the surface water and sediments of Emigrant Creek.
- A scaled site plan that includes topography; surface water drainage; drainage direction of the presumed wetlands; flow direction of Emigrant Creek; drainage features such as ditches, surface water management; and layout of the current AGC ranges.
- Additional information on the site history regarding types of shooting, ammunition used, lead recovery schedule, and current BMPs. This should include a review of any alternative shooting areas that may have existed historically.
- A description of the geology and hydrogeology, including a description of soils and underlying lithology, information on groundwater, available well logs, and a description of the Lithia Springs wells that are located on the Property.
- BMPs for the Property include a regular lead recovery schedule, termination of shooting into the wetland located near the shotgun and skeet range, and erosion control features on the rifle and pistol ranges.

2.3.2 Wetland Delineation/Surface Water Drainage Assessment

In 2011, the City contracted with JBR Environmental Consultants, Inc. (JBR; now Stantec) to prepare a *Site Characterization Work Plan* (JBR 2011) to address the comments provided by DEQ (described in **Section 2.3.1**) on the *Level II ERA Report* (B&C 2010). As part of the scope of work, Stantec staff conducted wetlands delineations in May 2011. After a series of amendments including enlarging the wetland delineation study area and adjusting for eliminated irrigation, Stantec prepared a *Wetland Delineation Report* (titled, *Resubmission: Delineation of Waters of the United States, including Wetlands, Lithia Springs Property* [Stantec 2014]) for submittal to DSL. A response to DSL's comments on the report was submitted by Stantec to DSL on April 23, 2015 (Stantec 2015). The *Wetland Delineation Report* and revisions included in the Stantec response to DSL comments received concurrence from DSL on May 1, 2015 (WD2014-0488; DSL 2015). An earlier version of the *Wetland Delineation Report* covering a portion of the site received concurrence from USCOE in July of 2012. The 2014 *Wetland Delineation Report*, response to DSL comments, and DSL concurrence are provided in **Appendix C**.

Surface water drainage and the drainage direction of the presumed wetlands are mainly driven by what appears to be historical drainage/cutoff channels of Emigrant Creek. The surface drainage information is summarized below. Additional information is provided in the *Wetland Delineation Report*.

The riverine wetlands receive a significant portion of their hydrology from overbank flooding of Emigrant Creek. The palustrine wetlands, lying close in elevation to the stream, receive a significant portion of their hydrology from an elevated water table.

Farther away from the stream, wetland hydrology is driven by seeps, precipitation and a shallow groundwater table, so their size shrinks during the dry season, leaving a smaller perennial wetland. The source of hydrology for all wetlands appears to be on-site. While surface water drainage has not been observed directly during a precipitation event, surface indicators of sheet flow or channeling were not observed. Evidence of surface flow from or across upland areas during precipitation events is lacking

except in wetland areas to the east of the shotfall range area (provided as Figure 5 of the *Wetland Delineation Report (Appendix C)* submitted to DSL and USCOE). Rainfall appears to percolate into the permeable soils in upland areas and flow laterally below the surface, reappearing in seeps along the slopes around the other wetlands.

The primary hydrologic input to the palustrine wetlands appears to be several mineral water springs scattered throughout the Property, as evidenced by the carbon dioxide (CO₂) bubbles observed rising in inundated areas, and calcite deposits and mineral-cemented gravels found in wetland areas. Several areas contain surface water and appear to be fed by mineral water seeps. Site inspection revealed that ponding was maintained by a layer of cemented gravel and cobble hardpan or dense clay.

2.3.3 Site Characterization

From December 2011 through January 2012, JBR (now Stantec) conducted a site characterization on behalf of the City. The site characterization was performed in accordance with the *Site Characterization Work Plan* (JBR 2011) and included the following activities:

- 1) Collection of 67 soil samples from grid-based sample locations in the shotfall range area.
- 2) Collection of 40 discrete soil samples from the berms of the rifle and pistol range areas, long-range rifle range, and monitoring well boreholes.
- 3) Drilling and installation of 6 monitoring wells.
- 4) Quarterly groundwater monitoring events.

The results of the site characterization are summarized below.

- Concentrations of total lead were elevated above the minimum DEQ screening level (regional background) in surface soil collected from 0 to 0.5 feet below ground surface (bgs) across the majority of the Property, with the most elevated concentrations observed in the discrete samples collected from the rifle/pistol range berms.
- At the 0 to 0.5 feet bgs sample depth interval, the lowest concentrations were observed in discrete samples collected from the delineated wetland within the shotfall range area.
- Concentrations of other metals (predominantly antimony, arsenic, copper and iron) in five samples collected from the 0 to 0.5 feet bgs sample depth interval were also elevated above the applicable DEQ preliminary screening levels.
- The distribution of total lead concentrations across the three sampling intervals, including 0 to 0.5 feet bgs, 0.5 to 1 feet bgs, and 2 to 3 feet bgs, shows a significant decrease in total lead concentrations with an increase in depth, with lead concentrations only exceeding the regional background value in the deepest samples within the rifle/pistol berm areas.
- Based on the pattern of total lead concentrations decreasing with depth, the elevated total lead concentrations in soil within the shotfall range area are likely limited to the upper 1 to 2 feet of soil.
- Six groundwater monitoring wells were installed at depths ranging from 8 to 40 feet bgs with groundwater elevations in January 2012 ranging from approximately 2.5 to 16 feet bgs. The

variability in monitoring well depths depended on the presence of an impenetrable claystone layer or the presence of groundwater in the borehole during drilling.

- Groundwater flow is generally to the north-northwest direction of the Property, toward Emigrant Creek.
- Total lead concentrations in groundwater from the six monitoring wells during four quarterly sampling events in 2012 were all reported at concentrations below the laboratory reporting limit. Based on these data, leaching of lead from the surficial soil to groundwater has not occurred.
- The three soil samples (DS-7, DS-8, and DS-9) collected during site characterization activities within the footprint of the RA Project Area indicate that lead concentrations are less than the DEQ regional background concentration of 34.09 mg/kg established for the Cascade Mountain physiographic province (DEQ 2013).

All data collected during site characterization activities are provided in the *Site Characterization Report* (JBR 2012) and subsequent *Second, Third, and Fourth Quarter 2012 Groundwater Monitoring Report* (JBR 2013).

2.3.4 Environmental Stewardship Plan

As previously mentioned, an *Environmental Stewardship Plan* (URS 2013; **Appendix A**) establishing BMPs for management of the shooting range was prepared on behalf of AGC. Since the property will continue to be used as an active shooting range, the BMPs are being used (or will be used in the future) to control the accumulation of lead shot and bullets and potential migration of any metal-impacted soil and to protect to human health and the environment. Since the shooting range is operated by the AGC, it will be their responsibility to manage and implement the BMPs. More information regarding the BMPs is included in **Section 6.0**.

3.0 IDENTIFICATION OF RA PROJECT AREA

As described in **Section 2.1**, the RA Project Area includes jurisdictional Wetland 3b, Wetland 5, and a 10-foot buffer circumscribing the boundary of the wetlands. The following sections provide potential exposure pathways and applicable DEQ screening levels based on the site characterization data.

3.1 Potential Exposure Pathways

Property-specific receptors were first identified by assessing current and potential future land use plans and conducting a preliminary beneficial water use survey (provided in the *Site Characterization Report* [JBR 2012]). According to the Jackson County Planning Department (<http://jacksoncountyor.org/ds/Planning/Home>), the portion of the Property including the shooting range is zoned as Open Space Reserve (OSR), which is intended to conserve forest lands, but no forests are located within the site area. The planned future use for the Property will not change in the foreseeable future; the area including the RA Project Area is to continue use as a shooting range. Residential properties or property used for agricultural purposes surround the site.

Because residential properties surround the Property and because 25 domestic wells were located within a half-mile radius of the Property, residential exposures were used to assess soil and groundwater concentrations collected during the site characterization activities. Based on four quarters of groundwater data collected from the shallow wells (described in **Section 2.3.3**), groundwater exposure pathways (i.e., soil leaching to groundwater, and ingestion and inhalation of tap water), and the groundwater to surface water (i.e., Emigrant Creek) pathway are not considered to be complete and relevant for the RA Project Area. The groundwater/overland surface flow to surface water pathway via wetlands will be addressed under the remedial action scope of work. Additionally, the soil or groundwater pathway to interior air via vapor intrusion or exterior air via volatilization are not considered to be complete and relevant exposure pathways because the contaminants of concern are metals, which are considered to be non-volatile for exposure evaluations (DEQ 2012). Based on the Property zoning information, and current and future plans for continued use of the Property as a shooting range, the following potential exposure pathways and receptors were identified:

Human Receptors

- Occupational: *Soil Ingestion, Dermal Contact, and Inhalation*

Ecological Receptors

- Terrestrial (*Plants, Invertebrates, Birds, and Mammals*):
 - *Soil Ingestion, Dermal Contact, and Inhalation*
 - *Groundwater/Overland Surface Flow to Surface Water via wetlands*

AGC club members use and maintain the shooting range during the hours of operation. Contact of human receptors using the shooting range with soil through ingestion, inhalation, and dermal contact has been determined to be a complete and relevant exposure pathway at the Property. Because the reasonably likely current and future human receptors are not expected to change, occupational exposures in surficial soil (0 to 3 feet bgs) through incidental ingestion, dermal contact, and inhalation of airborne particulate matter are considered to be a complete exposure pathway. Incidental use by construction workers may be possible, but use by excavation workers is not planned. Construction worker exposures will be covered by occupational exposures.

Ecological receptor exposure (terrestrial: plants, invertebrates, birds, and mammals) is expected to be limited to the upper three feet of soil. This contact could occur by terrestrial animals at the ground surface (i.e., dermal contact, incidental ingestion, and inhalation of airborne particulate matter). Terrestrial predators could also be exposed to contaminated soil through ingestion of prey that inhabit contaminated surface soil. Terrestrial plants could also come in contact with surface soil contamination, primarily via uptake through their root systems. Another potential exposure pathway for ecological receptors is groundwater or overland surface flow to Emigrant Creek via the wetland areas.

It is expected that the human and ecological exposure pathways will be eliminated in the RA Project Area by implementation of the planned remedial action described herein.

3.2 Applicable DEQ Screening Levels

Based on the land use and beneficial water use evaluation and the exposure pathway assessment (see **Section 3.1**), site characterization results were compared with DEQ generic risk-based concentration (RBC) levels for human health exposures (DEQ 2012), screening level values (SLVs) for ecological exposures (DEQ 2001), and previous regional background concentrations for metals (DEQ 2002). These results are provided in the *Site Characterization Report* (JBR 2012) and *Groundwater Monitoring Report* (JBR 2013). Since these reports were prepared, DEQ has established new regional background concentrations for metals (DEQ 2013); the background concentrations established for the Cascade Mountains physiographic province were used to re-evaluate the concentrations obtained for the site characterization performed in December 2011 and January 2012. **Table 1** compares the site characterization data collected to the new regional background concentrations for the soil samples collected within the RA Project Area (DS-7, DS-8, and DS-9).

Please note that these comparisons were conducted to assess any imminent impacts to human health and the environment and are not intended to connote cleanup levels. Because the RA Project Area is located within an active shooting range, environmental cleanup for the purpose of obtaining a No Further Action (NFA) determination from DEQ is not planned at this time. The establishment of BMPs (see **Section 6.0**) has been initiated by the AGC and will be implemented in accordance with the *Environmental Stewardship Plan* (**Appendix A**) for controlling any impacts to human health and the environment.

3.3 Constituents Exceeding Screening Levels

Based on the site characterization results, contaminants associated with the active shooting range appear to be present in soil within the property used for the shooting range; however, data collected from three sample locations within the RA Project Area (DS-7, DS-8, and DS-9) show lead concentrations do not exceed the DEQ screening levels (other metals detected in other site characterization samples were not analyzed in this area). Based on the property-wide data, usage of the area (including the RA Project Area) as a shoffall (trap and skeet) shooting range, and the visible presence of lead shot at the surface, it is possible that lead, antimony, arsenic and copper are present in shallow soil (up to 0.5 feet bgs) above the applicable DEQ screening levels. These constituents are the drivers for determining the analytical requirements for the remedial action.

4.0 REMEDIAL ACTION SCOPE OF WORK & METHODOLOGY

As previously described in **Section 1.0**, the scope of work for the soil removal action will include the following tasks:

- 1) Lead shot reclamation from the RA Project Area.
- 2) Confirmation soil sampling within the RA Project Area.
- 3) Data evaluation using statistical methods.
- 4) Shot/soil segregation and recycling/reuse.
- 5) Drainage installation.
- 6) Backfilling and site restoration of the RA Project Area.

Detailed descriptions of each task are provided in the sections below.

4.1 Lead Shot Reclamation

Lead shot reclamation will be conducted within the RA Project Area, as shown on **Figure 3**. The methodologies will include using a high-powered vacuum or a Gradall® excavator (or similar equipment) to remove the lead shot within the upper 1 to 3 inches of soil (or another proven method for selective shot reclamation from soil). The objective of using these methodologies is to minimize the disturbance to the area and amount of soil removed with the shot that requires management. The shot reclamation will be focused in the RA Project Area where shot is visible at the ground surface. X-ray fluorescence (XRF) methodology may be used to evaluate residual metals concentrations in the soil to determine whether additional shot reclamation may be advisable. Reclaimed shot and any associated soil will be temporarily stockpiled in a lined/covered and secure area on the Property until a decision is made on segregation of the material (see **Section 4.4**). The shot reclamation effort is anticipated to result in the removal of approximately 150 to 500 cubic yards of mixed shot and soil over about a 1.14 acre area (assuming removal of about 1 to 3 inches of shot/soil). This volume may change based on actual site conditions. As described in **Section 4.4**, recycling of the reclaimed lead shot at an offsite facility and onsite reuse of soil is planned.

The lead shot reclamation will be conducted by a remediation contractor with experience using lead shot reclamation equipment. Selection of the remediation contractor will be determined by the City at a later date. It is anticipated that the City will be exempt from permitting for excavation and grading activities. Also, because impacted soil will not be removed from the property, transportation permits will not be required. However, because the RA Project Area covers more than one acre, a National Pollutant Discharge Elimination System (NPDES) 1200-C Construction Stormwater Permit may be required by DEQ. If required, the City will submit a 1200-C permit application, including a Land Use Compatibility Statement (LUCS) with Findings and Erosion and Sediment Control Plan (ESCP) to DEQ for approval prior to initiation of field activities.

4.2 Confirmation Soil Sampling

Following lead shot reclamation activities, confirmation soil samples will be collected from the RA Project Area to assess the residual concentrations of metals in soil. As necessary, XRF methodology may be used to pre-screen the samples to determine whether additional shot reclamation may be advisable to lower overall residual metals concentrations in the soil. The results of the soil samples collected during site characterization activities (at locations DS-7, DS-8, and DS-9; **Figure 3**) will be used to represent confirmation results at those locations.

Confirmation samples will be collected from the base and at the boundary of the RA Project Area. At a minimum, one boundary sample will be collected approximately every 100 linear feet of boundary, and one base sample will be collected approximately every 1,500 square feet of base area (**Figure 3**). Confirmation sampling locations will be recorded using a hand-held global positioning system (GPS) device. If XRF pre-screening or confirmation sample results indicate an exceedance of the soil screening levels, additional shot reclamation and confirmation sampling may be completed in the localized area that contains the exceedance(s).

4.2.1 Soil Sampling Procedures

At each confirmation soil sample location, a shovel or hand auger (or equivalent) will be used to dig a hole to a depth of 6 inches bgs. After digging, a clean soil surface will be exposed around the diameter of the hole, and soil will be collected in a decontaminated stainless steel bowl using clean stainless steel spoons, making sure to collect representative soil from the sidewalls of the hole throughout the depth interval and from at least four sidewall locations. Similar volumes of soil will be collected from each sample location. Disposable tools may be used instead of stainless steel, when feasible.

Once the sample has been collected (and before homogenization), the soil samples will be field screened using an XRF and visually inspected. A visual inspection for lead shot or other shooting range-related features will be documented in the field notes.

After sample collection, the lithologic features of the soil sample will also be recorded and the remaining soil sample will be placed in a decontaminated stainless steel bowl. Larger sized material (i.e., gravel greater than about ¼ to ½ inch in diameter) will be removed by hand. The sample will then be homogenized thoroughly using a stainless steel spoon (or comparable disposable implement) and transferred to the appropriate laboratory-provided sample container. The sample container will be appropriately labeled and placed in a chilled cooler pending delivery to the analytical laboratory. Sample handling, storage, and documentation will be conducted in accordance with the quality assurance/quality control (QA/QC) procedures described in **Appendix D**.

Equipment will be decontaminated before each sample is collected using the methods described in **Section 4.2.4**.

4.2.2 Sample Nomenclature

To allow for easy identification of sample locations and corresponding lab results, the following three-part nomenclature system will be used:

- remedial action confirmation sampling identifier (RA-CONF);
- sample location number that corresponds to the order in which the location was sampled (e.g., 1, 2, 3, etc.); and
- sample number that corresponds to the order in which the sample was collected from a single location (e.g., 1, 2, 3, etc.).

For example, the first confirmation sample collected from the first sampling location will be identified as RA-CONF-1-1. If that localized area is re-sampled (i.e., following additional shot/soil removal from that area), the subsequent sample will be identified as RA-CONF-1-2. The first confirmation sample collected from the second sampling location will be identified as RA-CONF-2-1, and so on.

4.2.3 Laboratory Analyses

Confirmation soil samples will be submitted to Apex Laboratories LLC of Tigard, Oregon under standard chain-of-custody protocol. The soil samples will be analyzed, with results provided on either a same-day or a 24-hour turnaround time, for total metals (lead, antimony, arsenic and copper) by EPA Method 6020. XRF screening results will not be used to represent final confirmation sample results. It is not anticipated that any soil samples will be analyzed for waste classification purposes because the shot will be recycled offsite and the soil will be reused as backfill, as described in **Section 4.6**.

4.2.4 Decontamination Procedures

The decontamination procedures described below are to be used by field personnel for sampling and related equipment. Deviations from these procedures must be documented in field records.

All soil sampling equipment (e.g., stainless steel bowls, stainless steel spoons, etc.) will be cleaned using the following three-step process:

- Scrub surfaces of equipment that would be in contact with the sample using brushes and an Alconox (or similar) solution.
- Rinse and scrub equipment with clean tap water.
- Rinse equipment a final time with deionized water to remove tap water impurities.

Decontamination of the reusable sampling devices will occur before each sample collection.

4.3 Data Evaluation and Demonstration of Statistical Compliance

Following completion of the soil confirmation sampling activities, the data will be evaluated using DEQ-approved statistical methods and the hot spot screening approach in accordance with OAR 340-122-090 to determine whether residual soil concentrations meet the applicable DEQ screening levels for human and ecological exposures defined in **Section 3.2**. The data will be used to make decisions on the need for additional shot reclamation to reduce residual metals concentrations in soil and on removal area backfill options (see **Section 4.6**). Data evaluation tasks are described in **Section 7.0** and reporting is described in **Section 8.0**.

4.4 Lead Shot/Soil Segregation & Management

Following lead shot reclamation activities (see **Section 4.1**), applicable methodologies will be implemented for the stockpiled material to segregate the shot from any soil that was removed with it. Depending on site conditions, methodologies to be used for lead shot/soil segregation may include:

- 1) Dry screening: a series of stacked vibrating screens (usually two screens) of different mesh sizes are used to dry sift and segregate the shot from the soil. This method can only be used under dry soil conditions.
- 2) Soil washing (wet screening or gravity separation): a water-based wash solution is used with stacked screens of varying sizes to separate the shot from the soil or is used with equipment that allows the more dense materials (i.e., lead shot) to settle to the bottom of unit. This is used with soil under wet soil conditions. Water generated during this process will be tested and disposed offsite under applicable regulations.
- 3) Other segregation method(s) that are deemed feasible based on site conditions.

The decision for the final lead shot/soil segregation methodology will be based on concurrence between the City and DEQ.

The purpose of the segregation is to allow the shot to be recycled offsite and to reuse the soil for maintenance or rebuilding of the backstop berms for the shooting range on the Property. According to EPA guidance, "ranges that reclaim and recycle lead bullets or lead shot may place the soil that is generated during the reclamation process back onto an active range on the same property or facility or a property adjacent to and under the same ownership as the property where the soils originated, without testing the soil for hazardous waste characteristics" (EPA 2005). EPA guidance also indicates that, "as a construction material, range soil after reclamation is not considered as either a solid or hazardous waste" (EPA 2005). The location(s) of the soil re-location will be documented in the field records.

4.5 Drainage Installation

Drainage trenches will be excavated throughout the RA Project Area to adequately dewater the area prior to backfilling and to maintain dewatered conditions for the future. The trenches will discharge into the downstream wetland. The trenches will be excavated to depths that will capture groundwater (as springs) at a minimum of 12 inches below grade. The total capacity of the trenches will be sized 50 percent larger than the existing 12-inch culvert used to discharge water from Wetland 3 through a concrete dam into Wetland 2 (see **Appendix C**). Perforated drain pipe (4-inch diameter) covered with filter sock will be placed in the trenches and covered with 1 to 3 inches of washed river rock to the top of the trench. The drain rock will be covered with polypropylene geotextile fabric, overlapping 1 foot on either side of the trenches. Soil removed during the drainage installation is not expected to be impacted by lead shot and therefore, will also be reused for maintenance and rebuilding of the backstop berms for the shooting range on the Property. Additional details for the drainage installation will be provided in the CWMP.

4.6 Backfilling and Site Restoration

Backfilling and site restoration will include a final survey of the RA Project Area and placement of clean fill into the area. If based on the statistical evaluation of the soil confirmation sample data (see **Section 4.3**), residual metals concentrations in soil are in compliance with applicable DEQ screening levels (see **Section 3.2**), the RA Project Area will be filled to a minimum of twelve inches above the top of the drain rock, and graded to meet existing elevations.

Prior to backfilling of the RA Project Area, a GPS survey of the area will be completed. The survey results will be utilized to verify the areal extent of the vicinity where lead shot reclamation activities occurred, the quantity of soil removed for documentation purposes, and the location of the main drains and laterals.

If statistical evaluation of the soil confirmation sample data (see **Section 4.3**) confirms residual metal concentrations in soil are in compliance with applicable DEQ screening levels (see **Section 3.2**), topsoil from the wetland mitigation area (currently planned on the west side of the Property) will be used to backfill the excavation areas to grade level. If however, metals concentrations in soil are not in compliance with the DEQ screening levels, an engineered cap (e.g., geomembrane and soil cover) will be emplaced within the RA Project Area. The engineered cap and the drainage installation (see **Section 4.5**) will be used to limit surface infiltration and accumulation of water in the area. The design for an engineered cap will be included in construction specifications for the remediation contractor (see **Section 8.0**).

Site restoration will consist of a full vegetation cover, which is an important erosion control method for outdoor shooting ranges. Vegetation absorbs rainfall, slows stormwater flow velocity, and minimizes the potential for lead to be transported by stormwater runoff. Once topsoil has been placed and graded loosely, an erosion control seed mix containing native species appropriate for the local growing conditions will be used to minimize irrigation and maintenance needs. The seeding mixes will be applied through the use of mechanical spreaders, by hydroseed or by hand.

5.0 HEALTH AND SAFETY

Stantec personnel and the remediation contractor personnel (excluding truck drivers) that will be conducting activities within (or in close proximity to the RA Project Area, must have completed Hazardous Waste Operations and Emergency Response (HAZWOPER) training in accordance with Occupational Safety and Health Administration (OSHA) requirements under the code of federal regulations (CFR) 1910.120. Prior to commencement of work, evidence of HAZWOPER 40-hour training and annual 8-hour refresher training must be provided to Stantec for all contractor personnel providing on-site services. Excavation activities will be conducted in accordance with OSHA excavation standards (29 CFR 1926) and any other federal, state, or local requirements.

In addition to Stantec and the remediation contractor personnel, other personnel anticipated to be present during remedial action activities are truck drivers and possibly regulatory agency personnel. Any onsite personnel that are not involved in soil excavation activities will be restricted to the Clean Zone. The Clean Zone will be defined in the remediation contractor specifications.

Site-specific health and safety protocols will be documented to identify potential hazards associated with lead shot reclamation and sampling activities, identify site contaminants, and clarify health and safety procedures. All field personnel will be required to review and sign a health and safety plan (or comparable) prior to commencement of fieldwork. In addition, onsite personnel will attend a daily health and safety "tailgate" meeting to discuss safety issues anticipated for the day. Field personnel will be required to sign a meeting attendance form to acknowledge their understanding of the safety issues discussed. A site-specific Risk Management Strategy (RMS 1 Form) prepared by Stantec to document health and safety protocols is provided in **Appendix D**. Daily health and safety concerns/strategies will also be documented by Stantec on a RMS 2 form (also provided in **Appendix D**). All health and safety documentation will be maintained by Stantec personnel during field activities and in Stantec project files.

6.0 BEST MANAGEMENT PRACTICES

As required under the renewed lease with the City, BMPs will be formally instituted by the AGC in order to limit additional future impacts to the Property from gun range activities. The goal of the BMPs is to provide for safety of AGC users, neighbors and ecological receptors; minimize the accumulation of lead in non-designated areas; and provide a regular lead recovery schedule. The AGC currently has BMPs in place that include berms and backstops in the rifle and pistol ranges, keypad access to restrict site use to AGC members, and a lead recovery program.

As previously mentioned, an *Environmental Stewardship Plan* (**Appendix A**) was developed on behalf of AGC to establish BMPs for the Property and other options to minimize impacts to human health or ecological receptors. BMPs will be implemented by the AGC and/or their authorized representative.

7.0 DATA EVALUATION

Upon completion of confirmation sampling activities, soil analytical data will be validated and evaluated to determine if any revisions to the scope of work are warranted. Revisions would be based on the confirmation sample results and include potential modifications to the vertical boundaries of the RA Project Area for completion of a soil remedial action, and/or identification of potential hot spots of contamination, in accordance with OAR 340-122-090. If required, scope of work revisions will be prepared as an amendment to this RAP and submitted to DEQ.

7.1 Statistical Demonstration of Compliance

At completion of the remedial action and collection of confirmation samples, overall compliance with the applicable DEQ screening levels will be demonstrated using a distribution-based UCL90. The compliance demonstration will consist of two approaches: 1) comparing individual samples to the screening levels, and 2) determining the statistical distribution of the combined data sets for lead, antimony, arsenic and copper, calculating the UCL90 on the true population mean based on the distribution results, and comparing this to the screening levels.

The first approach provides a spatial distribution of exceedances and will be used to determine the final scope of the lead shot reclamation efforts and any hot spots that would require removal. The second approach will identify areas or discrete sample locations that, if additional soil was removed, would lower the confidence limits for a given metal below the applicable DEQ screening level. If additional soil is removed, an additional confirmation sample would be collected within that removal area, and the result representing the initial concentration would be removed from the data set. For statistical compliance, not all samples within the data set would have to yield results less than the DEQ screening levels in order to be in compliance.

Compliance will be achieved when the UCL90 for the identified metals is less than the applicable DEQ screening level for that constituent.

8.0 DELIVERABLES

Deliverables for the remedial action in the RA Project Area will include the following:

- 1) **NPDES 1200-C Permit Application, including a LUCS and ESCP.** The application will be provided to DEQ for approval prior to initiation of remedial action field activities.
- 2) **Remediation Contractor Specifications.** To aid in the selection of a remediation contractor by the City, Stantec will prepare technical specifications for use by the remediation contractor during performance of the remedial action. The specifications will identify procedures to be adhered to by the remediation contractor during the lead reclamation and segregation activities, implementation of the NPDES 1200-C permit requirements, and requirements for backfill/restoration of the RA Project Area at completion of the remedial action.
- 3) **Remedial Action Completion Report.** Following completion of remedial action activities and site restoration, Stantec will prepare a Remedial Action Completion Report for submittal to DEQ. The report will include a summary of lead reclamation, confirmation sampling, fill, and site restoration activities; tabulation and discussion of analytical results; site maps showing confirmation sample locations, final extent of lead shot reclamation area, and locations of soil reuse; laboratory reports; and data validation results. This report will also include a request for DEQ to issue a written determination confirming that the remedial action is complete.

The scope of work and methodology for the associated wetland mitigation activities will be documented in the CWMP that Stantec is currently preparing on behalf of the City. Following DEQ's approval of this RAP, the RAP will be submitted with the removal/fill permit application and the CWMP to DSL and USCOE for approval.

schedule

Remedial Action Plan, Lithia Springs Property

9.0 SCHEDULE

This RAP will be submitted to DEQ in mid-October 2015. Remedial action activities will be scheduled following receipt of DEQ approval, and approval of the removal/fill permits and CWMP by Oregon DSL and USCOE.

References

Remedial Action Plan, Lithia Springs Property

10.0 REFERENCES

- B&C 2009. Brown and Caldwell. *Level I Scoping Level Ecological Risk Assessment Report, Ashland Gun Club*. Prepared for the City of Ashland, Oregon. August 2009.
- B&C 2010. Brown and Caldwell. *Level II Screening Level Ecological Risk Assessment Report*. Prepared for the City of Ashland, Oregon. April 16, 2010.
- DEQ 1998. Oregon Department of Environmental Quality. *Guidance for Ecological Risk Assessment (ERA), Levels I, II, III, and IV*. Waste Management and Cleanup Division, Oregon Department of Environmental Quality. November 1998 update for Level I Scoping ERA.
- DEQ 2001. Oregon Department of Environmental Quality. *Guidance for Ecological Risk Assessment, Levels I, II, III, and IV*. Waste Management and Cleanup Division, Oregon Department of Environmental Quality. December 2001 update for Level II Screening ERA and Level II Benchmark Screening Values.
- DEQ 2002. Oregon Department of Environmental Quality. Technical Memorandum regarding Default Regional Background Concentrations for Metals in Soils in the Pacific Northwest, DEQ Toxicology Workgroup, October 28, 2002.
- DEQ 2010. Oregon Department of Environmental Quality. Letter from Paul (Max) F. Rosenburg, DEQ, to Michael Morrison, City of Ashland, regarding *Site Specific Technical Consultation Cost Recovery Agreement* for Voluntary Cleanup Program. July 13, 2010.
- DEQ 2011. Oregon Department of Environmental Quality. Letter from Geoff Brown, DEQ, to Mike Morrison, City of Ashland, regarding *Field Review and Environmental Status, Ashland Gun Club*. January 19, 2011.
- DEQ 2012. Oregon Department of Environmental Quality. *Risk-Based Decision Making for the Remediation of Petroleum-Contaminated Sites*. Land Quality Division, Environmental Cleanup and Tanks Program. Originally published September 1999. Last updated June 2012.
- DEQ 2013. Oregon Department of Environmental Quality. *Development of Oregon Background Metals Concentrations in Soil*, Technical Report. Land Quality Division Cleanup Program. March 2013.
- DSL 2015. Oregon Department of State Lands. Letter from Lynne McAllister, Jurisdiction Coordinator, DSL, to Mike Morrison, City of Ashland, regarding *Wetland Delineation Report for Lithia Springs Property*. May 1, 2015.
- EPA 2005. U.S. Environmental Protection Agency. *Best Management Practices for Lead at Outdoor Shooting Ranges*. EPA-902-B-01-001, Region 2. Revised June 2005.
- ITRC 2003. Interstate Technology & Regulatory Council. *Characterization and Remediation of Soils at Closed Small Arms Firing Ranges*. SMART-1. Washington, D.C.: Interstate Technology & Regulatory Council, Small Arms Firing Range Team.
- ITRC 2005. Interstate Technology & Regulatory Council. *Environmental Management at Operating Outdoor Small Arms Firing Ranges*. SMART-2. Washington, D.C.: Interstate Technology & Regulatory Council, Small Arms Firing Range Team. Available on the Internet at <http://www.itrcweb.org>.

References

Remedial Action Plan, Lithia Springs Property

JBR 2011. JBR Environmental Consultants, Inc. *Site Characterization Work Plan, Ashland Gun Club*. Prepared for the City of Ashland, Oregon. June 21, 2011.

JBR 2012. JBR Environmental Consultants, Inc. *Site Characterization Report, Ashland Gun Club*. Prepared for the Oregon Department of Environmental Quality. March 9, 2012.

JBR 2013. JBR Environmental Consultants, Inc. *Second, Third, and Fourth Quarter 2012 Groundwater Monitoring Report, Ashland Gun Club*. Prepared for the Oregon Department of Environmental Quality. April 2, 2013.

Stantec 2014. Stantec Consulting Services Inc. *Resubmission, Delineation of Waters of the United States, including Wetlands, Lithia Springs Property*. Prepared for the City of Ashland, Oregon. October 28, 2014.

Stantec 2015. *Response to Questions for the Re-Submission Delineation of Waters of the United States; Lithia Springs Property, Ashland, Oregon*. April 23, 2015.

URS 2013. URS Corporation. *Environmental Stewardship Plan*. January 22, 2013.

Table 1

TABLE 1
Analytical Results for Select Discrete Soil Samples
Ashland Gun Club Site Characterization
555 Emigrant Creek Road, Ashland, Oregon

Sample ID	Date Sampled	Sample Depth (feet bgs)	Total Lead (mg/kg) ^(a)
DS-7-0.5 (0-0.5)	1/5/2012	0-0.5	30.4
DS-7-1 (0.5-1)	1/5/2012	0.5-1.0	4.63
DS-8-0.5 (0-0.5)	1/5/2012	0-0.5	8.6
DS-8-1 (0.5-1)	1/5/2012	0.5-1.0	3.36
DS-8-3 (2-3)	1/5/2012	2.0-3.0	3.72
DS-9-0.5 (0-0.5)	1/5/2012	0-0.5	11.1
DS-9-1 (0.5-1)	1/5/2012	0.5-1.0	2.72
DS-9-2 (1-2)	1/5/2012	1.0-2.0	3.06
DEQ Applicable RBC (Human Receptors), SLV (Ecological Receptors) or Background:			
RBC: Occupational: Soil Ingestion, Dermal Contact, and Inhalation ^(b)			800
SLV: Terrestrial Receptors: Plants ^(c)			50
SLV: Terrestrial Receptors: Invertebrates ^(c)			500
SLV: Terrestrial Receptors: Birds ^(c)			16
SLV: Terrestrial Receptors: Mammals ^(c)			4,000
Regional Background Concentration ^(d)			34.09

Notes & Definitions:

Samples were collected by JBR Environmental Consultants, Inc. (now Stantec Consulting Services Inc.) as part of site characterization activities.

Bold font indicates that the value exceeds the laboratory reporting limit.

< = Not reported at, or above, the laboratory method reporting limit.

^(a) Total metals analyzed using EPA Method 6020.

^(b) RBCs for human exposures are referenced from the June 7, 2012 revision of the DEQ guidance document *Risk-Based Decision-Making for the Remediation of Petroleum-Contaminated Sites*.

^(c) SLVs for ecological exposures are referenced from the December 2001 DEQ's *Guidance for Ecological Risk Assessment, Table 1: Level II Screening Guidance for Ecological Risk Assessments*.

^(d) The Regional Background Concentration for metals in soils in the Cascade Mountains Province is provided (per the *Development of Oregon Background Metals Concentrations in Soil, Technical Report* published by DEQ in March 2013).

Acronyms:

bgs = below ground surface

DEQ = Oregon Department of Environmental Quality

DS = discrete sample

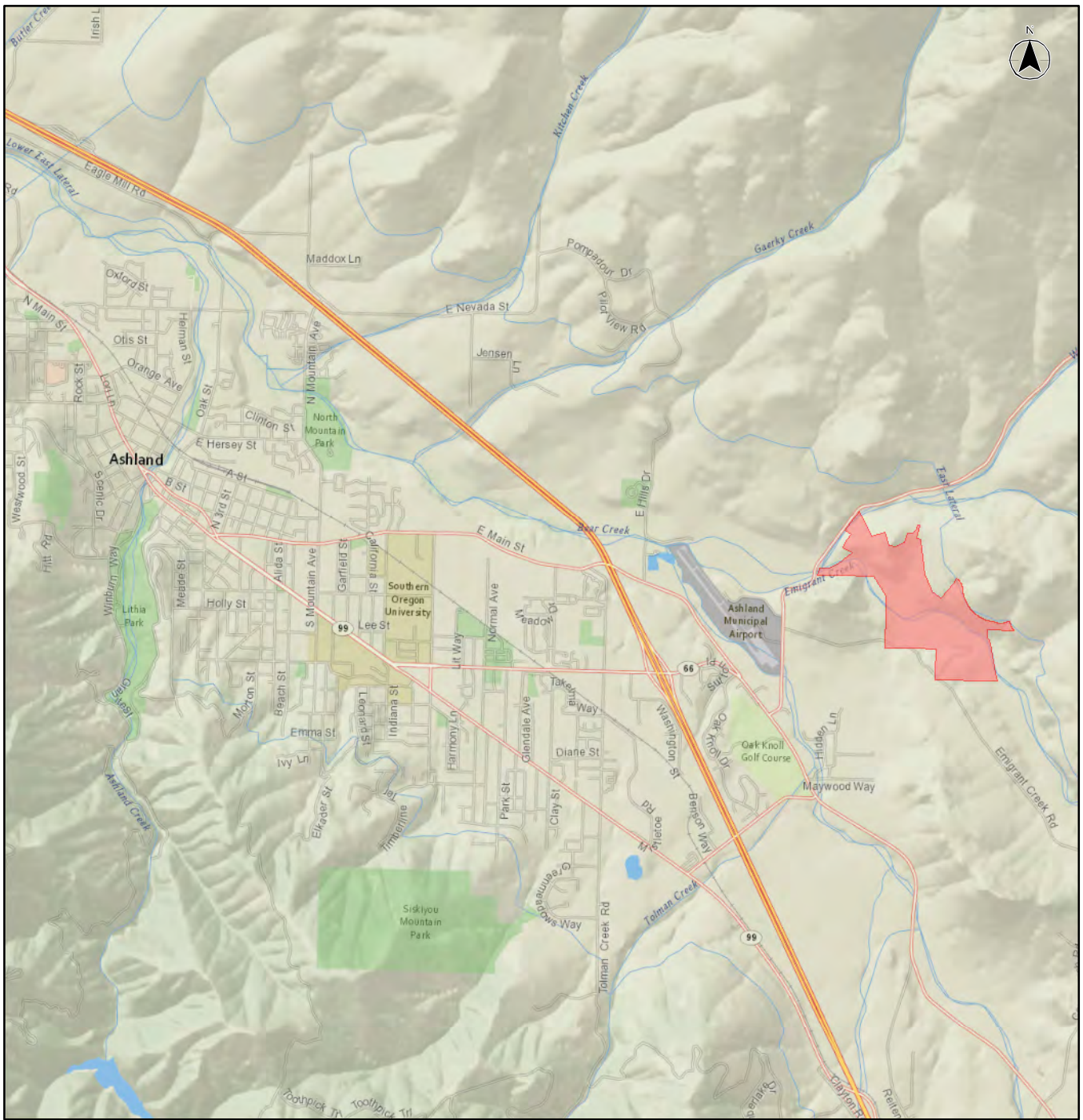
EPA = U.S. Environmental Protection Agency

mg/kg = milligrams per kilogram

RBC = risk-based concentration

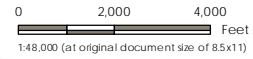
SLV = screening level value

Figures



Legend

Property Boundary



Project Location 203714196
 555 Emigrant Creek Road Prepared by DH/NF on 2015-10-12
 Ashland, Oregon Technical Review by RB on 2015-10-12
 Independent Review by AP on 2015-10-12

Client/Project
 City of Ashland
 Lithia Springs Property











Figure No. 1 **DRAFT**

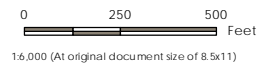
PROPERTY LOCATION

Notes
 1. Coordinate System: NAD 1983 StatePlane Oregon South
 FPS 3602 Feet
 2. Service Layer Credits: Esri, HERE, DeLorme, MapmyIndia, ©
 OpenStreetMap contributors, and the GIS user community
 Content may not reflect National Geographic's current
 map policy. Sources: National Geographic, Esri, DeLorme,
 HERE, UNEP-WCMC, USGS, NASA, ESA, METI, NRCAN,
 GEBCO, NOAA, increment P Corp.



Legend

-  Active Lithia Spring Well Location
-  Monitoring Well Location
-  Emigrant Creek and Tributary
-  Topographic Contour Line
Contour Interval = 5 feet
-  RA Project Area Boundary
-  Property Boundary
-  Archery Range Boundary
-  Rifle and Pistol Range Boundary
-  Gun Club Lease Area
-  Delineated Wetland Area



Notes
 1. Coordinate System: NAD 1983 StatePlane Oregon South FIPS 3602 Feet
 2. Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community



Project Location 203714196
 555 Emigrant Creek Road
 Ashland, Oregon
 Prepared by DH/NF on 2015-10-12
 Technical Review by RB on 2015-10-12
 Independent Review by AP on 2015-10-12

Client/Project

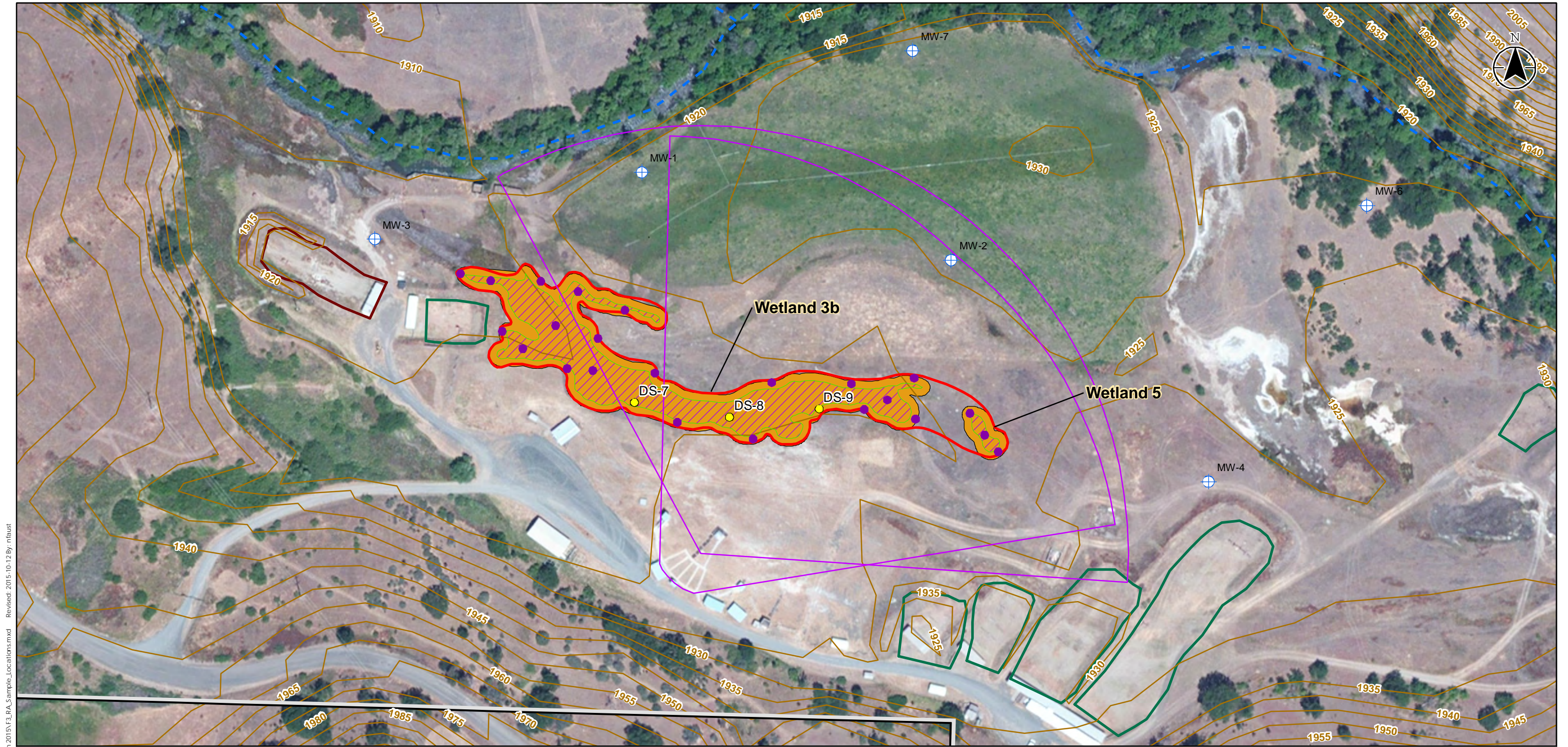
City of Ashland
 Lithia Springs Property

Figure No. 2

DRAFT

Title
 REMEDIAL ACTION (RA)
 PROJECT AREA MAP

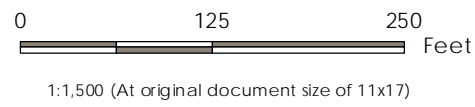
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X:\OR\clients\City of Ashland\Gun Club\GIS\mapDocs\RA Work Plan 2015\F3_RA_Sample_Locations.mxd Revised: 2015-10-12 By: nfaust

Legend

- Proposed Confirmation Sample Location
- 2012 Site Characterization Sample Location
- ⊕ Monitoring Well Location
- Emigrant Creek and Tributary
- Topographic Contour Line
Contour Interval = 5 feet
- Shotgun and Skeet Range
Shot Fall Zone (185 yd)
- RA Project Area Boundary
- Property Boundary
- Proposed Lead Reclamation
Boundary (includes 10ft buffer
around wetland areas)
- Archery Range Boundary
- Rifle and Pistol Range
Boundary
- Delineated Wetland Area



Notes
 1. Coordinate System: NAD 1983 StatePlane Oregon South FIPS 3602 Feet
 2. Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Geomapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community



Project Location 203714196
 555 Emigrant Creek Road Prepared by DH/NF on 2015-10-12
 Ashland, Oregon Technical Review by RB on 2015-10-12
 Independent Review by AP on 2015-10-12

Client/Project
 City of Ashland
 Lithia Springs Property

Figure No. 3
 Title
**REMEDIAL ACTION PLAN
 CONFIRMATION SAMPLE LOCATIONS**
 Page 01 of 01

DRAFT

Appendix A

Environmental Stewardship Plan



ENVIRONMENTAL STEWARDSHIP PLAN

Ashland Gun Club
Ashland, Oregon

Prepared for:


Ashland Gun Club
555 Emigrant Creek Road
Ashland, Oregon 97520

Prepared by:

URS Corporation
111 SW Columbia, Suite 1500
Portland, Oregon 97201
(503) 222.7200

January 2013

Project No. 25697799





January 22, 2013

Project No. 25697799

Ashland Gun Club
555 Emigrant Creek Road
Ashland, Oregon 97520

Attention: Mr. Mike Lanier

**Subject: Environmental Stewardship Plan
Ashland Gun Club
Ashland, Oregon**

Dear Mr. Lanier:

URS Corporation (URS) is pleased to submit this Environmental Stewardship Plan (ESP) to the Ashland Gun Club (AGC) for the small arms training facility in Ashland, Oregon. The AGC small arms training facility includes seven small arms firing ranges, which have been in operation since 1968. This ESP provides guidance for environmental management of the small arms firing ranges located on Emigrant Creek Road in Ashland, Jackson County, Oregon. The small arms firing ranges are operated by the AGC on property leased from the City of Ashland.

This ESP was developed from a site visit conducted on October 9, 2012 and information from environmental investigations conducted by the City of Ashland on the AGC leased property. Implementation of the ESP will include the participation of AGC and personnel responsible for the operations and maintenance of the ranges. URS can provide training for the implementation of the ESP to AGC officers and specified designees. This work was performed in accordance with the scope of work included in the September 2012 Professional Services Agreement.

We appreciate the opportunity to provide our services for your project. If you have any questions or request further information, please feel free to contact us at (503) 478.2764.

Sincerely,

Kimberly Degutis, PWS
Environmental Scientist

Scott Kranz, RG
Senior Project Manager

URS Corporation
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Portland, Oregon
USA 97201
Tel+1 (503) 222.7200
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LIST OF ACRONYMS AND ABBREVIATIONS

bgs	below ground surface
BMP	Best Management Practice
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
EPA	U.S. Environmental Protection Agency
ESP	Environmental Stewardship Plan
ITRC	Interstate Technology and Regulatory Council
NHD	National Hydrography Dataset
NOAA	National Oceanic and Atmospheric Administration
NRCS	Natural Resources Conservation Service
NSSF	National Shooting Sports Foundation, Inc.
NWI	National Wetlands Inventory
ODEQ	Oregon Department of Environmental Quality
OSHA	Occupational Safety and Health Administration
RCRA	Resource Conservation Recovery Act
URS	URS Corporation
USDA	United States Department of Agriculture
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
WRCC	Western Regional Climate Center



ENVIRONMENTAL STEWARDSHIP PLAN

Ashland Gun Club

Ashland, Jackson County, Oregon

1.0 INTRODUCTION

This Environmental Stewardship Plan (ESP) was developed by URS Corporation on behalf of Ashland Gun Club (AGC) for the small arms training facility located on Emigrant Creek Road in Ashland, Jackson County, Oregon (Figure 1). The small arms training facility (Range) includes seven small arms firing ranges, which have been in operation since 1968. The AGC is located north of Emigrant Creek Road on Jackson County Maps 392E07, Lot 800 and Map 391E12, Lot 400 (Parcel). The small arms firing ranges are operated by the AGC on approximately 16 acres of a 61-acre lot leased from the City of Ashland. A small portion (approximately 12.5 acres) of the Miller Trust Property, located to the north of the parcel (Map 392E07, Lot 400 and Map 391E12, Lot 100), is also used, under agreement, by the AGC as a shot fall zone for the Trap and Skeet ranges. No structures or development belonging to or used by the AGC is located on the Miller Trust property.

This ESP describes site-specific "Best Management Practices" (BMPs) for the management of lead and other range-related materials at the outdoor small arms firing ranges. This ESP was prepared in accordance with the following guidance documents:

- *Best Management Practices for Lead at Outdoor Shooting Ranges*, U.S. Environmental Protection Agency (EPA) Region 2, (EPA, 2005);
- *Environmental Management at Operating Outdoor Small Arms Firing Ranges*, The Interstate Technology and Regulatory Council (ITRC, 2005);
- *Environmental Aspects of Construction and Management of Outdoor Shooting Ranges*, National Shooting Sports Foundation (NSSF, 1997); and
- *Army Small Arms Training Range Environmental Best Management Practices*, U.S. Army, 2005.

Site inspection of the AGC facility was performed on October 9, 2012. The purpose of the site inspections was to identify potential environmental concerns at the AGC facility and to assess standard range operations and maintenance procedures. The results of the site inspections were used to develop site-specific BMPs for the property, in accordance with currently accepted practices for range management. The BMPs consist of a series of practical measures and procedures for the ongoing management of lead and range-related materials at the facility.

1.1 OBJECTIVE

The objective of this ESP is to provide the AGC range managers and operators with cost-effective procedures to prevent environmental impacts associated with outdoor range operations, including procedures to assist range managers in maintaining compliance with applicable local, state, and federal regulatory requirements, including the Resource Conservation and Recovery Act (RCRA), the Clean Water Act, the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), and Occupational Safety and Health Administration (OSHA) requirements. Specifically, this ESP is designed to:

- Assess the physical setting of the outdoor ranges;
- Evaluate operations at the outdoor ranges;
- Design BMPs to prevent transport of lead into the surrounding environment through erosion, groundwater transport, and/or surface water runoff;
- Design BMPs to reduce range users' exposure to lead and encourage good hygiene practices;
- Minimize the potential for human and wildlife exposure to lead and range materials; and
- Develop policies and procedures for the long-term management of lead at the outdoor ranges.

1.2 MANAGEMENT APPROACH

This ESP was developed to outline a management approach with the following primary objectives:

1. Control and contain lead bullets, bullet fragments, and/or lead shot.
2. Prevent migration of lead into subsurface soils, groundwater, surrounding water bodies, and wetlands.
3. Prevent human and wildlife exposure to lead and range materials.
4. Document lead and range material management activities and maintain records.



2.0 ENVIRONMENTAL SETTING

The environmental setting of outdoor ranges can affect the potential for lead migration from range areas. Environmental setting conditions including climate, topography, soil, and geology, were evaluated to determine the potential for lead in bullets to degrade, oxidize, or erode and be transported through erosion or infiltration. The presence of potentially sensitive resources (e.g. nearby land uses, groundwater, and surface water bodies) was investigated to determine if there is a potential for lead from the AGC to migrate to these resources.

2.1 CLIMATE

Jackson County, Oregon experiences climate that is tempered by wind from the Pacific Ocean. Summers are warm. Winters are cool, but snow and freezing temperatures are common only at the higher elevations. In summer rainfall is extremely light. Several weeks often pass without precipitation. Rains are frequent during the rest of the year, especially in late fall and winter (USDA, NRCS 2012).

The average annual precipitation ranges from 14 to 20 inches (355 to 510 millimeters) at the lower elevations and as much as 200 inches (5,080 millimeters) in the mountains. Most of the rainfall occurs as low-intensity, Pacific frontal storms. Rain turns to snow at the higher elevations. Very little precipitation occurs in summer. Most of the precipitation occurs between November and April. The average annual temperature is 40 to 62 degrees F (5 to 17 degrees C), decreasing with elevation. The freeze-free period averages 240 days and ranges from 110 to 365 days. Monthly climate data for the Ashland area is summarized in Table 2.0.

Table 2.0: Average Monthly Climate Data for the City of Ashland, Oregon

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Average Maximum Temperature (°F) ¹	46.5	51.9	56.6	62.9	70.2	77.8	86.8	86.0	78.7	66.8	53.4	46.2
Average Minimum Temperature (°F) ¹	29.8	31.8	33.7	36.7	41.9	47.2	51.7	51.0	45.5	39.2	34.1	30.4
Average Total Precipitation (in.) ¹	2.63	2.02	2.01	1.56	1.55	0.99	0.38	0.43	0.82	1.56	2.77	3.05
Average Total Snowfall (in.) ²	3.5	2.3	1.8	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.5	2.2

¹ Source: Western Regional Climate Center – Ashland, OR monthly precipitation

² Source: Western Regional Climate Center – Ashland, OR monthly snowfall

Precipitation can increase the potential for lead migration from areas of lead accumulation. High levels of annual precipitation result in faster weathering of lead and an increased potential of lead migration in solution. The climate data for the project area indicates the AGC receives a small to moderate annual rainfall, averaging approximately 19.8 inches per year.

2.2 TOPOGRAPHY

The landscape at the AGC and immediate vicinity are comprised of numerous stream terraces, which gently slope to the northwest. The stream terraces rise steeply on the north side of the Parcel. Elevation at the AGC varies from about 1,895 feet above mean sea level (msl) to about 2,025 feet above msl, situated in a Loamy Floodplain physiographic area. Portions of the AGC bordering Emigrant Creek are within a Special Flood Hazard Zone (100-year flood). The elevation of the streambed drops approximately 15 feet over the 2,000-foot reach adjacent to the AGC Range (JBR 2011).

2.3 LAND USE

The AGC leased property is approximately 61 acres. Most of the area has been cleared and altered for historic access to the Lithia Springs and varying other land uses over time. The AGC has operated the small arms ranges since 1968, including rifle, pistol, trap and skeet ranges, and an archery range.

The mineral springs located at and near the AGC leased property have been used for approximately 100 years by both individuals and companies (JBR 2011). Extensive alteration of the alluvial terraces at the AGC leased property was observed in a review of historic aerial photographs. In the late 1940s, several settling ponds were formed to aid the production of dry ice from the carbon dioxide found naturally in spring water. All neighboring properties were utilized for rangeland and hay fields and related residential purposes until the present day.

Most of the terrace has been artificially filled by the City of Ashland. Extensive fill and alterations were completed prior to AGC operations at the Range, possibly to alleviate the soft marshy ground associated with the mineral springs. Emigrant Creek appears to have been diverted from its original channel. Retaining walls are clearly evident in aeriels along wet areas at the AGC leased property several feet inland from Emigrant Creek. In the 1960s, portions of the AGC leased property were used for motocross events. The City constructed a general fill landfill in 2003 along the eastern corner of the terrace (JBR 2011). Over the past 43 years, the alluvial terrace was modified to accommodate small arms firing ranges associated with AGC use, including the creation of bullet impact berms and side berms.

The AGC leased property is zoned as Open Space Reserve (OSR) by the Jackson County Planning Department, which is intended to conserve forest lands. The AGC Range is predominantly clear of woody vegetation except for riparian areas. Most areas are kept mowed and free of shrubs.

2.4 SOIL

Soil information for the Parcel was obtained from the U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) Soil Survey for Jackson County, Oregon. The USDA soil survey consists of soil classification, estimation of soil permeability, and sample collection from each soil unit for mapping purposes. Onsite soils are predominantly mapped as Camas-Newberg-Evans Complex, 0 to 3 percent slopes (USDA NRCS, 2012). Descriptions and characteristics of soil types identified on the Parcel are summarized in Table 2.4 and presented on Figure 3.

Table 2.4: Soil Types Mapped at the Ashland Gun Club

Soil Map Unit	Surface (A and B Horizons)	Subsoil	Drainage	Surface pH	Hydric Soil ¹
Brader-Debenger loams, 1 to 15 percent slopes (17C)	Loam (0-6 in) Loam (6-13 in)	Weathered bedrock (13 in)	Brader soil is well drained and permeability is moderate.	5.6 – 7.3	Yes – Alluvial Fans
Brader-Debenger loams, 15 to 40 percent slopes (17E)	Loam (0-6 in) Loam (6-13 in)	Weathered bedrock (13 in)	Brader soil is well drained and permeability is moderate.	5.6 – 7.3	Yes – Alluvial Fans
Camas-Newberg-Evans Complex, 0 to 3 percent slopes (23A)	Sandy loam (0-10 in) Very gravelly loamy sand (10 -19 in)	Extremely gravelly coarse sand (19-60 in)	Excessively drained, permeability is moderately rapid to very rapid and is occasionally seasonally inundated	5.6 – 7.3	Yes – Floodplains
Carney cobbly clay, 20 to 35 percent slopes (28E)	Cobbly clay (0-6 in) Clay (6-23 in)	Clay (23-35 in) Weathered bedrock 35-in	Moderately well drained, Permeability very slow	6.1 – 7.3	No – Slopes, Yes – Alluvial Fans
Darow silty clay loam, 5 to 20 percent slopes (43D)	Silty clay loam (0-5 in) Silty clay loam (5-12 in)	Silty clay (12 – 32 in) Weathered siltstone (32 in)	Moderately well drained, permeability is slow	6.1 – 7.3	Yes – Floodplains and Terraces

Soil Map Unit	Surface (A and B Horizons)	Subsoil	Drainage	Surface pH	Hydric Soil ¹
Medford clay loam, gravelly substratum, 0 to 7 percent slopes (128B)	Silty clay loam (0-12 in) Silty clay (12-22 in) Silty clay loam (22-44 in)	Clay loam (44-53 in) Sandy clay loam (53-71 in)	Moderately well drained, permeability is moderately slow	5.6 – 7.3	No

Notes:

¹ Hydric soils are defined as those soils that are sufficiently wet in the upper part to develop anaerobic conditions during the growing season. Soil types are identified on the National Hydric Soils List by State for Jackson County, Oregon (USDA NRCS, 2012)
 in = inches
 Source: NRCS, 1983

As summarized in Table 2.4, soils on the Parcel generally consist of loams and sandy loams, and are well-drained. Soil characteristics that may affect the potential for lead to migrate include soil pH, permeability, and soil particle size. Soil samples collected from the Range target berms and floors during site inspections are analyzed for pH. The results of the soil pH analysis will be used to determine if soil amendment is necessary. The results of soil pH monitoring at the AGC completed in 2012 are included in Appendix D.

All of the soils mapped on site are complexes of intricately mapped individual units too finely combined to map independently. Hydric indications are reliant upon landscape position to account for mapping variability.

2.5 GEOLOGY

The Parcel is located in the Siskiyou-Trinity Alps Major Land Resource Area (MLRA), a part of the Klamath Mountains Section of the Pacific Border Province of the Pacific Mountain System (USDA 2006). This section consists of an uplifted and eroded peneplain on very hard rocks. Numerous higher peaks are in scattered areas throughout this mountainous region.

Most of this area consists of Mesozoic, marine sandstones and shales. In some areas granodiorite, gabbro, and other intrusive rocks of the same age are dominant. Mesozoic ultramafic rocks also are included in this area. All of these rocks have been metamorphosed to some extent. Rounded but steeply sloping mountains are dominant. These mountains are underlain mainly by sandstone and shale. In some areas, however, the mountains are underlain by granodiorite, gabbro, and other intrusive rocks. The narrow valleys have gently sloping flood plains and alluvial fans and are bordered by strongly sloping foothills.

2.6 HYDROGEOLOGY

Groundwater in the vicinity of the Parcel generally occurs at approximately the surface to 110 feet below ground surface (bgs), as indicated by well log records for the shallowest wells installed in the area (ODEQ, 2012). Regional groundwater flows are generally towards the north and west, following Emigrant Creek. Local groundwater flow directions may differ depending on local topography and subsurface conditions. A portion of Lithia Springs is present on the Parcel, which discharges to the ground surface in wetland areas. The Lithia Springs area is a historic mineral spring,

2.7 BIOLOGICAL RESOURCES

The Siskiyou-Trinity Area MLRA is characterized by a cover of forest, open forest, and grassland vegetation (USDA 2006). Douglas-fir, ponderosa pine, sugar pine, incense cedar, white fir, red fir, tanoak, Oregon white oak, California black oak, canyon live oak, and Pacific madrone are the dominant tree species. Poison-oak, snowberry, ceanothus, manzanita, and rose characterize the forest understory. Blue wildrye, fescues, bluegrass, mountain brome, and some browse species are in the understory in open stands of timber. Soft chess, wild oats, burclover, fescues, and bromes are the major grassland species.

Major wildlife species in this area include amphibians and reptiles along with black bear, mountain lion, mule deer, black-tailed deer, coyote, fox, raccoon, ring-tailed cat, porcupine, skunk, mink, squirrel, grouse, northern spotted owl, band-tailed pigeon, mountain quail, and California valley quail. Fish reported to be located in downstream reaches of Emigrant Creek and Bear Creek include coho and king salmon, steelhead, and trout (USDA 2006).

A search of the US Fish and Wildlife Service's data report for listed species within Jackson County, Oregon identified the following plants and animals with the potential for being found on or within the immediate vicinity of the Range. Most habitat types required by these listed are very specific, and none are reported found on the Range.

Table 2.7: Listed Species Within the Vicinity of the Ashland Gun Club

Name	Status	Habitat	Potentially at Site?	Reference
Northern Spotted Owl (Strix occidentalis caurina)	Threatened	Mix of old growth and younger coniferous forests with large trees with nesting cavities.	Not likely, habitat not present	77 FR 14062 14165

Name	Status	Habitat	Potentially at Site?	Reference
Whitebark Pine (<i>Pinus albicaulis</i>)	Candidate	Alpine timberline areas	Not likely, habitat not present	76 FR 42631 42654
Vernal Pool Fairy Shrimp (<i>Branchinechta lynchi</i>)	Threatened	Vernal pools	Not likely - known habitat within Agate Desert area around Medford.	68 FR 46684 46732
Siskiyou Mariposa lily (<i>Calochortus persistens</i>)	Candidate	Elevations around 5,600-ft in open rock barren outcrops associated with Ponderosa pine, Idaho fescue and wild buckwheat	Not likely - Oregon population located near Bald Mountain	67 FR 40657 40679
Gentner's Fritillary (<i>Fritillaria gentneri</i>)	Endangered	Dry, open woodlands of fir or oak below 4,450 ft elevation	Not likely, habitat not present	64 FR 69195 69203
Large-Flowered woolly Meadowfoam (<i>Limnathes floccosa</i> ssp. <i>grandiflora</i>)	Endangered	Relatively intact vernal pool - mound complexes within the Agate Desert	Not likely, habitat not present	75 FR 42490 42570
Cook's Lomatium (<i>Lomatium cookii</i>)	Endangered	Relatively intact vernal pool - mound complexes within the Agate Desert	Not likely, habitat not present	75 FR 42490 42570
Kincaid's Lupin (<i>Lupinus sulphureus</i> ssp. <i>kincaidii</i>)	Threatened	Open upland prairie and short grassed meadow edges in well-drained soils below 2,700-ft	Not likely - no designated critical habitat in Jackson County.	71 FR 63862 63977
Canada Lynx (<i>Lynx canadensis</i>) Contiguous US DPS	Threatened	Forests with large woody debris	Not likely, habitat not present	65 FR 16053 16086

Name	Status	Habitat	Potentially at Site?	Reference
North American Wolverine (Gulo gulo luscus)	Candidate	Cold areas that receive enough snow to reliably maintain deep persistent levels late into the warm season; southern populations generally at higher elevations where persistent deep snow exists	Not likely, habitat not present	76 FR 66370 66439
Fisher (Martes pennanti) West Coast DPS	Candidate	Conifer forests with large trees and high canopy closure	Not likely, habitat not present	74 FR 57804 57878

DPS – Distinct Population Segment

No Federally Threatened, Endangered or Candidate species are likely to occur on the Range due to lack of suitable habitat.

2.8 WETLANDS AND SURFACE WATER FEATURES

A review of the Oregon Wetlands Explorer GIS data was performed to obtain information on both surface water features and wetlands on and in the vicinity of the AGC. The Oregon Wetland Explorer data was developed from several data sources, including the National Wetlands Inventory (NWI), Wetlands of Conservation Concern (ORNHIC & TWC Wetlands), Springs Data (GNIS Springs), Natural Resource Inventories (NRI), and ODOT Highway Wetland Layer (ODOT Highways). A generalized graphical representation of the presence of riverine and palustrine wetlands and the spring on the Range is provided on Figure 4. Lithia Spring is within delineated wetland number 4. A small, unknown palustrine emergent ditch is shown between delineated wetlands 4, 3 and 2.

A wetlands delineation was completed in July 2011 and a jurisdictional determination by the US Army Corps of Engineers was issued in July 2012. As of October 2012, the Oregon Department of State Lands has not approved the delineation. Approximately 2.32 acres of wetlands were delineated adjacent to 600 lineal feet of “other waters,” known as Emigrant Creek. The wetlands are classified as palustrine emergent (PEM) with hydrologic regimes including persistent seasonally flooded and non-persistent vernal saturated, and riverine lower perennial (R2) areas along the creek with hydrologic regimes including aquatic bed, unconsolidated shore, and emergent (JBR 2011). The wetland boundaries are generally defined by a sharp break in topography and a transition to hydrophytic vegetation community from upland communities (JBR 2011). All delineated wetlands associated with the Range are hydrologically connected to Emigrant Creek (JBR 2011).



Lithia Springs is present on the Range, where a recharging shallow water table is perched above a mineral-cemented gravel hardpan. The mineral springs have several outlets; however some have been buried resulting in seeps observed around the margins of wetlands. Lithia Springs discharges to the perennial Emigrant Creek. Emigrant Creek is a tributary to Bear Creek, a tributary of the Rogue River.

3.0 RANGE FACILITIES AND CURRENT OPERATIONS

The description of range facilities and operations was developed from the October 9, 2012 site inspection, review of aerial photographs, tax lot maps, Jackson County land use maps and USGS-topographic maps. A site inspection was conducted on October 9 2012, and included a visual inspection of the entire AGC leased property. The primary focus of the site inspection was to assess the physical setting at the AGC facility, and to identify areas of lead accumulation and the potential for lead migration. In addition, the site inspection defines the baseline conditions for evaluation of BMP effectiveness and operational changes.

3.1 OUTDOOR RANGES

The existing outdoor ranges are operated on an approximately 4 acre area of the larger 61-acre parcel. The range facilities include:

- Law Enforcement Range,
- Pistol Bays #1 and #2,
- 50 Yard Range;
- 100/200/300 Yard Range,
- 600 Yard Range,
- Trap and Skeet Ranges, and
- Sporting Clay Range.

3.1.1 Law Enforcement Range

The Law Enforcement Range is located at the western portion of the AGC facility (Figure 2), and is designed for law enforcement training and certification activities using rifle, pistol, and shotgun. The Law Enforcement Range has a firing line shed with a roof and walls, but the Law Enforcement Range is mostly used for tactical training (Appendix A, Photo 1).

The Law Enforcement Range has five covered shooting positions with shooting benches, and accommodates movable targets and shooting positions. Shooting activities are primarily conducted at short distances, up to approximately 25 yards. A bullet impact berm is located at approximately 25 yards from the shooting shed (Appendix A, Photo 2).

Existing BMPs at the Law Enforcement Range include:

- **Bullet Containment:** The Law Enforcement Range has an earthen bullet impact berm (Appendix A, Photo 2). The berm captures and contains the bullets.
- **Vegetative Cover:** The Law Enforcement Range floor is covered with sand is partially vegetated (Appendix A, Photos 1-2). The sand and vegetative cover prevents erosion and transport of sediment and lead in stormwater runoff.
- **Optimal Soil pH:** The optimal soil pH for minimizing lead solubility and preventing the migration of lead through the soil column into underlying groundwater is between 6.5 to 8.5 (EPA, 2005). Soil pH was measured at the Law Enforcement Range in February 2012. A composite soil sample was collected from the range floor and bullet impact berm and pH was measured at 7.46, within the optimal range. The sampling analysis report is included under Appendix D.
- **Lead Recovery:** Lead recovery from the Law Enforcement Range bullet impact berm is occurring on an approximately 5 year interval. Lead recycling receipts for the lead reclaimed during 2012 is included in Appendix E.

3.1.2 Pistol Bays #1 and #2

Pistol Bays #1 and #2 are located east of the Law Enforcement Range, on the west side of the Trap and Skeet Range (Figure 2), and are designed for pistol training and practice conducted by the general membership. All pistol calibers are used at Pistol Bays #1 and #2. Both pistol bays have a covered shooting area with shooting benches (Appendix A, Photo 8). Most small arms training occurs from the fixed firing points within the firing line shed. The pistol bays are used occasionally for practical shooting competitions, including cowboy action events, where the shooter moves to the target. Shooting activities are primarily conducted at short distances, up to approximately 25 yards.

The bullet impact berm is located approximately 25 yards from the firing line within the shooting shed at each pistol bay (Appendix A, Photo 9). The range floor is composed of level packed sand and is sparsely vegetated.

Existing BMPs at the Pistol Bay #1 and Pistol Bay #2 include:

- **Bullet Containment:** The Pistol Bays are constructed with earthen bullet impact berm. The bullet impact berms capture and contain the bullets.
- **Vegetative Cover:** The Pistol Bay side berms and range floor are covered with sand and partially vegetated (Appendix A, Photo 8 and 9). The sand and vegetative cover prevents erosion and transport of sediment and lead in stormwater runoff.

- **Optimal Soil pH:** The optimal soil pH for minimizing lead solubility and preventing the migration of lead through the soil column into underlying groundwater is between 6.5 to 8.5 (EPA, 2005). Soil pH was measured at the Pistol Bays in February 2012. A composite soil sample was collected from the range floor and bullet impact berm at each range and pH was measured at 7.54 within Pistol Bay #1 and 7.13 within Pistol Bay #2, within the optimal range. The sampling analysis report has been included under Appendix D.
- **Lead Recovery:** Lead recovery from the Pistol Bays #1 and #2 bullet impact berms is occurring on an approximately 5 year interval. Lead recycling receipts for the lead reclaimed during 2012 is included in Appendix E.

3.1.3 50 Yard Range

The 50 Yard Range is a pistol range located at the eastern portion of the range facility (Figure 2). There are 10 covered shooting stations on a concrete pad within a firing line shed (Appendix A, Photo 10). The firing line shed at the 50 Yard Range is shared with the firing line at the 100/200/300 Yard Range. The 50 Yard Range is used for all pistol and rifle calibers.

Small arms training occurs at fixed firing positions within the firing line shed at stationary targets. The bullet impact berm is located just beyond the targets located at 50 yards from the firing line (Appendix A, Photo 11). The range floor is composed of level packed sand and is sparsely vegetated.

Designed BMPs at the 50 Yard Range include:

- **Bullet Containment:** The 50 Yard Range is constructed with earthen bullet impact berm. The bullet impact berms capture and contain the bullets.
- **Vegetative Cover:** The 50 Yard Range side berms and range floor is covered with sand and partially vegetated (Appendix A, Photo 11). The sand and vegetative cover prevents erosion and transport of sediment and lead in stormwater runoff.
- **Optimal Soil pH:** The optimal soil pH for minimizing lead solubility and preventing the migration of lead through the soil column into underlying groundwater is between 6.5 to 8.5 (EPA, 2005). Soil pH was measured at the 50 Yard Range in February 2012. A composite soil sample was collected from the range floor and bullet impact berm and pH was measured pH at 6.93, within the optimal pH range. The sampling analysis report has been included under Appendix D.
- **Lead Recovery:** Lead recovery from the 50 Yard Range bullet impact berm is occurring on an approximately 5 year interval. Lead recycling receipts for the lead reclaimed during 2012 is included in Appendix E.

3.1.4 100/200/300 Yard Range

The 100/200/300 Yard Range is designed primarily for rifle use and is located on the eastern portion of the facility (Figure 2). There are 20 covered shooting stations on a concrete pad within a firing line shed. The firing line shed at the 100/200/300 Yard Range is shared with the firing line at the 50 Yard Range.

Small arms training occurs at fixed firing positions within the firing line shed at stationary targets. The 100/200/300 Yard Range has a separate bullet impact berm for targets located at 100, 200, and 300 yards (Appendix A, Photos 12, 13, and 14). The range floor is composed of level packed sand and is sparsely vegetated.

Designed BMPs at the 100 Yard Range include:

- **Bullet Containment:** The 100/200/300 Yard Range is constructed with earthen bullet impact berm. The bullet impact berms capture and contain the bullets.
- **Vegetative Cover:** The 100/200/300 Yard Range side berms and range floor is covered with sand and partially vegetated (Appendix A, Photo 12, 13, and 14). The sand and vegetative cover prevents erosion and transport of sediment and lead in stormwater runoff.
- **Optimal Soil pH:** The optimal soil pH for minimizing lead solubility and preventing the migration of lead through the soil column into underlying groundwater is between 6.5 to 8.5 (EPA, 2005). Soil pH was measured at the 100/200/300 Yard Range in February 2012. A composite soil sample was collected from the range floor and bullet impact berm and pH was measured pH at 6.64, within the optimal soil pH range. The sampling analysis report has been included under Appendix D.
- **Lead Recovery:** Lead recovery from the 100 Yard Range bullet impact berm is occurring on an approximately 5 year interval. Lead recycling receipts for the lead reclaimed during 2012 is included in Appendix E.

3.1.5 600 Yard Range

The 600 Yard Range is designed for rifle use only and is located on the western portion of the facility on an elevated berm, adjacent to the Law Enforcement Range (Figure 2). The 600 Yard Range does not have a covered firing line shed and is intended to be used from a prone firing position (Appendix A, Photo 3). The 600 Yard Range will primarily be used for rifle practice and competitive shooting. Use of the 600 Yard Range requires closure of all other ranges at AGC, and is used only once a month.

The 600 yard targets are co-located with the 300-yard targets, with the bullet impact berm immediately behind the targets (Appendix A, Photo 14). The range floor is composed of level packed sand and is sparsely vegetated.

Designed BMPs at the 600 Yard Range include:

- **Bullet Containment:** The 600 Yard Range is constructed with earthen bullet impact berm. The bullet impact berms capture and contain the bullets.
- **Vegetative Cover:** The 600 Yard Range does not have established side berms. The range floor for the 600 Yard Range includes the Trap and Skeet Range and the 100/200/300 Yard Range, which is covered with sand and partially vegetated. The sand and vegetative cover prevents erosion and transport of sediment and lead in stormwater runoff.
- **Optimal Soil pH:** The optimal soil pH for minimizing lead solubility and preventing the migration of lead through the soil column into underlying groundwater is between 6.5 to 8.5 (EPA, 2005). Soil pH was measured at the 600 Yard Range in February 2012. A composite soil sample was collected from the range floor and bullet impact berm and pH was measured pH at 7.27, within the optimal soil pH range. The sampling analysis report has been included under Appendix D.
- **Lead Recovery:** Lead recovery from the 600 Yard Range bullet impact berm is occurring on an approximately 5 year interval. Lead recycling receipts for the lead reclaimed during 2012 is included in Appendix E.

3.1.6 Trap and Skeet Range

The Trap and Skeet Range is oriented to the northeast, with shared shooting positions (Appendix A, Photos 4-6). A temporary sporting clays course is located within the Trap and Skeet Range, with a shooting position oriented towards the middle of the Trap and Skeet Range. The maximum shot size used at the Trap and Skeet Range is 7½ shot. The shot fall zone for the trap and skeet ranges is shown on Figure 2. The Trap and Skeet Range is used for practice and competitive events.

The Trap and Skeet Range slopes topographically slightly towards the north. The range floor consists of compacted native soil and maintained grass, with native grasses in wetland areas and a forested edge along Emigrant Creek. No evidence of soil erosion from stormwater was observed at the Trap and Skeet Range. There is a low potential for lead to be transported from the Trap and Skeet Range in stormwater runoff due to the fully vegetated range floor and flat topography.

Existing BMPs at the Trap and Skeet Range include:

- **Steel Shot:** Range use is temporarily limited to steel shot. Lead shot will be allowed after range modifications are completed to prevent lead shot accumulation in wetlands and surface water.
- **Shot Containment:** The shot fall zone is located in a flat vegetated area and lead is contained in the shot fall zone, Figure 2 (Appendix A, Photo 6).
- **Vegetative Ground Cover:** The Trap and Skeet Range contains low height vegetation (native grasses) as cover and compacted gravel areas. The vegetative cover is maintained near the firing positions and target fall area. Vegetative cover prevents erosion and transport of sediment and lead in storm water runoff. (Appendix A, Photo 5 and 6)
- **Optimal Soil pH:** The optimal soil pH for minimizing lead solubility and preventing the migration of lead through the soil column into underlying groundwater is between 6.5 to 8.5 (EPA, 2005). Soil pH was measured at Trap Skeet Range in February 2012. A composite soil sample was collected at the target fall area and shot fall area and pH was measured at 7.06 and 7.78, respectively, within the optimal soil pH range. The sampling analysis report has been included under Appendix D.

The shot fall area at the Trap and Skeet is located primarily on the adjacent Miller Trust Property, north of Wetlands 3 and 4, as shown on Figure 4. The City of Ashland is in the process of acquiring the adjacent Miller Trust Property, which will be added to the AGC leased portion. Currently range use is limited to steel shot. Lead shot will be allowed in the future with range modifications to prevent lead shot accumulation in wetlands or surface water features. The Trap and Skeet Range modifications are described in Appendix F.

4.0 RECOMMENDED BEST MANAGEMENT PRACTICES FOR OUTDOOR RANGES

In addition to the designed BMPs described in Section 3.1, the following BMPs should be applied at the Site's proposed outdoor ranges to further minimize the potential for lead migration from range areas:

- Establish and maintain full vegetative cover to prevent soil erosion;
- Soil pH monitoring;
- Bullet impact berm inspection;
- Record lead removal performed by club members; and
- Post signs to encourage proper hygiene.

Each BMP is described in detail in the following sections. Recommended safety modifications are described in further detail under Appendix F.

4.1 PREVENT LEAD ACCUMULATION IN WETLANDS AND WATER

Areas delineated as wetlands and water potentially regulated by the State of Oregon or United States are present at AGC, as shown on Figure 4. Preventing lead shot accumulation in wetlands and water is required by state and federal law. Wetlands and water are not present at the following AGC ranges:

- Law Enforcement Range,
- Pistol Bays #1 and #2,
- 50 Yard Range;
- 100/200/300 Yard Range, and
- 600 Yard Range,

Wetlands and water are present within the safety fans of the Trap and Skeet Range. The AGC changed the Trap and Skeet Range use to prevent lead shot accumulation in wetlands and water by temporally switching to steel shot and not allowing the use of lead shot at the Trap and Skeet Range. The AGC will use steel shot at the Trap and Skeet Range until modifications to the range are completed to prevent lead shot accumulation in wetlands and water.

Wetland 6 is mostly within the Trap and Skeet Range safety fan, but are located beyond the 210 yard maximum shot fall distance for 7 ½ shot, and are not affect by the Trap and Skeet Range use. All or portions of Wetlands 3 and 5 are located within the shot fall zone or within the Trap and Skeet Range safety fan. The portions of Wetlands 3 and 5 located in the Trap and Skeet Range safety fan are within the 210 shot fall distance for 7 ½ shot. The portions of Wetland 3 and 5 located within the range safety fan require mitigation to prevent lead shot accumulation in the wetlands. The Trap and Skeet Range modifications, including wetland fill requirements are described in Appendix C

Lead shot can potentially accumulate in the tributary of Emigrant Creek on the northern edge of the skeet range shot fall area, shown on Figure 4. A shot curtain is recommended to prevent lead shot accumulation in the tributary to Emigrant Creek. Recommended changes to wetlands to accommodate safety modifications are presented under Appendix F. A description of the shot curtain is provided in Appendix F.

4.2 ESTABLISH AND MAINTAIN VEGETATIVE GROUND COVER

BMP Recommendations: Maintain ground cover at all ranges.

Full vegetation cover is an important erosion control method for outdoor ranges because vegetation absorbs rainfall, slows stormwater flow velocity, and minimizes the potential for lead to be transported by stormwater runoff. Use of an erosion control seed mix containing native species appropriate for the site growing conditions is recommended to minimize irrigation and maintenance needs. Native seed mixes can be applied through the use of mechanical spreaders, by hand, or by hydroseed. Application should occur after maintenance or construction activities that disturb the ground surface. A cover of a certified weed-free straw should be applied to prevent seeds from blowing or washing away prior to germination. The following table includes recommended upland native seed mixes:

Table 4.2: Recommended Native Seed Mix and Application Rate

Species	Mature Height (cm)	# Pure Live Seeds/m ²	Seeding Rate grams/ha	Seeding Rate Lbs/ac.
<i>Festuca occidentalis</i> (Western Fescue)	30-40	50	470	0.42 (16.5 oz.)
<i>Agropyron spicatum</i> (Bluebunch Wheatgrass)	30-60	100	4,056	3.62 (143 oz.)
<i>Bromus marginatus</i> (Mountain Brome)	60+	75	6,085	5.43 (214 oz.)
<i>Sitanion hystrix</i> (Squirrel-tail Grass)	30-60	50	1,575	1.40 (55.5 oz.)
<i>Poa Sandbergii</i> (Sandberg Bluegrass)	30-60	75	533	0.47 (18.8 oz.)
<i>Elymus trachycaulus</i> (Slender wheatgrass)	30-60	50	1,983	1.80 (70.0 oz.)
<i>Festuca ovina</i> (Sheep Fescue)	30-60	100	872	0.78 (31.0 oz.)
		500 Seeds/m ² Coverage	15,574 Grams PLS/Ha	13.9 lbs. PLS/ac.

Note: Information from Oregon Department of Transportation, Region 5, Jackson County / Medford Area Native Grass Seed Mixture for Low Elevation Areas. Available online at: http://www.oregon.gov/ODOT/HWY/GEOENVIRONMENTAL/pages/seed_mixes.aspx

It is recommended that the mix be applied between October 1 through April 30 for temporary seeding and October 1 through January 1 for permanent seeding. Certified weed-free straw, mulch, or compost can be used on sloped surfaces, generally greater than a ratio of 2:1 (horizontal:vertical), as an alternative to vegetative ground cover as they also reduce the mobility of sediment and prevent lead migration. These materials should be applied at least two inches thick. Mulches and compost can reduce the pH of soil; see Section 4.2 for pH monitoring. If vegetation or other ground cover cannot be established, installation of bio-filter bags may be considered. Fertilizer or soil amendments can be used to enhance vegetation growth.

Vegetation does not need to be established where gravel and rock is present on range (e.g. walkways, and driveways). Gravel and rock materials on the range floors are not subject to erosion and are able to capture sediment, preventing lead in stormwater runoff.

Personnel should conduct regular range inspections to assess the potential for erosion at the ranges. Indications of erosion may include unvegetated exposed soil and migration of sediment in stormwater or by wind. The inspections should be conducted quarterly and after major storm events. The inspection should include visual observations of the bullet impact berms for eroded areas. If erosion is observed, corrective actions may include additional seeding and/or planting may be necessary. The results of the periodic inspections will be recorded using B-1 Range Monitoring Forms located in Appendix B.

4.3 SOIL pH MONITORING

BMP Recommendations: Monitor pH at all ranges.

The optimal soil pH for minimizing lead solubility and preventing the migration of lead through the soil column into underlying groundwater is between 6.5 to 8.5 (EPA, 2005). The soil pH should be monitored annually to verify the pH remains within the optimal range. Results of the soil monitoring should be recorded on form B-2 Soil pH Monitoring Log (provided in Appendix B). If the soil monitoring results indicate the pH is below the optimal range, lime amendment should be added to the berms to increase the pH. Lime should be added following manufacturer's specifications.

Table 4.3: Measured Soil pH at Ashland Gun Club

Soil Sample Location	pH	Result
Law Enforcement Range	7.5	Within optimal pH range
Pistol Bay #1	7.5	Within optimal pH range
Pistol Bay #2	7.1	Within optimal pH range
50 Yard Range	6.9	Within optimal pH range
100 Yard Range	6.6	Within optimal pH range
200 Yard Range	7.0	Within optimal pH range
300 Yard Range	7.3	Within optimal pH range
Trap Range	7.1	Within optimal pH range
Skeet Range	7.8	Within optimal pH range

4.4 BULLET ACCUMULATION INSPECTION

BMP Recommendations: Perform annual inspections of bullet accumulation at bullet impact berms of all ranges.

Annual inspections should be conducted to evaluate the face of the earthen berms in the bullet impact areas. The earthen berms should be evaluated to determine if lead has accumulated to the

point of posing a potential risk to range safety or the environment. If large bullet pockets are observed, the face of the berm should be re-graded to eliminate the bullet pockets and/or ballistic grade sand added to the berm face. If the annual inspection indicates a potential ricochet hazard is present, the particulate lead should be recovered from the berm. The lead recovery activities must be performed in accordance with applicable OSHA, Oregon OSHA (OROSHA), and Oregon Department of Environmental Quality (ODEQ) standards. Annual bullet impact inspections should be recorded on form B-1 Range Monitoring Log provided in Appendix B.

4.5 RECORD LEAD RECYCLING

BMP Recommendations: Record lead recycling performed by club members at all ranges.

Lead removed for recycling from bullet impact areas by range users for personal use should be recorded. An easily-accessible weigh station should be installed at the Site with a logbook that identifies the individual, the amount of lead removed, the range where lead removal was conducted, the intended purpose of the lead and the date of the removal. Removal activities should be recorded on form B-3 Bullet Recovery Log provided as Appendix B.

The AGC has been conducting periodic lead reclamation and recycling. Receipts for lead recycled during 2012 at the time of the October 9, 2012 site inspection demonstrate AGC's existing lead recycling program and are include in Appendix E.

4.6 PERSONAL HYGIENE

BMP Recommendations: Post signs at all ranges to remind range users to avoid exposure to lead through appropriate personal hygiene practices.

Basic personal hygiene practices can minimize potential exposure to lead from fire arms use at the ranges.

These hygiene guidelines include:

- Refrain from consuming food and/or drink, smoking or placing your hands in proximity to your mouth or nose while on the range or cleaning a firearm.
- Range patrons are advised to wash with cool water following shooting activities.
- Change and wash clothing after a shooting or firearm cleaning session to minimize exposure to airborne lead or solvent and cleaning product residues.
- Pregnant women and children under seven years of age, and others who have health concerns should consult a physician before visiting shooting ranges.

Posting signs at the ranges and in restrooms to remind and/or notify range users of appropriate hygiene practices is recommended. Example signs are included as Appendix C.

4.7 OPTIONAL BMPs FOR OUTDOOR RANGES

The following BMPs are considered optional. AGC may choose to implement these BMPs as resources become available.

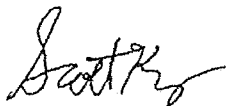
- **Record Type and Quantity of Rounds Fired:** Logs may be kept at the range shooting station to record the type and quantity of rounds fired. This information may be used to monitor the amount of lead that is deposited within each range over time. Rounds fired may be recorded on form B-4 Rounds Fired Log, provided in Appendix B.

5.0 CONCLUSIONS

The physical setting at the AGC was assessed through personnel interviews and information review and inspection of the outdoor ranges on October 9, 2012. Recommended BMPs in this ESP should be implemented to prevent the off-site migration of lead into the surrounding environment through erosion, groundwater transport, and/or surface water runoff, and to minimize the potential for human and wildlife exposure to lead and range materials. The BMPs described in this ESP were developed to provide policies and procedures for the long-term management of lead at the Ashland Gun Club.

In order to measure the success of this ESP, it is necessary to keep accurate records to document the effects of recommended BMPs. Facility records should include range inspection logs, soil pH monitoring logs, lead removal logs, and rounds fired logs (as applicable). Templates for these logs are included in Appendix B. It is recommended this ESP be reviewed by range management personnel every five years and updated as site conditions change.

We appreciate the opportunity to be of service to the Ashland Gun Club on this project. If you have any questions or comments regarding this report, please contact the undersigned at (503) 222-7200.



Scott Kranz, RG
Senior Project Manager

REFERENCES

U.S. Environmental Protection Agency (EPA), 2005. Best Management Practices at Outdoor Shooting Ranges. EPA Region 2, EPA-902-B-01-001. January 2001, revised June 2005.

ITRC, 2003. Characterization and Remediation of Soils at Closed Small Arms Firing Ranges. Interstate Technology and Regulatory Council, Small Arms Firing Range Team, Washington, DC, January 2003, 204 p.

ITRC, 2005. Environmental Management at Operating Outdoor Small Arms Firing Ranges. The Interstate Technology & Regulatory Council, Small Arms Firing Range Team, Washington, DC, February 2005, 87 p.

JBR Environmental Consultants, Inc. July 2011. Delineation of Wetland and Waters of the United States Lithia Springs Property, City of Ashland, Jackson County, Oregon. 84p.

National Shooting Sports Foundation (NSSF), 1997. Environmental Aspects of Construction and Management of Outdoor Shooting Ranges. Facility Development Series No. 2, National Shooting Sports Foundation, Newtown, Connecticut, 1997.

Oregon Department of Fish and Wildlife. 2012. County listing for Jackson County, Oregon. Accessed digitally November 2012 at http://www.dfw.state.or.us/wildlife/diversity/species/threatened_endangered_candidate_list.asp

U.S. Army Environmental Center (USACE), 2005. Army Small Arms Training Range Environmental Best Management Practices (BMPs) Manual. SFIM-AEC-AT-CR-2006007. February 12, 2005.

U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS), 1994. Soil Survey of Jackson County, Oregon.

USDA NRCS, 2006. Land Resource Regions and Major Land Resource Areas of the United States, the Caribbean, and the Pacific Basin: Custom Report for MLRA Explorer: Northwestern Forest, Forage and Specialty Crop Region: Siskiyou-Trinity Area. Created October 2012.

USDA NRCS, 2012. Hydric Soils of the United States. Accessed October 23, 2012 at <http://soils.usda.gov/use/hydric/included.html>

USDA NRCS, 2012. Web Soil Survey: Jackson County, Oregon. Accessed October 2012 at <http://websoilsurvey.nrcs.usda.gov/app/HomePage.htm>

U.S. Fish and Wildlife Service (USFWS) National Wetlands Inventory, 1981. National Wetland Inventory Map. June 1981. Accessed digitally October 2012 at <http://137.227.242.85/wetland/wetland.html>.

U.S. Fish and Wildlife Service. 2012. Endangered Species Program. County listing for Jackson County, Oregon. Accessed digitally November 2012 at <http://www.fws.gov/endangered/>

Western Regional Climate Center (WRCC), 2012. Ashland, Oregon, Period of Record Monthly Climate Summary, 7/1/1892 to 8/31/2012. Accessed September 10, 2012 at <http://www.wrcc.dri.edu/cgi-bin/cliMAIN.pl?or0304>.



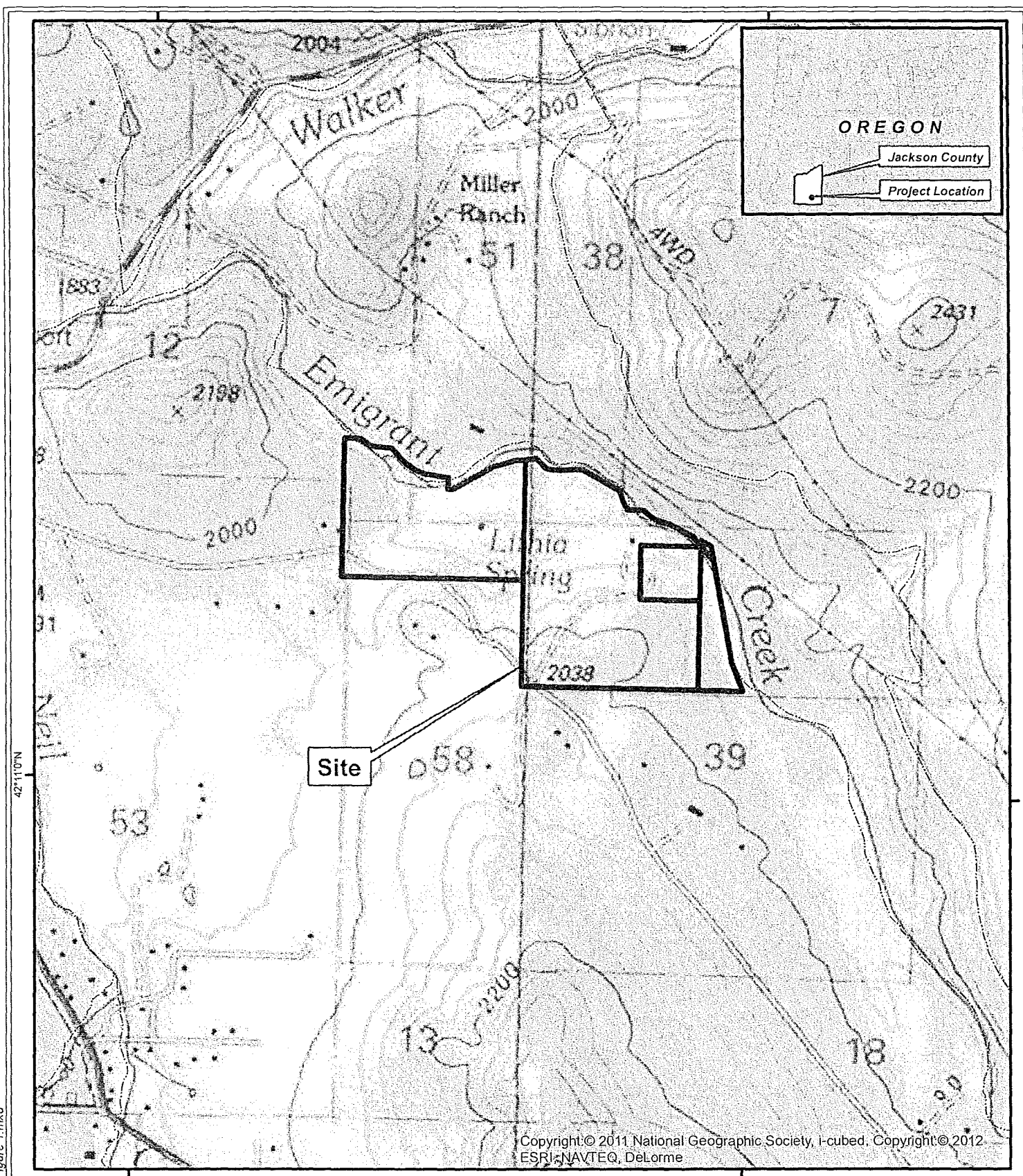
LIMITATIONS

This Environmental Stewardship Plan was prepared exclusively for the Ashland Gun Club by URS Corporation. The quality of information, conclusions, and estimates contained herein is consistent with the level of effort involved in URS services and based on: i) information available at the time of preparation, ii) data supplied by outside sources, and iii) the assumptions, conditions, and qualifications set forth in this report. This Environmental Stewardship Plan is intended to be used by Ashland Gun Club for the small arms training facility located in the City of Ashland, Jackson County, Oregon only, subject to the terms and conditions of its contract with URS. Any other use of, or reliance on, this report by any third party is at that party's sole risk.

The findings contained herein are relevant to the dates of the URS Site visit and should not be relied upon to represent conditions at later dates. In the event that changes in the nature, usage, or layout of the property or nearby properties are made, the conclusions and recommendations contained in this report may not be valid. If additional information becomes available, it should be provided to URS so the original conclusions and recommendations can be modified as necessary.

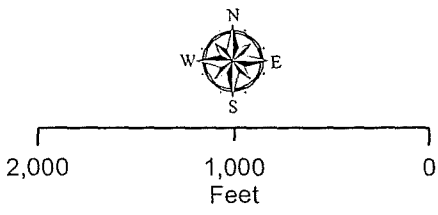
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FIGURES



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- LEGEND**
-  Site Boundary
 -  Rivers



**FIGURE 1:
Project Vicinity**

Environmental Stewardship Plan
Ashland Gun Club
555 Emigrant Creek Road, Ashland, Oregon

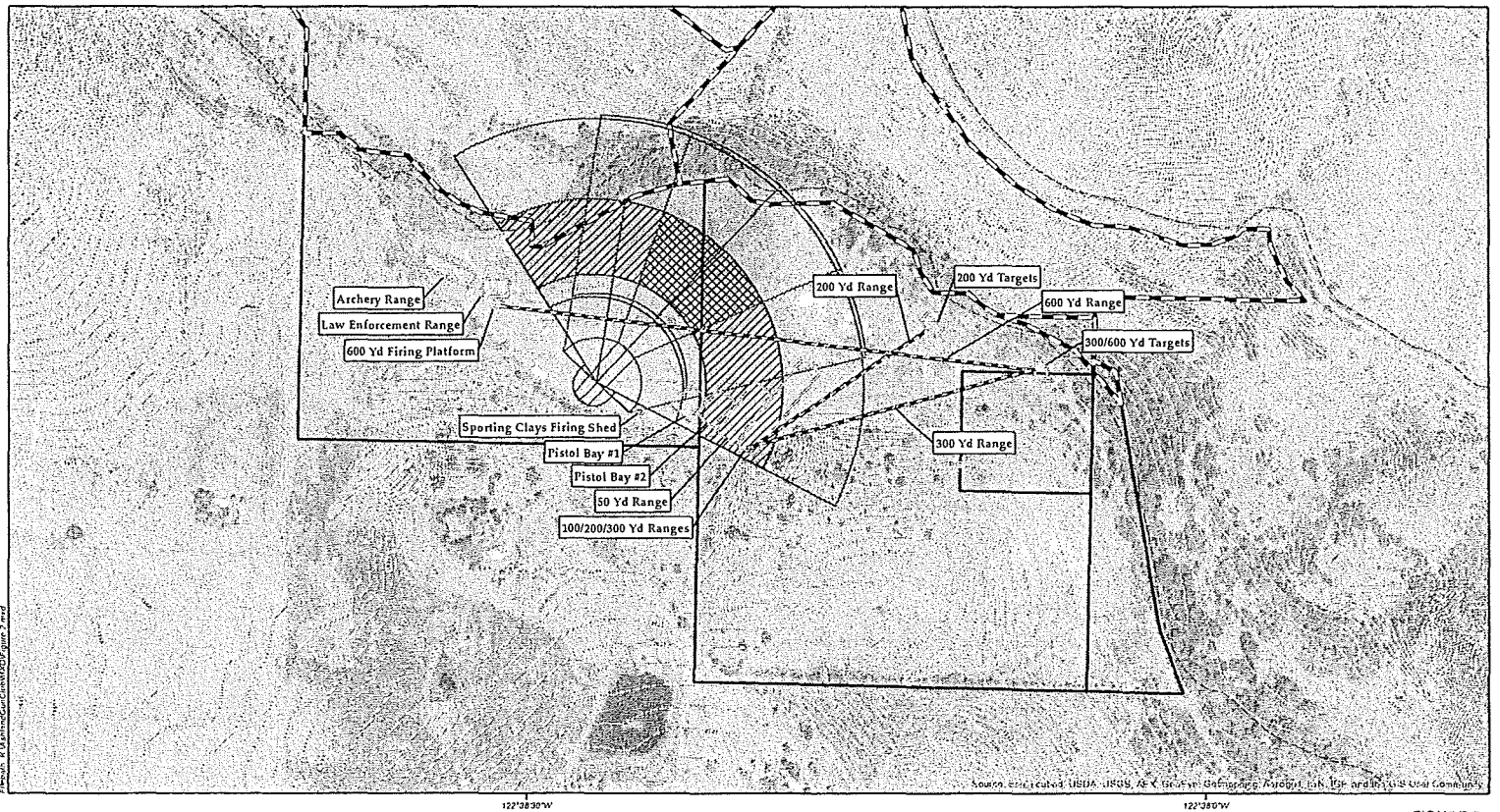


Photo: K:\ASHEM\GIS\MapDocs\fig2.mxd

Source: Eric Leland, USGS, IIGS, AS-X, Geotiff, Oregon, Ashland, Gun Club and the US Forest Service

122°38'30"W

122°38'00"W

- Legend
- Sheet Shot Fall Zone
 - Trap Shot Fall Zone
 - Range Boundaries
 - Parcel Boundaries
 - 1/2 Acre Parcel Boundaries
 - Trap
 - Rivers

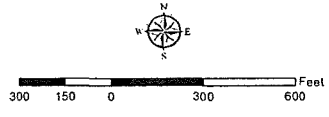
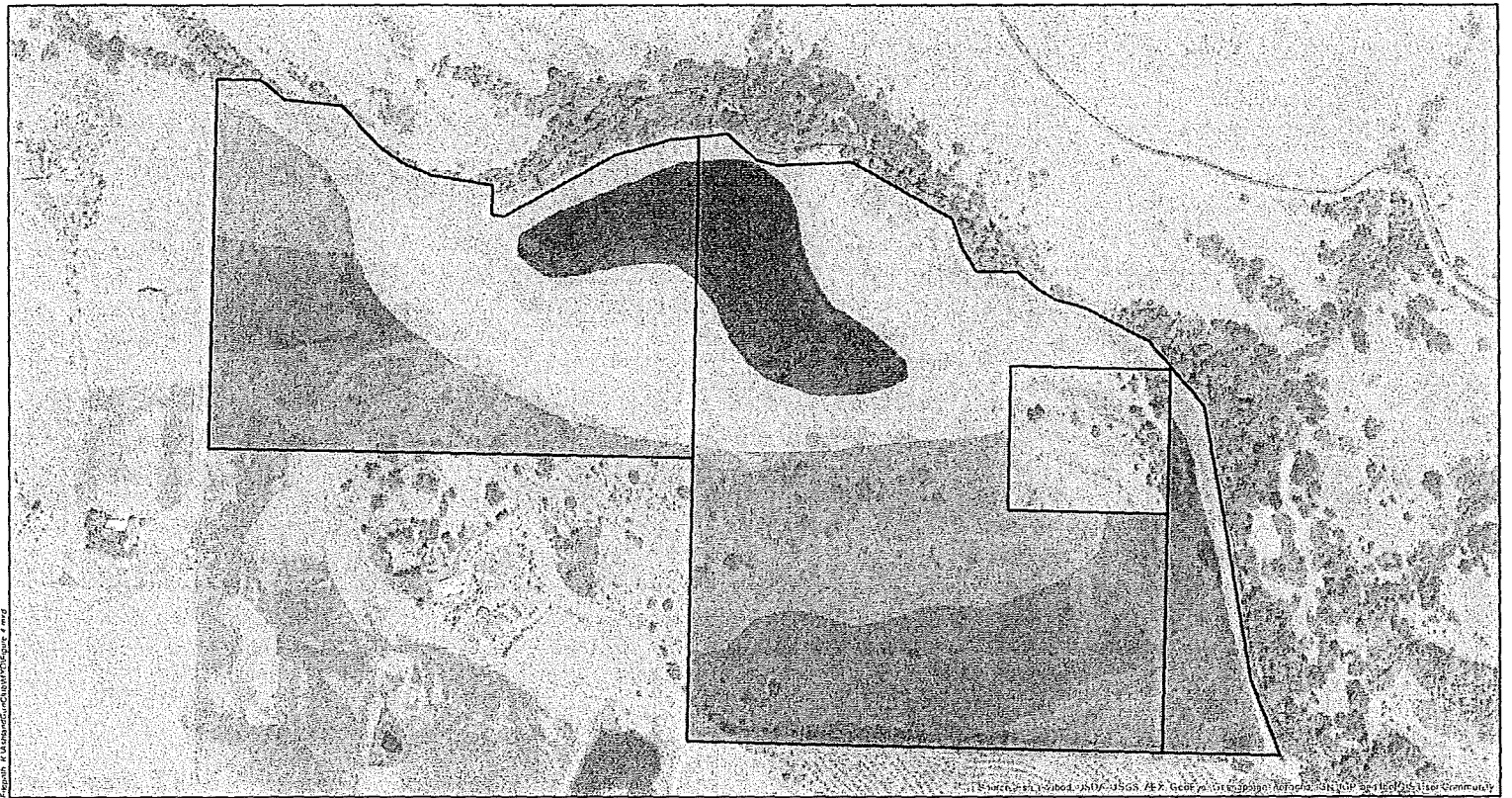


FIGURE 2:
Existing Features

Environmental Stewardship Plan
Ashland Gun Club
555 Emigrant Creek Road, Ashland, Oregon

January 2013





- Legend
- HRCS Soil Survey of Jackson County
- Bradley-Dabinger loams, 1 to 15 percent slopes, 459551
 - Bradley-Dabinger loams, 15 to 40 percent slopes, 459552
 - Canas-Nearberg-Evans complex, 0 to 3 percent slopes, 456705
 - Carney cobby clay, 20 to 35 percent slopes
 - Darrow silty clay loam, 5 to 20 percent slopes, 459733
 - Madford clay loam, gravelly substratum, 0 to 7 percent slopes, 456594

Parcel Boundaries
 --- Rivers

122°38'30"W

122°38'0"W

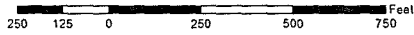
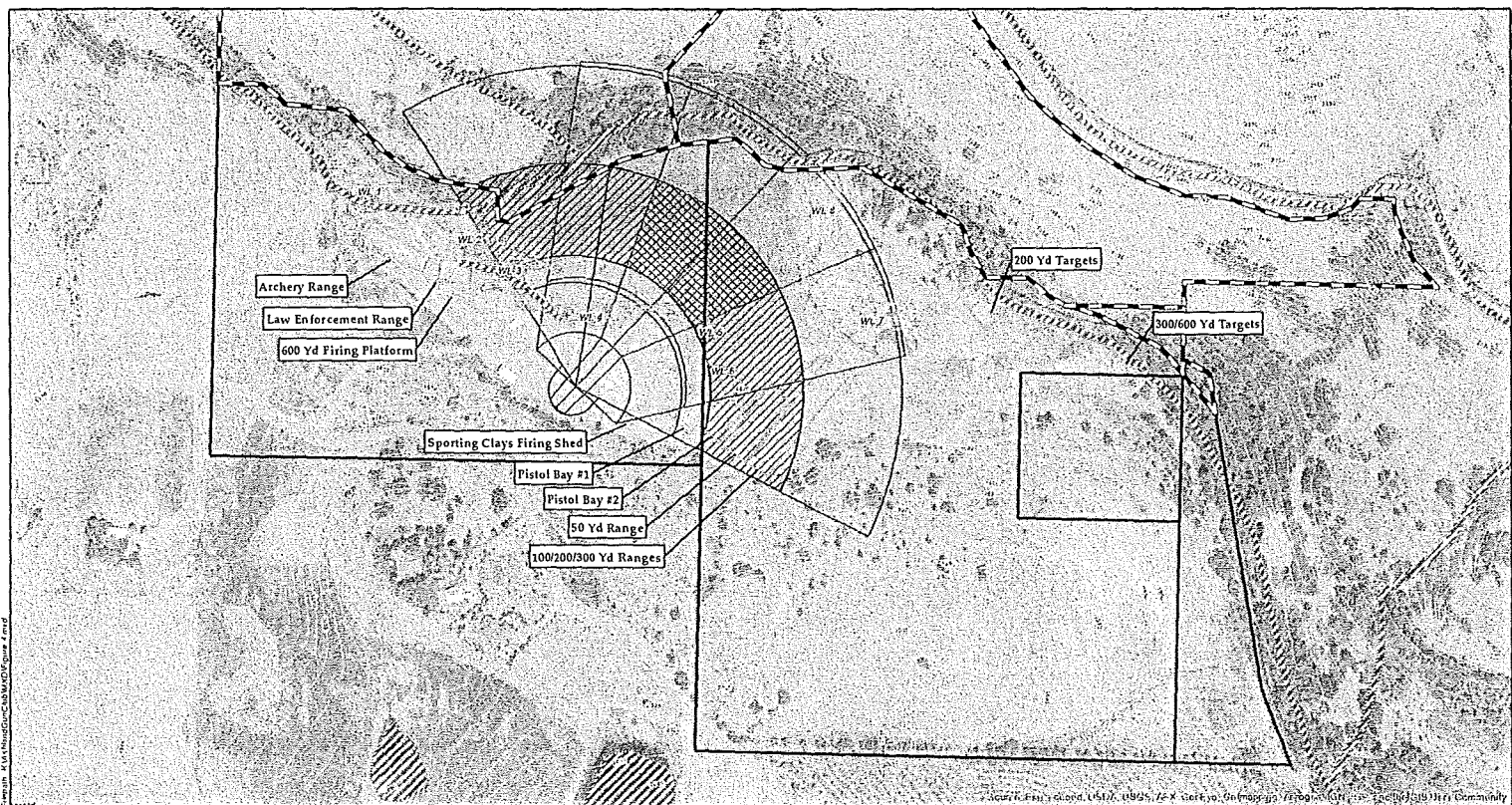


FIGURE 3:
NRCS Soils

Environmental Stewardship Plan
 Ashland Gun Club
 555 Emigrant Creek Road, Ashland, Oregon



January 2013



- Steel Shot Fall Zone
- Range Boundaries
- Parcel Boundaries
- Trap Shot Fall Zone
- Water Parcel Boundaries
- Oregon Wetlands Explorer Data
- Non-Verified De-riated Wetlands
- Steel
- Trap
- Emigrant Creek, other water

122°26'30"W

122°26'0"W

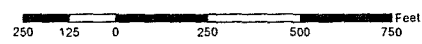


FIGURE 4:
Wetlands

Environmental Stewardship Plan
Ashland Gun Club
555 Emigrant Creek Road, Ashland, Oregon



January 2010



APPENDIX A

Photo Log

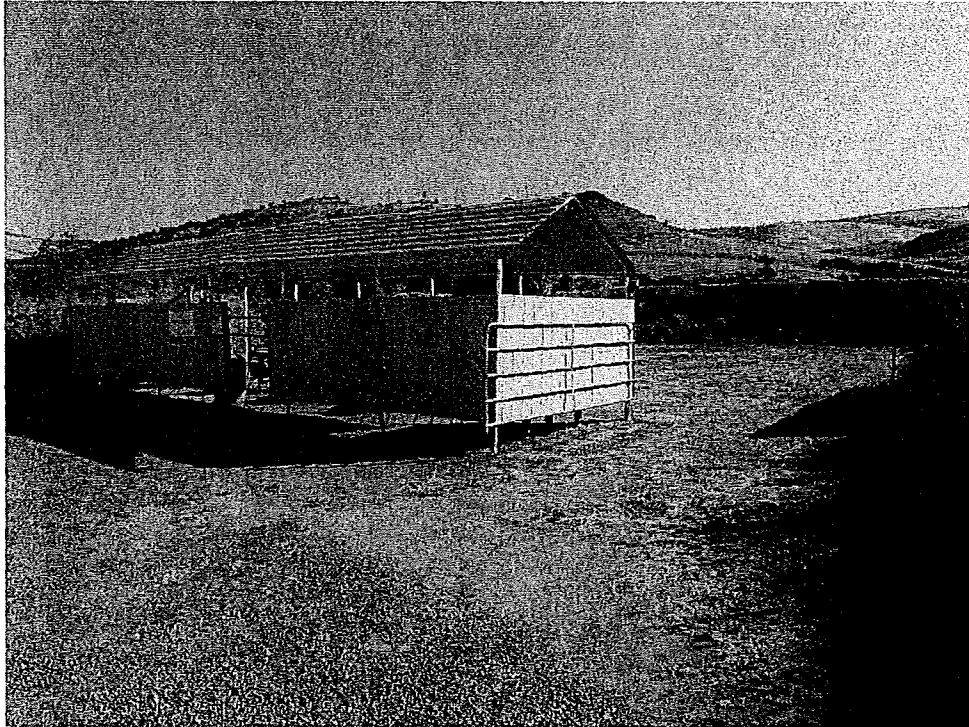


Photo 1

Law Enforce Range firing line shed with impact berm.

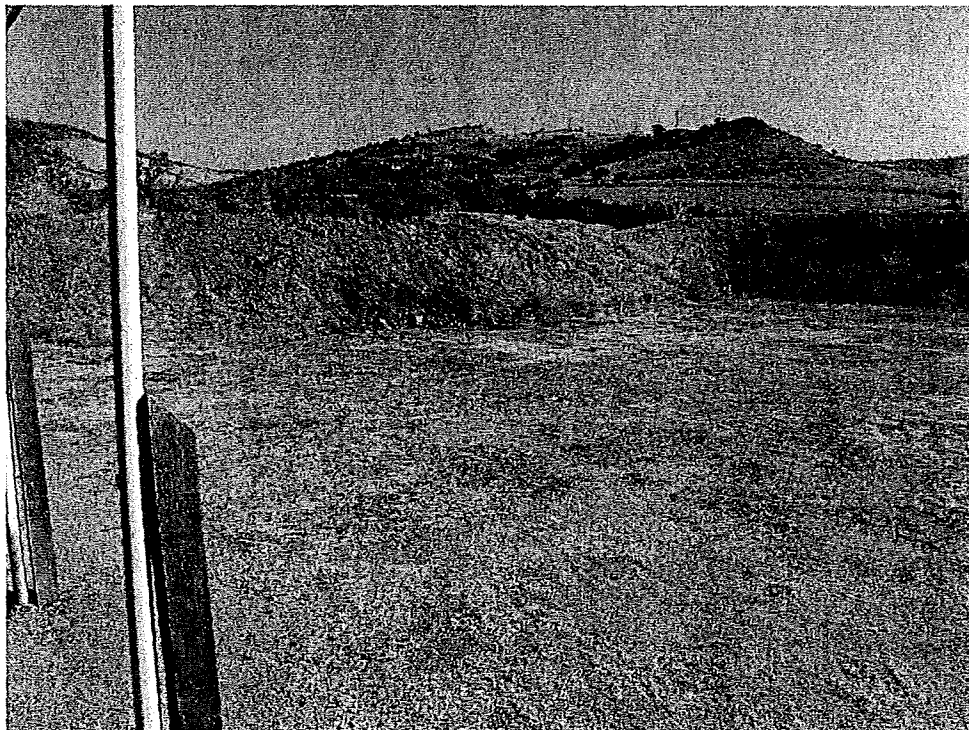


Photo 2

Law Enforce Range side berm. Note additional material deposited recently from City of Ashland.



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ENVIRONMENTAL STEWARSHIP
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PHOTOGRAPH LOG



Photo 3

600 Yard Range shooting bench. Most use occurs in prone position on flat area adjacent to the bench. Range is used infrequently, and only when other ranges are closed and a Range Safety Officer is present.

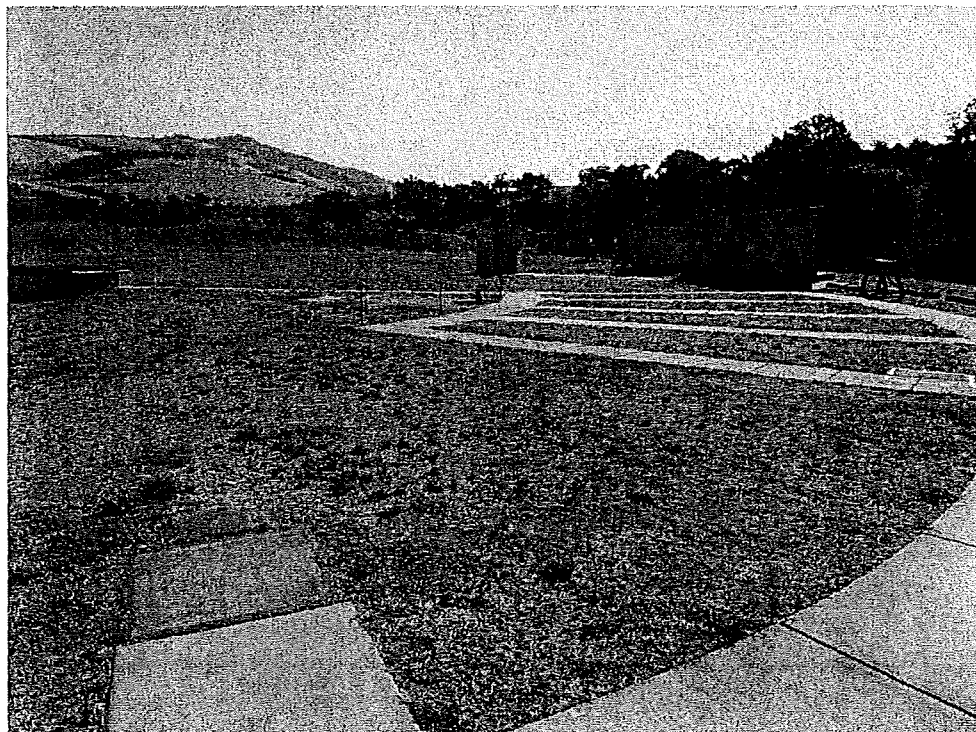


Photo 4

Trap and Skeet Ranges. The trap and Skeet Ranges also includes a temporary sporting clays course.

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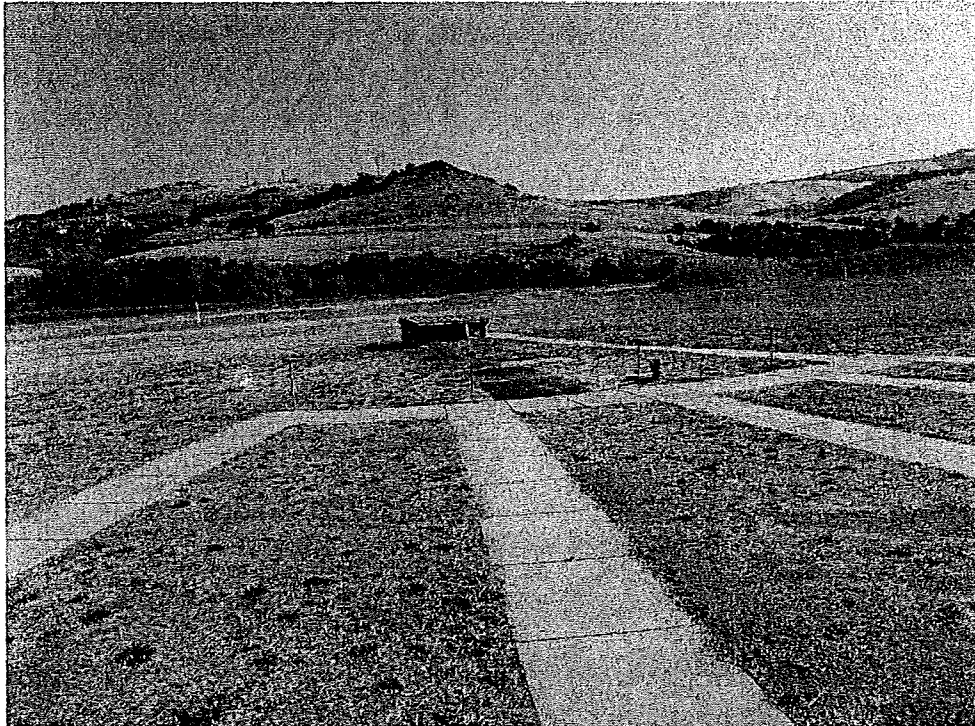


Photo 5

Trap range with shot fall zone in background.



Photo 6

Edge of shot fall zone for trap, skeet and sporting clays range.

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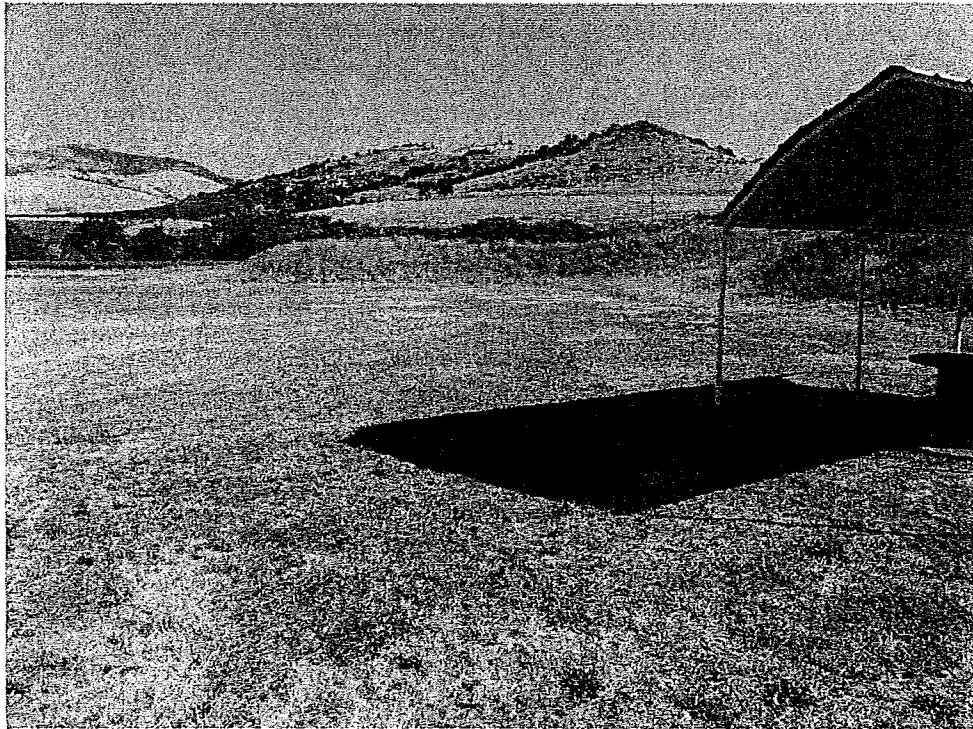


Photo 7

Temporary range used for cowboy action competitions only.

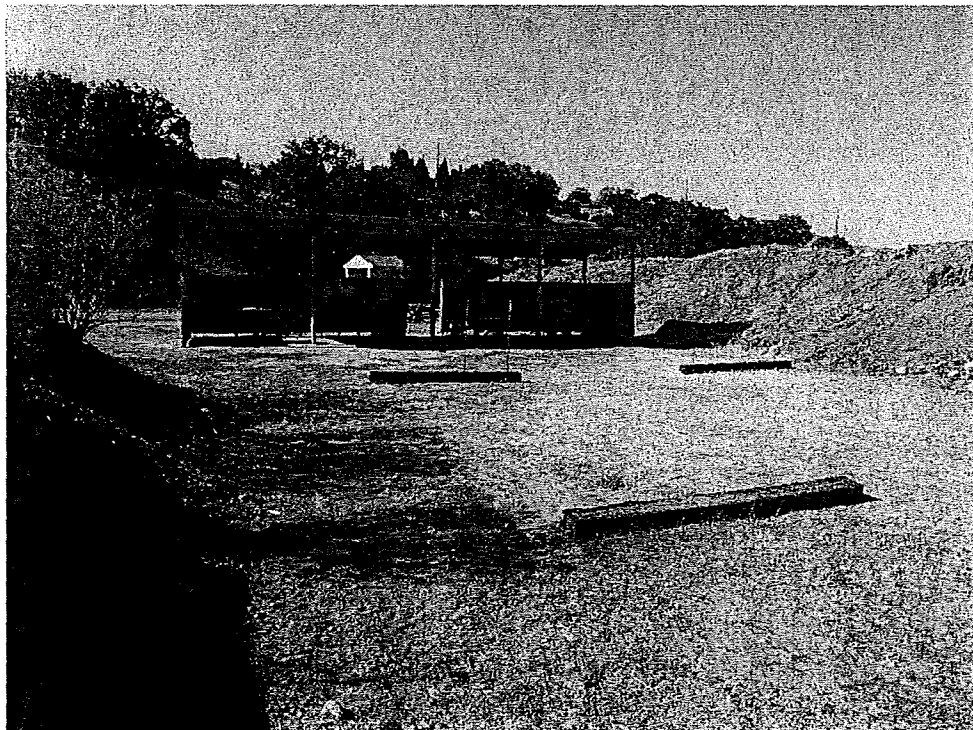


Photo 8

Pistol Bay #1 firing shed and side berms.

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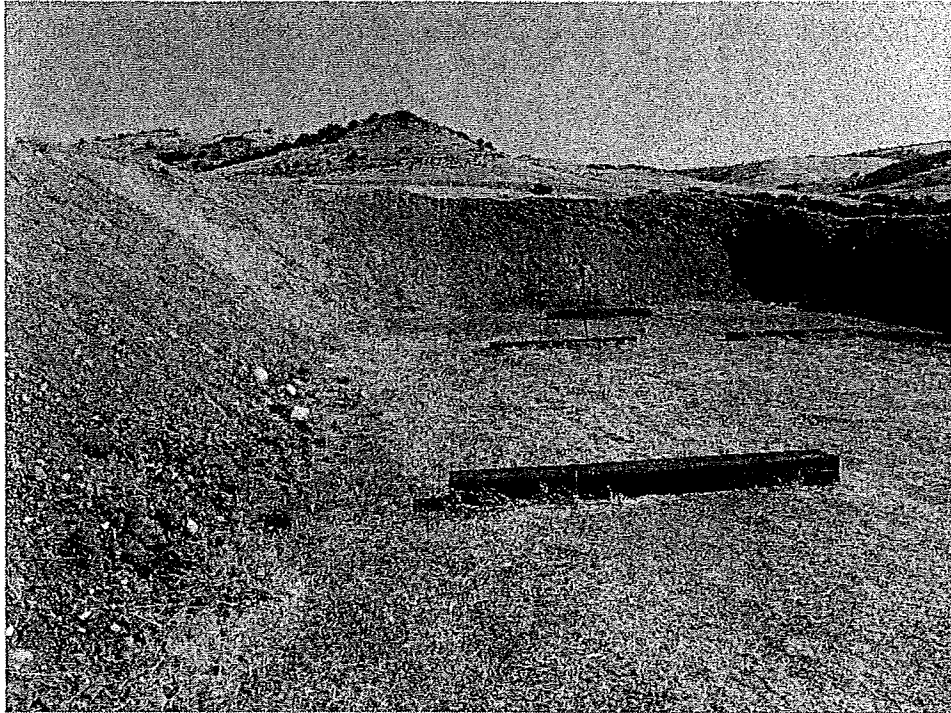


Photo 9

Pistol Bay #2 bullet impact berm and side berms.

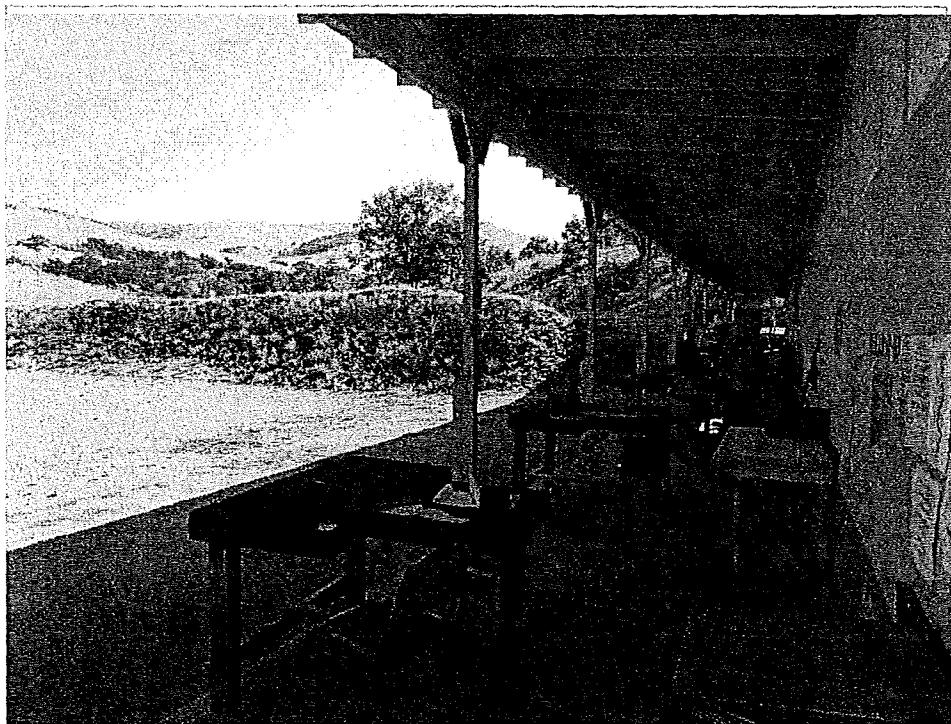


Photo 10

50 Yard Range firing positions. 50 Yard Range shares one firing line shed with the 100/200/300 Yard Range. Side berm in background separates the 50 Yard Range from the 100/200/300 Yard Range.

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ASHLAND GUN CLUB

PHOTOGRAPH LOG

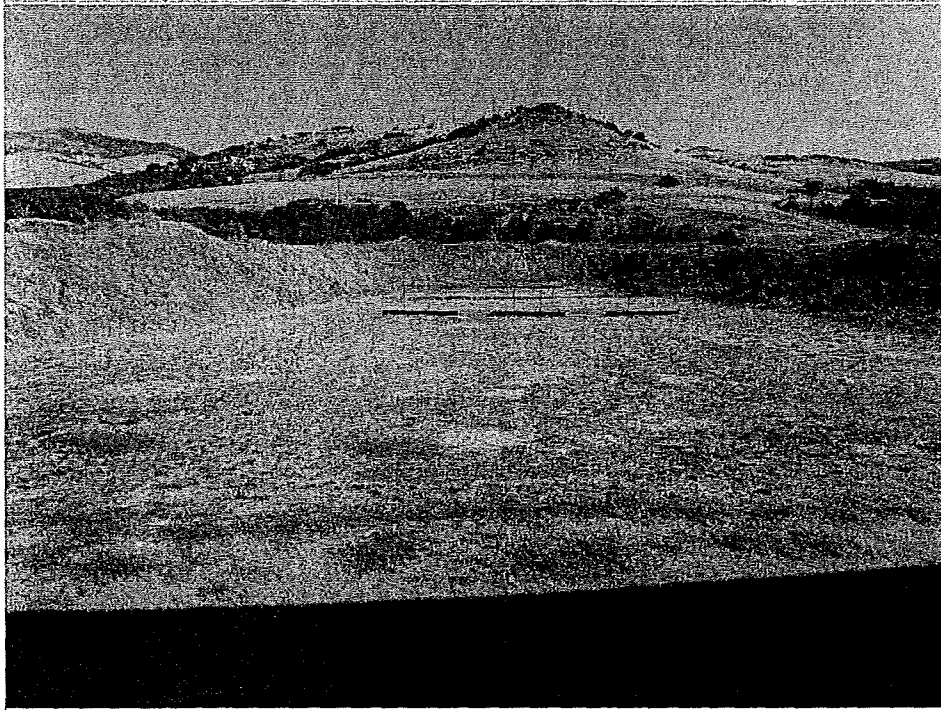


Photo 11

50 Yard Range bullet impact berm and side berms.

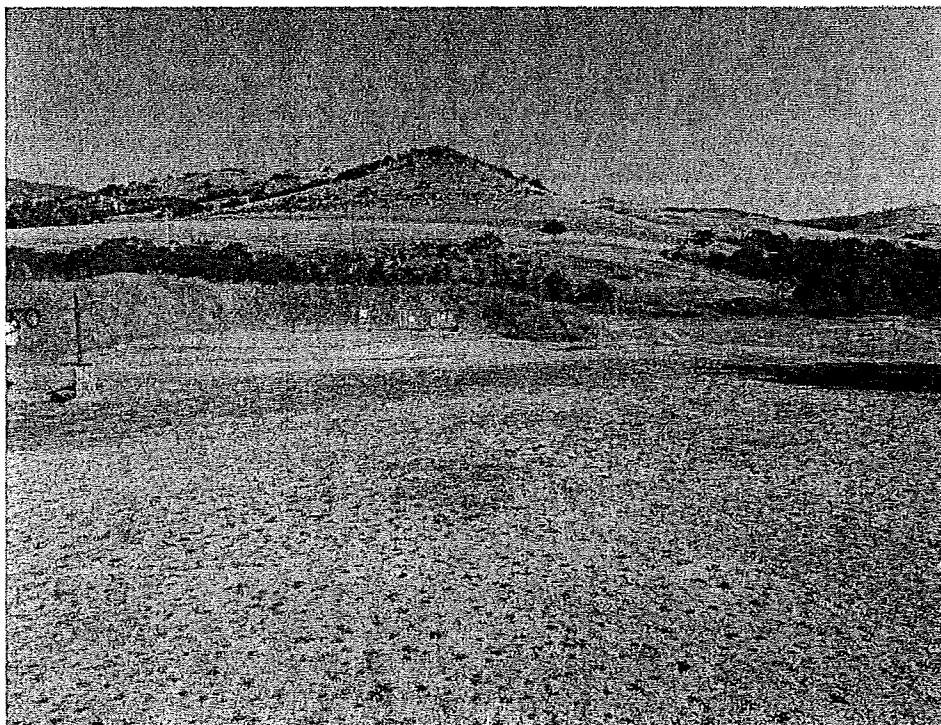


Photo 12

100/200/300 Yard Range targets at 100 and 200 yards target area with impact berms. The 300 and 600 yard impact berm is on the right side of the photo.

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Photo 13

100/200/300 Yard Range vegetated range floor. The 300 and 600 yard target area with impact berm in the distance.



Photo 14

300 and 600 yard target area with bullet impact berm.

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DATE November 2012
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ENVIRONMENTAL STEWARSHIP
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PHOTOGRAPH LOG



APPENDIX B

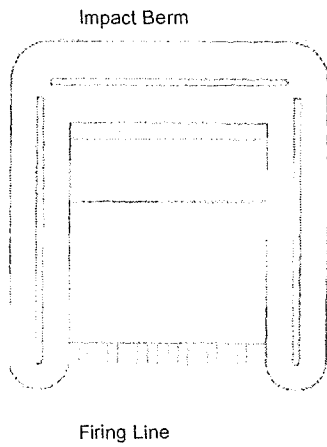
Range Inspection Forms

Date: _____

FORM B-1a: 50 Yard Range Monitoring Form
Ashland Gun Club
Environmental Stewardship Plan

Inspected By: _____

Directions: Mark areas of erosion on drawing and describe in space below. Examples of erosion include: storm water runoff channels, dust clouds. Mark locations of storm water controls, such as bio-filter bags, and note condition. Continue on reverse if necessary.



1. Describe Area of Erosion: _____

Initials: _____

Describe Corrective Action and Date: _____

Initials: _____

2. Describe Area of Erosion: _____

Initials: _____

Describe Corrective Action and Date: _____

Initials: _____

3. Describe Area of Erosion: _____

Initials: _____

Describe Corrective Action and Date: _____

Initials: _____

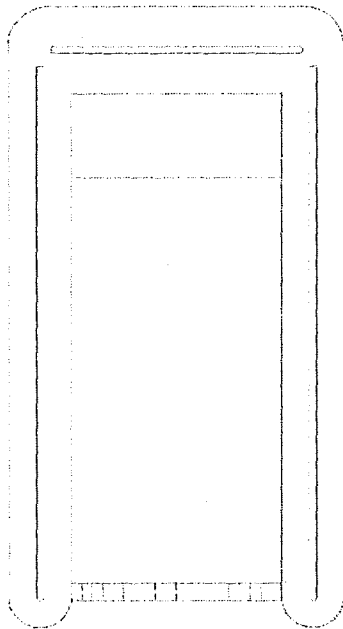
Date: _____

FORM B-1b: 100 Yard Range Monitoring Form
Ashland Gun Club
Environmental Stewardship Plan

Inspected By: _____

Directions: Mark areas of erosion on drawing and describe in space below. Examples of erosion include: storm water runoff channels, dust clouds. Mark locations of storm water controls, such as bio-filter bags, and note condition. Continue on reverse if necessary.

Impact Berm



Firing Line

1. Describe Area of Erosion: _____

Initials: _____

Describe Corrective Action and Date: _____

Initials: _____

2. Describe Area of Erosion: _____

Initials: _____

Describe Corrective Action and Date: _____

Initials: _____

3. Describe Area of Erosion: _____

Initials: _____

Describe Corrective Action and Date: _____

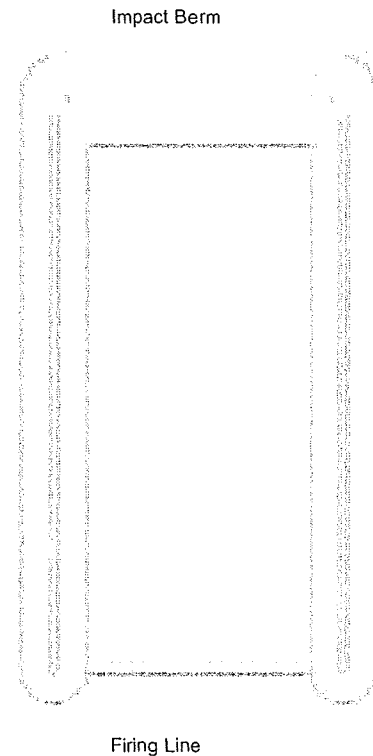
Initials: _____

Date: _____

FORM B-1c: 200 Yard Range Monitoring Form
Ashland Gun Club
Environmental Stewardship Plan

Inspected By: _____

Directions: Mark areas of erosion on drawing and describe in space below. Examples of erosion include: storm water runoff channels, dust clouds. Mark locations of storm water controls, such as bio-filter bags, and note condition. Continue on reverse if necessary.



1. Describe Area of Erosion: _____

_____ Initials: _____

Describe Corrective Action and Date: _____

_____ Initials: _____

2. Describe Area of Erosion: _____

_____ Initials: _____

Describe Corrective Action and Date: _____

_____ Initials: _____

3. Describe Area of Erosion: _____

_____ Initials: _____

Describe Corrective Action and Date: _____

_____ Initials: _____

Date: _____

FORM B-1d: 300 Yard Range Monitoring Form
Ashland Gun Club
Environmental Stewardship Plan

Inspected By: _____



Firing Line

Directions: Mark areas of erosion on drawing and describe in space below. Examples of erosion include: storm water runoff channels, dust clouds. Continue on reverse if necessary.

1. Describe Area of Erosion: _____

_____ Initials: _____

Describe Corrective Action and Date: _____

_____ Initials: _____

2. Describe Area of Erosion: _____

_____ Initials: _____

Describe Corrective Action and Date: _____

_____ Initials: _____

3. Describe Area of Erosion: _____

_____ Initials: _____

Describe Corrective Action and Date: _____

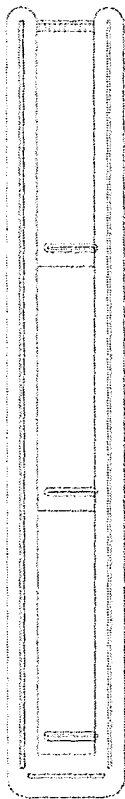
_____ Initials: _____

Impact Berm

Date: _____

FORM B-1e: 600 Yard Range Monitoring Form
Ashland Gun Club
Environmental Stewardship Plan

Inspected By: _____



Firing Line

Directions: Mark areas of erosion on drawing and describe in space below. Examples of erosion include: storm water runoff channels, dust clouds. Continue on reverse if necessary.

1. Describe Area of Erosion: _____

_____ Initials: _____

Describe Corrective Action and Date: _____

_____ Initials: _____

2. Describe Area of Erosion: _____

_____ Initials: _____

Describe Corrective Action and Date: _____

_____ Initials: _____

3. Describe Area of Erosion: _____

_____ Initials: _____

Describe Corrective Action and Date: _____

_____ Initials: _____

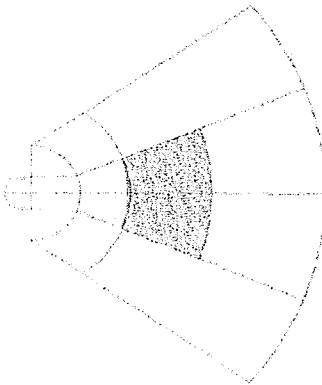
Impact Berm

Date: _____

FORM B-1f: Trap Range Monitoring Form
Ashland Gun Club
Environmental Stewardship Plan

Inspected By: _____

Directions: Mark areas of erosion on drawing and describe in space below. Examples of erosion include: storm water runoff channels, dust clouds. Inspection bio-filter bags. Continue on reverse if necessary.



1. Describe Area of Erosion: _____

Initials: _____

Describe Corrective Action and Date: _____

Initials: _____

2. Describe Area of Erosion: _____

Initials: _____

Describe Corrective Action and Date: _____

Initials: _____

3. Describe Area of Erosion: _____

Initials: _____

Describe Corrective Action and Date: _____

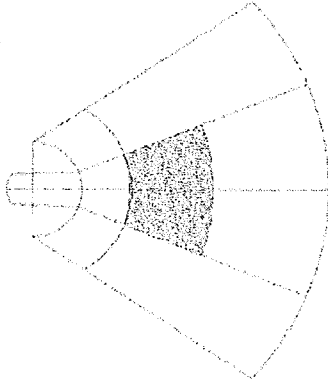
Initials: _____

Date: _____

FORM B-1g: Skeet Range Monitoring Form
Ashland Gun Club
Environmental Stewardship Plan

Inspected By: _____

Directions: Mark areas of erosion on drawing and describe in space below. Examples of erosion include: storm water runoff channels, dust clouds. Inspection bio-filter bags. Continue on reverse if necessary.



1. Describe Area of Erosion: _____

_____ Initials: _____

Describe Corrective Action and Date: _____

_____ Initials: _____

2. Describe Area of Erosion: _____

_____ Initials: _____

Describe Corrective Action and Date: _____

_____ Initials: _____

3. Describe Area of Erosion: _____

_____ Initials: _____

Describe Corrective Action and Date: _____

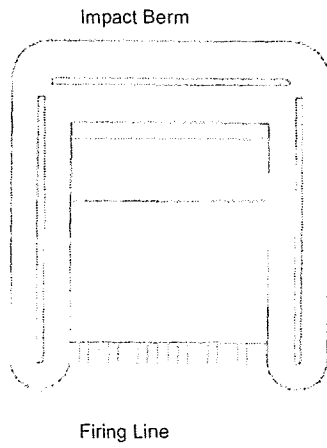
_____ Initials: _____

Date: _____

FORM B-1h: Law Enforcement Range Monitoring Form
Ashland Gun Club
Environmental Stewardship Plan

Inspected By: _____

Directions: Mark areas of erosion on drawing and describe in space below. Examples of erosion include: storm water runoff channels, dust clouds. Mark locations of storm water controls, such as bio-filter bags, and note condition. Continue on reverse if necessary.



1. Describe Area of Erosion: _____

Initials: _____

Describe Corrective Action and Date: _____

Initials: _____

2. Describe Area of Erosion: _____

Initials: _____

Describe Corrective Action and Date: _____

Initials: _____

3. Describe Area of Erosion: _____

Initials: _____

Describe Corrective Action and Date: _____

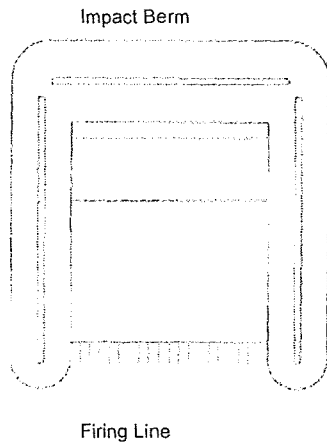
Initials: _____

Date: _____

FORM B-1i: Pistol Bays 1 and 2 Monitoring Form
Ashland Gun Club
Environmental Stewardship Plan

Inspected By: _____

Directions: Mark areas of erosion on drawing and describe in space below. Examples of erosion include: storm water runoff channels, dust clouds. Mark locations of storm water controls, such as bio-filter bags, and note condition. Continue on reverse if necessary.



1. Describe Area of Erosion: _____

_____ Initials: _____

Describe Corrective Action and Date: _____

_____ Initials: _____

2. Describe Area of Erosion: _____

_____ Initials: _____

Describe Corrective Action and Date: _____

_____ Initials: _____

3. Describe Area of Erosion: _____

_____ Initials: _____

Describe Corrective Action and Date: _____

_____ Initials: _____

Form B-2: Soil pH Monitoring Form
 Ashland Gun Club
 Environmental Stewardship Plan

Date	Name of Range	Soil pH		Initials
		<i>Impact Berm</i>	<i>Range Floor</i>	

- NOTES: Soil pH monitoring should be conducted annually
- Procedure for Measuring pH in soil:
1. In a clean container, mix 1 part soil with 1 part tap water or distilled water.
 2. Mix thoroughly.
 3. Allow mixture to settle for 10 minutes.
 4. Calibrate pH meter following manufacturers instructions
 5. Measure pH with pH meter, allowing reading to stabilize. Record reading.
 6. Clean pH meter and container with tap water or distilled water.

Form B-3: Bullet Recovery Form
Ashland Gun Club
Environmental Stewardship Plan

Range	Name	Pounds Recovered	Intended Purpose	Date

Directions: Complete information line for each range where bullet removal is performed.

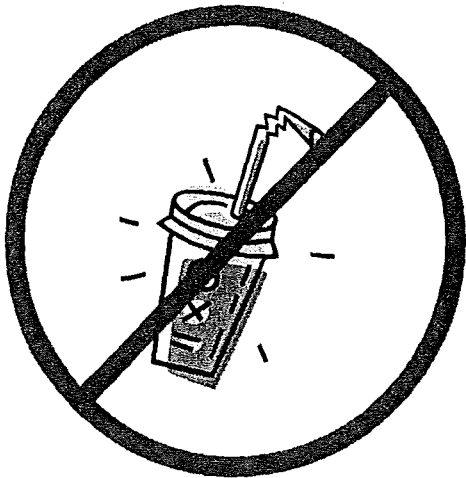


APPENDIX C

Range Signs

NOTICE

***NO EATING OR
DRINKING AT RANGE***



*Avoid Lead
Exposure!*

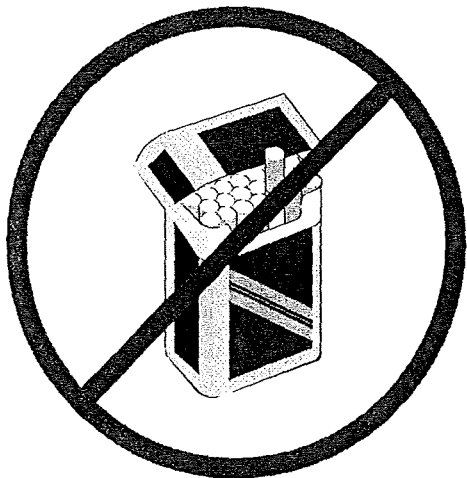


NOTICE

NO TOBACCO USE

ON RANGE

*Avoid Lead
Exposure!*



NOTICE

***WASH HANDS AFTER
FIRING PRACTICE***

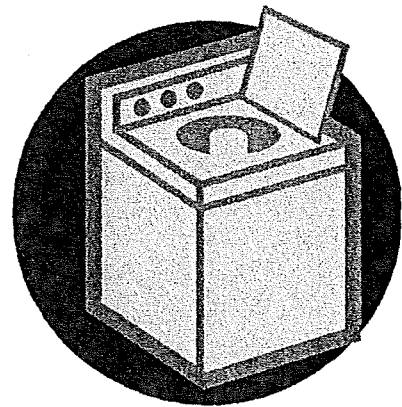
***Avoid Lead
Exposure!***



NOTICE

CHANGE AND WASH CLOTHING AFTER SHOOTING OR CLEANING FIREARMS

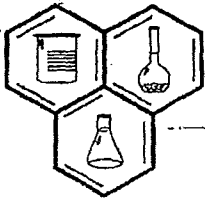
*Avoid Lead
Exposure!*





APPENDIX D

Soil pH Report



NEILSON RESEARCH CORPORATION

Environmental Testing Laboratory

2/16/12

Mike LaNier
Ashland Gun Club
PO Box 953
Ashland, OR 97520
TEL: (541) 482-8903
FAX:
RE: Soil pH Testing

Order No.: 1202338

Dear Mike LaNier:

Neilson Research Corporation received 9 sample(s) on 2/13/12 for the analyses presented in the following report.

The results relate only to the parameters tested or to the sample as received by the laboratory. This report shall not be reproduced except in full, without the written approval of Neilson Research Corporation. If you have any questions regarding these test results, please feel free to call.

Sincerely,
Neilson Research Corporation

Fay L. Fowler
Project Manager

Neilson Research Corporation

245 South Grape Street, Medford, Oregon 97501 541-770-5678 Fax 541-770-2901

Analysis Report

ORELAP 100016
EPA OR00028

CLIENT: Ashland Gun Club

Date: 16-Feb-12

Project: Soil pH Testing

CASE NARRATIVE

Lab Order: 1202338

The analyses were performed according to the guidelines in the Neilson Research Corporation Quality Assurance Program. This report contains analytical results for the sample(s) as received by the laboratory.

Neilson Research Corporation certifies that this report is in compliance with the requirements of NELAP. No unusual difficulties were experienced during analysis of this batch except as noted below or qualified with data flags on the reports.

Neilson Research Corporation

245 South Grape Street, Medford, Oregon 97501 541-770-5678 Fax 541-770-2901

Analysis Report

ORELAP 100016
EPA OR00028

Ashland Gun Club
PO Box 953
Ashland, OR 97520
Client Sample ID: CCW/APD
Sample Location:
Project: Soil pH Testing

Lab Order: 1202338
NRC Sample ID 1202338-01
Collection Date: 2/13/12 10:00:00 AM
Received Date: 2/13/12 12:40:00 PM
Reported Date: 2/16/12 10:50:10 AM
Matrix: Solid

ANALYTICAL RESULTS

Analyses	NELAC Accredited	Result	Qual	MRL	Units	Dilution Factor	Date Analyzed
<i>pH in Solid by EPA 9045C</i>							<i>Analyst: JKT</i>
pH	A	7.46		0.1	pH Units	1	2/13/12 5:02:00 PM

Qualifiers:	ND - Not Detected at the Reporting Limit	S - Spike Recovery outside accepted recovery limits
	J - Analyte detected below quantitation limits	R - RPD outside accepted recovery limits
	B - Analyte detected in the associated Method Blank	E - Value above quantitation range
	* - Value exceeds Maximum Contaminant Level	MRL - Minimum Reporting Limit

Neilson Research Corporation

245 South Grape Street, Medford, Oregon 97501 541-770-5678 Fax 541-770-2901

Analysis Report

ORELAP 100016
EPA OR00028

Ashland Gun Club
PO Box 953
Ashland, OR 97520
Client Sample ID: Shotgun - 01
Sample Location:
Project: Soil pH Testing

Lab Order: 1202338
NRC Sample ID 1202338-02
Collection Date: 2/13/12 10:00:00 AM
Received Date: 2/13/12 12:40:00 PM
Reported Date: 2/16/12 10:50:10 AM
Matrix: Solid

ANALYTICAL RESULTS

Analyses	NELAC Accredited	Result	Qual	MRL	Units	Dilution Factor	Date Analyzed
pH In Solid by EPA 9045C							Analyst: JKT
pH	A	7.06		0.1	pH Units	1	2/13/12 5:02:00 PM

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits
J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank E - Value above quantitation range
* - Value exceeds Maximum Contaminant Level MRL - Minimum Reporting Limit

Neilson Research Corporation

245 South Grape Street, Medford, Oregon 97501 541-770-5678 Fax 541-770-2901

Analysis Report

ORELAP 100016
EPA OR00028

Ashland Gun Club
PO Box 953
Ashland, OR 97520
Client Sample ID: Shotgun - 02
Sample Location:
Project: Soil pH Testing

Lab Order: 1202338
NRC Sample ID 1202338-03
Collection Date: 2/13/12 10:00:00 AM
Received Date: 2/13/12 12:40:00 PM
Reported Date: 2/16/12 10:50:10 AM
Matrix: Solid

ANALYTICAL RESULTS

Analyses	NELAC Accredited	Result	Qual	MRL	Units	Dilution Factor	Date Analyzed
pH in Solid by EPA 9045C							Analyst: JKT
pH	A	7.78		0.1	pH Units	1	2/13/12 5:02:00 PM

Qualifiers:

ND - Not Detected at the Reporting Limit

S - Spike Recovery outside accepted recovery limits

J - Analyte detected below quantitation limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

E - Value above quantitation range

* - Value exceeds Maximum Contaminant Level

MRL - Minimum Reporting Limit

3

Neilson Research Corporation

245 South Grape Street, Medford, Oregon 97501 541-770-5678 Fax 541-770-2901

Analysis Report

ORELAP 100016
EPA OR00026

Ashland Gun Club
PO Box 953
Ashland, OR 97520
Client Sample ID: Pistol - 01
Sample Location:
Project: Soil pH Testing

Lab Order: 1202338
NRC Sample ID 1202338-04
Collection Date: 2/13/12 10:00:00 AM
Received Date: 2/13/12 12:40:00 PM
Reported Date: 2/16/12 10:50:10 AM
Matrix: Solid

ANALYTICAL RESULTS

Analyses	NELAC Accredited	Result	Qual	MRL	Units	Dilution Factor	Date Analyzed
pH in Solid by EPA 9045C							Analyst: JKT
pH	A	7.54		0.1	pH Units	1	2/13/12 5:02:00 PM

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits
J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank E - Value above quantitation range
* - Value exceeds Maximum Contaminant Level MRL - Minimum Reporting Limit

Neilson Research Corporation

245 South Grape Street, Medford, Oregon 97501 541-770-5678 Fax 541-770-2901

Analysis Report

ORELAP 100016
EPA OR00028

Ashland Gun Club
PO Box 953
Ashland, OR 97520
Client Sample ID: Pistol - 02
Sample Location:
Project: Soil pH Testing

Lab Order: 1202338
NRC Sample ID 1202338-05
Collection Date: 2/13/12 10:00:00 AM
Received Date: 2/13/12 12:40:00 PM
Reported Date: 2/16/12 10:50:10 AM
Matrix: Solid

ANALYTICAL RESULTS

Analyses	NELAC Accredited	Result	Qual	MRL	Units	Dilution Factor	Date Analyzed
<i>pH In Solid by EPA 9045C</i>							<i>Analyst: JKT</i>
pH	A	7.13		0.1	pH Units	1	2/13/12 5:02:00 PM

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits
J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank E - Value above quantitation range
* - Value exceeds Maximum Contaminant Level MRL - Minimum Reporting Limit

Neilson Research Corporation

245 South Grape Street, Medford, Oregon 97501 541-770-5678 Fax 541-770-2901

Analysis Report

ORELAP 100016
EPA OR00023

Ashland Gun Club
PO Box 953
Ashland, OR 97520
Client Sample ID: Enclosed 50
Sample Location:
Project: Soil pH Testing

Lab Order: 1202338
NRC Sample ID 1202338-06
Collection Date: 2/13/12 10:00:00 AM
Received Date: 2/13/12 12:40:00 PM
Reported Date: 2/16/12 10:50:10 AM
Matrix:

ANALYTICAL RESULTS

Analyses	NELAC Accredited	Result	Qual	MRL	Units	Dilution Factor	Date Analyzed
pH In Solid by EPA 9045C							Analyst: JKT
pH	A	6.93		0.1	pH Units	1	2/13/12 5:02:00 PM

Qualifiers:

ND - Not Detected at the Reporting Limit

I - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

MRL - Minimum Reporting Limit

6

Neilson Research Corporation

245 South Grape Street, Medford, Oregon 97501 541-770-5678 Fax 541-770-2901

Analysis Report

ORELAP 100016
EPA OR00028

Ashland Gun Club
PO Box 953
Ashland, OR 97520
Client Sample ID: 100
Sample Location:
Project: Soil pH Testing

Lab Order: 1202338
NRC Sample ID 1202338-07
Collection Date: 2/13/12 10:00:00 AM
Received Date: 2/13/12 12:40:00 PM
Reported Date: 2/16/12 10:50:10 AM
Matrix: Solid

ANALYTICAL RESULTS

Analyses	NELAC Accredited	Result	Qual	MRL	Units	Dilution Factor	Date Analyzed
pH in Solid by EPA 9045C							Analyst: JKT
pH	A	6.64		0.1	pH Units	1	2/13/12 5:02:00 PM

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits
J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank E - Value above quantitation range
* - Value exceeds Maximum Contaminant Level MRL - Minimum Reporting Limit

Neilson Research Corporation

245 South Grape Street, Medford, Oregon 97501 541-770-5678 Fax 541-770-2901

Analysis Report

ORELAP 100016
EPA OR00028

Ashland Gun Club
PO Box 953
Ashland, OR 97520
Client Sample ID: 200
Sample Location:
Project: Soil pH Testing

Lab Order: 1202338
NRC Sample ID 1202338-08
Collection Date: 2/13/12 10:00:00 AM
Received Date: 2/13/12 12:40:00 PM
Reported Date: 2/16/12 10:50:10 AM
Matrix: Solid

ANALYTICAL RESULTS

Analyses	NELAC Accredited	Result	Qual	MRL	Units	Dilution Factor	Date Analyzed
<i>pH in Solid by EPA 9045C</i>							<i>Analyst: JKT</i>
pH	A	7.05		0.1	pH Units	1	2/13/12 5:02:00 PM

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits
 J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank E - Value above quantitation range
 * - Value exceeds Maximum Contaminant Level MRL - Minimum Reporting Limit

Neilson Research Corporation

245 South Grape Street, Medford, Oregon 97501 541-770-5678 Fax 541-770-2901

Analysis Report

ORELAP 100010
EPA OR00028

Ashland Gun Club
PO Box 953
Ashland, OR 97520
Client Sample ID: 300
Sample Location:
Project: Soil pH Testing

Lab Order: 1202338
NRC Sample ID 1202338-09
Collection Date: 2/13/12 10:00:00 AM
Received Date: 2/13/12 12:40:00 PM
Reported Date: 2/16/12 10:50:10 AM
Matrix: Solid

ANALYTICAL RESULTS

Analyses	NELAC Accredited	Result	Qual	MRL	Units	Dilution Factor	Date Analyzed
pH in Solid by EPA 9045C							Analyst: JKT
pH	A	7.27		0.1	pH Units	1	2/13/12 5:02:00 PM

Qualifiers:

ND - Not Detected at the Reporting Limit

S - Spike Recovery outside accepted recovery limits

J - Analyte detected below quantitation limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

E - Value above quantitation range

* - Value exceeds Maximum Contaminant Level

MRL - Minimum Reporting Limit

9

CLIENT: Ashland Gun Club
 Work Order: 1202338
 Project: Soil pH Testing

ANALYTICAL QC SUMMARY REPORT

TestCode: PH_S

Sample ID: LCS	SampType: LCS	TestCode: PH_S	Units: pH Units	Prep Date:	RunNo: 60179						
Client ID: ZZZZ	Batch ID: R60179	TestNo: EPA 9045C		Analysis Date: 2/13/12	SeqNo: 896416						
Analyte	Result	MRL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	6.890	0.100	6.86	0	100	97.1	102.9				

Sample ID: 1202338-01ADUP	SampType: DUP	TestCode: PH_S	Units: pH Units	Prep Date:	RunNo: 60179						
Client ID: CCW/APD	Batch ID: R60179	TestNo: EPA 9045C		Analysis Date: 2/13/12	SeqNo: 896407						
Analyte	Result	MRL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	7.510	0.100						7.46	0.668	10	

NRC - Page 12 of 13

Qualifiers: E Value above quantitation range H Holding times for preparation or analysis exceeded J Analyte detected below quantitation limits
 ND Not Detected at the Minimum Reporting Limit R RPD outside accepted recovery limits S Spike Recovery outside accepted recovery limits

CLIENT: Ashland Gun Club
 Work Order: 1202338
 Project: Soil pH Testing

ANALYTICAL QC SUMMARY REPORT

TestCode: PH_S

Sample ID: LCS	SampType: LCS	TestCode: PH_S	Units: pH Units	Prep Date:	RunNo: 60179						
Client ID: ZZZZZ	Batch ID: R60179	TestNo: EPA 9045C		Analysis Date: 2/13/12	SeqNo: 896416						
Analyte	Result	MRL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	6.890	0.100	6.86	0	100	97.1	102.9				

Sample ID: 1202338-01ADUP	SampType: DUP	TestCode: PH_S	Units: pH Units	Prep Date:	RunNo: 60179						
Client ID: CCW/APD	Batch ID: R60179	TestNo: EPA 9045C		Analysis Date: 2/13/12	SeqNo: 896407						
Analyte	Result	MRL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	7.510	0.100						7.46	0.668	10	

NRC - Page 12 of 13

Qualifiers: E Value above quantitation range H Holding times for preparation or analysis exceeded J Analyte detected below quantitation limits
 ND Not Detected at the Minimum Reporting Limit R RPD outside accepted recovery limits S Spike Recovery outside accepted recovery limits



APPENDIX E

Lead Recycling Receipts

NORTHWEST SHOT MANUFACTURING, INC.
1526 Camp Baker Road
Phoenix, OR 97535
541-535-3404

Shipping Date:		9/20/11
Shipped To:		
Quantity	Price	
Received from Ashland Gun Club	4215 of Lead	Larry Goldman

NORTHWEST SHOT MANUFACTURING, INC.
1526 Camp Baker Road
Phoenix, OR 97535
541-535-3404

Shipping Date:		Received from Ashland Gun Club
Shipped To:		4/16/09
Quantity	Price	
843 pound	BULLET Lead	Recovered from Shooting Range
		Larry Goldman CEO.



APPENDIX F

Recommended Safety Modifications

Safety Modifications

The Ashland Gun Club (AGC) requires safety modifications and modifications to prevent lead shot accumulation in wetlands and waters. The range modifications include select wetland fills, a shot curtain and wood safety fence, and berm enhancements. The proposed modifications are recommended in the ACG Environmental Stewardship Plan (ESP), improving compliance at the AGC facility. The design elements for the select wetland fills, shot curtain and wood fence, and berm enhancements are described below and graphically depicted on Figure F-2: Proposed Wetland Fill Areas.

Select Wetland Fills

Areas delineated as wetlands and waters potentially regulated by the State of Oregon and the United States are present at AGC, as shown on Figure F-1. Preventing lead shot accumulation in wetlands and waters is required by state and federal law. The wetland areas requiring fill to prevent lead shot accumulation were determined by comparing the wetland boundaries with the Trap and Skeet Range shot fall zone. Wetlands 2, 4, 5, and 6 are located wholly within or partially within the shot fall zone of the Trap and Skeet Range. The wetland areas requiring fill are shown on Figure F-2 and estimated wetland fill areas are provided in Table F-1, below.

Table F-1: Proposed Wetland Fill Areas

Wetland ID	Property Owner	Area ft ²
2	AGC	1,725
4	AGC	14,176
5	AGC	787
6	AGC	1041
Total Area:		17,729 ft² (0.41 acres)

The existing lead shot will be removed from the wetland areas requiring fill. The lead shot will be removed by excavating the top approximately 3 inches of soil from the wetland areas. The excavated soil will be stockpiled on the AGC property and soil samples will be collected to determine if the soil can be reused to improve the earthen berms at the other AGC range or if disposal of the soil is required. The excavated soil is range related material, is not abandoned, and lead shot is expected in the soil. Following regulations specified in the Military Munitions Rule¹ and the Environmental Protection Agency Best Management Practices for Lead at Outdoor Shooting Ranges², the soil from berms and shot fall areas may be moved to another area of the range for

¹ U.S. Environmental Protection Agency (EPA), 1997. Military Munitions Rule: Hazardous Waste Identification and Management; Explosives Emergencies; Manifest Exemption for Transport of Hazardous Waste on Right-of-Ways on Contiguous Properties (62 FR 6622)

other uses, including addressing potential environmental impacts (e.g., runoff), changing the range to address safety concerns, changing the range to allow different types of shooting activities, or change the range to add or remove shooting positions. The Oregon Department of Environmental Quality (DEQ) adopted the Military Munitions Rule with amendments defined in the Hazardous Waste Regulations of the Oregon Administrative Rules (OARs), which can be found in Title 340, Division 100 through Division 105.

Because the wetland fill areas are located mostly outside of the shot fall zones, sufficient lead shot is not expected on the ground surface at a density to allow for lead shot separation and recycling. The wetland fill areas are located primarily outside of the shot fall zones, lead concentrations in the excavated soil is not expected to exceed Oregon Department of Environmental Quality (DEQ) Risk Based Concentrations (RBCs) for lead protective of industrial human health receptors, at 800 mg/kg. Residential receptors are not expected in the shot fall zone at the AGC. If the analytical results from excavated soil samples indicate the soil lead concentration is less than 800 mg/kg, the soil will be reused as growth media for the wetland mitigation or used to improve the earthen berms at the other AGC ranges. If the soil lead concentration in the excavated soil is greater than 800 mg/kg, the soil will be further evaluated for offsite disposal at an approved landfill.

Once soil removal is complete, a base layer of aggregate material would be added to allow for the passage of existing hydrology from onsite springs. A second layer of finer aggregate material would be overlain by a permeable barrier to prevent fine soil from settling into the coarse aggregate material. Once the filled area has been smoothed and packed to prevent further settling, a native seed mix consisting primarily of grasses would be added to stabilize soils and prevent erosion. A top cover of certified weed free straw or hay would be added to prevent seeds from blowing or washing away prior to germination.

The proposed wetland fill will require a Joint Permit Application to the Oregon Department of State Lands (ODSL). This approval would include a concurrent application for a 404 permit from the US Army Corps of Engineers (USACOE). This would need to be acquired by the Club prior to any construction activities. Any proposed fill on the Miller Trust property would require agreement by the property owner and a permit from the ODSL/USACOE.

² U.S. Environmental Protection Agency (EPA), 2005. Best Management Practices at Outdoor Shooting Ranges. EPA Region 2, EPA-902-B-01-001. January 2001, revised June 2005.

Shot Curtain and Wood Safety Fence

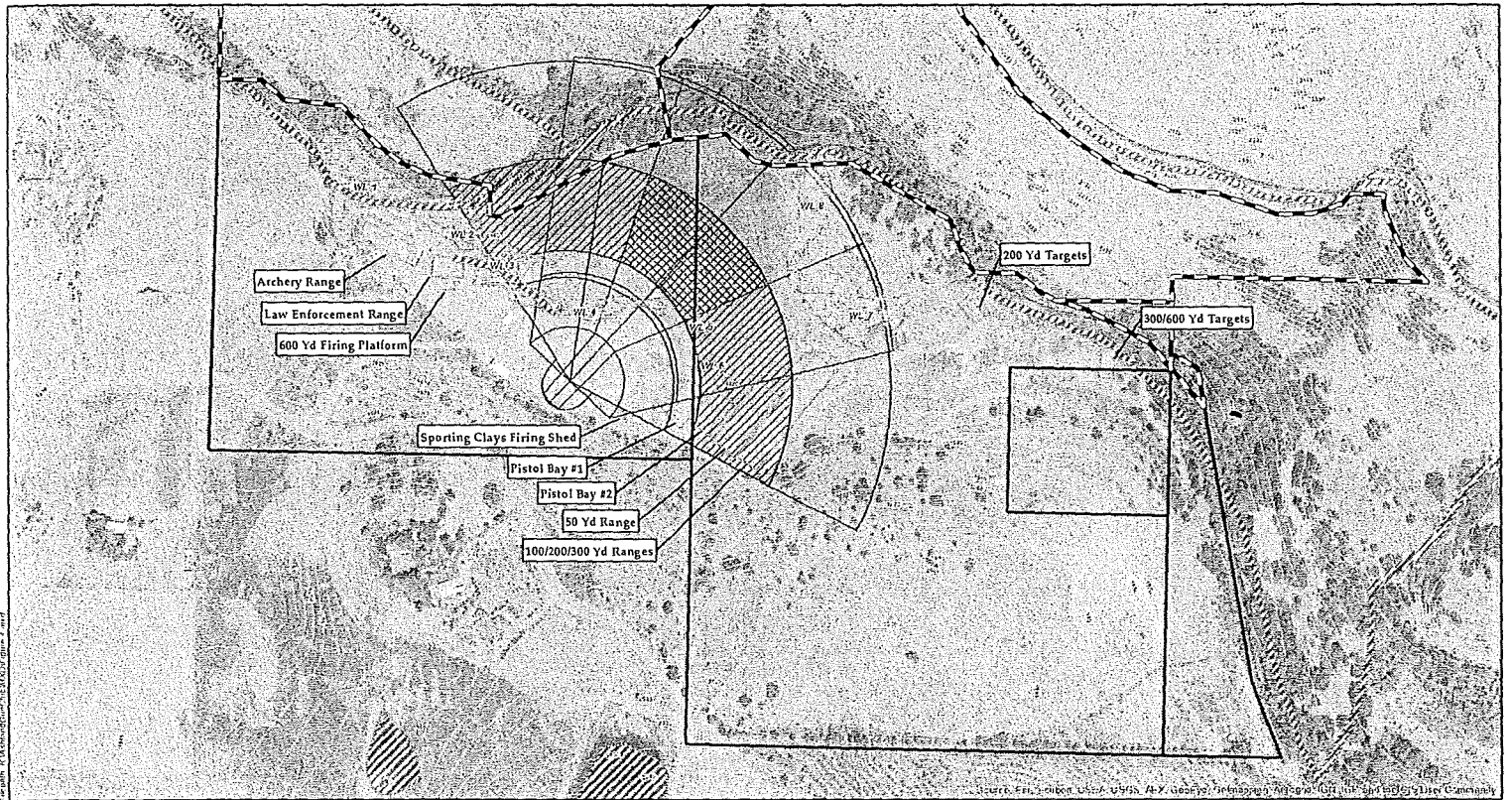
Lead shot can potentially accumulate in Wetlands 2 and 3 and in the tributary of Emigrant Creek on the northern edge of the skeet range shot fall area, as shown on Figure F-1. A shot curtain and wooden safety fence are recommended to prevent lead shot accumulation in the wetlands and creek. The shot curtain and fence would be located approximately 240-feet from the center shooting station at the Trap and Skeet Range. The shot curtain and fence layout are shown on Figure F-2 and F-4. The shot curtains will be suspended from the poles, allowing the shot curtains to be raised during range operation and lowered when the range is not in use. Each curtain panel is comprised of four 8-foot high x 45-foot wide panels. An example shot curtain is depicted on Figure F-2 and Figure F-3.

The proposed shot curtain would cross Wetland 4, at a minimum distance from the center shooting position of 240 feet. Installation of the shot curtain would prevent lead shot accumulation down range, and portions of wetland 4, all of wetland 3, and portions of wetland 2, to remain unfilled. A wood safety fence is proposed to prevent low angle shots from passing under the curtain. The wood safety fence would be constructed approximately 5-feet behind the shot curtain (to allow room for raising and lowering the curtain and maintenance). A 5 foot wide area of fill behind the wood fence is also proposed, for maintenance of the fence and to provide access to the entire facility. Lead shot accumulating below the shot curtain and fence can be collected for recycling.

Range Berm Enhancement

The earthen berm at the Law Enforcement Range needs to be raised to improve range safety. The recommended minimum height for side berms is 8 feet and the minimum recommended height of the bullet impact berm is 12 feet. Earthen berms are typically designed with a 2:1 (horizontal: vertical) slope on the exterior faces and as steep as 1.5:1 on interior faces, if the material can stand at a 1.5:1 slope. The ballistic grade sand will hold a 1.5:1 slope in the bullet impact area. Earthen berms are generally seeded with drought resistant, native, grasses to reduce erosion.

Using the design criteria of a 2:1 slope, the side berms, with a height of 8-feet and berm top width of 4-feet, would require a 36-foot base. This distance would be measured from the interior existing toe-of-slope location. The impact berm, with a height of 12-feet with a 4-foot top width, would require a 52-foot base, also measured from the existing interior toe-of-slope location. Portions of wetland 2 are located within the proposed berm enhancement footprint, as shown on Figure F-2, and will be filled.



- Legend**
- Aerial Parcel Boundaries
 - Parcel Boundaries
 - Oregon Wetlands Explorer Data
 - Non-Verified Deeded Wetlands
 - Sheet
 - Trap
 - Range Boundaries
 - Trap Shot Fall Zone
 - Sheet Shot Fall Zone
 - Emigrant Creek, other water

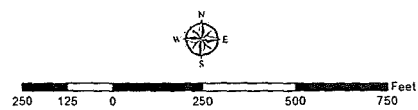


FIGURE F-1:
Wetlands
 Environmental Stewardship Plan
 Ashland Gun Club
 555 Emigrant Creek Road, Ashland, Oregon
 January 2013



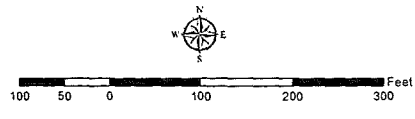
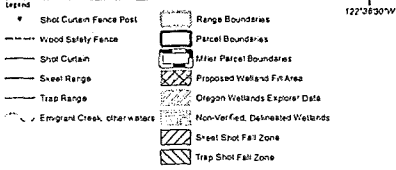
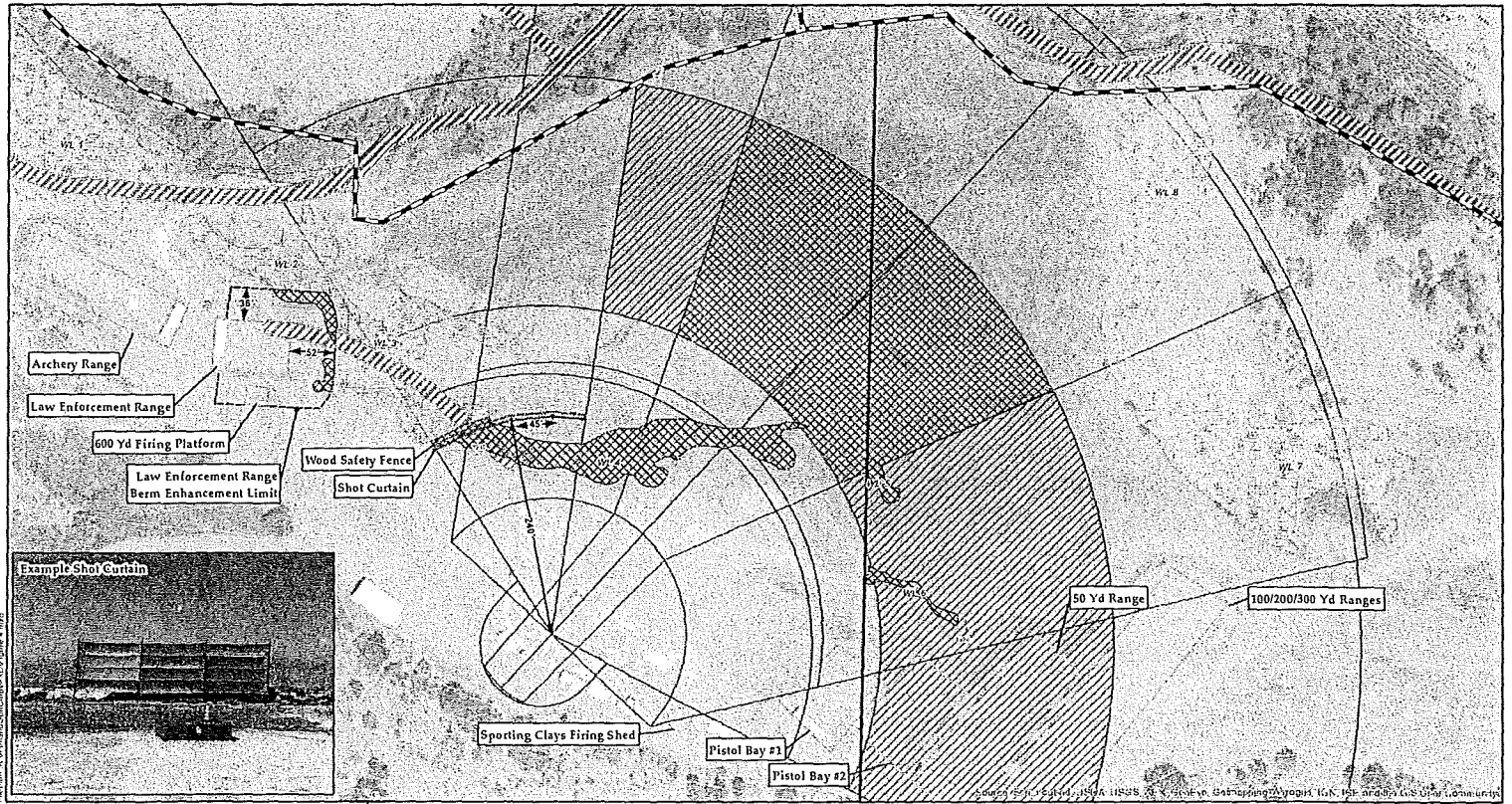


FIGURE F-2:
Proposed Wetland Fill Areas

Environmental Stewardship Plan
 Ashland Gun Club
 555 Emigrant Creek Road, Ashland, Oregon

URS

January 2013

Appendix B

City of Ashland Property Survey Map

PROPERTY LINE ADJUSTMENT

JACKSON COUNTY FILE NO. SUB2012-00069_PLA
AND FILE NO. SUB2013-00009_PLA

JACKSON COUNTY DEVELOPMENT SERVICES
APPROVAL:

BY: *[Signature]*
DEVELOPMENT SERVICES

April 15, 2014
DATE

MAP OF SURVEY
PROPERTY LINE ADJUSTMENT

FOR
CITY OF ASHLAND
20 EAST MAIN STREET
ASHLAND, OREGON 97520
AND
JAMES C. MILLER AND CHARLENE M. MILLER
975 DEAD INDIAN MEMORIAL ROAD
ASHLAND, OREGON 97520

LOCATED IN:
THE NW 1/4 AND THE NE 1/4 AND THE SE 1/4 OF SECTION 12
TOWNSHIP 39 SOUTH, RANGE 1 EAST,
WILLAMETTE MERIDIAN, JACKSON COUNTY, OREGON
AND:
THE SW 1/4 OF SECTION 7
TOWNSHIP 39 SOUTH, RANGE 2 EAST,
WILLAMETTE MERIDIAN, JACKSON COUNTY, OREGON

LINE	LENGTH	BEARING
L1	56.10	S73°19'00"E
L2	108.80	S78°13'24"E
L3	91.43	S28°15'00"E
L4	43.90	N74°10'00"E
L5	161.18	S73°22'57"W
L6	31.94	N83°25'39"W
L7	83.44	N00°13'19"E
L8	172.81	N81°31'05"W
L9	81.92	N67°37'29"W
L10	86.23	N54°47'28"W
L11	148.59	N43°27'39"W
L12	161.87	N85°03'43"W
L13	84.10	N50°12'38"W
L14	123.37	N17°02'00"E
L15	118.46	N29°13'20"E
L16	169.24	N36°50'50"E
L17	192.44	N57°14'20"W
L18	159.38	S78°12'12"E
L19	140.52	S88°16'55"E
L20	145.60	N33°35'20"E
L21	120.68	N20°41'13"E
L22	50.93	N61°09'37"W
L23	75.79	N50°31'15"W
L24	116.51	N89°47'06"W
L25	77.58	N31°07'09"W
L26	81.60	N20°16'41"W
L27	204.08	S86°34'46"W
L28	62.44	N77°34'20"W
L29	106.82	N48°12'43"W
L30	158.67	S82°55'40"W
L31	143.63	N00°13'26"E
L32	82.72	S63°07'41"E
L33	111.26	S10°37'22"E
L34	264.22	S63°07'41"E
L35	130.95	S42°20'35"E
L36	91.58	N74°32'03"W
L37	79.97	N82°55'40"E
L38	78.70	N82°55'40"E
L39	73.37	S00°11'51"W
L40	103.02	S89°47'06"E
L41	86.14	S89°47'06"E

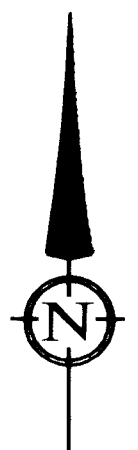
CURVE	RADIUS	LENGTH	DELTA	CHORD BEARING	CHORD LENGTH
CT	869.40'	428.27'	287.3°28'	N51°06'36"W	423.96'

LEGEND

- LINES OF ADJUSTED PROPERTIES
- LINES PRIOR TO ADJUSTMENT, UNLESS OTHERWISE NOTED
- - - GOVERNMENT LOT, DLC, SECTION LINES
- APPROXIMATE CENTERLINE OF EMIGRANT CREEK
- x FENCE
- FOUND CITY OF ASHLAND BRASS CAP AS NOTED (FOR MARKINGS SEE FS 13365)
- FOUND 5/8" IRON PIN W/ALUMINUM CAP MARKED: CITY OF ASHLAND, LS 759. UNLESS OTHERWISE NOTED
- SET 5/8" X 24" IRON PIN W/CAP MARKED: OSMUS PLS 2464
- FS FILED SURVEY, JACKSON COUNTY, OREGON
- OR OFFICIAL RECORDS, JACKSON COUNTY, OREGON
- VOL, PG. DEED RECORDS, JACKSON COUNTY, OREGON
- P.O.B. LEGAL DESCRIPTION POINT OF BEGINNING
- DLC DONATION LAND CLAIM

REFERENCES

- DR DEED RECORD INFORMATION
- R1 RECORD BEARINGS/DISTANCES FROM FS 13365



SCALE: 1" = 300'
DATE OF SURVEY: FEBRUARY 13, 2013

BASIS OF BEARINGS
THE NORTH LINE OF GOVERNMENT LOT 8 IN SECTION 12, TOWNSHIP 39 SOUTH, RANGE 1 EAST, AS SHOWN ON FILED SURVEY NO. 13365

FILED
DATE 4-15-14 BY *[Signature]*
This survey consists of:
1 sheet(s) Map
2 page(s) Narrative
JACKSON COUNTY SURVEYOR

39 2E 07, TL 400, 500, 800
39 1E 12, TL 100, 400

TERRASURVEY, INC.
PROFESSIONAL LAND SURVEYORS

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ASHLAND, OREGON 97520
(541) 482-6474
terrain@bisp.net
www.terrasurveyinc.com

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LAND SURVEYOR
[Signature]
OREGON
JULY 25, 1890
STUART M. OSMUS
No. 2464
Expires 12-31-14

Appendix C

Wetland Delineation Documents

WETLAND DELINEATION / DETERMINATION REPORT COVER FORM

This form must be included with any wetland delineation report submitted to the Department of State Lands for review and approval. A wetland delineation report submittal is not "complete" unless the fully completed and signed report cover form and the required fee are submitted. Attach the form to the front of an unbound report and submit to: Oregon Department of State Lands, 775 Summer Street NE, Suite 100, Salem, OR 97301-1279

Mail a copy of the completed form with payment of the required report review fee to: Oregon Department of State Lands, P.O. Box 4395, Unit 18, Portland, OR 97208-4395.

For new credit card payment option, see DSL web site.

<input type="checkbox"/> Applicant <input checked="" type="checkbox"/> Owner Name, Firm and Address: City of Ashland 20 East Main Street Ashland, OR 97520 Contact: Mike Morrison	Business phone # 541-552-2412 Mobile phone # (optional) FAX # (541) 488-6006 E-mail: morrism@ashland.or.us
<input checked="" type="checkbox"/> Authorized Legal Agent, Name and Address: Mike Morrison	Business phone # (541) 552-2325 FAX # (541) 488-6006 Mobile phone # (541) 951-0355 E-mail: morrism@ashland.or.us
I either own the property described below or I have legal authority to allow access to the property. I authorize the Department to access the property for the purpose of confirming the information in the report, after prior notification to the primary contact. Typed/Printed Name: Mike Morrison Signature: Date: 10/28/2014 Special instructions regarding site access: Contact Consultant 48 hrs in advance of visit.	

Project and Site Information (for latitude & longitude, use centroid of site or start & end points of linear project)

Project Name: Lithia Springs Property	Latitude: 42.1888599	Longitude: -122.640673
Proposed Use: Ashland Gun Club	Tax Map # 391E12400 and 392E07800	
Project Street Address (or other descriptive location): 555 Emigrant Creek Road	Township 39S Range 1E Section 12 QQ	
City: Ashland County: Jackson	Tax Lot (s) 400	
	Waterway: Emigrant Creek River Mile: 1.5	
	NWI Quad(s): Ashland 42122b6	

Wetland Delineation Information

Wetland Consultant Name, Firm and Address: Donald K. Martin Stantec Consulting Services, Inc 1911 United Way; Medford, OR 97504	Phone # 541-770-6977 Mobile phone # 541-510-9700 FAX # 541-770-7019 E-mail: don.martin@stantec.com
The information and conclusions on this form and in the attached report are true and correct to the best of my knowledge. Consultant Signature: Date: October 28, 2014	
Primary Contact for report review and site access is <input checked="" type="checkbox"/> Consultant <input type="checkbox"/> Applicant/Owner <input type="checkbox"/> Authorized Agent	
Wetland/Waters Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Study Area size: 9 Total Wetland Acreage: 2.32

Check Box Below if Applicable:

Fees:

<input type="checkbox"/> R-F permit application submitted <input type="checkbox"/> Mitigation bank site <input type="checkbox"/> Wetland restoration/enhancement project (not mitigation) <input type="checkbox"/> Industrial Land Certification Program Site	<input type="checkbox"/> Fee payment submitted \$ _____ <input type="checkbox"/> Fee (\$100) for resubmittal of rejected report Name of Payor: City of Ashland
Other Information: Y N Has previous delineation/application been made on parcel? <input checked="" type="checkbox"/> <input type="checkbox"/> If known, previous DSL # WD2011-0253 withdraw USCOE 2011-421 (concurrence)	
Does LWI, if any, show wetland or waters on parcel? <input type="checkbox"/> <input checked="" type="checkbox"/>	

For Office Use Only

DSL Reviewer: _____	Fee Paid Date: ____ / ____ / ____	DSL WD # _____
Date Delineation Received: ____ / ____ / ____	DSL Project # _____	DSL Site # _____
Scanned: <input type="checkbox"/> Final Scan: <input type="checkbox"/>	DSL WN # _____	DSL App. # _____

Resubmission

**Delineation of Waters of the
United States, including Wetlands**
Lithia Springs Property

City of Ashland
Jackson County, Oregon



Prepared for:

City of Ashland
20 East Main Street
Ashland, Oregon 97520

Prepared by:

Stantec Consulting Services Inc.
(formerly JBR Environmental Consultants, Inc.)
1191 United Way
Medford, Oregon 97504
Phone: 541.770.6977

October 28, 2014

Project No: 203714196

Sign-off Sheet

October 28, 2014



Please note that effective May 9, 2014, the employees of **JBR Environmental Consultants, Inc. (JBR)** have joined **Stantec Consulting Services Inc. (Stantec)**. You will continue to see the same people, doing business with you the same way, and with the same goal: to safely deliver the highest level of service while always striving to exceed your expectations.

This document entitled, ***Delineation of Waters of the United States, including Wetlands***, was prepared by Stantec on behalf of the **City of Ashland (City)** for specific application to Lithia Springs Property in Ashland, Oregon. Services performed by JBR (now Stantec) for this project were conducted in accordance with the Environmental Services Contract between the City and Stantec. Any reliance on this document by any third party is strictly prohibited. The material in it reflects Stantec's professional judgment in light of the scope, schedule and other limitations stated in the document and in the contract between Stantec and the City. The opinions in the document are based on conditions and information existing at the time the document was published and do not take into account any subsequent changes. In preparing the document, Stantec did not verify information supplied to it by others. Any use which a third party makes of this document is the responsibility of such third party. Such third party agrees that Stantec shall not be responsible for costs or damages of any kind, if any, suffered by it or any other third party as a result of decisions made or actions taken based on this document.

This report documents the investigation, best professional judgment and conclusions of the investigator. It is correct and complete to the best of my 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 Oregon Administrative Rules 141-090-0005 through 141-090-0055.

These findings should be considered preliminary until the United States Army Corps of Engineer makes a final approved determination in coordination with the United States Environmental Protection Agency.

This document was prepared under the supervision and direction of the key staff identified below.

A handwritten signature in black ink, appearing to be "DM", written over a horizontal line.

Prepared by: **Donald Martin, PWS**
Environmental Scientist

A handwritten signature in black ink, appearing to be "Nancy Kang", written over a horizontal line.

Reviewed by: **Nancy Kang**
Senior Environmental Scientist

A handwritten signature in blue ink, appearing to be "Debra Lemke", written over a horizontal line.

Reviewed by: **Debra Lemke, PWS, CPESC**
Project Manager, Technical Reviewer

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Abbreviations & Acronyms

1987 Manual	<i>Technical Report Y-87-1, Corps of Engineers Wetland Delineation Manual (January 1987)</i>
AMSL	above mean sea level
BC Level II ERA	<i>Level II Screening Level Ecological Risk Assessment Report (prepared by Brown and Caldwell)</i>
bgs	below ground surface
CaCO ₃	calcium carbonate
CFR	Code of Federal Regulation
City	City of Ashland
CO ₂	carbon dioxide
DEQ	Oregon Department of Environmental Quality
DSL	Oregon Department of State Lands
ECSI	Environmental Cleanup Site Information
EPA	United States Environmental Protection Agency
FAC	Facultative
FACU	Facultative Upland
FACW	Facultative Wetland
FEMA	Federal Emergency Management Agency
GIS	geographic information system
GPS	global positioning system
Gun Club	Ashland Gun Club
JBR	JBR Environmental Consultants, Inc.
NCDC	National Climate Data Center
NI	No Indicator
NRCS	Natural Resources Conservation Service
NRI	Natural Resource Inventories
NWI	National Wetland Inventory
OAR	Oregon Administrative Rules
OBL	Obligate Wetland
ODOT	Oregon Department of Transportation
OHWM	Ordinary High Water Mark
OSR	Open Space Reserve
PMCD	Preliminary Monthly Climate Data
Stantec	Stantec Consulting Services Inc.
SWANCC	Solid Waste Agency of Northern Cook County
TNW	Traditionally Navigable Waters
UPL	Obligate Upland
USACE	United States Army Corps of Engineer
USGS	United States Geological Survey
Work Plan	Site Characterization Work Plan
WOUS	Waters of the United States

1.0 Landscape Setting & Land Use

1.1 Location & Legal Description

The Study Area is situated at 555 Emigrant Creek Road, Ashland Oregon. (**Appendix A, Figure 1**). The Lithia Springs Property is owned by the City of Ashland (City), but lays approximately $\frac{3}{4}$ of a mile outside the city limits. The northern portion of the Lithia Springs Property (Miller Trust Property) was recently purchased by the City and has been incorporated into the Study Area. The majority of the Study Area is within tax lot number 400 in (Willamette Meridian) Township 39 South, Range 1 East, Section 12 and a part of tax lot number 800 in (Willamette Meridian) Township 39 South, Range 2 East, Section 7, in Jackson County, Oregon (**Appendix A, Figure 2**). Access to the property is from Ashland Street (Hwy 66) east from I-5, then turning left (north) on Dead Indian Memorial Road. Turn right (east) on Emigrant Creek Road for 4,500 feet to a gravel road with a security gate on the left. The Study Area is the firing range at the bottom of the hill, which is currently being leased by the Ashland Gun Club, and the adjacent parcel to the north of the shotgun range, which was formerly owned by the Miller Trust.

1.2 Study Area & Vicinity General Characteristics

The Study Area is approximately 11.5 acres in size. The size and geometry of the Study Area was determined in general by the skeet shooting range shotfall area and directly connected waters and associated riparian areas for jurisdictional determination purposes. The Study Area lies on a relatively level alluvial terrace along the south side of Emigrant Creek and contains a part of the mineral springs complex known as Lithia Springs. The south portion of the Lithia Springs Property rises steeply to Emigrant Creek Road. According to the Jackson County Planning Department, the Study Area is zoned as Open Space Reserve (OSR), which is intended to conserve forest lands. The Study Area is predominantly clear of woody vegetation except for riparian areas. Most areas are kept mowed and free of shrubs. Adjacent properties to the east and west rise in elevation forming a basin around the Study Area.

1.3 Current Use of the Study Area

The entire Lithia Springs Property is approximately 66 acres. Most of the area has been cleared and has been used under lease by the Ashland Gun Club for target practice since 1968. In, and adjacent to the Study Area, is a network of soil berms surrounding firing ranges. The slopes to the south of the Study Area are used for archery purposes.

1.4 Past Uses of the Study Area

The mineral springs have been used by individuals and commercial interests for approximately 100 years for their perceived health benefits. In the late 1940s carbon dioxide from the springs was used to make dry ice in a process that involved the creation of several settling ponds in the project area. In the 1960s, portions of the Study Area were utilized for motocross events until the Gun Club acquired the lease in 1968. Over the past 46 years the alluvial terrace was filled and contoured to accommodate firing ranges, including the creation of horseshoe-shaped berms (Aerial Photographs, **Figures 5, 6, and 7**).

Historic vegetation data dating to 1909 shows the Study Area as Oak Savannah (Pacific Northwest Ecosystem Research 2000). This is reflected in a geographic information system (GIS) polygon layer depicting "presettlement" vegetation in Oregon as described by surveyors for the General Land Office (1851–1909), when surveying township and section lines. Most low-elevation sites with arable land were surveyed between 1851 and 1865.

Aerial photographs from 1939, 1952, 1960, 1967, 1971, 1976, 1980, 1985, 1991, 1994, 2001, 2005, 2011 and 2012 were reviewed to determine predominant land use of the Study Area and surrounding lands. Roads and buildings are observed in the springs and wetland areas of the Study Area in the 1939 aerial (**Figure 5**). By the 1960s activity in those areas appears to have ceased and an oval track is observed where the skeet shooting shotfall area is today. From the 1970s to 2001 various site alteration related to the firing ranges are noted. Over the past decade significant changes to the Study Area are not observed.

1.5 Past and Current Uses of the Surrounding Properties

Based on the aerial photographs referred to in **Section 1.4**, all neighboring properties were utilized for agricultural and related residential purposes until the present day.

1.6 Topography & Drainage

The Study Area and immediate vicinity lies in a basin, has a stream terrace landform, and is very gently sloping to the south in stream terrace areas, then rising steeply on the south side of the property. Elevation varies from about 1,895 feet above mean sea level (AMSL) to about 2,025 feet AMSL near Emigrant Creek Road to the south. The Study Area is situated at 1,910 feet AMSL in a Loamy Floodplain physiographic area. Portions of the Study Area bordering Emigrant Creek are within a Special Flood Hazard Zone (100-year flood). The elevation of the streambed drops approximately 15 feet over the 2000-foot reach adjacent to the Study Area. Emigrant Dam and Lake lie about 8 miles upstream (southeast) of the Study Area. Emigrant Lake drains 64 square miles of the north slope of the Siskiyou Mountains west of the Cascade Divide. A substantial portion of that flow is to Emigrant Creek. Greatest inflow into the Emigrant Creek is December through March.

1.7 Geologic & Hydrogeologic Conditions

1.7.1 Geologic Conditions

According to the Soil Survey of Jackson County, Oregon (USDA, NRCS Web Soil Survey) and Hydric Soils of Jackson County, Oregon (USDA, NRCS 1999), soils on the Study Area include Medford Clay loam, gravelly substratum, Camas-Newberg-Evans complex, Brader-Debenger loams, Brader-Debenger, Darrow silty clay loam, and

The Medford Clay loam, gravelly substratum is a very deep, moderately well drained soil on stream terraces, and includes about 20% of Abin, Evans, Newberg, and Camas soils on flood plains, Gregory soils on the lower terraces, and Coleman soils on the higher terraces.

The Camas-Newberg-Evans complex (23A) is found on flood plains, and is composed of 40% Camas, 30% Newberg, and 20% Evans soils, none of which are hydric. The complex also has minor components of Aquolls, Cove and Riverwash, which are hydric. The surface may be gravelly or cobbly.

The Brader-Debenger loams, 1 to 15% slope (17C) are found on knolls and ridges, is composed of about 60% Brader soil and 20% Debenger soil. Included are small areas of Rock Outcrop, Carney, Coker, Darrow, Padigan, Lanfellain, and Ruch soils in various settings.

The Brader-Debenger loams – 15 to 40% slope (17E) are found on knolls and ridges, and are composed of Carney, Coker, Darrow, Padigan, Lanfellain, and Ruch soils in various settings.

The Darrow silty clay loam is moderately deep, moderately well drained soil found on hillslopes and includes small areas of Brader, Debenger, Carney, Coker, Selmac, Cove, Gregory, and Padigan soils in various areas.

1.7.2 Hydrogeologic Conditions

The primary hydrologic input to the palustrine emergent wetlands appear to be the Lithia mineral springs, which percolate up through the soil in various area, and evidenced by the calcite deposits and mineral-cemented gravels found within the Study Area.

Lithia Springs is known for the volumes of carbon dioxide (CO₂) gas that bubbles with the spring water. Deep underground the combination of cold water and dissolved CO₂ (carbonic acid) dissolves calcium carbonate and brings it to the surface. At the surface the water warms and the CO₂ off-gasses, neutralizing the water. This combination makes calcium carbonate (CaCO₃) precipitate into the carbonate mineral as calcite, which cements the cobbles together forming an aquitard.

Several areas within the Study Area contain standing surface water and appear to be fed by seeps and maintained by the cemented gravel and cobble hardpan. Evidence of surface flow from or across upland areas during precipitation events is lacking in most portions of the Study Area. Rainfall appears to percolate into the permeable soils and flow laterally below the surface, reappearing in seeps along the fill/disturbed slopes around the potential wetlands. Two excavated and maintained ditches keep areas near the former bath house foundation and along the access road and parking area drained. Lastly, it appears that there is a shallow groundwater table.

1.8 Wetlands on Adjacent Properties

A visual inspection of lands immediately adjacent to the Study Area on the southeast side of Emigrant Creek was undertaken by walking through and looking for hydrophytic vegetation, drainage patterns, and other indicators of potential wetlands. It appears that mineral spring-fed wetlands may occur to the east of the Study Area, and are a source of hydrology for the southern eastern portion of the Study Area.

2.0 Study Area Alterations

2.1 Grading & Filling

The Study Area has a history that involved disturbances of hydrology, soils, and vegetation, particularly on the alluvial terrace bordering Emigrant Creek. Early resource extraction in the form of mineral water and carbon dioxide left the Study Area with various types of wells, roads, stream re-alignment, filled areas, ditches, and concrete foundations. During the 80 years the City has owned the majority of the Study Area, most of the alluvial terrace has been filled with approximately 33 acres graded for firing ranges including berms up to 20 feet high (**Appendix B, Photo 1**), and cleared shrubby vegetation. Regular maintenance includes mowing range areas and keeping ditches clear of vegetation and graded for drainage. The Study Area still has PVC pipes protruding from the surface in wetland areas. Very little of the original surface remains in the Study Area.

2.2 Vegetation Mowing

The upland slopes of the land surrounding the wetlands are mowed on a regular basis as a requirement for the firing ranges and noxious weed abatement. Mowing tractors do not venture into the wetland areas. The Study Area had been mowed a few days prior to the site visit.

3.0 Precipitation Data & Analysis

3.1 Growing Season

The growing season at Ashland, as reported in the Natural Resources Conservation Service (NRCS) WETS Station: Ashland, OR0304, (Latitude: 4213, Longitude: -12243, Elevation: 1750 feet), is an average of 204 days (**Appendix C**). Fifty percent of the time the growing season (>28°F) will fall between April 10 and November 1. The number of consecutive days within the growing season during which the directly-observed hydrology criteria must be met is 14 days in areas where soil and vegetation parameters are met.

The Preliminary Monthly Climate Data (PMCD) from the Medford weather station, and provided by the National Climate Data Center (NCDC), indicates statistically higher than normal temperatures for the months of April and May resulting in an early onset of the growing season. The February, March, April, and May weather data records an average of 2.8 degrees Fahrenheit warmer temperatures than normal, possibly contributing to advanced growth rates in early (wet) season vegetation.

3.2 Recent Weather

The climatology report is provided by the NCDC for the Weather Service Station: Medford (Latitude 4222, Longitude -12252). A summary of the PMCD for precipitation is provided in **Table 1** below.

Table 1: Monthly Precipitation Summary

Month (2011)	Precipitation Total	Departure from Normal
January	0.78	Lower: -1.66
February	4.55	Higher +2.54
March	3.50	Higher: +1.79
April	0.82	Lower: -0.56
May 1 - 23	0.62	Lower: -0.24

Both April and May received a little less precipitation than normal, and temperatures were a higher than normal. In the 10 days preceding the site visit a total of 0.15 inches of precipitation was recorded, all of it in the day preceding the hydrology measurements.

Actual and average daily and monthly precipitation data are provided in **Appendix C**.

4.0 Methodology

4.1 Pre-Visit Research

Research was conducted prior to the site delineation in order to ascertain likely wetland boundaries. Data reviewed included the Soil Survey of Jackson County, Oregon (USDA, NRCS 1987) maps and soil series descriptions; Medford West (42122c8) 7.5-minute United States Geological Survey (USGS) topographic quadrangle; aerial photographs taken each decade beginning in 1936; Oregon Hydric Soils List; National Wetland Inventory (NWI) (**Appendix A, Figure 4**); Federal Emergency Management Agency (FEMA) Flood Hazard Panel; Medford Local Wetland Inventory; water well log data; NRCS WETS growing season data; and precipitation and climatology data.

4.2 Field Work

The field work was conducted on May 22 and 23, 2014. The wetland delineation was conducted in accordance with the United States Army Corps of Engineers (USACE) routine “on-site” delineation method for study areas less than 5 acres, as contained in Technical Report Y-87-1, Corps of Engineers Wetland Delineation Manual, January 1987 (hereinafter called “the 1987 Manual”), with minor adjustments in procedure to account for local conditions and disturbances as outlined below. The *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region Version 2.0* (USACE 2008) was also used.

Wetlands 2, 3, 4, and 5 were originally delineated in 2011, and the USACE concurred with the findings as shown in **Figure 8**. The DSL also reviewed the report, conducted a site visit, and was about to concur when an issue of land ownership for the Miller Trust Property arose, resulting in a withdrawal of the report until the City could purchase the property. In the present delineation, the DSL requested that we check and update the data from those wetlands, and collect a full set of data for the additional wetlands. Hence, the delineation method for less than 5 acres was used.

Initially the potential wetland boundaries were identified and flagged based on earlier data review, the presence of hydrophytic vegetation, and the area of saturation around Emigrant Creek. A formal USACE delineation was conducted and the preliminary wetland boundary was adjusted accordingly. A survey was conducted for other jurisdictional waters in the Study Area, documenting the Ordinary High Water Mark (OHWM).

All upland areas adjacent to the boundary were characterized by the upland member of paired plots. Twelve sets of paired plots were established along the wetland/upland boundary, and were used to establish the wetland boundary. In addition, two upland plots were established in an area formerly hydrated by irrigation (**Appendix B, Photo 2**).

Data forms are provided in **Appendix D**. The wetland boundary was marked using 30-inch white wire flags at 50-foot intervals and the positions were captured using a Trimble GeoXH global positioning system (GPS) unit, accurate to sub-foot data collection. Pit and boundary line coordinates are saved for future use.

4.3 Soil Data Collection

A Sharpshooter soil shovel was used to advance soil pits in selected locations to a depth of at least 16 inches. A clean section of soil was then extracted from the side of the pit, keeping the strata intact. The soil profile was recorded on the USACE Wetland Determination Data Form – Arid West Region for each plot and examined for hydric soil and wetland hydrology indicators. Soil colors in the pits were determined using the Munsell Soil Color Charts, 2013 version (Munsell Color 2013).

4.4 Vegetation Data Collection

The vegetation plots along the wetland/upland boundary contained predominantly an herb stratum. Plots were established as half circles with a radius of ten feet with the origin at the soil pit. This configuration maintains consistency from plot to plot when dealing with patchy vegetation while restricting the plot to a narrower band along the boundary line. This was done to more accurately characterize the plant community close to the boundary line, in order to emphasize the sharpness of the transition. Individual species in plots were tabulated by raw percent cover on data forms, and dominance calculated using absolute percent cover and the quick method of the 50/20 rule.

Plant identification was made using *Flora of the Pacific Northwest* (Hitchcock 1978), *The Jepson Manual, Higher Plants of California* (Hickman 1993), *A Field Guide to the Common Wetland Plants of Western Washington and Southwestern Oregon* (Seattle Audubon Society 1997), *Wildflowers of the Pacific Northwest* (Turner 2009), *Wetland Plants of Oregon and Washington* (Guard 1995), and others (**Section 12.0**). The *State of Oregon 2014 Wetland Plant List* (Lichvar 2014) was used to classify plant species by their indicator status.

4.5 Hydrology Data Collection

During the field work on May 22-23, 2014 inundation was not observed near the boundary of most of the wetland areas. It is recognized that this is a slightly lower than average precipitation year and that direct hydrology monitoring results will tend to appear more marginal than in a normal year. Indicators of consistently higher water levels such as mineral lines on rocks and hydrophytic vegetation was used to confirm hydrology. Hydrology was measured approximately one hour after the pits were advanced to full depth to allow time for equalization of water.

All of the wetland pits were saturated in the major portion of the root zone during the period of the field work. Primary and secondary indicators were also reported to strengthen the findings. These include inundation and saturation patterns on aerial photographs from 1939 (**Figure 5**), 2001 (**Figure 6**), and 2011 (**Figure 7**), hydrophytic vegetation, and landscape position, in addition to best professional judgment, for determination. No off-site stream gauges or monitoring wells were used.

5.0 Description of Wetlands & Waters of the U.S.

5.1 Delineated Wetlands

The delineated wetlands in the Study Area are presented below. **Appendix A, Figure 8** provides an overview of the delineated wetlands, soil pit locations and numbering, and site characteristics.

5.1.1 Lithia Springs Wetlands

Wetland 1 is located at the toe of the slope to the northwest of the entrance road. It contains 0.467 acres of palustrine emergent wetlands with fine silt loam topsoil underlain by a darker sand or clay loam. Evidence of surface flow from or across upland areas during precipitation events is lacking. Water was encountered at 8" to 12" below ground surface (bgs), and the soil contained distinct redox concentrations in the matrix as soft masses. The hydrophytic community was dominated with Armenian blackberry (*Rubus armeniacus*) and teasle (*Dipsacus fullonum*), with willow (*Salix spp*) and Baltic rush (*Juncus balticus*) replacing the blackberry in the south side. The south and west boundaries of the triangular-shaped wetland are clearly defined by steep embankments and the northeast side by a gentle rise in shallow fill and a clear transition in vegetation. Refer to **Appendix B, Photos 3 and 4; Appendix D, Data Forms, Sampling Points 20 and 21, 22 and 23, and 24 and 25.**

Wetland 2 lies along Emigrant Creek at the northwestern side of the Study Area. It contains 0.992 acres of palustrine emergent and riverine wetlands. It is characterized by deep sandy clay soils with prominent redox concentrations in the matrix, saturation to the surface, and a vegetation community dominated with broadleaf cattail (*Typha latifolia*) and Baltic rush. The wetland receives water from Wetlands 1 and 3 and from the Creek during high water. The riverine portion of Wetland 2 receives a significant portion of its hydrology from overbank flooding. The palustrine wetlands, lying close in elevation to the stream, receive a significant portion of their hydrology from an elevated water table. Evidence of surface flow from or across upland areas during precipitation events is lacking. Water from the wetland discharges directly into Emigrant Creek. Refer to **Appendix B, Photo 5 and 6; Appendix D, Data Forms, Sampling Points 7 and 8.**

Wetland 3 is palustrine emergent and located upstream (east) of Wetland 2. Wetland 3 directly discharges water into Wetland 2 through a culvert under a gravel road (**Appendix B, Photo 3**). Wetland 3 is 0.845 acres. Wetland 3 is characterized by shallow, sandy/gravelly soils with a restrictive layer beginning between 8" and 21" bgs with prominent redox concentrations and saturation to the surface. The vegetation community is dominated by Baltic rush, annual bluegrass (*Poa annua*), slender hairgrass (*Deschampsia elongata*), broadleaf cattail, and medusaehead rye (*Taeniatherum caput-medusae*), which may be a late season dominant in vernal wet areas. Refer to **Appendix B, Photos 1, 7 through 12; Appendix D, Data Forms, Sampling Points 1 and 2, 3 and 4, 5 and 6, and 18 and 19.**

Wetland 4 is palustrine emergent, being formed in a slight depression in an excavated and maintained shallow ditch or swale used to drain the historic bath house foundation. Drainage is carried away from the bath house where it is allowed to infiltrate. The ditch/swale was constructed without a surface connection to another wetland or conveyance feature because drainage captured in the ditch/swale is minimal and present for short

periods. A gravel service road crosses the depression at the mid-point. Wetland 4 is characterized by shallow, sandy/gravelly soils with a restrictive layer beginning between 8" and 21" bgs with prominent redox concentrations and saturation to the surface. The sparse vegetation community outside the road crossing is dominated by Baltic rush, annual bluegrass, slender hairgrass, broadleaf cattail, and medusaehead rye, which may be a late season dominant in vernal wet areas. No data sheets provided due to its small size and consistency with adjacent wetlands. Refer to **Appendix B, Photo 13 and 14**. Wetland 4 is 0.025 acres.

Wetland 5 is depressional and overflows across the ground surface into Wetland 3. Wetland 5 is characterized by shallow, sandy/gravelly soils with a restrictive layer beginning between 8" and 21" bgs with prominent redox concentrations and saturation to the surface. The vegetation community is dominated by Baltic rush, annual bluegrass, slender hairgrass, broadleaf cattail, and medusaehead rye, which may be a late season dominant in vernal wet areas. No data sheets provided due to its small size and consistency with adjacent wetlands. Refer to **Appendix B, Photo 15**. Wetland 5 is 0.018 acres.

Wetland 6 is located in the east side of the Study Area. It contains 1.001 acres of palustrine emergent wetland. The wetland is confined by steeply rising slopes containing fill/disturbed soils and rubble around most of the perimeter. Some areas of the wetland were inundated during the site visit. Evidence of regular inundation includes mineral spring evaporate-encrusted rocks, and a hydrophytic vegetation community including Baltic rush, meadow barley (*Hordeum brachyantherum*), field meadow foxtail (*Alopecurus pratensis*) and algal mats. Approximately 75% of the wetland is vegetation free. Evidence of surface flow from or across upland areas during precipitation events is lacking. The wetland continues off-site and immediately discharges directly into Emigrant Creek (**Appendix D**). Refer to **Appendix B, Photos 16 through 18; Appendix D, Data Forms, Sampling Points 9, 10, and 11, 12 and 13, and 14 and 15**.

The wetlands in the Study Area are considered adjacent wetlands to Emigrant Creek, which is a Waters of the U.S. (WOUS) (**Appendix B, Photo 15**). The wetland complex has significant nexus with the Rogue River and could affect interstate commerce. Therefore, it is our opinion that the wetlands other than Wetland 4 are jurisdictional and subject to regulation under the Clean Water Act.

5.2 Other Waters

The Study Area is bounded by the south bank of 875 lineal feet of Emigrant Creek in the vicinity of Wetland 1. The OHWM was established for the portion of Emigrant Creek existing within the Study Area consistent with methods used in the Western Mountains, Valleys, and Coast Regions (WMVC) of Oregon. This is because the riparian area is more consistent with the WMVC region than the Arid West. A description of the riparian area is found in Level II Screening Ecological Risk Assessment Report Prepared for City of Ashland, Ashland, Oregon (Brown & Caldwell 2010).

Emigrant Creek is a perennial tributary to Bear Creek, which in turn is a tributary of the Rogue River, a Traditionally Navigable Waters (TNW), as defined by the Clean Water Act. Therefore, Emigrant Creek would be jurisdictional and subject to regulation under the Clean Water Act.

6.0 Deviation from Local Wetland Inventory or National Wetlands Inventory

The closest local wetland inventory is Ashland, which does not include the Study Area, because it is outside of city limits.

The NWI does not show mapped wetlands on the Study Area.

7.0 Mapping Method

The wetland/upland boundaries were flagged at approximately 50-foot intervals with white wire flags. Pits were flagged and identification numbers were marked on the flags. The City has been advised to restrict mowing activities to upland areas to avoid disturbing the flags if they desire subsequent surveying.

For report mapping purposes, locations of wetland boundaries and pits were captured using a Trimble GeoXH GPS, with real time correction. Map accuracy is sub-foot. Mapping was done with ArcMap Version 10.2 software. Professional surveying will be arranged (if necessary) by the City upon concurrence by regulatory agencies.

In the event flags are disturbed, the coordinates have been saved and could be used as GPS waypoints for relocation of the wetland/upland boundary.

8.0 Additional Information

Emigrant Creek is a DEQ Section 303(d) stream for failing the water temperature goals for salmonid fish rearing in this reach. Emigrant Creek is the receiving waters of the wetlands on the Study Area and flows into Bear Creek, approximately 1.5 miles downstream. Bear Creek flows into the Rogue River approximately 22 miles to the northwest of the confluence. There is direct hydrological connectivity with jurisdictional waters (Emigrant Creek), so it is our professional opinion that the wetland complex jurisdictional in the United States, per DSL.

Background information for the client may be found in **Appendix E**.

Information from Mike Morrison, Jr., Public Works Superintendent, City of Ashland, was relied upon to map and describe water conveyance structures in the Study Area. These structures include swales and ditches that were excavated many years ago for drainage purposes, and are in a regular maintenance regime including vegetation management and dredging when required. The two drainage systems that are related to mapped wetlands are shown in Figure 8, Wetland Map. Proposed non-jurisdictional Wetland 4 lies entirely within one of those structures in a depression where a gravel service road crosses. Wetland 1 lies immediately adjacent to the second ditch. **Photos 19 through 20**

9.0 Results & Conclusions

The Study Area contains 3.348 acres of wetland, 3.325 acres are proposed jurisdictional, and approximately 875 lineal feet of “other waters,” being Emigrant Creek (**Table 2**). The wetlands have Cowardin classifications of Palustrine Emergent (PEM) with hydrologic regimes including persistent seasonally flooded and non-persistent vernal saturated, and Riverine Lower Perennial (R2) areas along Emigrant Creek with hydrologic regimes including aquatic bed, unconsolidated shore, and emergent.

The wetland boundaries are clearly defined in most parts by a sharp break in topography due to historic filling activities, and a transition from hydrophytic vegetation community to upland communities.

The source of hydrology is primarily Lithia Springs recharging a shallow water table perched above a mineral-cemented gravel hardpan. Hydrology is supplemented by precipitation seasonally and in some areas by proximity to Emigrant Creek.

Table 2: Summary of Wetlands and Other Waters

Wetland Number	Acres Jurisdictional Waters*	Acres Non-Jurisdictional Waters*	Flow Regime	Connection to Jurisdictional Drainage	Justification
Wetland 1	0.467	0	Perennial	Adjacent	Wetland indicators for soil, vegetation and hydrology are present.
Wetland 2	0.992	0	Perennial	Adjacent	
Wetland 3	0.845	0	Perennial	Adjacent	
Wetland 4	0	0.025	Vernal/Ephemeral	Isolated	Man-made ditch/swale with no surface connection.
Wetland 5	0.018	0	Vernal/Ephemeral	Occasional overflow into Wetland 3	Wetland indicators for soil, vegetation and hydrology are present.
Wetland 6	1.001	0	Perennial	Adjacent	
Emigrant Creek frontage	875 Lineal Feet		Perennial	Adjacent	Drains to Bear Creek, a TNW
Total	3.323	0.025			

**This is the acreage of the drainage/wetland within the survey area.*

10.0 Limitations

This report documents the investigation, best professional judgment, and conclusions of the investigators. It should be considered a Preliminary Jurisdictional Determination and used at your own risk until it has been approved in writing by DSL in accordance with OAR 141-090-0005 through 141-090-0055.

The services described in this report were performed consistent with generally accepted professional consulting principles and practices. No other warranty, express or implied, is made. These services were performed consistent with our agreement with our client. This report is solely for the use and information of our client unless otherwise noted. Any reliance on this report by a third party is at such party's sole risk.

Opinions and recommendations contained in this report apply to conditions existing when services were performed and are intended only for the client, purposes, locations, time frames, and project parameters indicated. We are not responsible for the impacts of any changes in environmental standards, practices, or regulations subsequent to performance of services. We do not warrant the accuracy of information supplied by others, nor the use of segregated portions of this report.

The purpose of a geologic/hydrogeologic study is to reasonably characterize existing site conditions based on the geology/hydrogeology of the area. In performing such a study, it is understood that a balance must be struck between a reasonable inquiry into the site conditions and an exhaustive analysis of each conceivable environmental characteristic. The following paragraphs discuss the assumptions and parameters under which such an opinion is rendered.

No investigation is thorough enough to describe all geologic/hydrogeologic conditions of interest at a given site. If conditions have not been identified during the study, such a finding should not therefore be construed as a guarantee of the absence of such conditions at the site, but rather as the result of the services performed within the scope, limitations, and cost of the work performed.

We are unable to report on or accurately predict events that may change the site conditions after the described services are performed, whether occurring naturally or caused by external forces. We assume no responsibility for conditions we were not authorized to evaluate, or conditions not generally recognized as predictable when services were performed.

Geologic/hydrogeologic conditions may exist at the site that cannot be identified solely by visual observation. Where subsurface exploratory work was performed, our professional opinions are based in part on interpretation of data from discrete sampling locations that may not represent actual conditions at locations not sampled.

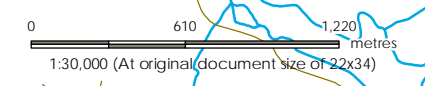
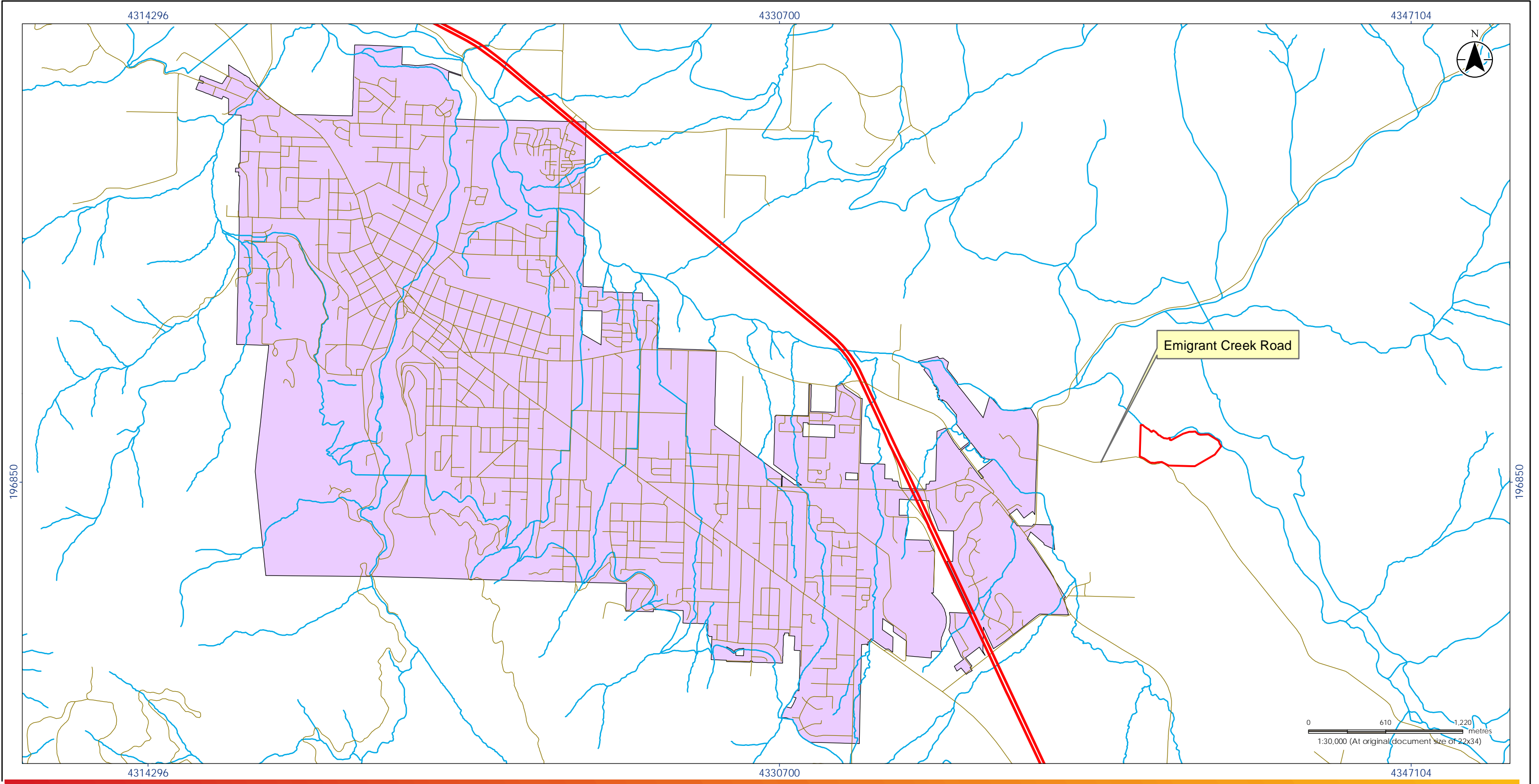
11.0 References

- Brown & Caldwell. 2010. *Level II Screening Ecological Risk Assessment Report Prepared for City of Ashland, Ashland, Oregon*.
- Seattle Audubon Society. 1997. *A Field Guide to the Common Wetland Plants of Western Washington and Southwestern Oregon*. Edited by Sarah Spear Cooke. Seattle, WA.
- Gilkey, Helen M. and La Rea J. Dennis. 2004. *Handbook of Northwestern Plants*. Corvallis, OR: Oregon State University Press.
- Guard, B. Jennifer. 1995. *Wetland Plants of Oregon and Washington*. Redmond, WA: Lone Pine Publishing.
- Hickman, J.C. 1993. *The Jepson Manual: Higher Plants of California*. Berkeley and Los Angeles, CA: University of California Press.
- Hitchcock, C. Leo and A. Cronquist. 1978. *Flora of the Pacific Northwest*. Seattle, WA: University of Washington Press.
- Kemper, John. 2006. *Wildflowers of Southern Oregon – A Field Guide*. Medford, OR: Outdoor Press.
- Lichvar, R.W., M. Butterwick, N.C. Melvin, and W.N. Kirchner. 2014. *The National Wetland Plant List: 2014 Update of Wetland Ratings*. Phytoneuron 2014-41: 1-42.
- Mullins, Linda and Rachel Showalter. 2007. *Rare Plants of Southwest Oregon*. Grants Pass, OR: Bureau of Land Management/US Forest Service, Grants Pass Interagency Office.
- Munsell Color. 2013. *Munsell Soil Color Charts*. New Windsor, NY: Gretag-Macbeth.
- Nature Conservancy, The - General Land Office Surveyors (c. 1851) *Historic Vegetation Data Layer - VEG1851_V6 Date: 2000-09-28*. Pacific Northwest Ecosystem Research.*
- Pojar, Jim and Andy MacKinnon. 2004. *Plants of the Pacific Northwest Coast – Washington, Oregon, British Columbia & Alaska*. Vancouver, British Columbia: Lone Pine Publishing.
- Soil Survey of Jackson County, Oregon, Northeast Part. Available on line at <http://websoilsurvey.sc.egov.usda.gov>. Natural Resources Conservation Service (NRCS). 2006.
- Topping, Brian J.D., Tracie-Lynn Nadeau, and Michael R. Turaski. *Oregon Streamflow Duration Assessment Method Interim Version*. Public Notice release date, 6 March 2009.
- Turner, Mark and Phillis Gustafson. 2009. *Wildflowers of the Pacific Northwest*. Portland, OR: Timber Press, Inc.

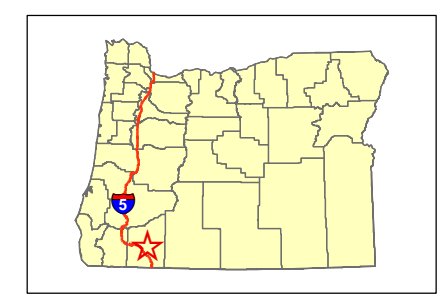
- U.S. Army Corps of Engineers. 1987. *Corps of Engineers Wetlands Delineation Manual. Technical Report Y-87-1*, Environmental Laboratory, U.S. Army Engineer Waterways Experiment Station, Vicksburg, Mississippi.
- U.S. Army Corps of Engineers. 2008. *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0)*. Edited by J. S. Wakeley, R. W. Lichvar, and C. V. Noble. ERDC/EL TR-08-28. Vicksburg, MS: U.S. Army Engineer Research and Development Center.
- U.S. Army Corps of Engineers and United States Environmental Protection Agency. 2007. *U.S. Army Corps of Engineers Jurisdictional Determination Form Instructional Guidebook*. 60 p.
- U.S. Department of Agriculture, Natural Resource Conservation Service. 1999. *Hydric Soils of Oregon*, prepared in cooperation with the National Technical Committee for Hydric Soils.
- U.S. Department of Agriculture, Natural Resources Conservation Service. 2010. *Field Indicators of Hydric Soils in the United States, Version 7.0*. Edited by L.M. Vasilas, G.W. Hurt, and C.V. Noble. USDA, NRCS, in cooperation with the National Technical Committee for Hydric Soils.
- U.S. Department of Agriculture - Soil Conservation Service. *Hydric Soils of the United States*, 1985. Washington, DC: USDA-SCS National Bulletin No. 430-5-9.
- U.S. Fish and Wildlife Service, Region 9. 2009. *National List of Plant Species that Occur in Wetlands: Oregon – Combined 1988 Region 9 List & 1993 Supplement List*. OR: Oregon Department of State Lands.
- Oregon Department of State Lands, Division 90, *Administrative Rules for Wetland Delineation Report Requirements and for Jurisdictional Determinations for the Purpose of Regulating Fill and Removal within Waters of the State* (OAR 141-090-0005 to 0055), 2013.

**This map was created as part of the research undertaken by the Pacific Northwest Ecosystem Research Consortium (<<http://osu.orst.edu/dept/pnw-erc>>) funded by the U.S. EPA under cooperative agreement with OSU #CR824682. This polygon coverage depicts "presettlement" vegetation in Oregon as described by surveyors for the General Land Office (1851–1909), when surveying township and section lines. Most low-elevation sites with arable land were surveyed between 1851 and 1865, while most foothill and mountainous areas were surveyed between 1865 and 1895.*

Appendix A: Maps & Figures



- Legend**
- Stream
 - Roads
 - Interstate 5
 - Study Area
 - City of Ashland



- Notes**
1. Coordinate System: NAD 1983 StatePlane Oregon South FIPS 3602 Feet
 2. Base Map data obtained from Jackson County GIS online.
 3. Study Area features are Stantec proprietary data.

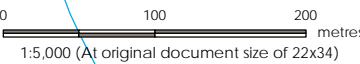
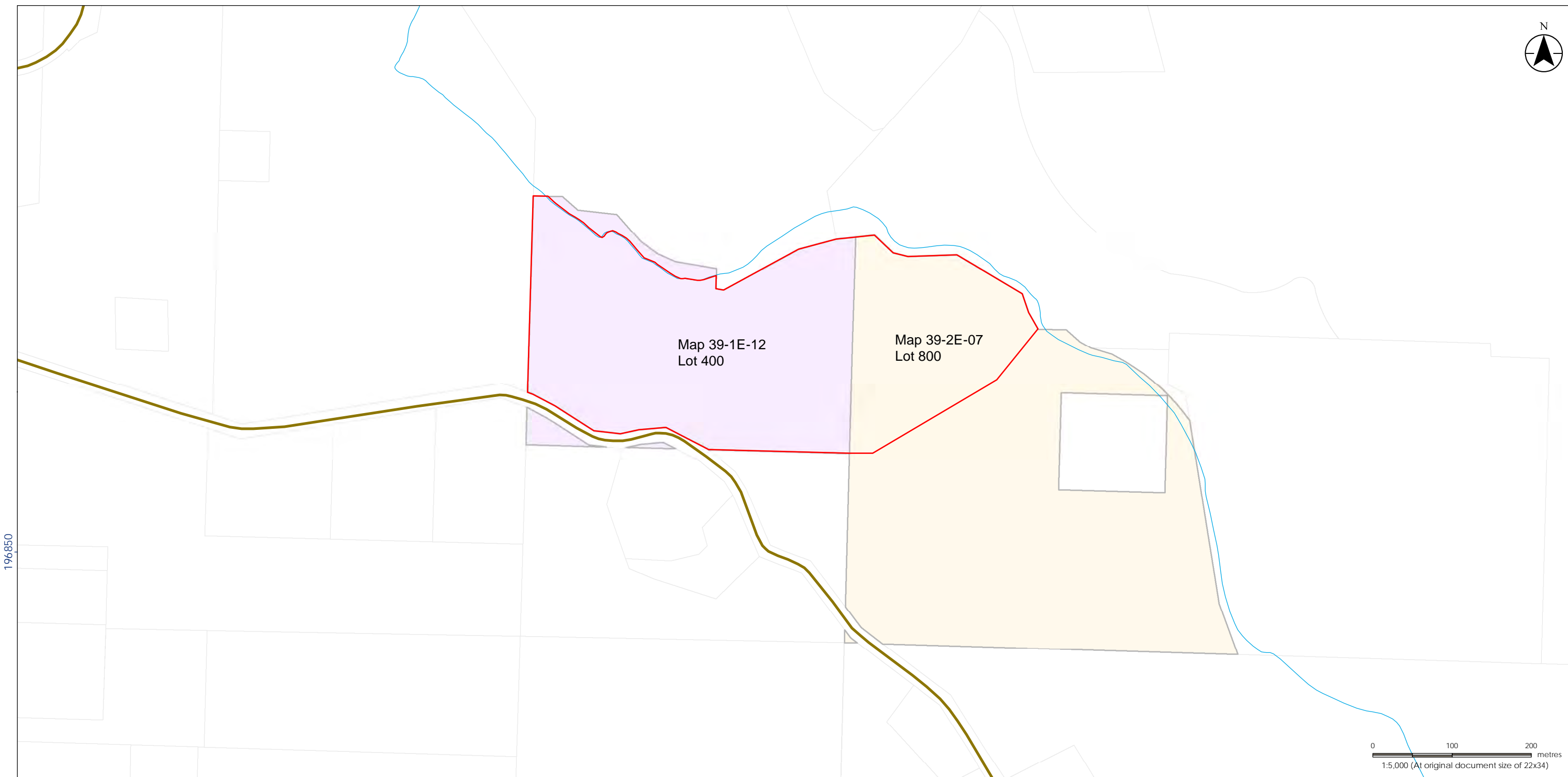
Project Location: 555 Emigrant Creek Road, Jackson County
 T39S, R1E, S12, Lot 400 Prepared by DKMartin on 2014-08-20
 T39S, R2E, S7, Lot 800 Technical Review by DLeMke on 2014-08-21
 Jackson County, Oregon Independent Review by RBrooks on 2014-08-21

Client/Project
 City of Ashland
 Lithia Springs Wetland Delineation
 203714196

Figure No.
 1
 Title

Location Map

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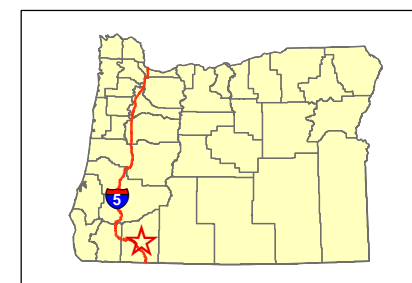


Legend

- Map 39-1E-12, Lot 400
- Map 39-2E-07, Lot 800
- Emigrant Creek
- Emigrant Creek Road
- Study Area

Notes

- 1. Coordinate System: NAD 1983 StatePlane Oregon South FIPS 3602 Feet
- 2. Base Map data obtained from Jackson County GIS online.
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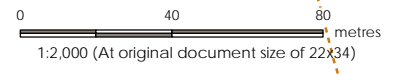
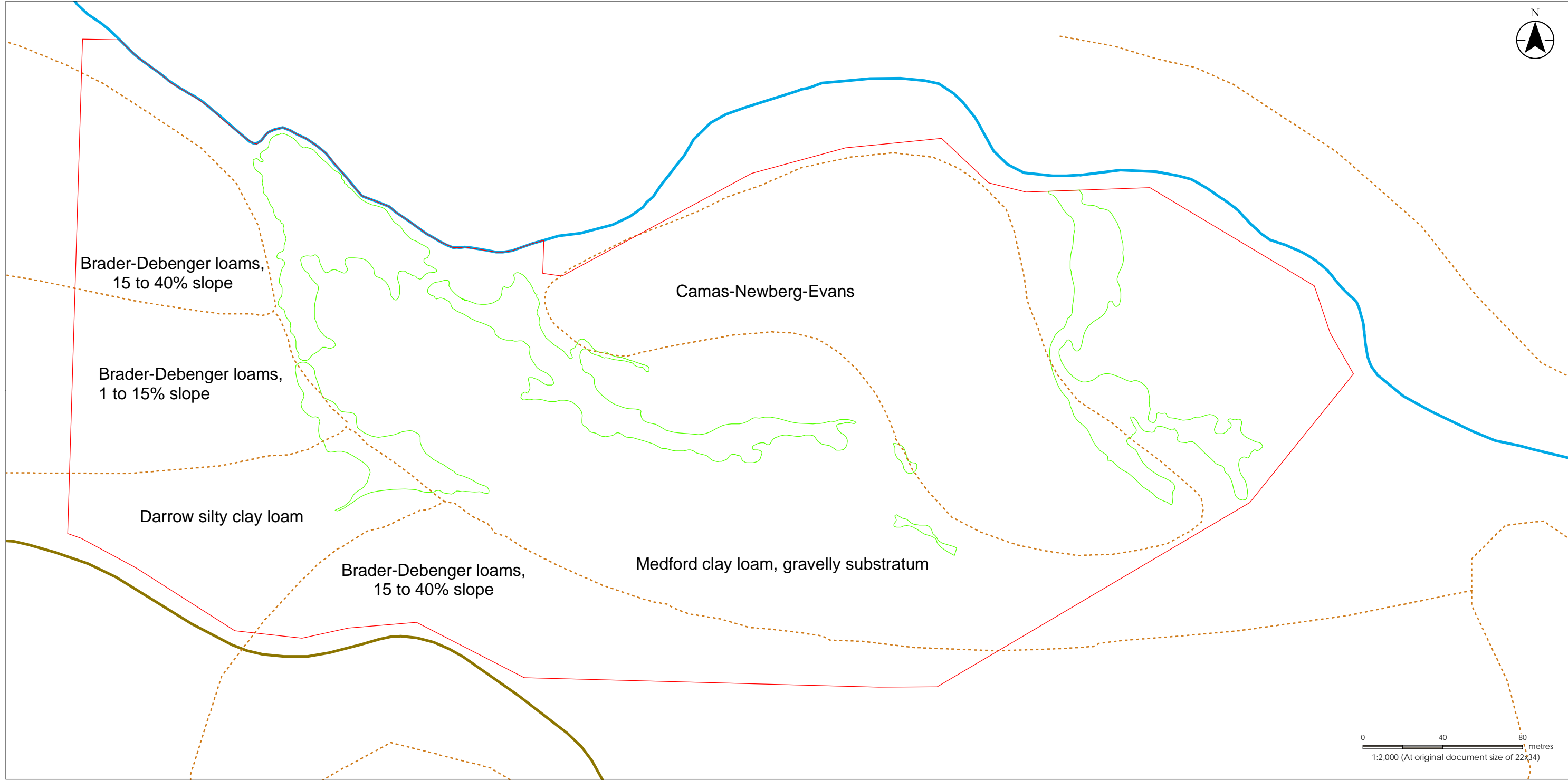


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 City of Ashland
 Lithia Springs Wetland Delineation
 203714196

Figure No.
 2

Title
 Tax Lot Map

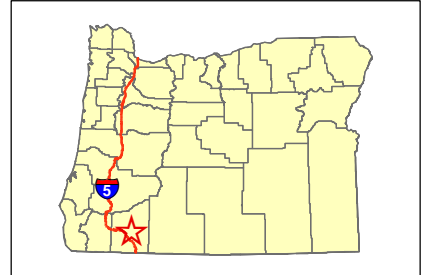


Legend

-  Potential Wetlands
-  Soil Map Units
-  Emigrant Creek
-  Emigrant Creek Road
-  Study Area



- Notes
1. Coordinate System: NAD 1983 StatePlane Oregon South FIPS 3602 Feet
 2. Base Map data obtained from Jackson County GIS online.
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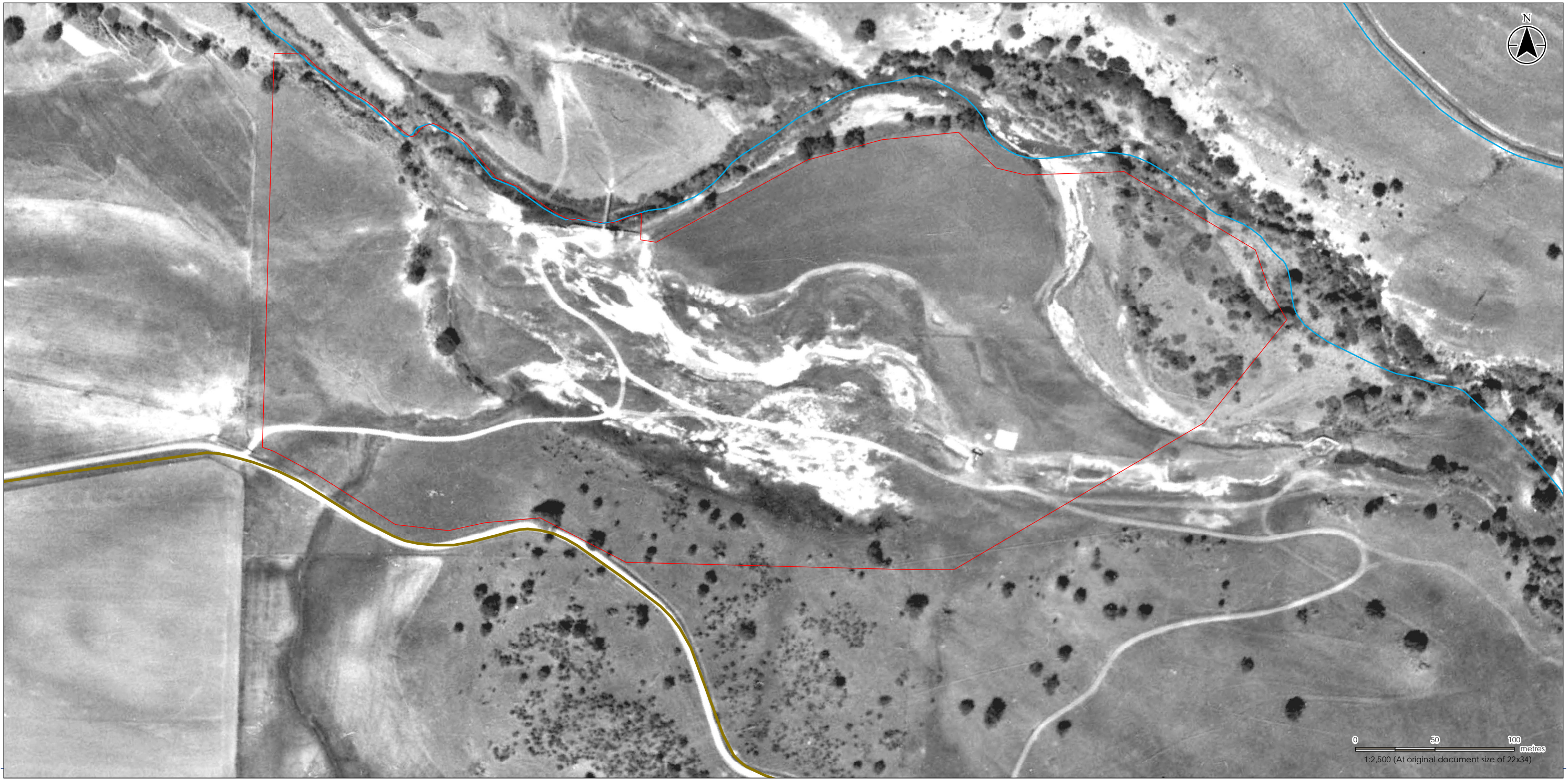
Project Location 555 Emigrant Creek Road, Jackson County
 T39S, R1E, S12, Lot 400 Prepared by DKMartin on 2014-09-05
 T39S, R2E, S7, Lot 800 Technical Review by DLenke on 2014-09-05
 Jackson County, Oregon Independent Review by RBrooks on 2014-09-05

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 City of Ashland
 Lithia Springs Wetland Delineation
 203714196

Figure No. 3

Title
 Soil Map

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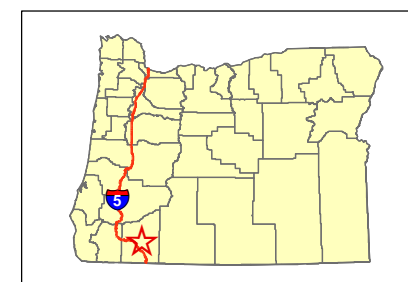
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Notes

1. Coordinate System: NAD 1983 StatePlane Oregon South FIPS 3602 Feet
2. Aerial photograph obtained from UofO Map Library.
3. Study Area features are Stantec proprietary data.

- Legend
- Emigrant Creek
 - Emigrant Creek Road
 - Study Area



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 City of Ashland
 Lithia Springs Wetland Delineation
 203714196

Figure No. 5

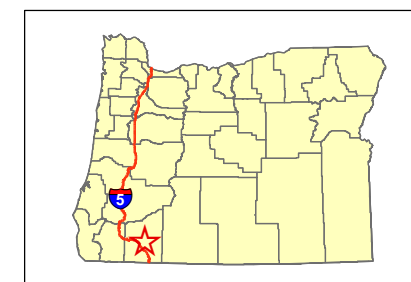
Title
 1939 Aerial Photograph



- Legend**
- Emigrant Creek
 - Emigrant Creek Road
 - Study Area

Notes

1. Coordinate System: NAD 1983 StatePlane Oregon South FIPS 3602 Feet
2. Aerial photograph obtained from UofO Map Library.
3. Study Area features are Stantec proprietary data.



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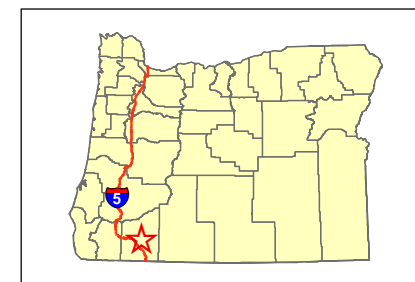
Figure No.
 6

Title
 2001 Aerial Photograph



- Notes
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 2. Aerial photograph obtained from UofO Map Library.
 3. Study Area features are Stantec proprietary data.

- Legend
- Emigrant Creek
 - Emigrant Creek Road
 - Study Area



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 T39S, R2E, S7, Lot 800 Technical Review by DLeMke on 2014-08-21
 Jackson County, Oregon Independent Review by RBrooks on 2014-08-21

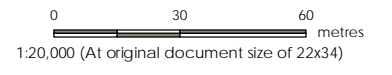
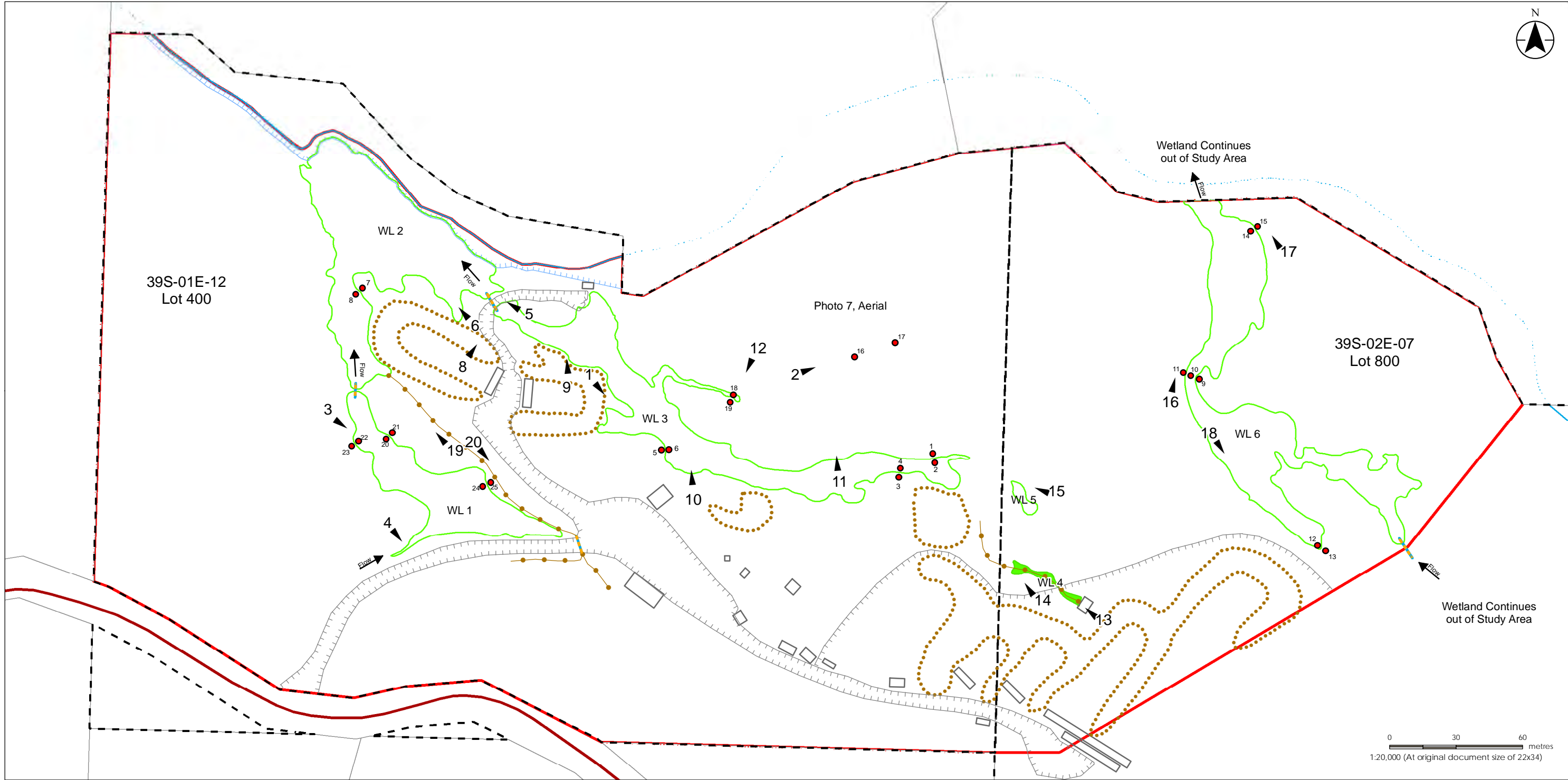
Client/Project
 City of Ashland
 Lithia Springs Wetland Delineation
 203714196

Figure No. 7

Title
 2012 Aerial Photograph

C:\BROOKS\CLUB\NET_LAND\BARRIS\BARRIS\PROJECTS\2014\Ashland\2014-08-21\2014-08-21-1508.dwg - 2014-08-21 15:08 By: dlmke

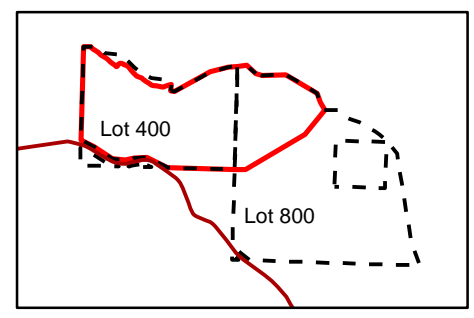
Disclaimer: Stantec assumes no responsibility for data supplied in electronic format. The recipient accepts full responsibility for verifying the accuracy and completeness of the data. The recipient releases Stantec, its officers, employees, consultants and agents, from any and all claims arising in any way from the content or provision of the data.



- Notes
1. Coordinate System: NAD 1983 StatePlane Oregon South FIPS 3602 Feet
 2. Base Map data obtained from Jackson County GIS online.
 3. Study Area features are Stantec proprietary data.

Legend

- Study Area
- Gravel Road
- Tax Lot
- Culvert
- Soil Pit
- Structure
- Proposed Jurisdictional Wetlands
- Proposed Non-jurisdictional Wetlands
- Recent Fill/Berms
- Emigrant Creek
- Ordinary High Water Line
- Drainage Ditch or Swale
- Photograph Angle



Project Location 123456789
 T39S, R1E, S12, Lot 400 Prepared by DKMartin on 2014-10-28
 T39S, R2E, S7, Lot 800 Technical Review by DLemke on 2014-10-28
 Jackson County, Oregon Independent Review by RBrooks on 2014-10-28

Client/Project
 City of Ashland
 Lithia Springs Wetland Delineation
 203714196

Figure No.
 8

Title
 Wetland Map

C:\Users\jmartin\Documents\2014\10\28\203714196\203714196.dwg - 10/28/2014 10:28:28 AM - 10/28/2014 10:28:28 AM

Appendix B: Site Photographs



Photo 1: Filling, grading and berm construction seen for Gun Club purposes. Photo overlooking Wetland 3.



Photo 2: Upland Plot 16 at the edge of the formerly-irrigated pasture.



Photo 3: Looking east over the boundary of Wetland 1 (right) and upland.



Photo 4: Predominant vegetation is *Mimulus* spp and teasel in the southern-most tip of Wetland 1.



Photo 5: Culvert connecting Wetland 2 and Wetland 3.



Photo 6: Wetland 2 bordering Emigrant Creek in the background.



Photo 7: This 2012 aerial image shows the heavily irrigated pasture adjacent to Wetland 3 that is no longer irrigated. Former irrigation lines are seen adjacent to the markup.



Photo 8: Wetland 3, west end.



Photo 9: Wetland 3, from the top of a pistol range berm.



Photo 10: Wetland 3 looking north over center area.



Photo 11: Lead shot scattered on ground in Wetland 3.



Photo 12: Plots 18 and 19 of Wetland 3. Note the clearly visible wetland boundary to the left.



Photo 13: Wetland 4 is formed in a drainage swale.



Photo 14: Drainage swale from former bath house is kept maintained.



Photo 15: Wetlands 4 and 5 are formed in slight depressions in a disturbed and filled area.



Photo 16: Overlooking Plots 9, 10 and 11 in Wetland 6.



Photo 17: Wetland 6. Plots 14 and 15 are in the lower right corner with the property line being defined by the fence and Emigrant Creek in the background.



Photo 19: Looking west along the ditch between Wetland 1 and the road.



Photo 18: Wetland 6 is a mosaic of mineral-encrusted cobble beds and vegetated patches, with inundated areas threaded throughout.



Photo 20: View of the east end of a ditch between Wetland 1 and a road, originating at the junction with the main access road.

Appendix C: Climate Data

[Explanation of the Preliminary Monthly Climate Data \(F6\) Product](#)

These data are preliminary and have not undergone final quality control by the National Climatic Data Center (NCDC). Therefore, these data are subject to revision. Final and certified climate data can be accessed at the NCDC - <http://www.ncdc.noaa.gov>.

WFO Monthly/Daily Climate Data

000
 CXUS56 KMFR 030843
 CF6MFR

PRELIMINARY LOCAL CLIMATOLOGICAL DATA (WS FORM: F-6)

STATION: MEDFORD OR
 MONTH: JANUARY
 YEAR: 2014
 LATITUDE: 42 22 N
 LONGITUDE: 122 52 W

=====																			
TEMPERATURE IN F: :PCPN: SNOW: WIND :SUNSHINE: SKY :PK WND																			
=====																			
1	2	3	4	5	6A	6B	7	8	9	10	11	12	13	14	15	16	17	18	
										12Z		AVG		MX		2MIN			
DY	MAX	MIN	AVG	DEP	HDD	CDD	WTR	SNW	DPTH	SPD	SPD	DIR	MIN	PSBL	S-S	WX	SPD	DR	
=====																			
1	47	22	35	-4	30	0	0.00	0.0	0	0.1	5	170	M	M	2	128	6	120	
2	50	24	37	-2	28	0	0.00	0.0	0	0.6	6	50	M	M	3	128	7	20	
3	55	28	42	3	23	0	0.00	0.0	0	1.1	8	350	M	M	3	128	9	350	
4	46	24	35	-4	30	0	0.00	0.0	0	0.8	6	360	M	M	5	128	7	340	
5	59	18	39	0	26	0	0.00	0.0	0	1.2	9	20	M	M	0	18	9	20	
6	45	27	36	-3	29	0	T	0.0	0	0.8	7	220	M	M	5	8	9	190	
7	47	33	40	1	25	0	0.09	0.0	0	1.4	7	70	M	M	8	18	8	60	
8	50	39	45	6	20	0	0.02	0.0	0	2.6	9	350	M	M	9	128	10	190	
9	50	37	44	4	21	0	0.04	0.0	0	3.3	10	50	M	M	8	18	14	280	
10	47	38	43	3	22	0	0.00	0.0	0	0.6	7	10	M	M	8	18	7	10	
11	53	38	46	6	19	0	0.35	0.0	0	5.5	30	230	M	M	9	128	38	230	
12	43	35	39	-1	26	0	0.02	0.0	0	2.1	8	20	M	M	10	12	9	40	
13	45	40	43	3	22	0	0.00	0.0	0	2.1	12	140	M	M	10	18	13	150	
14	44	36	40	0	25	0	0.00	0.0	0	3.6	9	350	M	M	8	1	11	360	
15	36	32	34	-6	31	0	0.00	0.0	0	1.5	6	20	M	M	10	12	7	40	
16	34	31	33	-7	32	0	0.00	0.0	0	0.9	6	30	M	M	10	12	6	30	
17	39	29	34	-6	31	0	0.00	0.0	0	1.0	6	350	M	M	9	128	8	350	
18	37	28	33	-7	32	0	0.01	T	0	0.9	6	10	M	M	10	12	8	350	
19	40	29	35	-5	30	0	T	T	0	1.0	7	350	M	M	10	128	9	350	
20	46	27	37	-4	28	0	0.00	0.0	0	0.4	3	40	M	M	7	128	6	20	
21	50	27	39	-2	26	0	T	T	0	0.6	6	330	M	M	6	12	7	320	
22	52	24	38	-3	27	0	T	T	0	1.2	7	10	M	M	5	128	7	10	
23	67	23	45	4	20	0	0.00	0.0	0	5.4	21	80	M	M	1	128	26	80	
24	70	36	53	12	12	0	0.00	0.0	0	7.6	26	130	M	M	0		31	130	
25	65	31	48	7	17	0	0.00	0.0	0	1.2	8	180	M	M	0		9	190	

5/22/14

National Weather Service - Climate Data

26	61	27	44	3	21	0	0.00	0.0	0	0.7	7	210	M	M	0	8	180	
27	47	29	38	-4	27	0	0.01	0.0	0	0.4	6	350	M	M	5	8	7	340
28	50	42	46	4	19	0	0.22	0.0	0	0.4	6	80	M	M	10	1	7	320
29	58	45	52	10	13	0	0.02	0.0	0	4.1	15	210	M	M	8	1	19	210
30	51	31	41	-1	24	0	T	0.0	0	2.8	12	360	M	M	8		14	350
31	49	28	39	-3	26	0	0.00	0.0	0	1.7	7	20	M	M	9	1	9	20

SM 1533 958 762 0 0.78 T 57.6 M 196

AV 49.5 30.9 1.9 FASTST M M 6 MAX (MPH)
MISC ----> # 30 230 # 38 230

NOTES:

LAST OF SEVERAL OCCURRENCES

COLUMN 17 PEAK WIND IN M.P.H.

PRELIMINARY LOCAL CLIMATOLOGICAL DATA (WS FORM: F-6) , PAGE 2

STATION: MEDFORD OR
MONTH: JANUARY
YEAR: 2014
LATITUDE: 42 22 N
LONGITUDE: 122 52 W

[TEMPERATURE DATA]

[PRECIPITATION DATA]

SYMBOLS USED IN COLUMN 16

AVERAGE MONTHLY: 40.2
DPTR FM NORMAL: -0.1
HIGHEST: 70 ON 24
LOWEST: 18 ON 5

TOTAL FOR MONTH: 0.78
DPTR FM NORMAL: -1.65
GRTST 24HR 0.35 ON 10-11
SNOW, ICE PELLETS, HAIL
TOTAL MONTH: T
GRTST 24HR T ON 18,19
21,22
GRTST DEPTH: T ON 18

- 1 = FOG OR MIST
- 2 = FOG REDUCING VISIBILITY TO 1/4 MILE OR LESS
- 3 = THUNDER
- 4 = ICE PELLETS
- 5 = HAIL
- 6 = FREEZING RAIN OR DRIZZLE
- 7 = DUSTSTORM OR SANDSTORM: VSBY 1/2 MILE OR LESS
- 8 = SMOKE OR HAZE
- 9 = BLOWING SNOW
- X = TORNADO

[NO. OF DAYS WITH]

[WEATHER - DAYS WITH]

MAX 32 OR BELOW: 0 0.01 INCH OR MORE: 9
MAX 90 OR ABOVE: 0 0.10 INCH OR MORE: 2
MIN 32 OR BELOW: 20 0.50 INCH OR MORE: 0
MIN 0 OR BELOW: 0 1.00 INCH OR MORE: 0

[HDD (BASE 65)]

TOTAL THIS MO. 762 CLEAR (SCALE 0-3) 8
DPTR FM NORMAL -4 PTCLDY (SCALE 4-7) 9
TOTAL FM JUL 1 2853 CLOUDY (SCALE 8-10) 14
DPTR FM NORMAL 321

[CDD (BASE 65)]

TOTAL THIS MO. 0
DPTR FM NORMAL 0 [PRESSURE DATA]
TOTAL FM JAN 1 0 HIGHEST SLP 30.72 ON 14
DPTR FM NORMAL 0 LOWEST SLP 29.89 ON 11

[REMARKS]

#FINAL-01-14#

[Explanation of the Preliminary Monthly Climate Data \(F6\) Product](#)

These data are preliminary and have not undergone final quality control by the National Climatic Data Center (NCDC). Therefore, these data are subject to revision. Final and certified climate data can be accessed at the NCDC - <http://www.ncdc.noaa.gov>.

WFO Monthly/Daily Climate Data

000
 CXUS56 KMFR 011729
 CF6MFR

PRELIMINARY LOCAL CLIMATOLOGICAL DATA (WS FORM: F-6)

STATION: MEDFORD OR
 MONTH: FEBRUARY
 YEAR: 2014
 LATITUDE: 42 22 N
 LONGITUDE: 122 52 W

=====																			
TEMPERATURE IN F: :PCPN: SNOW: WIND :SUNSHINE: SKY :PK WND																			
=====																			
1	2	3	4	5	6A	6B	7	8	9	10	11	12	13	14	15	16	17	18	
										12Z		AVG		MX		2MIN			
DY	MAX	MIN	AVG	DEP	HDD	CDD	WTR	SNW	DPTH	SPD	SPD	DIR	MIN	PSBL	S-S	WX	SPD	DR	
=====																			
1	52	27	40	-2	25	0	0.00	0.0	0	2.6	9	190	M	M	3	1	12	190	
2	56	27	42	0	23	0	0.00	0.0	0	2.2	8	180	M	M	3		10	260	
3	47	32	40	-2	25	0	T	0.0	0	2.1	9	280	M	M	7		12	290	
4	47	30	39	-4	26	0	0.00	0.0	0	2.5	10	20	M	M	9		13	20	
5	46	29	38	-5	27	0	0.00	0.0	0	1.7	7	340	M	M	7		9	60	
6	47	35	41	-2	24	0	0.17	T	0	2.9	12	320	M	M	10	1	14	320	
7	42	36	39	-4	26	0	0.18	0.0	0	1.7	8	360	M	M	9	1	10	10	
8	62	39	51	8	14	0	0.19	0.0	0	4.3	17	180	M	M	7	1	20	190	
9	56	37	47	4	18	0	T	0.0	0	2.0	8	150	M	M	5	1	9	150	
10	58	41	50	6	15	0	T	0.0	0	2.7	7	350	M	M	8	12	9	360	
11	55	40	48	4	17	0	T	0.0	0	2.4	8	330	M	M	7	1	10	320	
12	50	46	48	4	17	0	1.10	0.0	0	2.1	10	20	M	M	10	1	12	30	
13	53	47	50	6	15	0	0.34	0.0	0	2.3	10	360	M	M	10	12	13	360	
14	52	46	49	5	16	0	1.63	0.0	0	1.8	8	80	M	M	10	12	9	80	
15	61	43	52	8	13	0	0.47	0.0	0	4.9	26	270	M	M	9	1	33	250	
16	56	37	47	3	18	0	T	0.0	0	4.7	18	230	M	M	4		23	250	
17	53	33	43	-2	22	0	0.01	0.0	0	3.3	12	190	M	M	7		17	130	
18	59	40	50	5	15	0	0.41	0.0	0	4.4	22	230	M	M	7	1	29	230	
19	50	32	41	-4	24	0	0.02	0.0	0	3.9	16	10	M	M	4	128	18	360	
20	53	32	43	-2	22	0	0.00	0.0	0	1.2	9	40	M	M	8		14	20	
21	58	35	47	2	18	0	0.00	0.0	0	1.7	8	180	M	M	3		10	170	
22	59	29	44	-1	21	0	0.00	0.0	0	1.0	9	190	M	M	2	128	11	180	
23	61	29	45	-1	20	0	0.00	0.0	0	1.2	7	360	M	M	4	1	9	350	
24	67	45	56	10	9	0	0.00	0.0	0	1.8	8	180	M	M	3		10	190	
25	72	37	55	9	10	0	0.00	0.0	0	1.9	7	360	M	M	0	1	16	360	

5/22/14

National Weather Service - Climate Data

26 68 45 57 11 8 0 0.01 0.0 0 9.7 29 140 M M 6 35 140
27 61 42 52 6 13 0 0.02 0.0 0 4.6 22 150 M M 7 1 27 150
28 58 39 49 3 16 0 T 0.0 0 2.1 8 330 M M 6 12 11 290

SM 1559 1030 517 0 4.55 T 79.8 M 175

AV 55.7 36.8 2.9 FASTST M M 6 MAX (MPH)
MISC ----> # 29 140 # 35 140

NOTES:

LAST OF SEVERAL OCCURRENCES

COLUMN 17 PEAK WIND IN M.P.H.

PRELIMINARY LOCAL CLIMATOLOGICAL DATA (WS FORM: F-6) , PAGE 2

STATION: MEDFORD OR
MONTH: FEBRUARY
YEAR: 2014
LATITUDE: 42 22 N
LONGITUDE: 122 52 W

[TEMPERATURE DATA] [PRECIPITATION DATA] SYMBOLS USED IN COLUMN 16

AVERAGE MONTHLY: 46.2 TOTAL FOR MONTH: 4.55 1 = FOG OR MIST
DPTR FM NORMAL: 2.0 DPTR FM NORMAL: 2.54 2 = FOG REDUCING VISIBILITY
HIGHEST: 72 ON 25 GRTST 24HR 1.92 ON 14-15 TO 1/4 MILE OR LESS
LOWEST: 27 ON 2, 1 3 = THUNDER
SNOW, ICE PELLETS, HAIL 4 = ICE PELLETS
TOTAL MONTH: T 5 = HAIL
GRTST 24HR T ON 19 6 = FREEZING RAIN OR DRIZZLE
GRTST DEPTH: 0 7 = DUSTSTORM OR SANDSTORM:
VSBY 1/2 MILE OR LESS

[NO. OF DAYS WITH] [WEATHER - DAYS WITH] 8 = SMOKE OR HAZE
9 = BLOWING SNOW
X = TORNADO

MAX 32 OR BELOW: 0 0.01 INCH OR MORE: 12
MAX 90 OR ABOVE: 0 0.10 INCH OR MORE: 8
MIN 32 OR BELOW: 9 0.50 INCH OR MORE: 2
MIN 0 OR BELOW: 0 1.00 INCH OR MORE: 2

[HDD (BASE 65)]
TOTAL THIS MO. 517 CLEAR (SCALE 0-3) 5
DPTR FM NORMAL -65 PTCLDY (SCALE 4-7) 15
TOTAL FM JUL 1 3370 CLOUDY (SCALE 8-10) 8
DPTR FM NORMAL 256

[CDD (BASE 65)]
TOTAL THIS MO. 0
DPTR FM NORMAL 0 [PRESSURE DATA]
TOTAL FM JAN 1 0 HIGHEST SLP 30.38 ON 20
DPTR FM NORMAL 0 LOWEST SLP 29.34 ON 28

[REMARKS]
#FINAL-02-14#

[Explanation of the Preliminary Monthly Climate Data \(F6\) Product](#)

These data are preliminary and have not undergone final quality control by the National Climatic Data Center (NCDC). Therefore, these data are subject to revision. Final and certified climate data can be accessed at the NCDC - <http://www.ncdc.noaa.gov>.

WFO Monthly/Daily Climate Data

000
 CXUS56 KMFR 011000
 CF6MFR
 PRELIMINARY LOCAL CLIMATOLOGICAL DATA (WS FORM: F-6)

STATION: MEDFORD OR
 MONTH: MARCH
 YEAR: 2014
 LATITUDE: 42 22 N
 LONGITUDE: 122 52 W

TEMPERATURE IN F:										:PCPN:		SNOW:		WIND		:SUNSHINE:		SKY		:PK WND	
1	2	3	4	5	6A	6B	7	8	9	10	11	12	13	14	15	16	17	18			
										12Z		AVG MX 2MIN									
DY	MAX	MIN	AVG	DEP	HDD	CDD	WTR	SNW	DPTH	SPD	SPD	DIR	MIN	PSBL	S-S	WX	SPD	DR			
1	63	45	54	8	11	0	0.04	0.0	0	2.3	12	250	M	M	8	1	14	250			
2	61	47	54	8	11	0	0.01	0.0	0	2.9	14	320	M	M	9	1	18	330			
3	59	48	54	7	11	0	0.43	0.0	0	5.8	14	180	M	M	9	1	19	180			
4	64	43	54	7	11	0	T	0.0	0	3.9	13	160	M	M	5		16	160			
5	67	49	58	11	7	0	0.19	0.0	0	8.4	30	140	M	M	9	1	37	150			
6	54	42	48	1	17	0	0.21	0.0	0	4.1	21	180	M	M	8		26	180			
7	65	43	54	7	11	0	0.00	0.0	0	3.3	9	340	M	M	5		12	300			
8	60	38	49	2	16	0	T	0.0	0	0.9	7	300	M	M	5		8	360			
9	57	49	53	6	12	0	1.38	0.0	0	3.5	14	290	M	M	10	1	16	290			
10	56	37	47	-1	18	0	0.07	0.0	0	6.6	22	330	M	M	7	1	28	330			
11	65	30	48	0	17	0	0.00	0.0	0	4.3	20	130	M	M	2	1	24	120			
12	71	34	53	5	12	0	0.00	0.0	0	3.3	10	190	M	M	0		13	310			
13	69	33	51	3	14	0	0.00	0.0	0	2.9	12	350	M	M	0		14	350			
14	68	44	56	8	9	0	T	0.0	0	2.7	12	180	M	M	4		15	360			
15	74	36	55	7	10	0	0.00	0.0	0	2.2	8	170	M	M	0	1	10	170			
16	73	38	56	8	9	0	0.11	0.0	0	6.2	24	310	M	M	1	1	33	310			
17	53	38	46	-2	19	0	0.03	0.0	0	5.3	15	320	M	M	5		20	310			
18	62	30	46	-3	19	0	0.00	0.0	0	3.5	9	350	M	M	0		12	10			
19	68	33	51	2	14	0	0.00	0.0	0	4.1	14	340	M	M	1		19	320			
20	62	41	52	3	13	0	0.00	0.0	0	4.8	13	330	M	M	4		17	340			
21	61	32	47	-2	18	0	0.00	0.0	0	3.5	14	300	M	M	0		21	260			
22	68	30	49	0	16	0	0.00	0.0	0	2.3	12	10	M	M	0		13	20			
23	70	31	51	2	14	0	0.00	0.0	0	2.6	9	170	M	M	0		12	170			
24	76	34	55	6	10	0	0.00	0.0	0	2.1	9	120	M	M	0		13	280			
25	62	43	53	4	12	0	0.01	0.0	0	4.5	18	230	M	M	7		24	230			
26	58	43	51	1	14	0	0.05	0.0	0	4.6	23	270	M	M	10		28	270			

5/22/14

National Weather Service - Climate Data

27	57	42	50	0	15	0	0.02	0.0	0	4.9	18	260	M	M	10	23	270	
28	63	44	54	4	11	0	0.82	0.0	0	5.4	22	230	M	M	10	1	27	230
29	60	43	52	2	13	0	0.04	M	0	5.2	20	230	M	M	7	1	27	240
30	54	39	47	-3	18	0	0.01	0.0	0	3.2	17	290	M	M	6	1	23	290
31	56	35	46	-4	19	0	0.08	0.0	0	8.2	25	140	M	M	6		32	140

SM 1956 1214 421 0 3.50 0.0 127.4 M 148

AV 63.1 39.2 4.1 FASTST M M 5 MAX (MPH)
MISC ----> 30 M 37 M

NOTES:

LAST OF SEVERAL OCCURRENCES

COLUMN 17 PEAK WIND IN M.P.H.

PRELIMINARY LOCAL CLIMATOLOGICAL DATA (WS FORM: F-6) , PAGE 2

STATION: MEDFORD OR
MONTH: MARCH
YEAR: 2014
LATITUDE: 42 22 N
LONGITUDE: 122 52 W

[TEMPERATURE DATA] [PRECIPITATION DATA] SYMBOLS USED IN COLUMN 16

AVERAGE MONTHLY: 51.1	TOTAL FOR MONTH: 3.50	1 = FOG OR MIST
DPTR FM NORMAL: 2.8	DPTR FM NORMAL: 1.79	2 = FOG REDUCING VISIBILITY
HIGHEST: 76 ON 24	GRTST 24HR 1.38 ON 9- 9	TO 1/4 MILE OR LESS
LOWEST: 30 ON 22,18		3 = THUNDER
	SNOW, ICE PELLETS, HAIL	4 = ICE PELLETS
	TOTAL MONTH: 0.0 INCH	5 = HAIL
	GRTST 24HR 0.0	6 = FREEZING RAIN OR DRIZZLE
	GRTST DEPTH: 0	7 = DUSTSTORM OR SANDSTORM:
		VSBY 1/2 MILE OR LESS
		8 = SMOKE OR HAZE
[NO. OF DAYS WITH]	[WEATHER - DAYS WITH]	9 = BLOWING SNOW
		X = TORNADO

MAX 32 OR BELOW: 0	0.01 INCH OR MORE: 16
MAX 90 OR ABOVE: 0	0.10 INCH OR MORE: 6
MIN 32 OR BELOW: 5	0.50 INCH OR MORE: 2
MIN 0 OR BELOW: 0	1.00 INCH OR MORE: 1

[HDD (BASE 65)]

TOTAL THIS MO. 421	CLEAR (SCALE 0-3) 11
DPTR FM NORMAL -97	PTCLDY (SCALE 4-7) 13
TOTAL FM JUL 1 3791	CLOUDY (SCALE 8-10) 7
DPTR FM NORMAL 159	

[CDD (BASE 65)]

TOTAL THIS MO. 0	
DPTR FM NORMAL 0	[PRESSURE DATA]
TOTAL FM JAN 1 0	HIGHEST SLP M ON M
DPTR FM NORMAL 0	LOWEST SLP 29.52 ON 1

[REMARKS]

#FINAL-03-14#

[Explanation of the Preliminary Monthly Climate Data \(F6\) Product](#)

These data are preliminary and have not undergone final quality control by the National Climatic Data Center (NCDC). Therefore, these data are subject to revision. Final and certified climate data can be accessed at the NCDC - <http://www.ncdc.noaa.gov>.

WFO Monthly/Daily Climate Data

000
 CXUS56 KMFR 011000
 CF6MFR
 PRELIMINARY LOCAL CLIMATOLOGICAL DATA (WS FORM: F-6)

STATION: MEDFORD OR
 MONTH: APRIL
 YEAR: 2014
 LATITUDE: 42 22 N
 LONGITUDE: 122 52 W

TEMPERATURE IN F:					:PCPN:			SNOW:	WIND		:SUNSHINE:			SKY	:PK WND				
1	2	3	4	5	6A	6B	7	8	9	10	11	12	13	14	15	16	17	18	
										12Z AVG MX 2MIN									
DY	MAX	MIN	AVG	DEP	HDD	CDD	WTR	SNW	DPTH	SPD	SPD	DIR	MIN	PSBL	S-S	WX	SPD	DR	
1	59	35	47	-3	18	0	T	0.0	0	4.3	15	220	M	M	7	18	19	230	
2	63	38	51	1	14	0	T	0.0	0	2.5	10	300	M	M	5		15	80	
3	61	40	51	0	14	0	0.18	0.0	0	3.5	24	150	M	M	6	1	30	150	
4	61	45	53	2	12	0	0.07	0.0	0	3.5	10	20	M	M	8	1	14	180	
5	59	46	53	2	12	0	0.02	0.0	0	2.9	9	300	M	M	9	8	12	350	
6	70	50	60	9	5	0	0.00	0.0	0	2.9	9	170	M	M	6		11	300	
7	80	42	61	10	4	0	0.00	0.0	0	3.0	13	340	M	M	0		18	360	
8	80	46	63	12	2	0	0.00	0.0	0	3.7	16	290	M	M	0	8	20	290	
9	76	45	61	9	4	0	0.00	0.0	0	4.8	17	360	M	M	1		22	360	
10	77	49	63	11	2	0	0.00	0.0	0	4.5	10	320	M	M	4		14	320	
11	80	43	62	10	3	0	0.00	0.0	0	2.7	14	360	M	M	0		17	360	
12	76	43	60	8	5	0	0.00	0.0	0	3.9	17	350	M	M	0		24	270	
13	79	38	59	7	6	0	0.00	0.0	0	4.1	14	320	M	M	0		20	300	
14	78	42	60	8	5	0	0.00	0.0	0	4.7	13	360	M	M	1		15	270	
15	68	45	57	4	8	0	0.00	0.0	0	5.1	14	350	M	M	4		17	300	
16	72	40	56	3	9	0	0.00	0.0	0	3.0	10	10	M	M	1		13	350	
17	61	44	53	0	12	0	0.09	0.0	0	3.3	17	300	M	M	7	1	22	290	
18	71	45	58	5	7	0	0.00	0.0	0	2.7	9	190	M	M	4	18	12	190	
19	67	40	54	1	11	0	0.00	0.0	0	6.4	23	300	M	M	3		29	310	
20	75	38	57	3	8	0	0.00	0.0	0	2.0	9	10	M	M	0		12	20	
21	72	47	60	6	5	0	0.05	0.0	0	6.9	24	300	M	M	6		31	290	
22	58	43	51	-3	14	0	0.17	0.0	0	6.4	22	270	M	M	7	1	27	280	
23	62	45	54	0	11	0	T	0.0	0	3.2	13	260	M	M	9		26	340	
24	62	48	55	1	10	0	0.09	0.0	0	7.0	21	260	M	M	8	13	27	250	
25	58	42	50	-5	15	0	0.07	0.0	0	4.2	23	10	M	M	9	1	28	10	
26	59	36	48	-7	17	0	0.01	0.0	0	4.4	14	200	M	M	8		19	260	

5/22/14

National Weather Service - Climate Data

27	60	44	52	-3	13	0	0.07	M	0	6.4	17	310	M	M	9	1	23	290
28	70	37	54	-1	11	0	0.00	0.0	0	2.7	10	360	M	M	3		13	20
29	83	42	63	7	2	0	0.00	0.0	0	2.1	9	30	M	M	0		12	20
30	92	46	69	13	0	4	0.00	0.0	0	5.3	25	140	M	M	0		31	140

=====

SM 2089 1284 259 4 0.82 0.0 122.1 M 125

=====

AV 69.6 42.8 4.1 FASTST M M 4 MAX (MPH)

MISC ----> # 25 140 # 31 140

NOTES:

LAST OF SEVERAL OCCURRENCES

COLUMN 17 PEAK WIND IN M.P.H.

PRELIMINARY LOCAL CLIMATOLOGICAL DATA (WS FORM: F-6) , PAGE 2

STATION: MEDFORD OR

MONTH: APRIL

YEAR: 2014

LATITUDE: 42 22 N

LONGITUDE: 122 52 W

[TEMPERATURE DATA]

[PRECIPITATION DATA]

SYMBOLS USED IN COLUMN 16

AVERAGE MONTHLY: 56.2
DPTR FM NORMAL: 3.4
HIGHEST: 92 ON 30
LOWEST: 35 ON 1

TOTAL FOR MONTH: 0.82
DPTR FM NORMAL: -0.56
GRTST 24HR 0.25 ON 3- 4
SNOW, ICE PELLETS, HAIL
TOTAL MONTH: 0.0 INCH
GRTST 24HR 0.0
GRTST DEPTH: 0

- 1 = FOG OR MIST
- 2 = FOG REDUCING VISIBILITY TO 1/4 MILE OR LESS
- 3 = THUNDER
- 4 = ICE PELLETS
- 5 = HAIL
- 6 = FREEZING RAIN OR DRIZZLE
- 7 = DUSTSTORM OR SANDSTORM: VSBY 1/2 MILE OR LESS
- 8 = SMOKE OR HAZE
- 9 = BLOWING SNOW
- X = TORNADO

[NO. OF DAYS WITH]

[WEATHER - DAYS WITH]

MAX 32 OR BELOW:	0	0.01 INCH OR MORE:	10
MAX 90 OR ABOVE:	1	0.10 INCH OR MORE:	2
MIN 32 OR BELOW:	0	0.50 INCH OR MORE:	0
MIN 0 OR BELOW:	0	1.00 INCH OR MORE:	0

[HDD (BASE 65)]

TOTAL THIS MO.	259	CLEAR (SCALE 0-3)	13
DPTR FM NORMAL	-108	PTCLDY (SCALE 4-7)	12
TOTAL FM JUL 1	4050	CLOUDY (SCALE 8-10)	5
DPTR FM NORMAL	51		

[CDD (BASE 65)]

TOTAL THIS MO.	4		
DPTR FM NORMAL	1	[PRESSURE DATA]	
TOTAL FM JAN 1	4	HIGHEST SLP M ON M	
DPTR FM NORMAL	1	LOWEST SLP 29.78 ON 25	

[REMARKS]

#FINAL-04-14#

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Climatological Report (Monthly)

000
 CXUS56 KMFR 011137
 CLMMFR

CLIMATE REPORT
 NATIONAL WEATHER SERVICE MEDFORD, OR
 445 AM PDT THU MAY 1 2014

.....
 ...THE MEDFORD OR CLIMATE SUMMARY FOR THE MONTH OF APRIL 2014...

CLIMATE NORMAL PERIOD 1981 TO 2010
 CLIMATE RECORD PERIOD 1911 TO 2014

WEATHER	OBSERVED VALUE	DATE(S)	NORMAL VALUE	DEPART FROM NORMAL	LAST YEAR`S VALUE	DATE(S)
---------	-------------------	---------	-----------------	--------------------------	----------------------	---------

..... TEMPERATURE (F) RECORD						
HIGH	96	04/28/1998				
		04/28/1957				
		04/28/1926				
LOW	21	04/01/1936				
HIGHEST	92	04/30			86	04/27
						04/26
LOWEST	35	04/01			33	04/17
						04/14
AVG. MAXIMUM	69.6		64.9	4.7	67.7	
AVG. MINIMUM	42.8		40.8	2.0	40.7	
MEAN	56.2		52.8	3.4	54.2	
DAYS MAX >= 90	1		0.1	0.9	0	
DAYS MAX <= 32	0		0.0	0.0	0	

DAYS MIN <= 32	0	1.7	-1.7	0
DAYS MIN <= 0	0	0.0	0.0	0

PRECIPITATION (INCHES)
RECORD

MAXIMUM	4.40	1912		
TOTALS	0.82		1.38	-0.56
DAILY AVG.	0.03		0.05	-0.02
DAYS >= .01	10		10.6	-0.6
DAYS >= .10	2		4.8	-2.8
DAYS >= .50	0		0.4	-0.4
DAYS >= 1.00	0		0.0	0.0

GREATEST

24 HR. TOTAL 0.25 04/03 TO 04/04

SNOWFALL (INCHES)

RECORDS

TOTAL	4.2	1953		
TOTALS	0.0		0.0	0.0
SINCE 7/1	3.4		4.1	-0.7

DEGREE_DAYS

HEATING TOTAL	259		367	-108
SINCE 7/1	4050		3999	51
COOLING TOTAL	4		3	1
SINCE 1/1	4		3	1

FREEZE DATES

RECORD

EARLIEST	09/13/1921	
LATEST	06/12/1952	
EARLIEST		10/18
LATEST		04/29

WIND (MPH)

AVERAGE WIND SPEED	4.1		
HIGHEST WIND SPEED/DIRECTION	25/140	DATE	04/30
HIGHEST GUST SPEED/DIRECTION	31/140	DATE	04/30

SKY COVER

POSSIBLE SUNSHINE (PERCENT)	MM
AVERAGE SKY COVER	0.40

NUMBER OF DAYS FAIR	13
NUMBER OF DAYS PC	12
NUMBER OF DAYS CLOUDY	5

AVERAGE RH (PERCENT)	58
----------------------	----

WEATHER CONDITIONS. NUMBER OF DAYS WITH			
THUNDERSTORM	0	MIXED PRECIP	0
HEAVY RAIN	1	RAIN	4
LIGHT RAIN	11	FREEZING RAIN	0
LT FREEZING RAIN	0	HAIL	0
HEAVY SNOW	0	SNOW	0
LIGHT SNOW	0	SLEET	0
FOG	9	FOG W/VIS <= 1/4 MILE	0
HAZE	4		

- INDICATES NEGATIVE NUMBERS.

R INDICATES RECORD WAS SET OR TIED.

MM INDICATES DATA IS MISSING.

T INDICATES TRACE AMOUNT.

&&

ASIDE FROM WARM TEMPERATURES, THE MEDFORD AREA EXPERIENCED FAIRLY BENIGN WEATHER DURING APRIL 2014. A SERIES OF DISTURBANCES PASSED OVER THE AREA AT THE BEGINNING OF APRIL AND AGAIN TOWARDS THE LATTER HALF OF THE MONTH. DESPITE THE NEAR NORMAL AMOUNTS DELIVERED BY THESE DISTURBANCES, THE MONTHLY TOTAL ENDED BELOW AVERAGE BY 0.56 INCHES. AS FOR TEMPERATURES, THE MONTH STARTED OUT NEAR NORMAL BEFORE INCREASING TO ABOUT 10 DEGREES ABOVE AVERAGE. MEDFORD SAW IT`S FIRST 80 DEGREE DAY OF THE YEAR DURING THAT WEEK. TEMPERATURES MODERATED UNTIL THE LAST FEW DAYS OF THE MONTH WHEN A STRONG RIDGE OF HIGH PRESSURE SETTLED OVER THE AREA. THIS RIDGE RESULTED IN MULTIPLE RECORD HIGH TEMPERATURES FOR NUMEROUS SITES AROUND THE AREA. DUNCAN

[Explanation of the Preliminary Monthly Climate Data \(F6\) Product](#)

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WFO Monthly/Daily Climate Data

000
 CXUS56 KMFR 211000
 CF6MFR
 PRELIMINARY LOCAL CLIMATOLOGICAL DATA (WS FORM: F-6)

STATION: MEDFORD OR
 MONTH: MAY
 YEAR: 2014
 LATITUDE: 42 22 N
 LONGITUDE: 122 52 W

TEMPERATURE IN F:					:PCPN:			SNOW:	WIND			:SUNSHINE:			SKY	:PK WND			
1	2	3	4	5	6A	6B	7	8	9	10	11	12	13	14	15	16	17	18	
									12Z AVG MX 2MIN										
DY	MAX	MIN	AVG	DEP	HDD	CDD	WTR	SNW	DPTH	SPD	SPD	DIR	MIN	PSBL	S-S	WX	SPD	DR	
1	91	47	69	13	0	4	0.00	0.0	0	3.9	18	300	M	M	0		26	300	
2	83	48	66	10	0	1	0.00	0.0	0	5.7	22	300	M	M	0		30	290	
3	70	52	61	4	4	0	0.00	0.0	0	6.7	23	320	M	M	5		28	320	
4	62	49	56	-1	9	0	0.05	0.0	0	5.5	18	320	M	M	10	1	22	320	
5	62	48	55	-2	10	0	0.01	0.0	0	6.2	21	20	M	M	8	1	24	20	
6	67	45	56	-1	9	0	0.00	0.0	0	4.9	16	320	M	M	6		23	360	
7	71	38	55	-3	10	0	0.00	0.0	0	5.3	16	320	M	M	1		20	320	
8	62	50	56	-2	9	0	0.15	0.0	0	4.0	12	310	M	M	9	1	14	230	
9	63	48	56	-2	9	0	0.02	0.0	0	7.0	22	310	M	M	8		29	320	
10	62	45	54	-4	11	0	0.08	0.0	0	4.7	22	10	M	M	8	1	26	10	
11	73	37	55	-4	10	0	0.00	0.0	0	3.4	12	320	M	M	1		16	300	
12	83	43	63	4	2	0	0.00	0.0	0	3.3	12	310	M	M	0		14	310	
13	91	49	70	11	0	5	0.00	0.0	0	3.3	12	10	M	M	0		16	20	
14	96	53	75	16	0	10	0.00	0.0	0	3.4	12	280	M	M	0		15	340	
15	87	57	72	12	0	7	0.00	0.0	0	5.3	18	300	M	M	0		24	290	
16	81	47	64	4	1	0	0.00	0.0	0	5.5	18	20	M	M	0		23	320	
17	79	50	65	5	0	0		T	0.0	0	6.7	18	300	M	M	4		25	300
18	68	51	60	0	5	0	0.02	0.0	0	6.5	22	320	M	M	8	1	29	320	
19	71	49	60	0	5	0	0.14	0.0	0	5.6	21	280	M	M	5	1	26	280	
20	77	49	63	2	2	0	0.00	0.0	0	4.4	16	340	M	M	6	18	21	350	
SM	1499	955			96	27	0.47		0.0	101.3			M		79				
AV	74.9	47.8								5.1	FASTST		M	M	4		MAX (MPH)		

NOTES:

LAST OF SEVERAL OCCURRENCES

COLUMN 17 PEAK WIND IN M.P.H.

PRELIMINARY LOCAL CLIMATOLOGICAL DATA (WS FORM: F-6) , PAGE 2

STATION: MEDFORD OR
MONTH: MAY
YEAR: 2014
LATITUDE: 42 22 N
LONGITUDE: 122 52 W

[TEMPERATURE DATA] [PRECIPITATION DATA] SYMBOLS USED IN COLUMN 16
AVERAGE MONTHLY: 61.3 TOTAL FOR MONTH: 0.47 1 = FOG OR MIST
DPTR FM NORMAL: 2.9 DPTR FM NORMAL: -0.39 2 = FOG REDUCING VISIBILITY
HIGHEST: 96 ON 14 GRTST 24HR 0.17 ON 8- 9 TO 1/4 MILE OR LESS
LOWEST: 37 ON 11 3 = THUNDER
SNOW, ICE PELLETS, HAIL 4 = ICE PELLETS
TOTAL MONTH: 0.0 INCH 5 = HAIL
GRTST 24HR 0.0 6 = FREEZING RAIN OR DRIZZLE
GRTST DEPTH: 0 7 = DUSTSTORM OR SANDSTORM:
VSBY 1/2 MILE OR LESS
8 = SMOKE OR HAZE
9 = BLOWING SNOW
X = TORNADO
[NO. OF DAYS WITH] [WEATHER - DAYS WITH]
MAX 32 OR BELOW: 0 0.01 INCH OR MORE: 7
MAX 90 OR ABOVE: 3 0.10 INCH OR MORE: 2
MIN 32 OR BELOW: 0 0.50 INCH OR MORE: 0
MIN 0 OR BELOW: 0 1.00 INCH OR MORE: 0
[HDD (BASE 65)]
TOTAL THIS MO. 96 CLEAR (SCALE 0-3) 9
DPTR FM NORMAL -51 PTCLDY (SCALE 4-7) 8
TOTAL FM JUL 1 4146 CLOUDY (SCALE 8-10) 3
DPTR FM NORMAL 0
[CDD (BASE 65)]
TOTAL THIS MO. 27
DPTR FM NORMAL 8 [PRESSURE DATA]
TOTAL FM JAN 1 31 HIGHEST SLP M ON M
DPTR FM NORMAL 9 LOWEST SLP 29.81 ON 3

[REMARKS]

[Explanation of the Preliminary Monthly Climate Data \(F6\) Product](#)

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WFO Monthly/Daily Climate Data

000
 CXUS55 KPQR 011230
 CF6AST
 PRELIMINARY LOCAL CLIMATOLOGICAL DATA (WS FORM: F-6)

STATION: ASTORIA OR
 MONTH: MAY
 YEAR: 2014
 LATITUDE: 46 9 N
 LONGITUDE: 123 53 W

TEMPERATURE IN F:		:PCPN:		SNOW:		WIND		:SUNSHINE:		SKY		:PK WND						
1	2	3	4	5	6A	6B	7	8	9	10	11	12	13	14	15	16	17	18
										12Z		AVG MX		2MIN				
DY	MAX	MIN	AVG	DEP	HDD	CDD	WTR	SNW	DPTH	SPD	SPD	DIR	MIN	PSBL	S-S	WX	SPD	DR
1	81	56	69	18	0	4	0.00	0.0	0	8.3	23	220	M	M	0		34	210
2	58	52	55	4	10	0	0.02	0.0	0	7.7	16	220	M	M	9	18	22	210
3	58	50	54	3	11	0	1.18	0.0	0	13.5	25	200	M	M	9	1	41	190
4	57	51	54	3	11	0	0.65	0.0	0	15.5	24	200	M	M	9	1	38	220
5	58	49	54	3	11	0	0.10	M	0	9.8	21	230	M	M	9	1	29	220
6	58	46	52	1	13	0	0.00	0.0	0	6.4	15	250	M	M	6		21	250
7	58	41	50	-2	15	0	0.00	0.0	0	5.7	14	250	M	M	2		18	280
8	55	47	51	-1	14	0	1.31	M	0	8.9	21	190	M	M	9	1	31	200
9	55	45	50	-2	15	0	0.76	M	M	8.7	21	240	M	M	8	1	27	240
10	59	44	52	0	13	0	0.11	M	M	5.9	14	290	M	M	6	1	19	280
11	63	39	51	-1	14	0	0.00	0.0	M	6.5	17	310	M	M	1	12	22	320
12	78	45	62	10	3	0	0.00	0.0	M	6.8	16	40	M	M	0		20	130
13	80	48	64	11	1	0	0.00	0.0	M	6.8	17	310	M	M	0		22	310

14	87	50	69	16	0	4	0.00	0.0	0	6.6	15	330	M	M	0	24	40
15	71	52	62	9	3	0	0.00	0.0	0	10.9	30	220	M	M	1	41	220
16	63	54	59	6	6	0	T	0.0	0	10.4	20	250	M	M	8 1	24	180
17	63	52	58	5	7	0	0.11	0.0	0	5.7	16	250	M	M	7 1	20	240
18	62	53	58	5	7	0	0.58	0.0	0	6.9	20	240	M	M	10 1	26	240
19	65	49	57	3	8	0	0.01	M	0	6.5	15	310	M	M	3 1	19	330
20	63	51	57	3	8	0	0.00	0.0	0	10.1	21	320	M	M	9	24	310
21	64	52	58	4	7	0	0.00	0.0	0	8.5	18	310	M	M	6	22	300
22	71	51	61	7	4	0	0.00	0.0	0	5.6	14	290	M	M	3	19	290
23	61	55	58	4	7	0	0.14	0.0	0	6.9	17	220	M	M	10 18	23	210
24	63	49	56	2	9	0	0.01	M	0	6.1	14	310	M	M	7 18	18	320
25	63	48	56	2	9	0	0.25	M	0	5.8	14	250	M	M	8 1	17	230
26	63	47	55	1	10	0	0.13	M	0	6.8	18	250	M	M	6 1	22	280
27	63	44	54	-1	11	0	T	M	0	5.8	15	260	M	M	5	21	230
28	63	48	56	1	9	0	0.62	M	0	7.5	18	220	M	M	9 1	24	220
29	62	47	55	0	10	0	0.00	0.0	0	6.2	16	320	M	M	7	19	350
30	65	42	54	-1	11	0	0.00	M	0	10.5	24	320	M	M	0 1	30	310
31	61	53	57	2	8	0	0.00	0.0	0	8.1	14	290	M	M	10	16	280

```

=====
SM 1991 1510          265   8  5.98      0.0 245.4          M      177
=====
AV 64.2 48.7                7.9 FASTST   M   M   6   MAX (MPH)
                               MISC ----> # 30 220                # 41 190
=====

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NOTES:
LAST OF SEVERAL OCCURRENCES

COLUMN 17 PEAK WIND IN M.P.H.

PRELIMINARY LOCAL CLIMATOLOGICAL DATA (WS FORM: F-6) , PAGE 2

STATION: ASTORIA OR
MONTH: MAY
YEAR: 2014
LATITUDE: 46 9 N
LONGITUDE: 123 53 W

[TEMPERATURE DATA] [PRECIPITATION DATA] SYMBOLS USED IN COLUMN 16

AVERAGE MONTHLY: 56.5 TOTAL FOR MONTH: 5.98 1 = FOG OR MIST
DPTR FM NORMAL: 3.5 DPTR FM NORMAL: 2.66 2 = FOG REDUCING VISIBILITY
HIGHEST: 87 ON 14 GRTST 24HR 1.53 ON 3- 4 TO 1/4 MILE OR LESS
LOWEST: 39 ON 11 3 = THUNDER

SNOW, ICE PELLETS, HAIL	4 = ICE PELLETS
TOTAL MONTH: 0.0 INCH	5 = HAIL
GRTST 24HR 0.0	6 = FREEZING RAIN OR DRIZZLE
GRTST DEPTH: 0	7 = DUSTSTORM OR SANDSTORM: VSBY 1/2 MILE OR LESS

8 = SMOKE OR HAZE

9 = BLOWING SNOW

X = TORNADO

[NO. OF DAYS WITH]	[WEATHER - DAYS WITH]
--------------------	-----------------------

MAX 32 OR BELOW: 0	0.01 INCH OR MORE: 15
MAX 90 OR ABOVE: 0	0.10 INCH OR MORE: 12
MIN 32 OR BELOW: 0	0.50 INCH OR MORE: 6
MIN 0 OR BELOW: 0	1.00 INCH OR MORE: 2

[HDD (BASE 65)]

TOTAL THIS MO. 265	CLEAR (SCALE 0-3) 9
DPTR FM NORMAL -107	PTCLDY (SCALE 4-7) 12
TOTAL FM JUL 1 4647	CLOUDY (SCALE 8-10) 10
DPTR FM NORMAL -134	

[CDD (BASE 65)]

TOTAL THIS MO. 8	
DPTR FM NORMAL 8	[PRESSURE DATA]
TOTAL FM JAN 1 11	HIGHEST SLP 30.34 ON 11
DPTR FM NORMAL 11	LOWEST SLP 29.68 ON 8

[REMARKS]

#FINAL-05-14#

These data are preliminary and have not undergone final quality control by the National Climatic Data Center (NCDC). Therefore, these data are subject to revision. Final and certified climate data can be accessed at the NCDC - <http://www.ncdc.noaa.gov>.

Climatological Report (Monthly)

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 CXUS56 KMFR 011029
 CLMMFR

CLIMATE REPORT
 NATIONAL WEATHER SERVICE MEDFORD, OR
 330 AM PDT SUN JUN 1 2014

.....
 ...THE MEDFORD OR CLIMATE SUMMARY FOR THE MONTH OF MAY 2014...

CLIMATE NORMAL PERIOD 1981 TO 2010
 CLIMATE RECORD PERIOD 1911 TO 2014

WEATHER	OBSERVED VALUE	DATE(S)	NORMAL VALUE	DEPART FROM NORMAL	LAST YEAR`S VALUE	DATE(S)
---------	-------------------	---------	-----------------	--------------------------	----------------------	---------

.....						
TEMPERATURE (F)						
RECORD						
HIGH	103	05/30/1986				
LOW	28	05/04/1996				
		05/06/1968				
		05/01/1954				
HIGHEST	96	05/14			91	05/11
						05/10
LOWEST	37	05/11			33	05/01
AVG. MAXIMUM	76.9		73.3	3.6	75.6	
AVG. MINIMUM	49.0		46.2	2.8	47.6	
MEAN	63.0		59.8	3.2	61.6	
DAYS MAX >= 90	4		2.5	1.5	2	
DAYS MAX <= 32	0		0.0	0.0	0	
DAYS MIN <= 32	0		0.2	-0.2	0	

DAYS MIN <= 0 0 0.0 0.0 0

PRECIPITATION (INCHES)

RECORD

MAXIMUM	4.58	1945			
TOTALS	0.47		1.31	-0.84	0.69
DAILY AVG.	0.02		0.04	-0.02	0.02
DAYS >= .01	7		8.4	-1.4	10
DAYS >= .10	2		4.2	-2.2	2
DAYS >= .50	0		0.5	-0.5	0
DAYS >= 1.00	0		0.0	0.0	0

GREATEST

24 HR. TOTAL 0.17 05/08 TO 05/09

SNOWFALL (INCHES)

RECORDS

TOTAL	0.1	1988			
TOTALS	0.0		T	0.0	0.0
SINCE 7/1	3.4		4.1	-0.7	1.7

DEGREE_DAYS

HEATING TOTAL	107		198	-91	131
SINCE 7/1	4157		4197	-40	4002
COOLING TOTAL	52		35	17	33
SINCE 1/1	56		38	18	35

FREEZE DATES

RECORD

EARLIEST	09/13/1921				
LATEST	06/12/1952				
EARLIEST		10/18			
LATEST		04/29			

.....

WIND (MPH)

AVERAGE WIND SPEED	5.2				
HIGHEST WIND SPEED/DIRECTION	23/320	DATE	05/03		
HIGHEST GUST SPEED/DIRECTION	30/290	DATE	05/02		

SKY COVER

POSSIBLE SUNSHINE (PERCENT)	MM				
AVERAGE SKY COVER	0.30				
NUMBER OF DAYS FAIR	15				

NUMBER OF DAYS PC 13
 NUMBER OF DAYS CLOUDY 3

AVERAGE RH (PERCENT) 53

WEATHER CONDITIONS. NUMBER OF DAYS WITH

THUNDERSTORM	0	MIXED PRECIP	0
HEAVY RAIN	1	RAIN	3
LIGHT RAIN	8	FREEZING RAIN	0
LT FREEZING RAIN	0	HAIL	0
HEAVY SNOW	0	SNOW	0
LIGHT SNOW	0	SLEET	0
FOG	7	FOG W/VIS <= 1/4 MILE	0
HAZE	1		

- INDICATES NEGATIVE NUMBERS.

R INDICATES RECORD WAS SET OR TIED.

MM INDICATES DATA IS MISSING.

T INDICATES TRACE AMOUNT.

&&

MAY WAS A FAIRLY QUIET MONTH FOR THE MEDFORD AREA. THE STRONG RIDGE THAT DEVELOPED AT THE END OF APRIL LINGERED INTO THE BEGINNING OF THE MONTH. THIS CAUSED RECORD CHALLENGING TEMPERATURES DURING THE FIRST FEW DAYS...AVERAGING ABOUT 10 DEGREES ABOVE NORMAL. TEMPERATURES MODERATED THEREAFTER AS A FEW DISTURBANCES MOVED THROUGH, BRINGING THE MAJORITY OF PRECIPITATION THAT MEDFORD WOULD RECEIVE DURING MAY. A SECOND HEAT WAVE ARRIVED AROUND THE MIDDLE OF THE MONTH CAUSING MULTIPLE RECORDS TO BE BROKEN FOR NUMEROUS LOCATIONS, INCLUDING MEDFORD. A DISTURBANCE BROUGHT AN END TO THIS HEATWAVE AND DELIVERED THE REST MAY'S PRECIPITATION TO THE MEDFORD AREA. ALTHOUGH TEMPERATURES MODERATED FOR THE REMAINDER OF THE MONTH, THEY WERE STILL WARMER THAN NORMAL.

Appendix D: Data Forms

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Ashland Gun Club, 555 Emigrant Creek Road City/County: Ashland / Jackson Co. Sampling Date: May 23, 2014
 Applicant/Owner: City of Ashland, 20 East Main Street, Ashland State: OR Sampling Point: 1
 Investigator(s): Donald K. Martin Section, Township, Range: S12, T39S, R1E, Lot 400
 Landform (hillslope, terrace, etc.): Stream Terrace Local relief (concave, convex, none): Concave Slope (%): 30
 Subregion (LRR): Interior Deserts LRR D Lat: 42.188638 Long: -122.640795 Datum: _____
 Soil Map Unit Name: Camas-Newberg-Evans NWI classification: plot not mapped

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

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

Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/> Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Remarks: Area formerly used for resource extraction (mineral water and CO2) and subsequently filled and graded. Adjacent areas kept mowed.	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				
Sapling/Shrub Stratum (Plot size: _____)				
1. _____	_____	_____	_____	Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
Herb Stratum (Plot size: <u>10' semi-circl</u>)				
1. <u>Centaurea solstitialis</u>	<u>20</u>	<u>*</u>	<u>NOL</u>	Hydrophytic Vegetation Indicators: ___ Dominance Test is >50% ___ Prevalence Index is ≤3.0 ¹ ___ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. <u>Cerastium fontanum</u>	<u>30</u>	<u>*</u>	<u>FACU</u>	
3. <u>Schedonorus arundinaceus</u>	<u>20</u>	<u>*</u>	<u>FACU</u>	
4. <u>Taeniatherum caput-medusae</u>	<u>10</u>		<u>NOL</u>	
5. <u>Dipsacus fullonum</u>	<u>5</u>		<u>FAC</u>	
6. <u>Medicago lupulina</u>	<u>5</u>		<u>FAC</u>	
7. <u>Erodium cicutarium</u>	<u>5</u>		<u>NOL</u>	
8. <u>Lepidium virginicum</u>	<u>5</u>		<u>FACU</u>	
<u>100</u> = Total Cover				
Woody Vine Stratum (Plot size: _____)				
1. _____	_____	_____	_____	Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/>
2. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum <u>10</u> % Cover of Biotic Crust _____				
Remarks:				

SOIL

Sampling Point: 1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-5	7.5YR3/2	100					SaCL	cobbly
5-9	10YR3/2	70	10YR4/4	30	C	PL	Sa	cemented gravel/cobbles
9-15	10YR3/2	85	7.5YR4/6	10	C	PL	Sa	very cobbly gravel
			2.5N	5	D	PL		
15-23	10YR4/2	95	2.5YR4/4	3	C	PL	Sa	very cobbly sand
			2.5N	2	D	PL		

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

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)			Indicators for Problematic Hydric Soils³:		
<input type="checkbox"/> Histosol (A1)	<input checked="" type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)			
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> 2 cm Muck (A10) (LRR B)			
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> Reduced Vertic (F18)			
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Red Parent Material (TF2)			
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Other (Explain in Remarks)			
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	<input type="checkbox"/> Redox Dark Surface (F6)				
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)				
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)				
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Vernal Pools (F9)				
<input type="checkbox"/> Sandy Gleyed Matrix (S4)					

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present): Type: <u>cemented gravels</u> Depth (inches): <u>5"</u>	Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
--	---

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:	
Primary Indicators (minimum of one required; check all that apply)	Secondary Indicators (2 or more required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Water Marks (B1) (Riverine)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Sediment Deposits (B2) (Riverine)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Drift Deposits (B3) (Riverine)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Drainage Patterns (B10)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> FAC-Neutral Test (D5)	

Field Observations: Surface Water Present? Yes <input type="checkbox"/> No <input type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>18.5</u> Saturation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>15</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
--	---

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Ashland Gun Club, 555 Emigrant Creek Road City/County: Ashland / Jackson Co. Sampling Date: May 23, 2014
 Applicant/Owner: City of Ashland, 20 East Main Street, Ashland State: OR Sampling Point: 2
 Investigator(s): Donald K. Martin Section, Township, Range: S12, T39S, R1E, Lot 400
 Landform (hillslope, terrace, etc.): Basin Local relief (concave, convex, none): Concave Slope (%): 2
 Subregion (LRR): Interior Deserts LRR D Lat: 42.188638 Long: -122.640795 Datum: _____
 Soil Map Unit Name: Camas-Newberg-Evans NWI classification: plot not mapped

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

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

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____ Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____
Remarks: Area formerly used for resource extraction (mineral water and CO2) and subsequently filled and graded. Adjacent areas kept mowed.	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>67</u> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
Sapling/Shrub Stratum (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
_____ = Total Cover				
Herb Stratum (Plot size: <u>10' semi-circl</u>)				
1. <u>Centaurea solstitialis</u>	<u>5</u>	_____	<u>NOL</u>	
2. <u>Cerastium fontanum</u>	<u>5</u>	_____	<u>FACU</u>	
3. <u>Poa annua</u>	<u>20</u>	<u>*</u>	<u>FACU</u>	
4. <u>Taeniatherum caput-medusae</u>	<u>20</u>	_____	<u>NOL</u>	
5. <u>Juncus balticus</u>	<u>25</u>	<u>*</u>	<u>FACW</u>	
6. <u>Medicago lupulina</u>	<u>15</u>	<u>*</u>	<u>FAC</u>	
7. <u>Rumex crispus</u>	<u>10</u>	_____	<u>FAC</u>	
8. <u>Lepidium virginicum</u>	<u>5</u>	_____	<u>FACU</u>	
<u>105</u> = Total Cover				
Woody Vine Stratum (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum <u>15</u> % Cover of Biotic Crust _____				
Remarks: Taeniatherum caput-medusae is not included as a dominant since it is being considered a late-season dominant in a vernal wet area.				

Hydrophytic Vegetation Present? Yes No _____

SOIL

Sampling Point: 2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-3	10YR4/2	60	2.5YR4/3	40	C	M	SaCL	
3-8	10YR4/2	50	7.5YR2.5/1	30	C	M/PL	SaCL	very gravelly
8-13	10YR3/1	60	7.5YR4/4	40	C	PL	SiC	cobbly
13-18	10YR3/1	100					gravel	cobbly

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

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)	Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) (LRR C) <input type="checkbox"/> 1 cm Muck (A9) (LRR D) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input checked="" type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> Vernal Pools (F9)
	<input type="checkbox"/> 1 cm Muck (A9) (LRR C) <input type="checkbox"/> 2 cm Muck (A10) (LRR B) <input type="checkbox"/> Reduced Vertic (F18) <input type="checkbox"/> Red Parent Material (TF2) <input type="checkbox"/> Other (Explain in Remarks)

Restrictive Layer (if present):
 Type: dense clay
 Depth (inches): 8

Hydric Soil Present? Yes No

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:	
Primary Indicators (minimum of one required; check all that apply)	Secondary Indicators (2 or more required)
<input type="checkbox"/> Surface Water (A1) <input checked="" type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) (Nonriverine) <input type="checkbox"/> Sediment Deposits (B2) (Nonriverine) <input type="checkbox"/> Drift Deposits (B3) (Nonriverine) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input checked="" type="checkbox"/> Salt Crust (B11) <input type="checkbox"/> Biotic Crust (B12) <input type="checkbox"/> Aquatic Invertebrates (B13) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)
	<input type="checkbox"/> Water Marks (B1) (Riverine) <input type="checkbox"/> Sediment Deposits (B2) (Riverine) <input type="checkbox"/> Drift Deposits (B3) (Riverine) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5)

Field Observations:
 Surface Water Present? Yes No Depth (inches): _____
 Water Table Present? Yes No Depth (inches): 9.5
 Saturation Present? (includes capillary fringe) Yes No Depth (inches): 7

Wetland Hydrology Present? Yes No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Ashland Gun Club, 555 Emigrant Creek Road City/County: Ashland / Jackson Co. Sampling Date: May 23, 2014
 Applicant/Owner: City of Ashland, 20 East Main Street, Ashland State: OR Sampling Point: 3
 Investigator(s): Donald K. Martin Section, Township, Range: S12, T39S, R1E, Lot 400
 Landform (hillslope, terrace, etc.): Stream Terrace Local relief (concave, convex, none): Concave Slope (%): 10
 Subregion (LRR): Interior Deserts LRR D Lat: 42.188638 Long: -122.640795 Datum: _____
 Soil Map Unit Name: Camas-Newberg-Evans NWI classification: plot not mapped

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

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

Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/> Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Remarks: Area formerly used for resource extraction (mineral water and CO2) and subsequently filled and graded. Adjacent areas kept mowed.	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>10'</u> semi-circl)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				
Sapling/Shrub Stratum (Plot size: _____)				
1. _____	_____	_____	_____	Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
Herb Stratum (Plot size: _____)				
1. <u>Centaurea solstitialis</u>	<u>20</u>	<u>*</u>	<u>NOL</u>	Hydrophytic Vegetation Indicators: ___ Dominance Test is >50% ___ Prevalence Index is ≤3.0 ¹ ___ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation ¹ (Explain)
2. <u>Cerastium fontanum</u>	<u>20</u>	<u>*</u>	<u>FACU</u>	
3. <u>Schedonorus arundinaceus</u>	<u>10</u>		<u>FACU</u>	
4. <u>Taeniatherum caput-medusae</u>	<u>20</u>	<u>*</u>	<u>NOL</u>	
5. <u>Cynosurus cristatus</u>	<u>10</u>		<u>FACU</u>	
6. <u>Vicia sativa</u>	<u>10</u>		<u>FACU</u>	
7. <u>Poa bulbosa</u>	<u>10</u>		<u>FACU</u>	
8. <u>Lepidium virginicum</u>	<u>10</u>		<u>FACU</u>	
<u>110</u> = Total Cover				
Woody Vine Stratum (Plot size: _____)				
1. _____	_____	_____	_____	¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum <u>5</u> % Cover of Biotic Crust _____				
Remarks:				

Remarks:

SOIL

Sampling Point: 3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-3	10YR3/2	100					SiL	some gravel
3-16	10YR3/2	100					SiC	some gravel
16-23	10YR3/2	90	7.5YR4/4	10	C	M	C	

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

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)	Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) (LRR C) <input type="checkbox"/> 1 cm Muck (A9) (LRR D) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> Vernal Pools (F9)
	<input type="checkbox"/> 1 cm Muck (A9) (LRR C) <input type="checkbox"/> 2 cm Muck (A10) (LRR B) <input type="checkbox"/> Reduced Vertic (F18) <input type="checkbox"/> Red Parent Material (TF2) <input type="checkbox"/> Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present): Type: <u>cemented gravels</u> Depth (inches): <u>23"</u>	Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
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Remarks:

HYDROLOGY

Wetland Hydrology Indicators:		
Primary Indicators (minimum of one required; check all that apply)	Secondary Indicators (2 or more required)	
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) (Nonriverine) <input type="checkbox"/> Sediment Deposits (B2) (Nonriverine) <input type="checkbox"/> Drift Deposits (B3) (Nonriverine) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Salt Crust (B11) <input type="checkbox"/> Biotic Crust (B12) <input type="checkbox"/> Aquatic Invertebrates (B13) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Water Marks (B1) (Riverine) <input type="checkbox"/> Sediment Deposits (B2) (Riverine) <input type="checkbox"/> Drift Deposits (B3) (Riverine) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5)

Field Observations: Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? (includes capillary fringe) Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____	Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Ashland Gun Club, 555 Emigrant Creek Road City/County: Ashland / Jackson Co. Sampling Date: May 23, 2014
 Applicant/Owner: City of Ashland, 20 East Main Street, Ashland State: OR Sampling Point: 4
 Investigator(s): Donald K. Martin Section, Township, Range: S12, T39S, R1E, Lot 400
 Landform (hillslope, terrace, etc.): Basin Local relief (concave, convex, none): Concave Slope (%): 2
 Subregion (LRR): Interior Deserts LRR D Lat: 42.188638 Long: -122.640795 Datum: _____
 Soil Map Unit Name: Camas-Newberg-Evans NWI classification: plot not mapped

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

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

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____ Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____
Remarks: Area formerly used for resource extraction (mineral water and CO2) and subsequently filled and graded. Adjacent areas kept mowed.	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>10'</u> semi-circl)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				
Sapling/Shrub Stratum (Plot size: _____)				
1. _____	_____	_____	_____	Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
Herb Stratum (Plot size: _____)				
1. <u>Centaurea solstitialis</u>	<u>5</u>	_____	<u>NOL</u>	Hydrophytic Vegetation Indicators: <input checked="" type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)
2. <u>Cerastium fontanum</u>	<u>5</u>	_____	<u>FACU</u>	
3. <u>Schedonorus arundinaceus</u>	<u>10</u>	_____	<u>FACU</u>	
4. <u>Taeniatherum caput-medusae</u>	<u>5</u>	_____	<u>NOL</u>	
5. <u>Juncus balticus</u>	<u>20</u>	<u>*</u>	<u>FACW</u>	
6. <u>Lepidium virginicum</u>	<u>5</u>	_____	<u>FACU</u>	
7. <u>Holcus lanatus</u>	<u>15</u>	_____	<u>FAC</u>	
8. <u>Deschampsia elongata</u>	<u>25</u>	<u>*</u>	<u>FACW</u>	
<u>90</u> = Total Cover				
Woody Vine Stratum (Plot size: _____)				
1. _____	_____	_____	_____	¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum <u>10</u> % Cover of Biotic Crust _____				
Remarks:				

Remarks:

SOIL

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-8	10YR3/2	95	10YR3/1	5	D	M	CL	some gravel
8-18	10YR3/2	85	7.5YR4/4	10	C	M/PL	SaC	gravelly, few cobbles
			2.5Y2.5/1	5	C	M/PL		
18-21	10YR4/2	75	7.5YR4/4	25	C	M/PL	Sa	cemented gravel/cobbles

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

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)	Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) (LRR C) <input type="checkbox"/> 1 cm Muck (A9) (LRR D) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input checked="" type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> Vernal Pools (F9)
	<input type="checkbox"/> 1 cm Muck (A9) (LRR C) <input type="checkbox"/> 2 cm Muck (A10) (LRR B) <input type="checkbox"/> Reduced Vertic (F18) <input type="checkbox"/> Red Parent Material (TF2) <input type="checkbox"/> Other (Explain in Remarks)
<p>³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.</p>	

Restrictive Layer (if present):
 Type: cemented gravels
 Depth (inches): 18

Hydric Soil Present? Yes No

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)	Secondary Indicators (2 or more required)
<input type="checkbox"/> Surface Water (A1) <input checked="" type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) (Nonriverine) <input type="checkbox"/> Sediment Deposits (B2) (Nonriverine) <input type="checkbox"/> Drift Deposits (B3) (Nonriverine) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input checked="" type="checkbox"/> Salt Crust (B11) <input type="checkbox"/> Biotic Crust (B12) <input type="checkbox"/> Aquatic Invertebrates (B13) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)
	<input type="checkbox"/> Water Marks (B1) (Riverine) <input type="checkbox"/> Sediment Deposits (B2) (Riverine) <input type="checkbox"/> Drift Deposits (B3) (Riverine) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): _____	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Water Table Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Depth (inches): <u>12</u>	
Saturation Present? (includes capillary fringe) Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Depth (inches): <u>10</u>	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Area pockmarked with surface wet and dry zones and occasional pooling with CO2 bubbling up.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Ashland Gun Club, 555 Emigrant Creek Road City/County: Ashland / Jackson Co. Sampling Date: May 23, 2014
 Applicant/Owner: City of Ashland, 20 East Main Street, Ashland State: OR Sampling Point: 5
 Investigator(s): Donald K. Martin Section, Township, Range: S12, T39S, R1E, Lot 400
 Landform (hillslope, terrace, etc.): Stream Terrace Local relief (concave, convex, none): Convex Slope (%): 30
 Subregion (LRR): Interior Deserts LRR D Lat: 42.188638 Long: -122.640795 Datum: _____
 Soil Map Unit Name: Camas-Newberg-Evans NWI classification: plot not mapped

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

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

Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/> Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Remarks: Area formerly used for resource extraction (mineral water and CO2) and subsequently filled and graded. Adjacent areas kept mowed.	

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status	
Tree Stratum (Plot size: <u>10'</u> semi-circl)				
1. _____	_____	_____	_____	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>4</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>25</u> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				
Sapling/Shrub Stratum (Plot size: _____)				
1. _____	_____	_____	_____	Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
Herb Stratum (Plot size: _____)				
1. <u>Dipsacus fullonum</u>	<u>10</u>		<u>FAC</u>	Hydrophytic Vegetation Indicators: ___ Dominance Test is >50% ___ Prevalence Index is ≤3.0 ¹ ___ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. <u>Cerastium fontanum</u>	<u>20</u>	*	<u>FACU</u>	
3. <u>Poa pratensis</u>	<u>15</u>	*	<u>FAC</u>	
4. <u>Taeniatherum caput-medusae</u>	<u>15</u>	*	<u>NOL</u>	
5. <u>Bromus hordeaceus</u>	<u>10</u>		<u>FACU</u>	
6. <u>Cirsium vulgare</u>	<u>10</u>		<u>FACU</u>	
7. <u>Poa bulbosa</u>	<u>15</u>	*	<u>FACU</u>	
8. <u>Rosa Nutkana</u>	<u>5</u>		<u>FACU</u>	
<u>100</u> = Total Cover				
Woody Vine Stratum (Plot size: _____)				
1. _____	_____	_____	_____	Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/>
2. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum _____ % Cover of Biotic Crust _____				
Remarks:				

SOIL

Sampling Point: 5

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-11	7.5YR3/2	100					SiCL	no gravel
11-23	10YR4/2	100					SaCL	no gravel

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

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)			Indicators for Problematic Hydric Soils ³ :		
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)			
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> 2 cm Muck (A10) (LRR B)			
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> Reduced Vertic (F18)			
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Red Parent Material (TF2)			
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Other (Explain in Remarks)			
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	<input type="checkbox"/> Redox Dark Surface (F6)				
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)				
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)				
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Vernal Pools (F9)				
<input type="checkbox"/> Sandy Gleyed Matrix (S4)					

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/>
--	--

Remarks:
 Pit is located at the edge of an uncharacteristically level grassy area and soil is obviously disturbed and very different from other disturbed soils encountered on the Site.

HYDROLOGY

Wetland Hydrology Indicators:	
Primary Indicators (minimum of one required; check all that apply)	Secondary Indicators (2 or more required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Other (Explain in Remarks)
	<input type="checkbox"/> Water Marks (B1) (Riverine)
	<input type="checkbox"/> Sediment Deposits (B2) (Riverine)
	<input type="checkbox"/> Drift Deposits (B3) (Riverine)
	<input type="checkbox"/> Drainage Patterns (B10)
	<input type="checkbox"/> Dry-Season Water Table (C2)
	<input type="checkbox"/> Crayfish Burrows (C8)
	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
	<input type="checkbox"/> Shallow Aquitard (D3)
	<input type="checkbox"/> FAC-Neutral Test (D5)

Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>21</u> Saturation Present? (includes capillary fringe) Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>17</u>	Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Ashland Gun Club, 555 Emigrant Creek Road City/County: Ashland / Jackson Co. Sampling Date: May 23, 2014
 Applicant/Owner: City of Ashland, 20 East Main Street, Ashland State: OR Sampling Point: 6
 Investigator(s): Donald K. Martin Section, Township, Range: S12, T39S, R1E, Lot 400
 Landform (hillslope, terrace, etc.): Stream Terrace Local relief (concave, convex, none): Concave Slope (%): 40
 Subregion (LRR): Interior Deserts LRR D Lat: 42.188638 Long: -122.640795 Datum: _____
 Soil Map Unit Name: Camas-Newberg-Evans NWI classification: plot not mapped

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

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

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____ Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____
Remarks: Area formerly used for resource extraction (mineral water and CO2) and subsequently filled and graded. Adjacent areas kept mowed.	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				
Sapling/Shrub Stratum (Plot size: _____)				
1. _____	_____	_____	_____	Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
Herb Stratum (Plot size: <u>10' semi-circl</u>)				
1. <u>Dipsacus fullonum</u>	<u>5</u>		<u>FAC</u>	Hydrophytic Vegetation Indicators: <input checked="" type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)
2. <u>Typha latifolia</u>	<u>20</u>	<u>*</u>	<u>OBL</u>	
3. <u>Schedonorus arundinaceus</u>	<u>5</u>		<u>FACU</u>	
4. <u>Taeniatherum caput-medusae</u>	<u>5</u>		<u>NOL</u>	
5. <u>Juncus balticus</u>	<u>75</u>	<u>*</u>	<u>FACW</u>	
6. <u>Veronica anagallis-aquatica</u>	<u>5</u>		<u>OBL</u>	
7. <u>Holcus lanatus</u>	<u>5</u>		<u>FAC</u>	
8. <u>Deschampsia elongata</u>	<u>5</u>		<u>FACW</u>	
<u>125</u> = Total Cover				
Woody Vine Stratum (Plot size: _____)				
1. _____	_____	_____	_____	¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum <u>5</u> % Cover of Biotic Crust _____				
Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____				
Remarks: Vegetation plot includes the 1' slope down to the wet flats, which was inundated by 3 inches of water.				

SOIL

Sampling Point: 6

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-9	7.5YR3/2	100					CL	no gravel
9-21	7.5YR3/2	80	10YR4/1	20	D	M	SiC	no gravel

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

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)			Indicators for Problematic Hydric Soils ³ :		
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)			
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> 2 cm Muck (A10) (LRR B)			
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> Reduced Vertic (F18)			
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Red Parent Material (TF2)			
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input type="checkbox"/> Depleted Matrix (F3)	<input checked="" type="checkbox"/> Other (Explain in Remarks)			
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	<input type="checkbox"/> Redox Dark Surface (F6)				
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)				
<input type="checkbox"/> Thick Dark Surface (A12)	<input checked="" type="checkbox"/> Redox Depressions (F8)				
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Vernal Pools (F9)				
<input type="checkbox"/> Sandy Gleyed Matrix (S4)					

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present): Type: <u>cemented gravels</u> Depth (inches): <u>21</u>	Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
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Remarks:
 Pit located on steep slope, approximately 1' above inundated area represented in vegetation section. Soil is radically different than other soils on the Site. This pit meets hydric criteria in the Arid Supplement considering that the apparent fill overburden is atypical. According to Chapter 5 if the fill had not been placed there the soil would be hydric according to F8 (redox depression).

HYDROLOGY

Wetland Hydrology Indicators:		
Primary Indicators (minimum of one required; check all that apply)	Secondary Indicators (2 or more required)	
<input type="checkbox"/> Surface Water (A1)	<input checked="" type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Water Marks (B1) (Riverine)
<input checked="" type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)	<input type="checkbox"/> Sediment Deposits (B2) (Riverine)
<input checked="" type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Drift Deposits (B3) (Riverine)
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> FAC-Neutral Test (D5)

Field Observations: Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>10</u> Saturation Present? (includes capillary fringe) Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>8</u>	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
 Remarks:
 Vegetation plot 1' away from the pit is a 3" pool with CO2 bubbling up.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Ashland Gun Club, 555 Emigrant Creek Road City/County: Ashland / Jackson Co. Sampling Date: May 23, 2014
 Applicant/Owner: City of Ashland, 20 East Main Street, Ashland State: OR Sampling Point: 7
 Investigator(s): Donald K. Martin Section, Township, Range: S12, T39S, R1E, Lot 400
 Landform (hillslope, terrace, etc.): Stream Terrace Local relief (concave, convex, none): Convex Slope (%): 15
 Subregion (LRR): Interior Deserts LRR D Lat: 42.188638 Long: -122.640795 Datum: _____
 Soil Map Unit Name: Camas-Newberg-Evans NWI classification: plot not mapped

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

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

Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/> Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Remarks: Area formerly used for resource extraction (mineral water and CO2) and subsequently filled and graded. Adjacent areas kept mowed.	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>33</u> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
Sapling/Shrub Stratum (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	Hydrophytic Vegetation Indicators: ___ Dominance Test is >50% ___ Prevalence Index is ≤3.0 ¹ ___ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/>
_____ = Total Cover				
Herb Stratum (Plot size: <u>10' semi-circl</u>)				
1. <u>Dipsacus fullonum</u>	<u>10</u>	_____	<u>FAC</u>	
2. <u>Cerastium fontanum</u>	<u>10</u>	_____	<u>FACU</u>	
3. <u>Hordeum jubatum</u>	<u>25</u>	<u>*</u>	<u>FAC</u>	
4. <u>Taeniatherum caput-medusae</u>	<u>20</u>	<u>*</u>	<u>NOL</u>	
5. <u>Bromus tectorum</u>	<u>20</u>	<u>*</u>	<u>NOL</u>	
6. <u>Cirsium vulgare</u>	<u>5</u>	_____	<u>FACU</u>	
7. <u>Lepidium virginicum</u>	<u>10</u>	_____	<u>FACU</u>	
8. <u>Rosa Nutkana</u>	<u>5</u>	_____	<u>FACU</u>	
<u>105</u> = Total Cover				
Woody Vine Stratum (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum _____		% Cover of Biotic Crust _____		

Remarks:

SOIL

Sampling Point: 7

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-24	10YR3/2	100					SaCL	

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

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5) (LRR C)
- 1 cm Muck (A9) (LRR D)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)

- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Vernal Pools (F9)

Indicators for Problematic Hydric Soils³:

- 1 cm Muck (A9) (LRR C)
- 2 cm Muck (A10) (LRR B)
- Reduced Vertic (F18)
- Red Parent Material (TF2)
- Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____
 Depth (inches): _____

Hydric Soil Present? Yes _____ No

Remarks:

Plot is obviously in an area of deep fill with an unusual sandy clay texture.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1) (Nonriverine)
- Sediment Deposits (B2) (Nonriverine)
- Drift Deposits (B3) (Nonriverine)
- Surface Soil Cracks (B6)
- Inundation Visible on Aerial Imagery (B7)
- Water-Stained Leaves (B9)

- Salt Crust (B11)
- Biotic Crust (B12)
- Aquatic Invertebrates (B13)
- Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres along Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C6)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- Water Marks (B1) (Riverine)
- Sediment Deposits (B2) (Riverine)
- Drift Deposits (B3) (Riverine)
- Drainage Patterns (B10)
- Dry-Season Water Table (C2)
- Crayfish Burrows (C8)
- Saturation Visible on Aerial Imagery (C9)
- Shallow Aquitard (D3)
- FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No Depth (inches): _____
 Water Table Present? Yes _____ No Depth (inches): _____
 Saturation Present? (includes capillary fringe) Yes _____ No Depth (inches): _____

Wetland Hydrology Present? Yes _____ No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Ashland Gun Club, 555 Emigrant Creek Road City/County: Ashland / Jackson Co. Sampling Date: May 23, 2014
 Applicant/Owner: City of Ashland, 20 East Main Street, Ashland State: OR Sampling Point: 8
 Investigator(s): Donald K. Martin Section, Township, Range: S12, T39S, R1E, Lot 400
 Landform (hillslope, terrace, etc.): Stream Terrace Local relief (concave, convex, none): Concave Slope (%): 0
 Subregion (LRR): Interior Deserts LRR D Lat: 42.188638 Long: -122.640795 Datum: _____
 Soil Map Unit Name: Camas-Newberg-Evans NWI classification: plot not mapped

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

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

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____ Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____
Remarks: Area formerly used for resource extraction (mineral water and CO2) and subsequently filled and graded. Adjacent areas kept mowed.	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				
Sapling/Shrub Stratum (Plot size: _____)				
1. _____	_____	_____	_____	Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
Herb Stratum (Plot size: <u>10' semi-circl</u>)				
1. <u>Dipsacus fullonum</u>	<u>10</u>		<u>FAC</u>	Hydrophytic Vegetation Indicators: <input checked="" type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)
2. <u>Typha latifolia</u>	<u>80</u>	<u>*</u>	<u>OBL</u>	
3. <u>Juncus balticus</u>	<u>20</u>	<u>*</u>	<u>FACW</u>	
4. <u>Veronica anagallis-aquatica</u>	<u>10</u>		<u>OBL</u>	
5. <u>Holcus lanatus</u>	<u>5</u>		<u>FAC</u>	
6. <u>Deschampsia elongata</u>	<u>5</u>		<u>FACW</u>	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
<u>130</u> = Total Cover				
Woody Vine Stratum (Plot size: _____)				
1. _____	_____	_____	_____	¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum _____ % Cover of Biotic Crust _____		Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____		

Remarks:
 Vegetation plot includes the 6" slope down to the wet flats, which was inundated by 4 inches of water.

SOIL

Sampling Point: 8

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-19	10YR4/2	80	10YR4/1	15	D	M	SaCL	gravelly
			10YR4/6	5	C	M		

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

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5) (LRR C)
- 1 cm Muck (A9) (LRR D)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)

- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Vernal Pools (F9)

Indicators for Problematic Hydric Soils³:

- 1 cm Muck (A9) (LRR C)
- 2 cm Muck (A10) (LRR B)
- Reduced Vertic (F18)
- Red Parent Material (TF2)
- Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____
 Depth (inches): _____

Hydric Soil Present? Yes No

Remarks:

Pit located on steep slope, approximately 6" above inundated area represented in vegetation section.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1) (Nonriverine)
- Sediment Deposits (B2) (Nonriverine)
- Drift Deposits (B3) (Nonriverine)
- Surface Soil Cracks (B6)
- Inundation Visible on Aerial Imagery (B7)
- Water-Stained Leaves (B9)

- Salt Crust (B11)
- Biotic Crust (B12)
- Aquatic Invertebrates (B13)
- Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres along Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C6)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- Water Marks (B1) (Riverine)
- Sediment Deposits (B2) (Riverine)
- Drift Deposits (B3) (Riverine)
- Drainage Patterns (B10)
- Dry-Season Water Table (C2)
- Crayfish Burrows (C8)
- Saturation Visible on Aerial Imagery (C9)
- Shallow Aquitard (D3)
- FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes No Depth (inches): _____
 Water Table Present? Yes No Depth (inches): 9
 Saturation Present? (includes capillary fringe) Yes No Depth (inches): 6

Wetland Hydrology Present? Yes No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Ashland Gun Club, 555 Emigrant Creek Road City/County: Ashland / Jackson Co. Sampling Date: May 23, 2014
 Applicant/Owner: City of Ashland, 20 East Main Street, Ashland State: OR Sampling Point: 9
 Investigator(s): Donald K. Martin Section, Township, Range: S7, T39S, R2E, Lot 800
 Landform (hillslope, terrace, etc.): Stream Terrace Local relief (concave, convex, none): None Slope (%): 5
 Subregion (LRR): Interior Deserts LRR D Lat: 42.188638 Long: -122.640795 Datum: _____
 Soil Map Unit Name: Camas-Newberg-Evans NWI classification: plot not mapped

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

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

Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/> Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Remarks: Area formerly used for resource extraction (mineral water and CO2) and subsequently filled and graded. Adjacent areas kept mowed.	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>5</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>20</u> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				
Sapling/Shrub Stratum (Plot size: _____)				
1. _____	_____	_____	_____	Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
Herb Stratum (Plot size: <u>10' semi-circl</u>)				
1. <u>Artemesia spp</u>	<u>25</u>	<u>*</u>	<u>UPL</u>	Hydrophytic Vegetation Indicators: <input type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)
2. <u>Cynosurus cristatus</u>	<u>10</u>	<u>*</u>	<u>FACU</u>	
3. <u>Bromus vulgaris</u>	<u>10</u>	<u>*</u>	<u>FACU</u>	
4. <u>Lepidium virginicum</u>	<u>10</u>	<u>*</u>	<u>FACU</u>	
5. <u>Juncus balticus</u>	<u>10</u>	<u>*</u>	<u>FACW</u>	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
_____ = Total Cover				
Woody Vine Stratum (Plot size: _____)				
1. _____	_____	_____	_____	Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/>
2. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum <u>45</u> % Cover of Biotic Crust _____				

Remarks:

SOIL

Sampling Point: 9

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-10	10YR3/2	100					Sa	2" to 12" cobbles

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

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)	Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> 2 cm Muck (A10) (LRR B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	
<input type="checkbox"/> Thick Dark Surface (A12)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	
<input type="checkbox"/> Sandy Redox (S5)	
<input type="checkbox"/> Stripped Matrix (S6)	
<input type="checkbox"/> Loamy Mucky Mineral (F1)	
<input type="checkbox"/> Loamy Gleyed Matrix (F2)	
<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> Vernal Pools (F9)	

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):
 Type: cemented cobble pan
 Depth (inches): 10

Hydric Soil Present? Yes No

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)	Secondary Indicators (2 or more required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water Marks (B1) (Riverine)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Sediment Deposits (B2) (Riverine)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Drift Deposits (B3) (Riverine)
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Salt Crust (B11)	
<input type="checkbox"/> Biotic Crust (B12)	
<input type="checkbox"/> Aquatic Invertebrates (B13)	
<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	
<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	
<input type="checkbox"/> Presence of Reduced Iron (C4)	
<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	
<input type="checkbox"/> Thin Muck Surface (C7)	
<input type="checkbox"/> Other (Explain in Remarks)	

Field Observations:

Surface Water Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): _____	Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Water Table Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): _____	
Saturation Present? (includes capillary fringe)	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): _____	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Ashland Gun Club, 555 Emigrant Creek Road City/County: Ashland / Jackson Co. Sampling Date: May 23, 2014
 Applicant/Owner: City of Ashland, 20 East Main Street, Ashland State: OR Sampling Point: 10
 Investigator(s): Donald K. Martin Section, Township, Range: S7, T39S, R2E, Lot 800
 Landform (hillslope, terrace, etc.): basin Local relief (concave, convex, none): Concave Slope (%): 5
 Subregion (LRR): Interior Deserts LRR D Lat: 42.188638 Long: -122.640795 Datum: _____
 Soil Map Unit Name: Camas-Newberg-Evans NWI classification: plot not mapped

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

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

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____ Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____
Remarks: Bordering an area formerly used for resource extraction (mineral water and CO2) and subsequently filled and graded.	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				
Sapling/Shrub Stratum (Plot size: _____)				
1. _____	_____	_____	_____	Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
Herb Stratum (Plot size: <u>10' semi-circl</u>)				
1. <u>Juncus balticus</u>	<u>20</u>	<u>*</u>	<u>FACW</u>	Hydrophytic Vegetation Indicators: <input checked="" type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)
2. <u>Deschampsia elongata</u>	<u>20</u>	<u>*</u>	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
<u>40</u> = Total Cover				
Woody Vine Stratum (Plot size: _____)				
1. _____	_____	_____	_____	Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____
2. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum <u>60</u> % Cover of Biotic Crust _____				

Remarks:
 Plot is in a swale that is partially inundated (within 2 feet of the pit) or cobbles and mineral deposits.

SOIL

Sampling Point: 10

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-2	2.5 4/2	100					Cl	
2-3	5Y5/1	90	5Y7/1	10	Cs	M	Cl	mineral spring evaporites
3-8	5GY3/1	100					SiLm	organic muck

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

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

Indicators for Problematic Hydric Soils³:

- | | | |
|--|--|---|
| <input type="checkbox"/> Histosol (A1) | <input type="checkbox"/> Sandy Redox (S5) | <input type="checkbox"/> 1 cm Muck (A9) (LRR C) |
| <input type="checkbox"/> Histic Epipedon (A2) | <input type="checkbox"/> Stripped Matrix (S6) | <input type="checkbox"/> 2 cm Muck (A10) (LRR B) |
| <input type="checkbox"/> Black Histic (A3) | <input type="checkbox"/> Loamy Mucky Mineral (F1) | <input type="checkbox"/> Reduced Vertic (F18) |
| <input type="checkbox"/> Hydrogen Sulfide (A4) | <input checked="" type="checkbox"/> Loamy Gleyed Matrix (F2) | <input type="checkbox"/> Red Parent Material (TF2) |
| <input type="checkbox"/> Stratified Layers (A5) (LRR C) | <input type="checkbox"/> Depleted Matrix (F3) | <input type="checkbox"/> Other (Explain in Remarks) |
| <input type="checkbox"/> 1 cm Muck (A9) (LRR D) | <input type="checkbox"/> Redox Dark Surface (F6) | |
| <input type="checkbox"/> Depleted Below Dark Surface (A11) | <input type="checkbox"/> Depleted Dark Surface (F7) | |
| <input type="checkbox"/> Thick Dark Surface (A12) | <input type="checkbox"/> Redox Depressions (F8) | |
| <input type="checkbox"/> Sandy Mucky Mineral (S1) | <input type="checkbox"/> Vernal Pools (F9) | |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4) | | |

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: cemented cobble pan
Depth (inches):

Hydric Soil Present? Yes No

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

Secondary Indicators (2 or more required)

- | | | |
|--|--|--|
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Salt Crust (B11) | <input type="checkbox"/> Water Marks (B1) (Riverine) |
| <input checked="" type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Biotic Crust (B12) | <input type="checkbox"/> Sediment Deposits (B2) (Riverine) |
| <input checked="" type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Aquatic Invertebrates (B13) | <input type="checkbox"/> Drift Deposits (B3) (Riverine) |
| <input type="checkbox"/> Water Marks (B1) (Nonriverine) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) | <input type="checkbox"/> Drainage Patterns (B10) |
| <input type="checkbox"/> Sediment Deposits (B2) (Nonriverine) | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) | <input type="checkbox"/> Dry-Season Water Table (C2) |
| <input type="checkbox"/> Drift Deposits (B3) (Nonriverine) | <input type="checkbox"/> Presence of Reduced Iron (C4) | <input type="checkbox"/> Crayfish Burrows (C8) |
| <input type="checkbox"/> Surface Soil Cracks (B6) | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) | <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Thin Muck Surface (C7) | <input type="checkbox"/> Shallow Aquitard (D3) |
| <input type="checkbox"/> Water-Stained Leaves (B9) | <input type="checkbox"/> Other (Explain in Remarks) | <input type="checkbox"/> FAC-Neutral Test (D5) |

Field Observations:

Surface Water Present? Yes No Depth (inches):
Water Table Present? Yes No Depth (inches): 4
Saturation Present? Yes No Depth (inches): 5
(includes capillary fringe)

Wetland Hydrology Present? Yes No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Ashland Gun Club, 555 Emigrant Creek Road City/County: Ashland / Jackson Co. Sampling Date: May 23, 2014
 Applicant/Owner: City of Ashland, 20 East Main Street, Ashland State: OR Sampling Point: 11
 Investigator(s): Donald K. Martin Section, Township, Range: S7, T39S, R2E, Lot 800
 Landform (hillslope, terrace, etc.): Stream Terrace Local relief (concave, convex, none): None Slope (%): 25
 Subregion (LRR): Interior Deserts LRR D Lat: 42.188638 Long: -122.640795 Datum: _____
 Soil Map Unit Name: Camas-Newberg-Evans NWI classification: plot not mapped

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

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

Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/> Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Remarks: Area formerly used for resource extraction (mineral water and CO2) and subsequently filled and graded. Adjacent areas kept mowed.	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>10'</u> semi-circl)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>4</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
Sapling/Shrub Stratum (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	Hydrophytic Vegetation Indicators: <input type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/>
_____ = Total Cover				
Herb Stratum (Plot size: _____)				
1. <u>Bromus tectorum</u>	<u>25</u>	<u>*</u>	<u>NOL</u>	
2. <u>Cynosurus cristatus</u>	<u>10</u>	<u>*</u>	<u>FACU</u>	
3. <u>Hordeum vulgare</u>	<u>10</u>	<u>*</u>	<u>NOL</u>	
4. <u>Lepidium virginicum</u>	<u>5</u>		<u>FACU</u>	
5. <u>Erodium cicutarium</u>	<u>20</u>	<u>*</u>	<u>NOL</u>	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
<u>70</u> = Total Cover				
Woody Vine Stratum (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum <u>30</u>		% Cover of Biotic Crust _____		

Remarks:

SOIL

Sampling Point: 11

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-3	10YR3/2	100					SiLm	
3-16	10YR3/2	100					CLm	gravelly

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

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)			Indicators for Problematic Hydric Soils ³ :		
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)			
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> 2 cm Muck (A10) (LRR B)			
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> Reduced Vertic (F18)			
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Red Parent Material (TF2)			
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Other (Explain in Remarks)			
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	<input type="checkbox"/> Redox Dark Surface (F6)				
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)				
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)				
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Vernal Pools (F9)				
<input type="checkbox"/> Sandy Gleyed Matrix (S4)					

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/>
--	---

Remarks:
Lots of large cobbles

HYDROLOGY

Wetland Hydrology Indicators:		
Primary Indicators (minimum of one required; check all that apply)	Secondary Indicators (2 or more required)	
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Water Marks (B1) (Riverine)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)	<input type="checkbox"/> Sediment Deposits (B2) (Riverine)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Drift Deposits (B3) (Riverine)
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> FAC-Neutral Test (D5)

Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Ashland Gun Club, 555 Emigrant Creek Road City/County: Ashland / Jackson Co. Sampling Date: May 23, 2014
 Applicant/Owner: City of Ashland, 20 East Main Street, Ashland State: OR Sampling Point: 12
 Investigator(s): Donald K. Martin Section, Township, Range: S7, T39S, R2E, Lot 800
 Landform (hillslope, terrace, etc.): basin Local relief (concave, convex, none): Concave Slope (%): 5
 Subregion (LRR): Interior Deserts LRR D Lat: 42.188638 Long: -122.640795 Datum: _____
 Soil Map Unit Name: Camas-Newberg-Evans NWI classification: plot not mapped

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

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

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____ Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____
Remarks: Bordering an area formerly used for resource extraction (mineral water and CO2) and subsequently filled and graded.	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				Prevalence Index worksheet: _____ Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
Sapling/Shrub Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
Herb Stratum (Plot size: <u>10' semi-circl</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Hydrophytic Vegetation Indicators: <input checked="" type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. <u>Juncus balticus</u>	<u>100</u>	<u>*</u>	<u>FACW</u>	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
_____ = Total Cover				
Woody Vine Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum _____ % Cover of Biotic Crust _____				

Remarks:

SOIL

Sampling Point: 12

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-2	10YR4/3	90	7.5YR5/4	10	C	PI	SaClLm	
2-8	10YR6/2	100					ClLm	(calcic horizon?)

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

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)	Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) (LRR C) <input type="checkbox"/> 1 cm Muck (A9) (LRR D) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input checked="" type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> Vernal Pools (F9)
	<input type="checkbox"/> 1 cm Muck (A9) (LRR C) <input type="checkbox"/> 2 cm Muck (A10) (LRR B) <input type="checkbox"/> Reduced Vertic (F18) <input type="checkbox"/> Red Parent Material (TF2) <input type="checkbox"/> Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):	Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Type: <u>cemented cobble pan</u>	
Depth (inches): <u>8</u>	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:		
Primary Indicators (minimum of one required; check all that apply)	Secondary Indicators (2 or more required)	
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) (Nonriverine) <input type="checkbox"/> Sediment Deposits (B2) (Nonriverine) <input type="checkbox"/> Drift Deposits (B3) (Nonriverine) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Salt Crust (B11) <input type="checkbox"/> Biotic Crust (B12) <input type="checkbox"/> Aquatic Invertebrates (B13) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Water Marks (B1) (Riverine) <input type="checkbox"/> Sediment Deposits (B2) (Riverine) <input type="checkbox"/> Drift Deposits (B3) (Riverine) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5)
Field Observations:	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? (includes capillary fringe) Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>7.5</u>		
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Ashland Gun Club, 555 Emigrant Creek Road City/County: Ashland / Jackson Co. Sampling Date: May 23, 2014
 Applicant/Owner: City of Ashland, 20 East Main Street, Ashland State: OR Sampling Point: 13
 Investigator(s): Donald K. Martin Section, Township, Range: S7, T39S, R2E, Lot 800
 Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): None Slope (%): 35
 Subregion (LRR): Interior Deserts LRR D Lat: 42.188638 Long: -122.640795 Datum: _____
 Soil Map Unit Name: Camas-Newberg-Evans NWI classification: plot not mapped

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

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

Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/> Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Remarks: Steep slope of fill at boundary. Area formerly used for resource extraction (mineral water and CO2) and subsequently filled and graded. Adjacent areas kept mowed.	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>4</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				
Sapling/Shrub Stratum (Plot size: _____)				
1. _____	_____	_____	_____	Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
Herb Stratum (Plot size: <u>10' semi-circl</u>)				
1. <u>Bromus vulgaris</u>	<u>20</u>	<u>*</u>	<u>FACU</u>	Hydrophytic Vegetation Indicators: ___ Dominance Test is >50% ___ Prevalence Index is ≤3.0 ¹ ___ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. <u>Cynosurus cristatus</u>	<u>20</u>	<u>*</u>	<u>FACU</u>	
3. <u>Daucus carota</u>	<u>20</u>	<u>*</u>	<u>UPL</u>	
4. <u>Lepidium virginicum</u>	<u>5</u>		<u>FACU</u>	
5. <u>Centaurea solstitialis</u>	<u>30</u>	<u>*</u>	<u>NOL</u>	
6. <u>Rhus trilobata</u>	<u>5</u>		<u>NOL</u>	
7. <u>Erucastrum gallicum</u>	<u>10</u>		<u>NOL</u>	
8. _____	_____	_____	_____	
<u>110</u> = Total Cover				
Woody Vine Stratum (Plot size: _____)				
1. _____	_____	_____	_____	Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/>
2. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum <u>0</u> % Cover of Biotic Crust _____				
Remarks:				

SOIL

Sampling Point: 13

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-18	10YR3/3	100					SalM	rubble fill

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

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5) (LRR C)
- 1 cm Muck (A9) (LRR D)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)

- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Vernal Pools (F9)

Indicators for Problematic Hydric Soils³:

- 1 cm Muck (A9) (LRR C)
- 2 cm Muck (A10) (LRR B)
- Reduced Vertic (F18)
- Red Parent Material (TF2)
- Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____
Depth (inches): _____

Hydric Soil Present? Yes _____ No

Remarks:

Embankment in concrete pipe rubble and sandy fill.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1) (Nonriverine)
- Sediment Deposits (B2) (Nonriverine)
- Drift Deposits (B3) (Nonriverine)
- Surface Soil Cracks (B6)
- Inundation Visible on Aerial Imagery (B7)
- Water-Stained Leaves (B9)

- Salt Crust (B11)
- Biotic Crust (B12)
- Aquatic Invertebrates (B13)
- Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres along Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C6)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- Water Marks (B1) (Riverine)
- Sediment Deposits (B2) (Riverine)
- Drift Deposits (B3) (Riverine)
- Drainage Patterns (B10)
- Dry-Season Water Table (C2)
- Crayfish Burrows (C8)
- Saturation Visible on Aerial Imagery (C9)
- Shallow Aquitard (D3)
- FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No Depth (inches): _____
 Water Table Present? Yes _____ No Depth (inches): _____
 Saturation Present? (includes capillary fringe) Yes _____ No Depth (inches): _____

Wetland Hydrology Present? Yes _____ No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Ashland Gun Club, 555 Emigrant Creek Road City/County: Ashland / Jackson Co. Sampling Date: May 23, 2014
 Applicant/Owner: City of Ashland, 20 East Main Street, Ashland State: OR Sampling Point: 14
 Investigator(s): Donald K. Martin Section, Township, Range: S7, T39S, R2E, Lot 800
 Landform (hillslope, terrace, etc.): basin Local relief (concave, convex, none): Concave Slope (%): 5
 Subregion (LRR): Interior Deserts LRR D Lat: 42.188638 Long: -122.640795 Datum: _____
 Soil Map Unit Name: Camas-Newberg-Evans NWI classification: plot not mapped

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

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

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____ Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____
Remarks: Bordering an area formerly used for resource extraction (mineral water and CO2) and subsequently filled and graded.	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
Sapling/Shrub Stratum (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
Herb Stratum (Plot size: <u>10' semi-circl</u>)				
1. <u>Juncus balticus</u>	<u>70</u>	<u>*</u>	<u>FACW</u>	
2. <u>Hordeum vulgare</u>	<u>15</u>		<u>NOL</u>	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. <u>T</u>	_____	_____	_____	
_____ = Total Cover				
Woody Vine Stratum (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum <u>15</u> % Cover of Biotic Crust _____				
Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____				
Remarks:				

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Ashland Gun Club, 555 Emigrant Creek Road City/County: Ashland / Jackson Co. Sampling Date: May 23, 2014
 Applicant/Owner: City of Ashland, 20 East Main Street, Ashland State: OR Sampling Point: 15
 Investigator(s): Donald K. Martin Section, Township, Range: S7, T39S, R2E, Lot 800
 Landform (hillslope, terrace, etc.): Stream Terrace Local relief (concave, convex, none): Convex Slope (%): 5
 Subregion (LRR): Interior Deserts LRR D Lat: 42.188638 Long: -122.640795 Datum: _____
 Soil Map Unit Name: Camas-Newberg-Evans NWI classification: plot not mapped

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

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

Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/> Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Remarks: Area formerly used for resource extraction (mineral water and CO2) and subsequently filled and graded. Adjacent areas kept mowed.	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50</u> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
Sapling/Shrub Stratum (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	Hydrophytic Vegetation Indicators: ___ Dominance Test is >50% ___ Prevalence Index is ≤3.0 ¹ ___ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/>
_____ = Total Cover				
Herb Stratum (Plot size: <u>10' semi-circl</u>)				
1. <u>Hordeum vulgare</u>	<u>30</u>	<u>*</u>	<u>NOL</u>	
2. <u>Juncus balticus</u>	<u>30</u>	<u>*</u>	<u>FACW</u>	
3. <u>Medicago lupulina</u>	<u>5</u>		<u>FAC</u>	
4. <u>Bromus tectorum</u>	<u>15</u>		<u>NOL</u>	
5. <u>Festuca rubra</u>	<u>15</u>		<u>FAC</u>	
6. <u>Rhus trilobata</u>	<u>5</u>		<u>NOL</u>	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
_____ = Total Cover				
Woody Vine Stratum (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum <u>0</u>		% Cover of Biotic Crust _____		

Remarks:

SOIL

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-11	10YR3/3	100					CLm	gravelly

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

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)	Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) (LRR C) <input type="checkbox"/> 1 cm Muck (A9) (LRR D) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> Vernal Pools (F9)
	<input type="checkbox"/> 1 cm Muck (A9) (LRR C) <input type="checkbox"/> 2 cm Muck (A10) (LRR B) <input type="checkbox"/> Reduced Vertic (F18) <input type="checkbox"/> Red Parent Material (TF2) <input type="checkbox"/> Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):
 Type: cemented cobble pan
 Depth (inches): 11

Hydric Soil Present? Yes No

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)	Secondary Indicators (2 or more required)
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) (Nonriverine) <input type="checkbox"/> Sediment Deposits (B2) (Nonriverine) <input type="checkbox"/> Drift Deposits (B3) (Nonriverine) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Salt Crust (B11) <input type="checkbox"/> Biotic Crust (B12) <input type="checkbox"/> Aquatic Invertebrates (B13) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)
	<input type="checkbox"/> Water Marks (B1) (Riverine) <input type="checkbox"/> Sediment Deposits (B2) (Riverine) <input type="checkbox"/> Drift Deposits (B3) (Riverine) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____	Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____	
Saturation Present? (includes capillary fringe) Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Ashland Gun Club, 555 Emigrant Creek Road City/County: Ashland / Jackson Co. Sampling Date: May 23, 2014
 Applicant/Owner: City of Ashland, 20 East Main Street, Ashland State: OR Sampling Point: 16
 Investigator(s): Donald K. Martin Section, Township, Range: S7, T39S, R2E, Lot 800
 Landform (hillslope, terrace, etc.): Toe of hillslope Local relief (concave, convex, none): Concave Slope (%): 0
 Subregion (LRR): Interior Deserts LRR D Lat: 42.188638 Long: -122.640795 Datum: _____
 Soil Map Unit Name: Camas-Newberg-Evans NWI classification: plot not mapped

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

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

Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/> Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Remarks: This site has historically been irrigated, but the irrigation was permanently removed at the beginning of the growing season. Area formerly used for resource extraction (mineral water and CO2) and subsequently filled and graded. Areas kept mowed.	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A) Total Number of Dominant Species Across All Strata: <u>5</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>60</u> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>3</u> x 3 = <u>9</u> FACU species <u>3</u> x 4 = <u>12</u> UPL species <u>2</u> x 5 = <u>10</u> Column Totals: <u>8</u> (A) <u>31</u> (B) Prevalence Index = B/A = <u>3.9</u>
Sapling/Shrub Stratum (Plot size: <u>20' semi-circ.</u>)				
1. <u>Rosa rubiginosa</u>	<u>30</u>	<u>*</u>	<u>UPL</u>	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
<u>30</u> = Total Cover				
Herb Stratum (Plot size: <u>10' semi-circ.</u>)				
1. <u>Hordeum vulgare</u>	<u>20</u>	<u>*</u>	<u>NOL</u>	
2. <u>Hordeum jubatum</u>	<u>20</u>	<u>*</u>	<u>FAC</u>	
3. <u>Medicago lupulina</u>	<u>10</u>	<u>*</u>	<u>FAC</u>	
4. <u>Plantago lanceolata</u>	<u>10</u>	<u>*</u>	<u>FAC</u>	
5. <u>Centaurea solstitialis</u>	<u>5</u>	_____	<u>NOL</u>	
6. <u>Lepidium virginicum</u>	<u>5</u>	_____	<u>FACU</u>	
7. <u>Cirsium vulgare</u>	<u>5</u>	_____	<u>FACU</u>	
8. <u>Trifolium pratense</u>	<u>5</u>	_____	<u>FACU</u>	
<u>105</u> = Total Cover				
Woody Vine Stratum (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum _____ % Cover of Biotic Crust _____				
Remarks:				

SOIL

Sampling Point: 16

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-8	10YR3/2	100					SiCl	
8-16	10YR2/2	90	10YR4/3	10	C	M	SaCl	cemented gravels

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

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)	Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) (LRR C) <input type="checkbox"/> 1 cm Muck (A9) (LRR D) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> Vernal Pools (F9)
	<input type="checkbox"/> 1 cm Muck (A9) (LRR C) <input type="checkbox"/> 2 cm Muck (A10) (LRR B) <input type="checkbox"/> Reduced Vertic (F18) <input type="checkbox"/> Red Parent Material (TF2) <input type="checkbox"/> Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/>
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Remarks:
 Root barrier at cemented gravels at 8" bgs.

HYDROLOGY

Wetland Hydrology Indicators:	
Primary Indicators (minimum of one required; check all that apply)	Secondary Indicators (2 or more required)
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) (Nonriverine) <input type="checkbox"/> Sediment Deposits (B2) (Nonriverine) <input type="checkbox"/> Drift Deposits (B3) (Nonriverine) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Salt Crust (B11) <input type="checkbox"/> Biotic Crust (B12) <input type="checkbox"/> Aquatic Invertebrates (B13) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)
	<input type="checkbox"/> Water Marks (B1) (Riverine) <input type="checkbox"/> Sediment Deposits (B2) (Riverine) <input type="checkbox"/> Drift Deposits (B3) (Riverine) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5)

Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? (includes capillary fringe) Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____	Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
 Historic irrigation was turned off permanently at the start of the growing season this year.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Ashland Gun Club, 555 Emigrant Creek Road City/County: Ashland / Jackson Co. Sampling Date: May 23, 2014
 Applicant/Owner: City of Ashland, 20 East Main Street, Ashland State: OR Sampling Point: 17
 Investigator(s): Donald K. Martin Section, Township, Range: S7, T39S, R2E, Lot 800
 Landform (hillslope, terrace, etc.): Toe of hillslope Local relief (concave, convex, none): Concave Slope (%): 0
 Subregion (LRR): Interior Deserts LRR D Lat: 42.188638 Long: -122.640795 Datum: _____
 Soil Map Unit Name: Camas-Newberg-Evans NWI classification: plot not mapped

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

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

Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/> Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Remarks: This site has historically been irrigated, but the irrigation was permanently removed at the beginning of the growing season. Area formerly used for resource extraction (mineral water and CO2) and subsequently filled and graded. Areas kept mowed.	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>4</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
Sapling/Shrub Stratum (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	Hydrophytic Vegetation Indicators: <input type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/>
_____ = Total Cover				
Herb Stratum (Plot size: <u>10' semi-circl</u>)				
1. <u>Hordeum vulgare</u>	<u>20</u>	<u>*</u>	<u>NOL</u>	
2. <u>Cynosurus cristatus</u>	<u>20</u>	<u>*</u>	<u>FACU</u>	
3. <u>Eriocaulon gallicum</u>	<u>20</u>	<u>*</u>	<u>NOL</u>	
4. <u>Plantago lanceolata</u>	<u>10</u>		<u>FAC</u>	
5. <u>Lepidium virginicum</u>	<u>20</u>	<u>*</u>	<u>FACU</u>	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. <u>Zz</u>	_____	_____	_____	
_____ = Total Cover				
Woody Vine Stratum (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum <u>10</u>		% Cover of Biotic Crust _____		

Remarks:

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-4	10YR3/2	100					SaCL	mineral evaporites
4-16	10YR2/2	90	10YR4/3	10	C	M	SiCl	

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

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)			Indicators for Problematic Hydric Soils ³ :		
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)			
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> 2 cm Muck (A10) (LRR B)			
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> Reduced Vertic (F18)			
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Red Parent Material (TF2)			
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Other (Explain in Remarks)			
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	<input type="checkbox"/> Redox Dark Surface (F6)				
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)				
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)				
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Vernal Pools (F9)				
<input type="checkbox"/> Sandy Gleyed Matrix (S4)					

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/>
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Remarks:

HYDROLOGY

Wetland Hydrology Indicators:		
Primary Indicators (minimum of one required; check all that apply)	Secondary Indicators (2 or more required)	
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Water Marks (B1) (Riverine)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)	<input type="checkbox"/> Sediment Deposits (B2) (Riverine)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Drift Deposits (B3) (Riverine)
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> FAC-Neutral Test (D5)

Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? (includes capillary fringe) Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____	Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
 Historic irrigation was turned off permanently at the start of the growing season this year.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Ashland Gun Club, 555 Emigrant Creek Road City/County: Ashland / Jackson Co. Sampling Date: May 23, 2014
 Applicant/Owner: City of Ashland, 20 East Main Street, Ashland State: OR Sampling Point: 18
 Investigator(s): Donald K. Martin Section, Township, Range: S12, T39S, R1E, Lot 400
 Landform (hillslope, terrace, etc.): Toe of hillslope Local relief (concave, convex, none): Concave Slope (%): 0
 Subregion (LRR): Interior Deserts LRR D Lat: 42.188638 Long: -122.640795 Datum: _____
 Soil Map Unit Name: Camas-Newberg-Evans NWI classification: plot not mapped

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

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

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____ Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____
Remarks: This site has historically been irrigated, but the irrigation was permanently removed at the beginning of the growing season. Area formerly used for resource extraction (mineral water and CO2) and subsequently filled and graded. Areas kept mowed.	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
Sapling/Shrub Stratum (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
_____ = Total Cover				
Herb Stratum (Plot size: <u>10' semi-circl</u>)				
1. <u>Hordeum vulgare</u>	<u>10</u>		<u>NOL</u>	
2. <u>Juncus balticus</u>	<u>85</u>	<u>*</u>	<u>FACW</u>	
3. <u>Sonchus asper</u>	<u>5</u>		<u>FAC</u>	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
_____ = Total Cover				
Woody Vine Stratum (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum _____		% Cover of Biotic Crust _____		
Hydrophytic Vegetation Indicators: <input checked="" type="checkbox"/> Dominance Test is >50% ___ Prevalence Index is ≤3.0 ¹ ___ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation ¹ (Explain)				
¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.				
Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____				

Remarks:
 During the years of regular irrigation a hydrophytic community developed. Now that the irrigation is cut off some facultative wetland plants are still resented, but several upland species are coming in. The community fails the Prevalence Index, which is considered the truer measure of indicators.

SOIL

Sampling Point: 18

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-2	10YR2/2	100					SiLm	
2-5	10YR2/2	100					SiCl	
5-16	10YR3/2	60	10YR4/1	20	D	M	LmSa	mixed lenses of coarse sand
			10YR4/4	20	C	Pl		

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

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histosol (A1)	<input checked="" type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> 2 cm Muck (A10) (LRR B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Vernal Pools (F9)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)		

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
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Remarks:

HYDROLOGY

Wetland Hydrology Indicators:	
Primary Indicators (minimum of one required; check all that apply)	Secondary Indicators (2 or more required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)
<input checked="" type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Water Marks (B1) (Riverine)	<input type="checkbox"/> Water Marks (B1) (Riverine)
<input type="checkbox"/> Sediment Deposits (B2) (Riverine)	<input type="checkbox"/> Sediment Deposits (B2) (Riverine)
<input type="checkbox"/> Drift Deposits (B3) (Riverine)	<input type="checkbox"/> Drift Deposits (B3) (Riverine)
<input type="checkbox"/> Drainage Patterns (B10)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Dry-Season Water Table (C2)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Crayfish Burrows (C8)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Shallow Aquitard (D3)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> FAC-Neutral Test (D5)	<input type="checkbox"/> FAC-Neutral Test (D5)

Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>10</u>	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____
--	--

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Historic irrigation was turned off permanently at the start of the growing season this year. Source of hydrology appears to be from the mineral spring/wetland complex.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Ashland Gun Club, 555 Emigrant Creek Road City/County: Ashland / Jackson Co. Sampling Date: May 23, 2014
 Applicant/Owner: City of Ashland, 20 East Main Street, Ashland State: OR Sampling Point: 19
 Investigator(s): Donald K. Martin Section, Township, Range: S12, T39S, R1E, Lot 400
 Landform (hillslope, terrace, etc.): Toe of hillslope Local relief (concave, convex, none): Concave Slope (%): 0
 Subregion (LRR): Interior Deserts LRR D Lat: 42.188638 Long: -122.640795 Datum: _____
 Soil Map Unit Name: Camas-Newberg-Evans NWI classification: plot not mapped

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

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

Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/> Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Remarks: This site has historically been irrigated, but the irrigation was permanently removed at the beginning of the growing season. Area formerly used for resource extraction (mineral water and CO2) and subsequently filled and graded. Areas kept mowed.	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50</u> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
Sapling/Shrub Stratum (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
_____ = Total Cover				
Herb Stratum (Plot size: <u>10' semi-circl</u>)				
1. <u>Hordeum jubatum</u>	<u>10</u>		<u>FAC</u>	
2. <u>Juncus balticus</u>	<u>50</u>	<u>*</u>	<u>FACW</u>	
3. <u>Schedonerus arundinaceus</u>	<u>40</u>	<u>*</u>	<u>FACU</u>	
4. <u>Cynosurus cristatus</u>	<u>10</u>		<u>FACU</u>	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. <u>T</u>	_____	_____	_____	
_____ = Total Cover				
Woody Vine Stratum (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum <u>10</u> % Cover of Biotic Crust _____				
Hydrophytic Vegetation Indicators: ___ Dominance Test is >50% ___ Prevalence Index is ≤3.0 ¹ ___ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation ¹ (Explain)				
¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.				
Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/>				

Remarks:
 During the years of regular irrigation a hydrophytic community developed. Now that the irrigation is cut off some facultative wetland plants are still present, but upland species are coming in. The community fails the Prevalence Index, which is considered the truer measure of indicators.

SOIL

Sampling Point: 19

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-5	10YR3/2	100					LmSa	very gravelly
5-16	10YR2/2	95	10YR4/4	5	C	Pl	LmSa	cobbly

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

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)	Indicators for Problematic Hydric Soils³:
<input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) (LRR C) <input type="checkbox"/> 1 cm Muck (A9) (LRR D) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input checked="" type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> Vernal Pools (F9)
<input type="checkbox"/> 1 cm Muck (A9) (LRR C) <input type="checkbox"/> 2 cm Muck (A10) (LRR B) <input type="checkbox"/> Reduced Vertic (F18) <input type="checkbox"/> Red Parent Material (TF2) <input type="checkbox"/> Other (Explain in Remarks)	³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Remarks:	

HYDROLOGY

Wetland Hydrology Indicators:		
Primary Indicators (minimum of one required; check all that apply)	Secondary Indicators (2 or more required)	
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) (Nonriverine) <input type="checkbox"/> Sediment Deposits (B2) (Nonriverine) <input type="checkbox"/> Drift Deposits (B3) (Nonriverine) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Salt Crust (B11) <input type="checkbox"/> Biotic Crust (B12) <input type="checkbox"/> Aquatic Invertebrates (B13) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Water Marks (B1) (Riverine) <input type="checkbox"/> Sediment Deposits (B2) (Riverine) <input type="checkbox"/> Drift Deposits (B3) (Riverine) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>16</u>		Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks: Historic irrigation was turned off permanently at the start of the growing season this year.		

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Ashland Gun Club, 555 Emigrant Creek Road City/County: Ashland / Jackson Co. Sampling Date: May 23, 2014
 Applicant/Owner: City of Ashland, 20 East Main Street, Ashland State: OR Sampling Point: 20
 Investigator(s): Donald K. Martin Section, Township, Range: S12, T39S, R1E, Lot 400
 Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): None Slope (%): 5
 Subregion (LRR): Interior Deserts LRR D Lat: 42.188638 Long: -122.640795 Datum: _____
 Soil Map Unit Name: Camas-Newberg-Evans NWI classification: plot not mapped

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

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

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____ Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____
Remarks: Bordering an area formerly used for resource extraction (mineral water and CO2) and subsequently filled and graded.	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A) Total Number of Dominant Species Across All Strata: <u>4</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>75</u> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
Sapling/Shrub Stratum (Plot size: _____)				
1. <u>Salix spp.</u>	<u>5</u>	<u>*</u>	<u>FAC*</u>	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
Herb Stratum (Plot size: <u>10' semi-circl</u>)				
1. <u>Juncus balticus</u>	<u>10</u>	<u>*</u>	<u>FACW</u>	
2. <u>Dipsacus fullonum</u>	<u>50</u>	<u>*</u>	<u>FAC</u>	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. <u>T</u>	_____	_____	_____	
_____ = Total Cover				
Woody Vine Stratum (Plot size: _____)				
1. <u>Rubus armeniacus*</u>	<u>50</u>	<u>*</u>	<u>FACU</u>	
2. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum <u>0</u> % Cover of Biotic Crust _____				
Hydrophytic Vegetation Indicators: <input checked="" type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)				
¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.				
Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____				
Remarks: * Himalayan blackberry (Rubus armeniacus Focke) is a common invader of anthropogenically disturbed wetlands in the Pacific Northwest. (David L. Hays, University of Washington, 2012)				

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Ashland Gun Club, 555 Emigrant Creek Road City/County: Ashland / Jackson Co. Sampling Date: May 23, 2014
 Applicant/Owner: City of Ashland, 20 East Main Street, Ashland State: OR Sampling Point: 21
 Investigator(s): Donald K. Martin Section, Township, Range: S12, T39S, R1E, Lot 400
 Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): None Slope (%): 1
 Subregion (LRR): Interior Deserts LRR D Lat: 42.188638 Long: -122.640795 Datum: _____
 Soil Map Unit Name: Camas-Newberg-Evans NWI classification: plot not mapped

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

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

Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/> Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Remarks: Bordering an area formerly used for resource extraction (mineral water and CO2) and subsequently filled and graded. Areas kept mowed.	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				
Sapling/Shrub Stratum (Plot size: _____)				
1. _____	_____	_____	_____	Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
Herb Stratum (Plot size: <u>10' semi-circl</u>)				
1. <u>Schedonerus arundinaceus</u>	<u>60</u>	<u>*</u>	<u>FACU</u>	Hydrophytic Vegetation Indicators: ___ Dominance Test is >50% ___ Prevalence Index is ≤3.0 ¹ ___ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. <u>Bromus hordaceus</u>	<u>20</u>	<u>*</u>	<u>FACU</u>	
3. <u>Dipsacus fullonum</u>	<u>10</u>		<u>FAC</u>	
4. <u>Cynosurus cristatus</u>	<u>10</u>			
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
_____ = Total Cover				
Woody Vine Stratum (Plot size: _____)				
1. _____	_____	_____	_____	Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/>
2. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum <u>0</u> % Cover of Biotic Crust _____				

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Ashland Gun Club, 555 Emigrant Creek Road City/County: Ashland / Jackson Co. Sampling Date: May 23, 2014
 Applicant/Owner: City of Ashland, 20 East Main Street, Ashland State: OR Sampling Point: 22
 Investigator(s): Donald K. Martin Section, Township, Range: S12, T39S, R1E, Lot 400
 Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): None Slope (%): 5
 Subregion (LRR): Interior Deserts LRR D Lat: 42.188638 Long: -122.640795 Datum: _____
 Soil Map Unit Name: Camas-Newberg-Evans NWI classification: plot not mapped

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

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

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____ Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____
Remarks: Bordering an area formerly used for resource extraction (mineral water and CO2) and subsequently filled and graded.	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A) Total Number of Dominant Species Across All Strata: <u>4</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>75</u> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				
Sapling/Shrub Stratum (Plot size: _____)				
1. <u>Salix spp.</u>	<u>5</u>	<u>*</u>	<u>FAC**</u>	Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
<u>5</u> = Total Cover				
Herb Stratum (Plot size: <u>10' semi-circl</u>)				
1. <u>Juncus balticus</u>	<u>10</u>	<u>*</u>	<u>FACW</u>	Hydrophytic Vegetation Indicators: <input checked="" type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)
2. <u>Dipsacus fullonum</u>	<u>40</u>	<u>*</u>	<u>FAC</u>	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. <u>T</u>	_____	_____	_____	
<u>50</u> = Total Cover				
Woody Vine Stratum (Plot size: _____)				
1. <u>Rubus armeniacus*</u>	<u>70</u>	<u>*</u>	<u>FACU</u>	¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. _____	_____	_____	_____	
<u>70</u> = Total Cover				
% Bare Ground in Herb Stratum <u>0</u> % Cover of Biotic Crust _____				
Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____				

Remarks:
 * Himalayan blackberry (*Rubus armeniacus* Focke) is a common invader of anthropogenically disturbed wetlands in the Pacific Northwest. (David L. Hays, University of Washington, 2012)
 **Salix spp was assumed to be FAC or wetter based on other indicator associations.

SOIL

Sampling Point: 22

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-4	10YR3/2	100					SiLm	
4-9	7.5YR3/1	95	7.4YR3/4	5	C	M	SiCLm	
9-14	7.5YR4//1	100					Sand	

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

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)	Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) (LRR C) <input type="checkbox"/> 1 cm Muck (A9) (LRR D) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input checked="" type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> Vernal Pools (F9)
	<input type="checkbox"/> 1 cm Muck (A9) (LRR C) <input type="checkbox"/> 2 cm Muck (A10) (LRR B) <input type="checkbox"/> Reduced Vertic (F18) <input type="checkbox"/> Red Parent Material (TF2) <input type="checkbox"/> Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____
--	--

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:		
Primary Indicators (minimum of one required; check all that apply)	Secondary Indicators (2 or more required)	
<input type="checkbox"/> Surface Water (A1) <input checked="" type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) (Nonriverine) <input type="checkbox"/> Sediment Deposits (B2) (Nonriverine) <input type="checkbox"/> Drift Deposits (B3) (Nonriverine) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Salt Crust (B11) <input type="checkbox"/> Biotic Crust (B12) <input type="checkbox"/> Aquatic Invertebrates (B13) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Water Marks (B1) (Riverine) <input type="checkbox"/> Sediment Deposits (B2) (Riverine) <input type="checkbox"/> Drift Deposits (B3) (Riverine) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>10</u> Saturation Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>8</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Ashland Gun Club, 555 Emigrant Creek Road City/County: Ashland / Jackson Co. Sampling Date: May 23, 2014
 Applicant/Owner: City of Ashland, 20 East Main Street, Ashland State: OR Sampling Point: 23
 Investigator(s): Donald K. Martin Section, Township, Range: S12, T39S, R1E, Lot 400
 Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): None Slope (%): 1
 Subregion (LRR): Interior Deserts LRR D Lat: 42.188638 Long: -122.640795 Datum: _____
 Soil Map Unit Name: Camas-Newberg-Evans NWI classification: plot not mapped

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

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

Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/> Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Remarks: Bordering an area formerly used for resource extraction (mineral water and CO2) and subsequently filled and graded.	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Quercus garryana</u>	<u>100</u>	<u>*</u>	<u>UPL</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
<u>100</u> = Total Cover				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
<u>Sapling/Shrub Stratum (Plot size: _____)</u>				
1. <u>Symphoricarpos albus</u>	<u>40</u>	<u>*</u>	<u>FACU</u>	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
<u>40</u> = Total Cover				
<u>Herb Stratum (Plot size: <u>10' semi-circl</u>)</u>				Hydrophytic Vegetation Indicators: ___ Dominance Test is >50% ___ Prevalence Index is ≤3.0 ¹ ___ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. <u>T</u>	_____	_____	_____	
_____ = Total Cover				
<u>Woody Vine Stratum (Plot size: _____)</u>				
1. <u>Rubus armeniacus</u>	<u>50</u>	<u>*</u>	<u>FACU</u>	
2. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum <u>0</u> % Cover of Biotic Crust _____		Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/>		
Remarks:				

SOIL

Sampling Point: 23

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-8	10YR3/2	100					SiLm	
8-14	7.5YR4/2	100					SiCLm	
14-18	7.5YR3/1	95	5YR4/5	5	C	M	SiCLm	

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

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)	Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) (LRR C) <input type="checkbox"/> 1 cm Muck (A9) (LRR D) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> Vernal Pools (F9)
	<input type="checkbox"/> 1 cm Muck (A9) (LRR C) <input type="checkbox"/> 2 cm Muck (A10) (LRR B) <input type="checkbox"/> Reduced Vertic (F18) <input type="checkbox"/> Red Parent Material (TF2) <input type="checkbox"/> Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/>
--	---

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:	
Primary Indicators (minimum of one required; check all that apply)	Secondary Indicators (2 or more required)
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) (Nonriverine) <input type="checkbox"/> Sediment Deposits (B2) (Nonriverine) <input type="checkbox"/> Drift Deposits (B3) (Nonriverine) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Salt Crust (B11) <input type="checkbox"/> Biotic Crust (B12) <input type="checkbox"/> Aquatic Invertebrates (B13) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)
	<input type="checkbox"/> Water Marks (B1) (Riverine) <input type="checkbox"/> Sediment Deposits (B2) (Riverine) <input type="checkbox"/> Drift Deposits (B3) (Riverine) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5)

Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? (includes capillary fringe) Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____	Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Ashland Gun Club, 555 Emigrant Creek Road City/County: Ashland / Jackson Co. Sampling Date: May 23, 2014
 Applicant/Owner: City of Ashland, 20 East Main Street, Ashland State: OR Sampling Point: 24
 Investigator(s): Donald K. Martin Section, Township, Range: S12, T39S, R1E, Lot 400
 Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): None Slope (%): 20
 Subregion (LRR): Interior Deserts LRR D Lat: 42.188638 Long: -122.640795 Datum: _____
 Soil Map Unit Name: Camas-Newberg-Evans NWI classification: plot not mapped

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

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

Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/> Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Remarks: Bordering an area formerly used for resource extraction (mineral water and CO2) and subsequently filled and graded.	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
Sapling/Shrub Stratum (Plot size: _____)				
1. <u>Rosa rubiginosa</u>	<u>30</u>	<u>*</u>	<u>UPL</u>	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
<u>30</u> = Total Cover				
Herb Stratum (Plot size: <u>10' semi-circl</u>)				
1. <u>Schedonorus arundinaceus</u>	<u>30</u>	<u>*</u>	<u>FACU</u>	Hydrophytic Vegetation Indicators: ___ Dominance Test is >50% ___ Prevalence Index is ≤3.0 ¹ ___ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
<u>30</u> = Total Cover				
Woody Vine Stratum (Plot size: _____)				
1. <u>Rubus armeniacus</u>	<u>40</u>	<u>*</u>	<u>FACU</u>	
2. _____	_____	_____	_____	
<u>40</u> = Total Cover				
% Bare Ground in Herb Stratum <u>0</u>		% Cover of Biotic Crust _____		
Remarks:				

SOIL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-5	7.5YR4/2	100					SiCl	
5-16	10YR4/2	100					SiCl	

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

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)	Indicators for Problematic Hydric Soils³:
<input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) (LRR C) <input type="checkbox"/> 1 cm Muck (A9) (LRR D) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> Vernal Pools (F9)

<input type="checkbox"/> 1 cm Muck (A9) (LRR C) <input type="checkbox"/> 2 cm Muck (A10) (LRR B) <input type="checkbox"/> Reduced Vertic (F18) <input type="checkbox"/> Red Parent Material (TF2) <input type="checkbox"/> Other (Explain in Remarks)	³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.
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Restrictive Layer (if present):	Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/>
Type: _____ Depth (inches): _____	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:	
Primary Indicators (minimum of one required; check all that apply)	Secondary Indicators (2 or more required)
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) (Nonriverine) <input type="checkbox"/> Sediment Deposits (B2) (Nonriverine) <input type="checkbox"/> Drift Deposits (B3) (Nonriverine) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Salt Crust (B11) <input type="checkbox"/> Biotic Crust (B12) <input type="checkbox"/> Aquatic Invertebrates (B13) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)
	<input type="checkbox"/> Water Marks (B1) (Riverine) <input type="checkbox"/> Sediment Deposits (B2) (Riverine) <input type="checkbox"/> Drift Deposits (B3) (Riverine) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5)

Field Observations:	Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>
Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>16</u> (includes capillary fringe)	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Ashland Gun Club, 555 Emigrant Creek Road City/County: Ashland / Jackson Co. Sampling Date: May 23, 2014
 Applicant/Owner: City of Ashland, 20 East Main Street, Ashland State: OR Sampling Point: 25
 Investigator(s): Donald K. Martin Section, Township, Range: S12, T39S, R1E, Lot 400
 Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): Concave Slope (%): 20
 Subregion (LRR): Interior Deserts LRR D Lat: 42.188638 Long: -122.640795 Datum: _____
 Soil Map Unit Name: Camas-Newberg-Evans NWI classification: plot not mapped

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

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

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____ Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____
Remarks: Bordering an area formerly used for resource extraction (mineral water and CO2) and subsequently filled and graded.	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>4</u> (A) Total Number of Dominant Species Across All Strata: <u>4</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				
Sapling/Shrub Stratum (Plot size: _____)				
1. <u>Salix spp.</u>	<u>30</u>	<u>*</u>	<u>FAC*</u>	Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
<u>30</u> = Total Cover				
Herb Stratum (Plot size: <u>10' semi-circl</u>)				
1. <u>Juncus balticus</u>	<u>30</u>	<u>*</u>	<u>FACW</u>	Hydrophytic Vegetation Indicators: <input checked="" type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. <u>Dipsacus fullonum</u>	<u>15</u>	<u>*</u>	<u>FAC</u>	
3. <u>Mimulus spp.</u>	<u>5</u>	<u>*</u>	<u>FAC*</u>	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. <u>T</u>	_____	_____	_____	
<u>50</u> = Total Cover				
Woody Vine Stratum (Plot size: _____)				
1. _____	_____	_____	_____	Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____
2. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum <u>0</u> % Cover of Biotic Crust _____				
Remarks: * All Mimulus spp. found in this region are FAC or wetter.				

SOIL

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-5	7.5YR4/2	100	100				SiCl	
5-16	10YR4/2	95	10YR7/2	5	D	PL	SiCl	

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

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)	Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> 2 cm Muck (A10) (LRR B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	
<input type="checkbox"/> Thick Dark Surface (A12)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	
<input type="checkbox"/> Sandy Redox (S5)	
<input type="checkbox"/> Stripped Matrix (S6)	
<input type="checkbox"/> Loamy Mucky Mineral (F1)	
<input type="checkbox"/> Loamy Gleyed Matrix (F2)	
<input checked="" type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> Vernal Pools (F9)	

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

<p>Restrictive Layer (if present): Type: _____ Depth (inches): _____</p>	<p>Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p>
---	--

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:	
Primary Indicators (minimum of one required; check all that apply)	Secondary Indicators (2 or more required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)
<input checked="" type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)
<input checked="" type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Other (Explain in Remarks)
	<input type="checkbox"/> Water Marks (B1) (Riverine)
	<input type="checkbox"/> Sediment Deposits (B2) (Riverine)
	<input type="checkbox"/> Drift Deposits (B3) (Riverine)
	<input type="checkbox"/> Drainage Patterns (B10)
	<input type="checkbox"/> Dry-Season Water Table (C2)
	<input type="checkbox"/> Crayfish Burrows (C8)
	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
	<input type="checkbox"/> Shallow Aquitard (D3)
	<input type="checkbox"/> FAC-Neutral Test (D5)

<p>Field Observations: Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>14</u> Saturation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>12</u> (includes capillary fringe)</p>		<p>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:



Stantec Consulting Services Inc.
225 NE Hillcrest Drive, Suite 5
Grants Pass, OR 97526-3547
Tel: 541.479.0050

April 23, 2015

Lynne McAllister, Jurisdiction Coordinator
Oregon Department of State Lands
Aquatic Resource Management Program
775 Summer Street NE
Salem, OR 97301
Sent via email: Lynne.McAllister@state.or.us

**Re: Responses to Questions for the Re-Submission Delineation of Waters of the United States;
Lithia Springs Property, Ashland, Oregon**

Dear Ms. McAllister:

Stantec Consulting Services Inc. (Stantec) submitted a report to the Oregon Department of State Lands (DSL) in September, 2014, entitled "*Resubmission, Delineation of Waters of the United States, including Wetlands, Lithia Springs Property,*" hereinafter referred to as "the report".

Below are Stantec's responses to your comments on the report provided in your email on February 12, 2015. As requested, the report is not being revised. In response to your comments, Figure 8 and the data sheets have been revised but not renumbered; therefore, the items in the Attachments are not in sequential order.

1) *Please explain how you identified plants if they were mowed right before field work. How confident are you of the identification and percent coverage if vegetation assessment was based on stubble?*

The report text states in Section 2.2, "The upland slopes of the land surrounding the wetlands are mowed on a regular basis as a requirement for the firing ranges and noxious weed abatement. Mowing tractors do not venture into the wetland areas. The Study Area had been mowed a few days prior to the site visit." The wetlands, as described in Section 5.1.1, are mostly defined by steep embankments of fill, which are not mowed. While there are some areas where the wetland boundary is on a gentle rise, mowing does not encroach on known wetland areas where mowers may get bogged down. The areas chosen for vegetation plots were not mowed at the time of the site visit.

2) *Please note: we no longer use NRCS WETS growing season dates unless you just need a ballpark estimate for planning site visits or other logistics. Typically, the actual growing season is evident before the NRCS dates and should be determined with the growth indicators in the supplements.*

In the glossary of the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region Version 2.0* (USACE, 2008) it states, "If onsite data gathering is not practical, growing season dates may be approximated by using WETS tables ". Section 3.1 of the report states, "The Preliminary Monthly Climate Data (PMCD) from the Medford weather station, and provided by the National Climate Data Center (NCDC), indicates statistically higher than normal temperatures for the months of April and May resulting in an early onset of the growing season. The February, March, April, and May weather data record an average of 2.8 degrees Fahrenheit warmer temperatures than normal, possibly contributing to advanced growth rates in early (wet) season vegetation." The site visit was conducted May 22, 2014, well within the locally-expressed growing season.

3) *There is a blue linear hatch symbol south of the onsite portion of the creek that is not in the legend.*

This hatch symbol represents the Ordinary High Water Line (OHWL). The legend symbol has been corrected on Figure 8, Wetland Map (Attachment 1).

4) *The culvert symbology is also different than what's in the legend. Please resolve this.*

The legend symbol for the culvert has been corrected on Figure 8, Wetland Map (Attachment 1).

5) *There is a solid black (thin) line extending north from the north study area boundary (middle top of figure 8—it has a bend at the north end). What is this line? Is it a tax lot boundary? Please match it to the legend.*

The solid black (thin) line was a tax lot line. Off-site tax lot lines have been removed for clarity on Figure 8, Wetland Map (Attachment 1).

6) *The tax lots you provided do not match the Oregon map. Our GIS tax lot layer is shown below for comparison (I verified this against OR map tax layer). I can't completely resolve the OR map tax lots either because there are 2 lots labeled #400. The map below is from our GIS, but the OR map does not label the tax lot 400 that is L-shaped (the westernmost one). Are your tax lots more current? Have the tax lots recently changed? You might have to check with the tax assessor in Jackson County to resolve the numbers and boundaries. Please update the figure if necessary, and provide all tax lots (along with TRS) that comprise the study area.*

The Oregon Map is outdated. The tax lot lines provided in the report are accurate and recently surveyed. Section 1.1 of the report states, "The northern portion of the Lithia Springs Property (Miller Trust Property) was recently purchased by the City and has been incorporated into the Study Area." There was a tax lot line adjustment for Lot 400 and Lot 800 that involved a land swap with Mr. James C. Miller, the former owner of the elevated upland pasture (or Miller Trust Property), to accommodate the incorporation of the wetlands south of Emigrant Creek into the Lithia Springs Property.

7) *Is there sheetflow between wetlands 5 and 3? Or is there a channel? If a channel with bed and bank, please map. Otherwise, please explain.*

There is no existing channel. Typically, precipitation diffuses into the coarse soil, but during heavy precipitation, Stantec staff observed brief and shallow sheetflow to Wetland 3. Section 5.1.1 in the report states, "Wetland 5 is depressional and overflows across the ground surface into Wetland 4." This is a typo, and should read "into Wetland 3". This direction of flow is confirmed in the Wetland 4 description where it states, "Wetland 4 hydrology overflows across the ground surface into Wetland 5".

8) *Has wetland 6 been partially filled (description on page 5.9 mentions steep banks of fill around it)? When was this done?*

Yes, Wetland 6 is mostly bordered with steep banks of fill. According to the historical aerial photographs, the entire site has been subject to excavation and filling for about 100 years but Wetland 6 has not been significantly altered in the past 10 years. The firing range berms in the area are not visible in the 2001 image, but are visible in the 2005 image. However, it is unclear if the fill around Wetland 6 is related to the firing range berms or to the extensive historical reworking of the surface.

Section 2.1 of the report states, "The Study Area has a history that involved disturbances of hydrology, soils, and vegetation, particularly on the alluvial terrace bordering Emigrant Creek. Early resource extraction in the form of mineral water and carbon dioxide left the Study Area with various types of wells, roads, stream re-alignment, filled areas, ditches, and concrete foundations. During the 80 years the City has owned the majority of the Study Area, most of the alluvial terrace has been filled, with approximately 33 acres graded for firing ranges including berms up to 20 feet high (Appendix B, Photo 1), and cleared of shrubby vegetation. Regular maintenance includes mowing range areas and keeping ditches clear of vegetation and graded for drainage. The Study Area still has PVC pipes protruding from the surface in wetland areas. Very little of the original surface remains in the Study Area."

9) *Did you achieve sub-foot accuracy after post-processing your GPS data?*

The report incorrectly states in Section 7.0 that the mapping accuracy is sub-foot, when three-fourths of it is sub-meter, with the balance greater than one meter. With the data point averaging that Pathfinder Office provides, sub-meter accuracy is generally expected. Estimated accuracies for 3,146 corrected positions are as follows:

<u>Range</u>	<u>Percentage</u>
15-30 cm	18.2%
30-50 cm	18.7%
0.5-1 m	33.0%
1-2 m	26.9%

10) *Please add an accuracy statement to the map.*

An accuracy statement has been added to Figure 8, Wetland Map (Attachment 1).

11) *The boundary of Wetland 6 has been reduced compared to former wetland 7 from the 2011 submittal, but there are no plots in the indent of upland north of plot 12 and 13 in 2014 (in 2011 it was all wetland). What information did you use to delineate that area as upland in this delineation? Has the wetland changed since 2011, and if so, what caused it to change?*

The original focus was to delineate wetlands within the present shotfall area plus downstream wetlands. Before field work was completed, the question arose as to whether there were wetlands to the east should the range be rotated clockwise to avoid the Miller Trust Property to the north. Because of schedule and budget restraints, Wetland 6 (which was then named Wetlands 7 and 8 in the July 20, 2011 report submittal) was plotted on the map based on surface indicators such as landscape position and then-present hydrology only. This map was later withdrawn, partly because no data were collected on Wetland 6 and a revised map was submitted for DSL concurrence on March 15, 2012 that did not include Wetlands 7 and 8. Now that the Miller Trust Property has been purchased by the City of Ashland, this current re-submission includes the entire Wetland 6 to the new property line. It does not appear that any changes in removal/fill have occurred since the 2011 map was produced. This updated delineation includes, for the first time, data collected in seven soil pits in Wetland 6. These data were used to clearly define the boundary of Wetland 6. The boundary between the soil pits was extrapolated using standard delineation practices by looking for similar patterns in topography, vegetation and hydrology.

12) *Please describe the swale type feature following the south boundary of the large green field on the north. You put plots 16 and 17 on the west side of it, but what about farther east? Aerials suggest it is wet. The green field also looks wetter than the surrounding area, but no plots are there. We checked that area on the 2011 site visit, but I don't know what we concluded (I think it was upland).*

The large green field is the former heavily-irrigated pasture that was purchased from Mr. Miller and incorporated into Lot 400 a few months before the delineation was conducted. The pasture is a terrace, elevated by about six to eight feet above the wetlands to the south. The slope to the terrace is steep and well eroded by cattle (see Photos 9 and 11 in the report). The toe of the slope was wet while the pasture was being irrigated, but the City of Ashland terminated irrigation following the purchase and has permanently decommissioned the pump and irrigation plumbing. The swale is difficult to discern in the 2001 aerial (Figure 6 in the report). We did walk the swale and dig a pit in question during our 2011 visit and determined it was upland. The attached Google Earth Pro 2015 aerial photograph clearly indicates the area is significantly drier than the wetlands (Attachment 2).

13) *Photo captions mention that irrigation is no longer happening in the north field, but nothing about irrigation is discussed in section 1 of the report. Is the north field all upland vegetation? How did you determine that no plots were needed there?*

Stantec staff canvassed the terrace and placed Plots 16 and 17 in the most likely place for potential wetland (the swale at the toe of the slope to the terrace) and found upland characteristics in both plots. The terrace is elevated on all sides, with no terrain rising above it. Also, Mr. Miller stated that without heavy irrigation, nothing grows on the terrace.

14) *Are any of the artificial features built in wetlands or hydric soils?*

It appears that the entire topography within the Study Area has been reworked several times over the past 100 years based on historical aerial photographs. Most of the wetland areas are bordered by steep slopes composed of fill and rubble, indicating that potential wetlands may have been avoided during historic activities. However, several historical features may have impacted or are encroaching on potential wetlands, including: buried pipes from CO₂ extraction in various areas, a historic bath house foundation (photo point 13), a large abandoned pump house (northeast of photo point 5), firing range berms (archery and police), and roads.

15) *Can fish access?*

Stantec does not foresee any physical fish barriers between the wetland outfall and the creek.

16) *Soil profile plot 1 says restricted layer at 5", but that layer texture is sand and "type" says cemented gravels. What is the texture of that layer (5-9"), and how did you dig through the cemented portion? Please describe/clarify.*

Section 1.7.2 of the report describes the effect of the highly mineralized spring water on the soil, cementing the clasts together into an impermeable hardpan. Stantec staff used a crow bar to chip through the hardpan in order to observe and document the underlying soil profile. Virtually all the aggregate observed in Wetlands 3 through 6 was coated with white calcite crystals, whether cemented together or not. Once the soil was removed from the soil pit and broken up, Stantec staff observed that the soil texture consisted of cobbles in a sand matrix.

17) *Please describe your rationale for using the Arid West forms. Use table 2 of supplements as criteria.*

The 35-year average precipitation in the City of Ashland is 19.95 inches (<http://www.usclimatedata.com/climate/ashland/oregon/united-states/usor0015>), which is less than the lower threshold value for precipitation in the typical Western Mountains, Valleys, and Coast Region (WMVC) shown in Table 2 of the supplements. The local area is dominated by grasslands interspersed with *Artemesia* and *Chrysothamnus* with a forest canopy appearing only in riparian areas, and soils are low in organics and high in carbonates. On page 17 of the Arid West Supplement it states, "The Arid West Region is surrounded by and interspersed with portions of the Western Mountains, Valleys, and Coast Region." This area of Southern Oregon is borderline between Land Resource Regions C and D, and contains pockets of both.

18) *Please re-check dominant vegetation at plot 2. Taeneatherum is a dominant and is upland. Medicago is not a dominant. So this plot does not meet vegetation. If you use the WMVC supplement, Poa is FAC and it would meet vegetation. Please resolve this by justifying problematic conditions re-checking the plot in the field and provide a new data sheet.*

Medusahead (*Taeneatherum caput-medusae*) is a common late season dominant in many wetlands in the area. According to the Natural Resources Conservation Service's Plant Guide (https://plants.usda.gov/plantguide/pdf/pg_taca8.pdf), medusahead is mostly found in degraded ecological sites that have relatively high water holding capacity and/or a high water

table. Since this area appears to straddle the AW/WMVC boundary, professional opinion in the use of the plant list was exercised. If the Site were purely located in WMVC then Medicago would be FACU. In the spring, before medusahead dominates, this plot has a hydrophytic community in either region. In dealing with problematic hydrophytic vegetation, the goal is to assess the plant community that would normally be present during the wet portion of the growing season. The revised Plot 2 data sheet is included in Attachment 3.

19) *Plot 6 is considered atypical for soil based on presence of fill, but no fill is mapped or mentioned in the soil profile 'remarks' column. Is this a "normal" circumstance or atypical/problematic? Please explain. Redox is not distinct, and the layer is not entirely within the upper 6", so this doesn't meet F8. These soils might be problematic due to presence of the high calcium carbonate, but you'd need to read over chapter 5 and provide rationale to justify problematic soils and why you consider them to be hydric even though they don't always meet an indicator. The Concepts section of the soils chapter (chpt 3) may also be helpful.*

This pit is located on a 100 percent slope, centered 12 inches up from the inundated vegetation plot. The lower rim of the pit is nine inches from the water, horizontally and vertically. The water table was encountered at a depth of 10 inches below ground surface (bgs), and may have been higher if allowed to equilibrate longer. The upper nine inches of soil was composed of a heavy clay not typical of the site, and it contained rubble, indicating it is fill. Below the fill is silty clay, not unlike soils in some of the other pits, and it contained redoximorphic features. Since the area is a mineral spring, the water chemistry would alter the oxidation/reduction cycle needed to develop distinct to prominent redoximorphic features. If the pit were located a few inches downslope, the fill overburden would be reduced to the point where the F8: Redox Depression indicator would apply. Stantec staff chose to not place the pit at the water's edge to avoid inundation of the pit. Landscape position, vegetation, and hydrology are present within Plot 6. The Plot 6 data sheet was revised to remove F8 and still show hydric soil (Attachment 3).

20) *At plot 8, soil texture is sand clay, so shouldn't the indicator be F3? Alternatively, please re-check the soil texture on the data sheet.*

Indicator F3 is more appropriate for the finer texture soil. The Plot 8 data sheet has been adjusted and is included in Attachment 3.

21) *At plot 10, please fill in the indicator status for Deschampsia.*

The Plot 10 data sheet has been corrected and is included in Attachment 3.

22) *Plot 10 does not meet F2 because a gleyed matrix must have a value of at least 4 (see the supplement glossary). Does this meet F1?*

This soil pit was located in the center of a perennially, wet channel in the wetland. This did not appear to be a Loamy Mucky Mineral soil, but more of a stiff clay. The Plot 10 data sheet has been revised to indicate "Other", with remarks about the problematic environment (Attachment 3).

Lithia Springs Property

Re: Responses to Oregon DSL Questions for Re-Submission Delineation of WOUS

23) At plot 25, 10YR 7/2 is not redox. Since chroma is 2, it is a depletion, but 5% is insufficient for meeting an indicator (such as F7). Treat this as at other plots if soil is problematic. Or, re-evaluate the soils on site.

The Plot 25 data sheet has been edited and is included in Attachment 3.

CONTACT INFORMATION

We hope these responses will adequately address your comments. We look forward to your approval of the report. Please feel free to contact Don Martin at **541.510.9700** or don.martin@stantec.com with any further questions.

Sincerely,

Stantec Consulting Services Inc.



Donald Martin, PWS
Project Environmental Scientist



Debra Lemke
Environmental Scientist



Rebekah Brooks, RG
Senior Associate, Hydrogeologist/
Project Manager

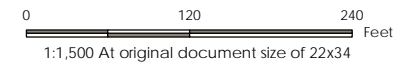
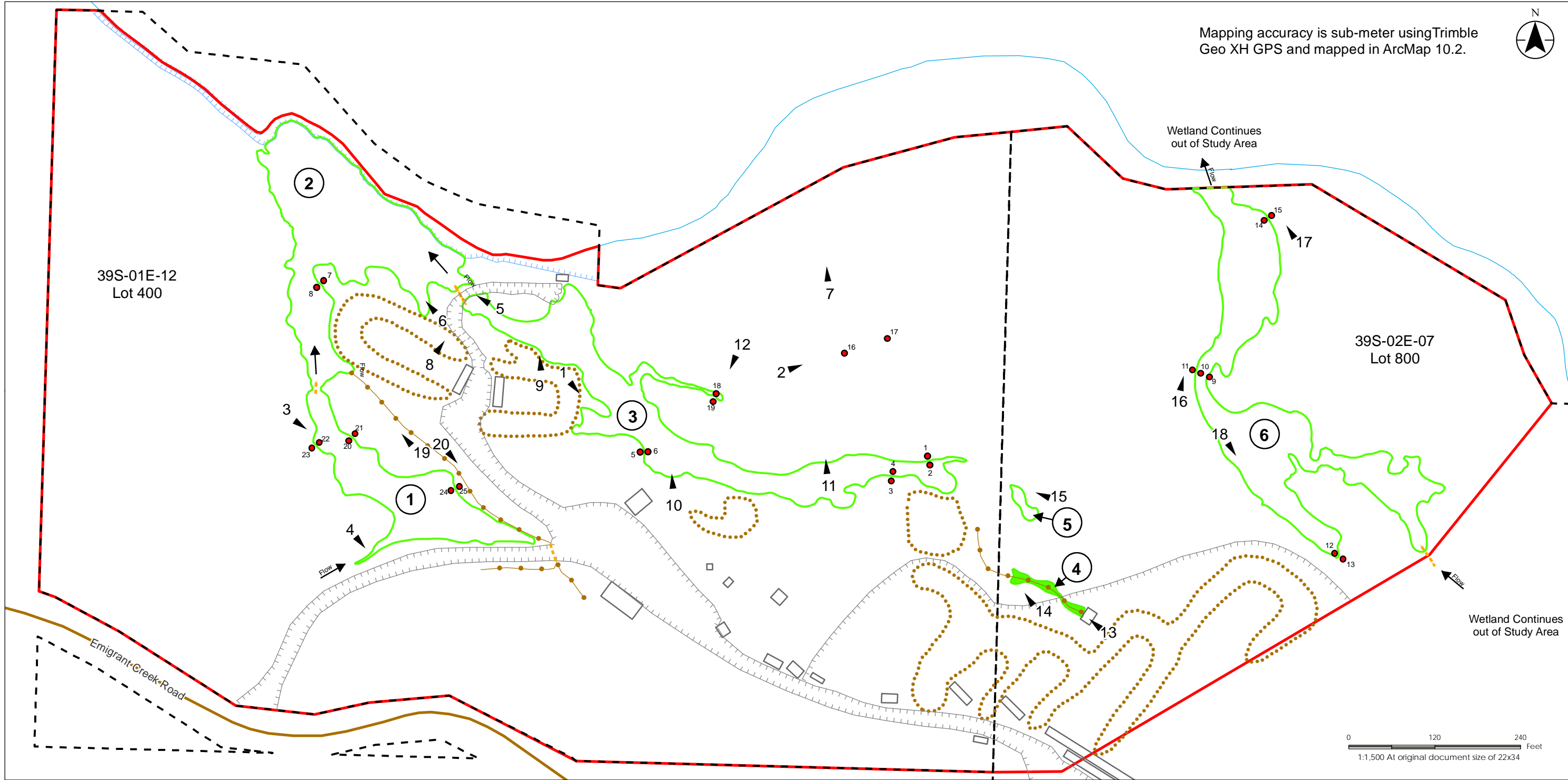
Attachments:

- 1) Revised Figure 8
- 2) 2015 Aerial Photograph
- 3) Revised Data Sheets

c. Mike Morrison, City of Ashland

Attachment 1 – Revised Figure 8

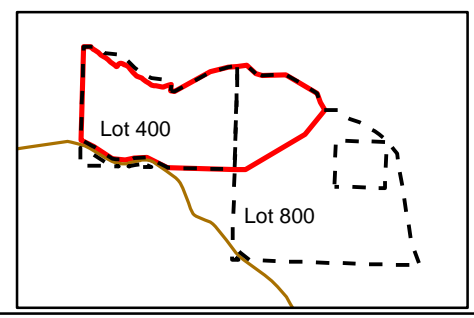
Mapping accuracy is sub-meter using Trimble Geo XH GPS and mapped in ArcMap 10.2.



Legend

- 3 Wetland Number
- Study Area
- Gravel Road
- Tax Lot
- Culvert
- Soil Pit
- Structure
- Proposed Jurisdictional Wetlands
- Proposed Non-jurisdictional Wetlands
- Firing Range Berms
- Emigrant Creek Centerline (offsite)
- Ordinary High Water Line
- Drainage Ditch or Swale
- ▶ Photograph Number and Direction

- Notes
1. Coordinate System: NAD 1983 StatePlane Oregon South FIPS 3602 Feet
 2. Base Map data obtained from Jackson County GIS online.
 3. Study Area features are Stantec proprietary data.



Project Location T39S, R1E, S12, Lot 400 T39S, R2E, S7, Lot 800 Jackson County, Oregon	203714196 Prepared by DKMartin on 2015-04-22 Technical Review by DLenke on 2015-04-22 Independent Review by RBrooks on 2015-04-22
Client/Project City of Ashland Lithia Springs Wetland Delineation 203714196	
Figure No.	8
Title	Wetland Map

Disclaimer: Stantec assumes no responsibility for data supplied in electronic format. The recipient accepts full responsibility for verifying the accuracy and completeness of the data. The recipient releases Stantec, its officers, employees, consultants and agents, from any and all claims arising in any way from the content or provision of the data.

Attachment 2 – 2015 Aerial Photograph



Attachment 3 – Revised Data Sheets

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Ashland Gun Club, 555 Emigrant Creek Road City/County: Ashland / Jackson Co. Sampling Date: May 23, 2014
 Applicant/Owner: City of Ashland, 20 East Main Street, Ashland State: OR Sampling Point: 2
 Investigator(s): Donald K. Martin Section, Township, Range: S12, T39S, R1E, Lot 400
 Landform (hillslope, terrace, etc.): Basin Local relief (concave, convex, none): Concave Slope (%): 2
 Subregion (LRR): Interior Deserts LRR D Lat: 42.188638 Long: -122.640795 Datum: _____
 Soil Map Unit Name: Camas-Newberg-Evans NWI classification: plot not mapped

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

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

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____ Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____
Remarks: Area formerly used for resource extraction (mineral water and CO2) and subsequently filled and graded. Adjacent areas kept mowed.	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				
Sapling/Shrub Stratum (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
Herb Stratum (Plot size: <u>10' semi-circl</u>)				
1. <u>Centaurea solstitialis</u>	5	_____	NOL	
2. <u>Cerastium fontanum</u>	5	_____	FACU	
3. <u>Poa annua</u>	20	*	FACU	
4. <u>Taeniatherum caput-medusae</u>	20	*	NOL	
5. <u>Juncus balticus</u>	25	*	FACW	
6. <u>Medicago lupulina</u>	15	_____	FAC	
7. <u>Rumex crispus</u>	10	_____	FAC	
8. <u>Lepidium virginicum</u>	5	_____	FACU	
105 = Total Cover				
Woody Vine Stratum (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum <u>15</u> % Cover of Biotic Crust _____				

Dominance Test worksheet:
 Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
 Total Number of Dominant Species Across All Strata: 3 (B)
 Percent of Dominant Species That Are OBL, FACW, or FAC: 33 (A/B)

Prevalence Index worksheet:
 Total % Cover of: _____ Multiply by: _____
 OBL species _____ x 1 = _____
 FACW species 25 x 2 = 50
 FAC species 35 x 3 = 105
 FACU species 30 x 4 = 120
 UPL species 5 x 5 = 25
 Column Totals: 95 (A) 300 (B)
 Prevalence Index = B/A = 3.2

Hydrophytic Vegetation Indicators:
 ___ Dominance Test is >50%
 ___ Prevalence Index is ≤3.0¹
 ___ Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes No _____

Remarks: Taeniatherum is known to be found as a late-season dominant in wetlands so is considered problematic.

SOIL

Sampling Point: 2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-3	10YR4/2	60	2.5YR4/3	40	C	M	SaCL	
3-8	10YR4/2	50	7.5YR2.5/1	30	C	M/PL	SaCL	very gravelly
8-13	10YR3/1	60	7.5YR4/4	40	C	PL	SiC	cobbly
13-18	10YR3/1	100					gravel	cobbly
¹ Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ² Location: PL=Pore Lining, M=Matrix.								
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)						Indicators for Problematic Hydric Soils³:		
<input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) (LRR C) <input type="checkbox"/> 1 cm Muck (A9) (LRR D) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> Sandy Gleyed Matrix (S4)			<input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input checked="" type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> Vernal Pools (F9)			<input type="checkbox"/> 1 cm Muck (A9) (LRR C) <input type="checkbox"/> 2 cm Muck (A10) (LRR B) <input type="checkbox"/> Reduced Vertic (F18) <input type="checkbox"/> Red Parent Material (TF2) <input type="checkbox"/> Other (Explain in Remarks)		
						³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.		
Restrictive Layer (if present): Type: <u>dense clay</u> Depth (inches): <u>8</u>						Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		
Remarks:								

HYDROLOGY

Wetland Hydrology Indicators:			
Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (2 or more required)	
<input type="checkbox"/> Surface Water (A1)	<input checked="" type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Water Marks (B1) (Riverine)	
<input checked="" type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)	<input type="checkbox"/> Sediment Deposits (B2) (Riverine)	
<input checked="" type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Drift Deposits (B3) (Riverine)	
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)	
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Dry-Season Water Table (C2)	
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Crayfish Burrows (C8)	
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Shallow Aquitard (D3)	
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> FAC-Neutral Test (D5)	
Field Observations:			
Surface Water Present?	Yes <input type="checkbox"/> No <input type="checkbox"/>	Depth (inches):	
Water Table Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Depth (inches):	<u>9.5</u>
Saturation Present? (includes capillary fringe)	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Depth (inches):	<u>7</u>
		Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
Remarks:			

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Ashland Gun Club, 555 Emigrant Creek Road City/County: Ashland / Jackson Co. Sampling Date: May 23, 2014
 Applicant/Owner: City of Ashland, 20 East Main Street, Ashland State: OR Sampling Point: 6
 Investigator(s): Donald K. Martin Section, Township, Range: S12, T39S, R1E, Lot 400
 Landform (hillslope, terrace, etc.): Stream Terrace Local relief (concave, convex, none): Concave Slope (%): 40
 Subregion (LRR): Interior Deserts LRR D Lat: 42.188638 Long: -122.640795 Datum: _____
 Soil Map Unit Name: Camas-Newberg-Evans NWI classification: plot not mapped

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

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

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____ Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____
Remarks: Area formerly used for resource extraction (mineral water and CO2) and subsequently filled and graded. Adjacent areas kept mowed.	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				
Sapling/Shrub Stratum (Plot size: _____)				
1. _____	_____	_____	_____	Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
Herb Stratum (Plot size: <u>10' semi-circl</u>)				
1. <u>Dipsacus fullonum</u>	<u>5</u>		<u>FAC</u>	Hydrophytic Vegetation Indicators: <input checked="" type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)
2. <u>Typha latifolia</u>	<u>20</u>	<u>*</u>	<u>OBL</u>	
3. <u>Schedonorus arundinaceus</u>	<u>5</u>		<u>FACU</u>	
4. <u>Taeniatherum caput-medusae</u>	<u>5</u>		<u>NOL</u>	
5. <u>Juncus balticus</u>	<u>75</u>	<u>*</u>	<u>FACW</u>	
6. <u>Veronica anagallis-aquatica</u>	<u>5</u>		<u>OBL</u>	
7. <u>Holcus lanatus</u>	<u>5</u>		<u>FAC</u>	
8. <u>Deschampsia elongata</u>	<u>5</u>		<u>FACW</u>	
<u>125</u> = Total Cover				
Woody Vine Stratum (Plot size: _____)				
1. _____	_____	_____	_____	¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum <u>5</u> % Cover of Biotic Crust _____				
Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____				

Remarks:
 Vegetation plot includes the 1' slope down to the wet flats, which was inundated by 3 inches of water.

SOIL

Sampling Point: 6

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-9	7.5YR3/2	100					CL	no gravel
9-21	7.5YR3/2	80	10YR4/1	20	D	M	SiC	no gravel

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

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)			Indicators for Problematic Hydric Soils ³ :		
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)			
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> 2 cm Muck (A10) (LRR B)			
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> Reduced Vertic (F18)			
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Red Parent Material (TF2)			
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input type="checkbox"/> Depleted Matrix (F3)	<input checked="" type="checkbox"/> Other (Explain in Remarks)			
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	<input type="checkbox"/> Redox Dark Surface (F6)				
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)				
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)				
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Vernal Pools (F9)				
<input type="checkbox"/> Sandy Gleyed Matrix (S4)					

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present): Type: <u>cemented gravels</u> Depth (inches): <u>21</u>	Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
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Remarks: Slope is fill. Soil is naturally problematic due to mineral water. Pit located on steep slope, approximately 1' above inundated area represented in vegetation section. Soil is radically different than other soils on the Site. This pit meets hydric criteria in the Arid Supplement considering that the apparent fill overburden is atypical. According to Chapter 5 if the fill had not been placed there the soil would be hydric according to F8 (redox depression).

HYDROLOGY

Wetland Hydrology Indicators:	
Primary Indicators (minimum of one required; check all that apply)	Secondary Indicators (2 or more required)
<input type="checkbox"/> Surface Water (A1)	<input checked="" type="checkbox"/> Salt Crust (B11)
<input checked="" type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Water Marks (B1) (Riverine)
<input checked="" type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Sediment Deposits (B2) (Riverine)
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Drift Deposits (B3) (Riverine)
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Shallow Aquitard (D3)
	<input type="checkbox"/> FAC-Neutral Test (D5)
	<input type="checkbox"/> Other (Explain in Remarks)

Field Observations: Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>10</u> Saturation Present? (includes capillary fringe) Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>8</u>	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Vegetation plot 1' away from the pit is a 3" pool with CO2 bubbling up.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Ashland Gun Club, 555 Emigrant Creek Road City/County: Ashland / Jackson Co. Sampling Date: May 23, 2014
 Applicant/Owner: City of Ashland, 20 East Main Street, Ashland State: OR Sampling Point: 8
 Investigator(s): Donald K. Martin Section, Township, Range: S12, T39S, R1E, Lot 400
 Landform (hillslope, terrace, etc.): Stream Terrace Local relief (concave, convex, none): Concave Slope (%): 0
 Subregion (LRR): Interior Deserts LRR D Lat: 42.188638 Long: -122.640795 Datum: _____
 Soil Map Unit Name: Camas-Newberg-Evans NWI classification: plot not mapped

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

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

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____ Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____
Remarks: Area formerly used for resource extraction (mineral water and CO2) and subsequently filled and graded. Adjacent areas kept mowed.	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				
Sapling/Shrub Stratum (Plot size: _____)				
1. _____	_____	_____	_____	Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
Herb Stratum (Plot size: <u>10' semi-circl</u>)				
1. <u>Dipsacus fullonum</u>	<u>10</u>		<u>FAC</u>	Hydrophytic Vegetation Indicators: <input checked="" type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. <u>Typha latifolia</u>	<u>80</u>	<u>*</u>	<u>OBL</u>	
3. <u>Juncus balticus</u>	<u>20</u>	<u>*</u>	<u>FACW</u>	
4. <u>Veronica anagallis-aquatica</u>	<u>10</u>		<u>OBL</u>	
5. <u>Holcus lanatus</u>	<u>5</u>		<u>FAC</u>	
6. <u>Deschampsia elongata</u>	<u>5</u>		<u>FACW</u>	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
<u>130</u> = Total Cover				
Woody Vine Stratum (Plot size: _____)				
1. _____	_____	_____	_____	Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____
2. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum _____ % Cover of Biotic Crust _____				

Remarks:
 Vegetation plot includes the 6" slope down to the wet flats, which was inundated by 4 inches of water.

SOIL

Sampling Point: 8

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-19	10YR4/2	80	10YR4/1	15	D	M	SaCL	gravelly
			10YR4/6	5	C	M		

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

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5) (LRR C)
- 1 cm Muck (A9) (LRR D)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)

- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Vernal Pools (F9)

Indicators for Problematic Hydric Soils³:

- 1 cm Muck (A9) (LRR C)
- 2 cm Muck (A10) (LRR B)
- Reduced Vertic (F18)
- Red Parent Material (TF2)
- Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____
 Depth (inches): _____

Hydric Soil Present? Yes No

Remarks:

Pit located on steep slope, approximately 6" above inundated area represented in vegetation section.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1) (Nonriverine)
- Sediment Deposits (B2) (Nonriverine)
- Drift Deposits (B3) (Nonriverine)
- Surface Soil Cracks (B6)
- Inundation Visible on Aerial Imagery (B7)
- Water-Stained Leaves (B9)

- Salt Crust (B11)
- Biotic Crust (B12)
- Aquatic Invertebrates (B13)
- Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres along Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C6)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- Water Marks (B1) (Riverine)
- Sediment Deposits (B2) (Riverine)
- Drift Deposits (B3) (Riverine)
- Drainage Patterns (B10)
- Dry-Season Water Table (C2)
- Crayfish Burrows (C8)
- Saturation Visible on Aerial Imagery (C9)
- Shallow Aquitard (D3)
- FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes No Depth (inches): _____
 Water Table Present? Yes No Depth (inches): 9
 Saturation Present? (includes capillary fringe) Yes No Depth (inches): 6

Wetland Hydrology Present? Yes No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Ashland Gun Club, 555 Emigrant Creek Road City/County: Ashland / Jackson Co. Sampling Date: May 23, 2014
 Applicant/Owner: City of Ashland, 20 East Main Street, Ashland State: OR Sampling Point: 10
 Investigator(s): Donald K. Martin Section, Township, Range: S7, T39S, R2E, Lot 800
 Landform (hillslope, terrace, etc.): basin Local relief (concave, convex, none): Concave Slope (%): 5
 Subregion (LRR): Interior Deserts LRR D Lat: 42.188638 Long: -122.640795 Datum: _____
 Soil Map Unit Name: Camas-Newberg-Evans NWI classification: plot not mapped

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

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

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____ Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____
Remarks: Bordering an area formerly used for resource extraction (mineral water and CO2) and subsequently filled and graded.	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
Sapling/Shrub Stratum (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
Herb Stratum (Plot size: <u>10' semi-circl</u>)				
1. <u>Juncus balticus</u>	<u>20</u>	<u>*</u>	<u>FACW</u>	
2. <u>Deschampsia elongata</u>	<u>20</u>	<u>*</u>	<u>FACW</u>	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
_____ = Total Cover				
Woody Vine Stratum (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum <u>60</u>		% Cover of Biotic Crust _____		
Hydrophytic Vegetation Indicators: <input checked="" type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)				
¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.				
Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____				

Remarks:
 Plot is in a swale that is partially inundated (within 2 feet of the pit) or cobbles and mineral deposits.

SOIL

Sampling Point: 10

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-2	2.5 4/2	100					Cl	
2-3	5Y5/1	90	5Y7/1	10	Cs	M	Cl	mineral spring evaporites
3-8	5GY3/1	100					SiLm	organic muck

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

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5) (LRR C)
- 1 cm Muck (A9) (LRR D)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Vernal Pools (F9)

Indicators for Problematic Hydric Soils³:

- 1 cm Muck (A9) (LRR C)
- 2 cm Muck (A10) (LRR B)
- Reduced Vertic (F18)
- Red Parent Material (TF2)
- Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: cemented cobble pan
 Depth (inches): _____

Hydric Soil Present? Yes No

Remarks: The mineral water in the area creates a naturally problematic situation affecting the oxidation/reduction cycling that is crucial to the formation of redoximorphic features in the soil and the gleying of the matrix.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)	Secondary Indicators (2 or more required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)
<input checked="" type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)
<input checked="" type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Other (Explain in Remarks)
	<input type="checkbox"/> Water Marks (B1) (Riverine)
	<input type="checkbox"/> Sediment Deposits (B2) (Riverine)
	<input type="checkbox"/> Drift Deposits (B3) (Riverine)
	<input type="checkbox"/> Drainage Patterns (B10)
	<input type="checkbox"/> Dry-Season Water Table (C2)
	<input type="checkbox"/> Crayfish Burrows (C8)
	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
	<input type="checkbox"/> Shallow Aquitard (D3)
	<input type="checkbox"/> FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes No Depth (inches): _____
 Water Table Present? Yes No Depth (inches): 4
 Saturation Present? (includes capillary fringe) Yes No Depth (inches): 5

Wetland Hydrology Present? Yes No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Ashland Gun Club, 555 Emigrant Creek Road City/County: Ashland / Jackson Co. Sampling Date: May 23, 2014
 Applicant/Owner: City of Ashland, 20 East Main Street, Ashland State: OR Sampling Point: 25
 Investigator(s): Donald K. Martin Section, Township, Range: S12, T39S, R1E, Lot 400
 Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): Concave Slope (%): 20
 Subregion (LRR): Interior Deserts LRR D Lat: 42.188638 Long: -122.640795 Datum: _____
 Soil Map Unit Name: Camas-Newberg-Evans NWI classification: plot not mapped

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

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

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____ Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____
Remarks: Bordering an area formerly used for resource extraction (mineral water and CO2) and subsequently filled and graded.	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>4</u> (A) Total Number of Dominant Species Across All Strata: <u>4</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				
Sapling/Shrub Stratum (Plot size: _____)				
1. <u>Salix spp.</u>	<u>30</u>	<u>*</u>	<u>FAC*</u>	Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
<u>30</u> = Total Cover				
Herb Stratum (Plot size: <u>10' semi-circl</u>)				
1. <u>Juncus balticus</u>	<u>30</u>	<u>*</u>	<u>FACW</u>	Hydrophytic Vegetation Indicators: <input checked="" type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)
2. <u>Dipsacus fullonum</u>	<u>15</u>	<u>*</u>	<u>FAC</u>	
3. <u>Mimulus spp.</u>	<u>5</u>	<u>*</u>	<u>FAC*</u>	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. <u>T</u>	_____	_____	_____	
<u>50</u> = Total Cover				
Woody Vine Stratum (Plot size: _____)				
1. _____	_____	_____	_____	Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____
2. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum <u>0</u> % Cover of Biotic Crust _____				
Remarks: * All Mimulus spp. found in this region are FAC or wetter.				

SOIL

Sampling Point: 25 - -

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-5	7.5YR4/2	100	100				SiCl	
5-16	10YR4/2	95	10YR7/2	5	D	PL	SiCl	
¹ Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ² Location: PL=Pore Lining, M=Matrix.								
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise)						Indicators for Problematic Hydric Soils³:		
<input type="checkbox"/> Histosol (A1)			<input type="checkbox"/> Sandy Redox (S5)			<input type="checkbox"/> 1 cm Muck (A9) (LRR C)		
<input type="checkbox"/> Histic Epipedon (A2)			<input type="checkbox"/> Stripped Matrix (S6)			<input type="checkbox"/> 2 cm Muck (A10) (LRR B)		
<input type="checkbox"/> Black Histic (A3)			<input type="checkbox"/> Loamy Mucky Mineral (F1)			<input type="checkbox"/> Reduced Vertic (F18)		
<input type="checkbox"/> Hydrogen Sulfide (A4)			<input type="checkbox"/> Loamy Gleyed Matrix (F2)			<input type="checkbox"/> Red Parent Material (TF2)		
<input type="checkbox"/> Stratified Layers (A5) (LRR C)			<input type="checkbox"/> Depleted Matrix (F3)			<input checked="" type="checkbox"/> Other (Explain in Remarks)		
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)			<input type="checkbox"/> Redox Dark Surface (F6)			³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.		
<input type="checkbox"/> Depleted Below Dark Surface (A11)			<input type="checkbox"/> Redox Dark Surface (F7)					
<input type="checkbox"/> Thick Dark Surface (A12)			<input type="checkbox"/> Redox Depressions (F8)					
<input type="checkbox"/> Sandy Mucky Mineral (S1)			<input type="checkbox"/> Vernal Pools (F9)					
<input type="checkbox"/> Sandy Gleyed Matrix (S4)								
Restrictive Layer (if present): Type: _____ Depth (inches): _____						Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		
Remarks: The mineral water in the area creates a naturally problematic situation affecting the oxidation/reduction cycling that is crucial to the formation of redoximorphic features in the soil. Minerals would be allowed to dissolve but lose the opportunity to re-oxidize.								

HYDROLOGY

Wetland Hydrology Indicators:					
Primary Indicators (minimum of one required; check all that apply)			Secondary Indicators (2 or more required)		
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Water Marks (B1) (Riverine)			
<input checked="" type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)	<input type="checkbox"/> Sediment Deposits (B2) (Riverine)			
<input checked="" type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Drift Deposits (B3) (Riverine)			
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)			
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Dry-Season Water Table (C2)			
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Crayfish Burrows (C8)			
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)			
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Shallow Aquitard (D3)			
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> FAC-Neutral Test (D5)			
Field Observations: Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>14</u> Saturation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>12</u> (includes capillary fringe)			Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:					
Remarks:					



Oregon

Kate Brown, Governor

Department of State Lands

775 Summer Street NE, Suite 100

Salem, OR 97301-1279

(503) 986-5200

FAX (503) 378-4844

www.oregon.gov/dsl

May 1, 2015

State Land Board

Mike Morrison
City of Ashland
20 East Main Street
Ashland, OR 97520

Kate Brown
Governor

Jeanne P. Atkins
Secretary of State

Re: WD #2014-0488 Revised Concurrence Letter
for Wetland Delineation Report for Lithia Springs Property,
Jackson County; T39S R1E Sec. 12 Tax Lots, 400, T39S R2E
Sec. 7, Tax Lot 800

Ted Wheeler
State Treasurer

Dear Mr. Morrison:

This letter is to correct tax lot information in the April 24, 2015 concurrence letter. The Department of State Lands has reviewed the wetland delineation report prepared by Stantec Consulting Services, Inc. for the site referenced above. Please note that the study area includes tax lot 400 and only a portion of the tax lot 800 (see the attached map). Based upon the information presented in the report and additional information submitted upon request, we concur with the wetland and waterway boundaries as mapped in revised Figure 8 of the report. Please replace all copies of the preliminary wetland map with this final Department-approved map. Within the study area, six wetlands, Emigrant Creek, and 4 ditches were identified.

Wetlands 1-3, 5 and 6, totaling approximately 3.32 acres, and Emigrant Creek are subject to the permit requirements of the state Removal-Fill Law. Under current regulations, a state permit is required for cumulative fill or annual excavation of 50 cubic yards or more in the wetland/wetlands or below the ordinary high water line (OHWL) of a waterway (or the 2 year recurrence interval flood elevation if OHWL cannot be determined). However, Emigrant Creek is an essential salmonid stream; therefore, fill or removal of any amount of material within the OHWL and hydrologically-connected wetlands (Wetlands 2 and 6) may require a state permit. Wetland 4 is constructed in upland and, per OAR 141-085-0515(6) is not subject to current state Removal-Fill requirements. The ditches are not regulated, per OAR 141-085-0515(8).

In addition, berms placed in the vicinity of wetlands 2 and 3 in approximately 2002 may have been placed at least in part in wetlands. Therefore, any amount of new fill activity within the study area jurisdictional wetlands may require a state permit.

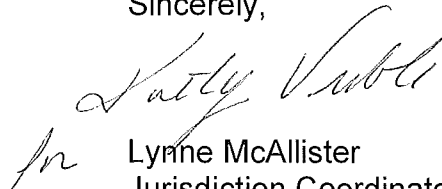
This concurrence is for purposes of the state Removal-Fill Law only. Federal or local permit requirements may apply as well. The Army Corps of Engineers will review the report and make a determination of jurisdiction for purposes of the Clean Water Act at the time that a permit application is submitted. We recommend that you attach a copy of this concurrence letter to both copies of any subsequent joint permit application to speed application review.

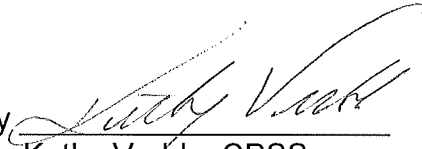
Please be advised that state law establishes a preference for avoidance of wetland impacts. Because measures to avoid and minimize wetland impacts may include reconfiguring parcel layout and size or development design, we recommend that you work with Department staff on appropriate site design before completing the city or county land use approval process.

This concurrence is based on information provided to the agency. The jurisdictional determination is valid for five years from April 24, 2015 unless new information necessitates a revision. Circumstances under which the Department may change a determination are found in OAR 141-090-0045 (available on our web site or upon request). In addition, laws enacted by the legislature and/or rules adopted by the Department may result in a change in jurisdiction; individuals and applicants are subject to the regulations that are in effect at the time of the removal-fill activity or complete permit application. The applicant, landowner, or agent may submit a request for reconsideration of this determination in writing within six months of the date of this letter.

Thank you for having the site evaluated. Please phone me at 503-986-5300 if you have any questions.

Sincerely,


Lynne McAllister
Jurisdiction Coordinator

Approved by 
Kathy Verble, CPSS
Aquatic Resource Specialist

Enclosures

ec: Don Martin, Stantec Consulting Services, Inc.
Jackson County Planning Department
Joe Sheahan, Corps of Engineers
Bob Lobdell, DSL

Appendix D

Health & Safety Plan (RMS 1 and RMS 2)

Project: Lithia Springs Property Remedial Action
 Client: City of Ashland
 Location: 555 Emigrant Creek Road, Ashland, Oregon

File No. n/a
 Project No: 203714196

- **Where a project with fieldwork does not require a Health and Safety Plan (HASP), a Risk Management Strategy (RMS1) must be completed.**
- **If the scope of work for a project that originally did not involve field work changes to include field work, an RMS1 form must be completed and reviewed with employees before field work begins.**
- **Although the RMS1 is intended to be part of the desktop planning process for a project, please be aware that the RMS1 can be carried as a field resource as well, to complement use of the RMS2 – Field Level Risk Assessment.**

1. PROJECT SUMMARY:

Description of the work:

Conduct a remedial action in the vicinity of jurisdictional Wetland 3 and Wetland 5 at the Lithia Springs Property. The remedial action will be performed in conjunction with planned wetland mitigation activities. The remedial action will include the following field tasks: 1) Lead shot reclamation from the RA Project Area. 2) Confirmation soil sampling within the RA Project Area. 3) Data evaluation using statistical methods. 4) Shot/soil segregation and recycling/reuse. 5) Drainage installation. 6) Backfilling and site restoration of the RA Project Area. Stantec will be overseeing a remediation contractor for Tasks 1, 4, 5, and 6.

General

Does a Prime Contractor (Constructor) or Client HSE Program apply? Yes No

If yes, please identify.

If Client, Prime Contractor or Constructor provides Orientation and/or Training, attach a copy of the training record to the project file and provide a copy to the OSEC.

Does this project involve work outside of North America (International) Yes No

(If yes, you must contact international@stantec.com)

2. HAZARD RECOGNITION

Health Hazard (Check all appropriate categories)

Is this work where MSDSs are required? Yes No

If yes, copies of MSDSs must be available at project site and attached to this document.

Chemical	Chemical	Physical
<input type="checkbox"/> Acids or Caustics	<input type="checkbox"/> Solvents/Flammables	<input type="checkbox"/> Radiation (type):
<input type="checkbox"/> Asbestos	<input type="checkbox"/> Other – specify:	<input checked="" type="checkbox"/> Remote Location
<input type="checkbox"/> H ₂ S	Physical	<input type="checkbox"/> Rough Terrain/Heavy Brush
<input type="checkbox"/> Halogenated Organic Compounds	<input checked="" type="checkbox"/> Cold Stress/Frostbite	<input type="checkbox"/> Road / Trail Conditions
<input checked="" type="checkbox"/> Heavy Metals	<input type="checkbox"/> Confined Space	<input type="checkbox"/> Vibration
<input checked="" type="checkbox"/> Metals	<input type="checkbox"/> Driver Fatigue	<input checked="" type="checkbox"/> Water
<input type="checkbox"/> PCBs	<input checked="" type="checkbox"/> Dust / Dusty environments	<input checked="" type="checkbox"/> Wildlife
<input type="checkbox"/> Pesticides / Herbicides	<input checked="" type="checkbox"/> Flora or Fauna (type):	<input type="checkbox"/> Working at Heights
<input type="checkbox"/> Petroleum Hydrocarbons	<input checked="" type="checkbox"/> Heat Stress / Sunburn	<input type="checkbox"/> Other – specify:
<input type="checkbox"/> Poisonous Materials	<input checked="" type="checkbox"/> Noise	

Ergonomic

- Force
- Posture
- Repetitive Motion
- Tools
- Workplace Design

Safety Hazards (Check all appropriate categories)
Machine

- ATV
- Automobile
- Blades
- Chains / Cables / Ropes
- Crush Points
- Cutting Edges
- Free-Wheeling Point
- Heavy Equipment
- Helicopter
- Hydraulic Systems
- Levers
- Moving Parts
- Pinch Points
- Rotating Parts (i.e. auger)

Ergonomic

- Other – specify:

Biological

- Bacterial Control Cultures
- Domestic Waste

Machine

- Shear Points
- Springs
- Wrap Points
- Other – specify:

Energy

- Chemical
- Electrical
- Hydraulic
- Mechanical
- Pneumatic
- Potential
- Thermal
- Other – specify:

Biological

- Medical Waste
- Sewage / Wastewater
- Other – specify:
- Not Applicable**

Material Handling & Task Completion

- Bending
- Falling/Flying Objects
- Fatigue
- Heavy Load (> 50 pounds)
- Load (< 50 pounds)
- Repetitive
- Sharp/Rough Surface
- Twisting
- Other – specify:

Work Practices

- Deviation of SWP
- Not Applicable**

3. HAZARD ASSESSMENT

Check off all SWPs that apply to job

- **Unless required by client, printing SWPs is not required. However, review of all applicable SWPs before commencing work is mandatory. The most current version of each below is hyperlinked to allow review, and printing where desired.**

100 Series – General HSE

- [102 – Workplace Violence Prevention Program](#)
- [103 – Workplace Hazardous Materials Information System \(WHMIS\)](#)
- [104 - Hazard Communication](#)
- [105 – Personal Protective Equipment \(PPE\)](#)
- [107 – First Aid](#)
- [108 – Bloodborne Pathogens](#)
- [111 – Medical Surveillance](#)
- [113 – Heat Stress](#)
- [114 – Working in Cold Environments](#)
- [115 – Material Handling and Safe Lifting](#)
- [116 – Office Safety](#)
- [118 – Working Alone in the Field](#)

- [124 – Safe Driving](#)

- [125 – Workstation Ergonomics](#)
- [126 – Using a Chainsaw](#)
- [130 – Rail Safety](#)

200 Series – Construction HSE

- [201 – Fall Protection/Working from Heights](#)
- [202 – Ladder Safety](#)
- [203 – Aerial Work Platforms](#)
- [205 – Scaffold Safety](#)
- [206 – Hand and Portable Power Tools](#)
- [208 – Hoisting and Lifting](#)
- [213 – Utility Clearance](#)
- [214 – Entering Excavations and Trenches](#)
- [215 – Supervision of Hydro-Excavation Activities](#)

200 Series – Construction HSE

- [216 – Working Near Mobile Equipment](#)
- [217 – Forklift Operation](#)

300 Series – Hazardous Materials

- [304 – Asbestos Safety](#)
- [305 – Benzene Safety](#)
- [308 – Working in Geotechnical and Materials Laboratories](#)
- [310 – Compressed Gas Cylinders](#)
- [311 – Working in Environmental Laboratories](#)
- [312 – Fueling Gasoline Engines](#)
- [314 - Working Around Hazardous Waste and Wastewater](#)

400 Series – Program Specific

- [406 – Electrical Safety Program](#)
- [407 - Traffic Control and Protection Planning](#)
- [408 – Lock, Tag & Try \(LTT\)](#)
- [409 Respiratory Protection](#)
- [411 – Confined Space Entry](#)
- [414 – Hot Work](#)
- [416 – Supervision of Contracted Drilling Activities](#)

500 – PA/PC/Region Specific Programs

- [501 - Using the Spot Messenger System](#)

500 – PA/PC/Region Specific Programs

- [502 - Use and Handling of Nuclear Density Gauges](#)
- [504 - Backpack and Boat Mounted Electro-fishing](#)
- [507 – Aircraft Safety](#)
- [508 – Wildlife Encounters](#)
- [509 - Guideline for 2-way Radio Use on Radio Controlled Roads in BC](#)
- [510 – Working in Abandoned Buildings](#)
- [513 – Boat and Water Safety](#)

500 – PA/PC/Region Specific Programs

- [514 – Working On or Near Ice](#)
- [516 – Radiation Safety \(US\)](#)
- [517 – Safe Machete Use](#)

Other SWPs not listed

- In dry and windy conditions, dust suppression will be provided by remediation contractor during excavation activities (if needed).

SWP for this task being performed is not available – Quantified Hazard Assessment (RMS7) must be performed, please speak with Regional Safety Environment Coordinator (RSEC) for assistance.

4. PERSONAL PROTECTIVE EQUIPMENT (PPE)

Based on hazard recognition and assessment as identified in the documents above, identify required PPE.

Head Protection (CSA or ANSI) – Type: hard hat (when in vicinity of heavy equipment)

Hearing Protection – Type:

Work Boots (CSA or ANSI) – Type: steel-toed boots

Respiratory Protection – Type:

Eye/Face Protection – Type: safety glasses

Coveralls – Type: coveralls or rain gear during wet weather conditions

High Visibility Vest – Type: Stantec safety vest

Fall Protection – Type:

Gloves – Type: nitrile

Other -

5. JOB ADMINISTRATION

Training

Is there any training required outside that identified in the applicable SWPs? Yes No
If yes, please identify:

Do workers require site-specific orientation? Yes No

Emergency Planning

It is the responsibility of the Project Manager to prepare and communicate an Emergency Preparedness and Response plan to all field staff.

Site Emergency #	206.947.0325	Fire Dept.	911
Ambulance	911	Police	911
OSEC	Andrea Pedersen: 425.977.4994 x103	Environment Dept.	Oregon DEQ: 800.452.4011
		Regional HR	Cristina Obieta: 925.296.2128

Stantec Corporate HSE Representative: Right-click and pick from list based on your location

Stantec Public Relations/Media Contact*: US West - Danny Craig - (949) 923-6085

** Employees who are not authorized to speak on Stantec's behalf must not respond to inquiries from the investment community or media unless specifically asked to do so by an authorized spokesperson. All such inquiries shall be referred to Public Relations.*

Project Contact Information:

Title	Name	Company	Phone Number
Stantec Office	Dana Hutchins	Stantec	541.479.0050 425.977.4994 x101
Project Manager	Rebekah Brooks	Stantec	
Project Site Safety	Gun Club Representative(s)	Ashland Gun Club	541.622.5152
Client or Owner	Mike Morrison, Jr.	City of Ashland	541.552.2325
Stantec After-Hours Number	Rebekah Brooks	Stantec	425.947.0325

Other (specify):

Other (specify):

First Aid facilities are located: Ashland Community Hospital, 280 Maple Street, Ashland, Oregon
541.201.4000

First Aiders on site are: Dana Hutchins

Fire extinguishers are located: Field Vehicle

Fire alarms are located: n/a

MSDSs are located: n/a

Eyewash station is located: n/a

Spill response equipment is: n/a

The nearest phone is: All Stantec field staff have cell phones.

Medical Assistance (Contact to discuss non-emergency signs or symptoms of work-related injury or illness):

AllOne Health - 800-350-4511

Record site-specific information below (evacuation signal, muster points, routes/map to clinic/hospital, etc.): Emergency route to Ashland Community Hospital from Ashland Gun Club:

1. Head **NORTHWEST** on **LITHIA WAY** toward **N 3RD STREET** (0.5 miles)
2. Continue onto **N MAIN ST** (0.6 miles)
3. Turn **LEFT** onto **MAPLE ST** (0.2 miles)
4. Destination will be on the **LEFT**

For any injury, the employee shall:

1. Initiate necessary first aid or medical treatment.
2. Immediately notify their supervisor.

6. REVIEW, APPROVAL AND DISTRIBUTION

Employee Review



All employees conducting field work on this project will review the Risk Management Strategy (RMS1) and sign below acknowledging that they have been advised of the hazards, controls, PPE, and other safety equipment required, and have reviewed the applicable SWPs. Employees in the field who identify additional hazards not listed above shall notify the project manager of the hazard, and prior to proceeding, will confirm the controls that will be used. Document any on-site changes and communications using the RMS2 as appropriate; see section 2.4 of the HSE Program Manual on Management of Change.

Please designate Team Lead for field activities below.

Reviewed by:	<u>Dana Hutchins</u> Print Name (Team Lead Field)	_____ Signature	_____ Date
	<u>Don Martin</u> Print Name	_____ Signature	_____ Date
	<u>Bob McAllister</u> Print Name	_____ Signature	_____ Date
	<u>Rebekah Brooks</u> Print Name	_____ Signature	_____ Date
	_____ Print Name	_____ Signature	_____ Date

Approvals

By signing this approval, the Project Manager is acknowledging that (s)he has communicated the hazards, controls, required PPE and applicable SWPs to the employees working on this project. It also indicates that the Project Manager has verified that employees have all the equipment required to work safely, that the equipment is in working order, and that the employees have the knowledge required to operate/use this equipment.

Prepared by: <u>Andrea Pedersen</u>	<u></u>	<u>September 21, 2015</u>
Print Name	Signature	Date
Approved by: <u>Rebekah Brooks</u>	<u></u>	<u>October 14, 2015</u>
Print Name (Project Manager)	Signature (Project Manager)	Date

Distribution

Original: Project File
Copies: Field Staff

Project: _____ Project No: _____

Client: _____

Location: _____

Start Date: _____

Documentation and Procedure Review

1. Risk Management Strategy (RMS1) form and/or Site Specific Health and Safety Plan signed and reviewed? Yes No*
2. Emergency Response Plan reviewed? Yes No* N/A
3. Tested two-way communications (cell phone, satellite phone) and security measures? Yes No*
4. Attended Client Site Health and Safety meeting? Yes No* N/A
5. Conducted Stantec site safety meeting with all workforces? Yes No* N/A
6. Are there any new or unexpected hazards not identified in the RMS1/HASP?
If yes, include in the Job Safety Analysis (JSA). Yes No
7. Working alone or remote work?
If yes, complete call in/out process – Safe Work form must be completed. Yes No

Notifications and Permits

8. Are work permits required for this site?
If yes, have they been completed and submitted as required? Yes No
 Yes No*
9. Are utility locates required for this site?
If yes, have they been completed and reviewed? Yes No
 Yes No*
10. Does the Client require any notification prior to starting the work?
If yes, has the notification been provided? Yes No
 Yes No*

***Contact your Project Manager immediately.**

Work Description Provide a general description of the work to be conducted.

Personal Protective Equipment

List specific PPE as needed. Verify type and inspect condition.

<input type="checkbox"/> Head Protection Type: _____	<input type="checkbox"/> Hearing Protection: _____	<input type="checkbox"/> Gloves Type: _____
<input type="checkbox"/> Foot Protection Type: _____	<input type="checkbox"/> Respiratory Protection: _____	<input type="checkbox"/> Water Safety Gear: _____
<input type="checkbox"/> Eye Protection Type: _____	<input type="checkbox"/> Fire Retardant Coveralls: _____	<input type="checkbox"/> _____
<input type="checkbox"/> High Visibility Vest: _____	<input type="checkbox"/> Fall Protection: _____	<input type="checkbox"/> _____

Tools and Equipment

List specific equipment to be used. Verify type and inspect condition.

<input type="checkbox"/> _____	<input type="checkbox"/> _____	<input type="checkbox"/> _____
<input type="checkbox"/> _____	<input type="checkbox"/> _____	<input type="checkbox"/> _____

Daily Tailgate Discussions/Subcontractor Input

Date:		Time:		Weather:	
Start					
Mid-Day					
Post-Day					
Date:		Time:		Weather:	
Start					
Mid-Day					
Post-Day					
Date:		Time:		Weather:	
Start					
Mid-Day					
Post-Day					
Date:		Time:		Weather:	
Start					
Mid-Day					
Post-Day					
Date:		Time:		Weather:	
Start					
Mid-Day					
Post-Day					

I know the hazards:

By signing here, you are stating the following:

1. I have been involved in the Job Safety Analysis (JSA) and understand the hazards and risk control actions associated with each task I am about to perform.
2. I understand the permit to work requirements applicable to the work I am about to perform (if it includes permitted activities).
3. I am aware that work that has not been risk-assessed must not be performed.
4. I am aware of my ability and obligation to **Stop Work** (*See below*).

I arrived and departed fit for duty (see Fit for Duty card for further information):

5. I am physically and mentally fit for duty.
6. I am not under the influence of any type of medication, drugs or alcohol that could affect my ability to work safely.
7. I am aware of my responsibility to bring any illness, injury (regardless of where or when it occurred), symptoms of soreness or discomfort, or fatigue issue I may have to the attention of the Crew Lead or Supervisor.
8. I sign out uninjured unless I have otherwise informed the Crew Lead or Supervisor.

Insert fitness level under corresponding time column: Fit for Duty = F Alternate Plan = AP															
Team Lead to contact Project Manager for any personnel identified as AP															
Individual Name/Company Name/Signature	Date:			Date:			Date:			Date:			Date:		
	Time:	Time:	Time:	Time:	Time:	Time:	Time:	Time:	Time:	Time:	Time:	Time:	Time:	Time:	Time:

I will STOP WORK any time anyone is concerned or uncertain about safety. **I will STOP WORK** if anyone identifies a hazard or additional mitigation not recorded. **I will** be alert to any changes in personnel or their fitness level (AP), conditions at the work site or hazards. If it is necessary to **STOP WORK**, I will reassess the task, hazards and mitigations; and then proceed only when safe to do so.

Conclusion of day: I certify that the planned work activities are completed for the day and all injuries and first aids have been reported via RMS3.


Signature of Crew Lead: _____	Date: _____
Signature of Crew Lead: _____	Date: _____
Signature of Crew Lead: _____	Date: _____
Signature of Crew Lead: _____	Date: _____
Signature of Crew Lead: _____	Date: _____



Job Safety Analysis (JSA) Must be completed for all field activities.

Basic Job Steps	Potential Hazards	Controls to Reduce or Eliminate Hazard	Person Responsible

Review the hazard categories below and check the mitigation measures applicable to the identified scope of work.

<p>Environmental Hazards</p> <ul style="list-style-type: none"> 1. Work area clean <input type="checkbox"/> 2. Material storage identified <input type="checkbox"/> 3. Dust/Mist/Fume <input type="checkbox"/> 4. Noise in area <input type="checkbox"/> 5. Extreme temperatures <input type="checkbox"/> 6. Spill potential <input type="checkbox"/> 7. Waste containers needed <input type="checkbox"/> 8. Waste properly disposed <input type="checkbox"/> 9. Waste plan identified <input type="checkbox"/> 10. Excavation permit required <input type="checkbox"/> 11. Other workers in area <input type="checkbox"/> 12. Weather conditions <input type="checkbox"/> 13. MSDS reviewed <input type="checkbox"/> 	<p>Access/Egress Hazards</p> <ul style="list-style-type: none"> 23. Aerial life/Man basket (inspected & tagged) <input type="checkbox"/> 24. Scaffold (inspected & tagged) <input type="checkbox"/> 25. Ladders (tied off) <input type="checkbox"/> 26. Slips & trips <input type="checkbox"/> 27. Hoisting (tools, equipment) <input type="checkbox"/> 28. Evacuation (alarms, routes, ph. #) <input type="checkbox"/> 29. Confined space entry permit required <input type="checkbox"/> 	<p>Rigging & Hoisting Hazards</p> <ul style="list-style-type: none"> 38. Lift study required <input type="checkbox"/> 39. Proper tools used <input type="checkbox"/> 40. Tools inspected <input type="checkbox"/> 41. Equipment inspected <input type="checkbox"/> 42. Slings inspected <input type="checkbox"/> 43. Others working overhead/below <input type="checkbox"/> 44. Critical lift permit <input type="checkbox"/>
<p>Ergonomic Hazards</p> <ul style="list-style-type: none"> 14. Awkward body position <input type="checkbox"/> 15. Over extension <input type="checkbox"/> 16. Prolonged twisting/bending motion <input type="checkbox"/> 17. Working in a tight area <input type="checkbox"/> 18. Lift too heavy/awkward to lift <input type="checkbox"/> 19. Parts of body in line of fire <input type="checkbox"/> 20. Repetitive motion <input type="checkbox"/> 21. Hands not in line of sight <input type="checkbox"/> 22. Working above your head <input type="checkbox"/> 	 <p>Remember to</p> <ol style="list-style-type: none"> 1. Stop and think 2. Look around 3. Assess risk 4. Control risks 5. Begin/resume work <p><small>Are you ready to work safely?</small></p>	<p>Electrical Hazards</p> <ul style="list-style-type: none"> 45. GFI test <input type="checkbox"/> 46. Lighting levels too low <input type="checkbox"/> 47. Working on/near energized equipment <input type="checkbox"/> 48. Electrical cords condition <input type="checkbox"/> 49. Electrical tools condition <input type="checkbox"/> 50. Fire extinguisher <input type="checkbox"/> 51. Hot work or electrical permit required <input type="checkbox"/>
	<p>Overhead Hazards</p> <ul style="list-style-type: none"> 30. Barricades & signs in place <input type="checkbox"/> 31. Hole coverings identified <input type="checkbox"/> 32. Harness/lanyard inspected <input type="checkbox"/> 33. 100% Tie-off with harness <input type="checkbox"/> 34. Tie off points identified <input type="checkbox"/> 35. Falling items <input type="checkbox"/> 36. Foreign bodies in eyes <input type="checkbox"/> 37. Hoisting or moving loads overhead <input type="checkbox"/> 	<p>Personal Limitations/Hazards</p> <ul style="list-style-type: none"> 52. Procedure not available for task <input type="checkbox"/> 53. Confusing instructions <input type="checkbox"/> 54. No training for task or tools to be used <input type="checkbox"/> 55. First time performing the task <input type="checkbox"/> 56. Micro break (stretching/flexing) <input type="checkbox"/> 57. Report all injuries to your supervisor <input type="checkbox"/>

**It is important that all relevant hazards have plans in place to reduce risk.
Be sure that all associated permits are closed off at the end of the job.
Remember: Stop and Think**

Reviewed by Name and Signature: _____

Appendix E

Quality Assurance/Quality Control Procedures

Quality Assurance/ Quality Control Procedures

Lithia Springs Property
555 Emigrant Creek Road
Ashland, Jackson County, Oregon



Prepared for:
City of Ashland
90 North Mountain Avenue
Ashland OR 97520

Prepared by:
Stantec Consulting Services Inc.
225 NE Hillcrest Drive, Suite 5
Grants Pass OR 97526-3547

Project No. 203714196

October 15, 2015

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ATTACHMENT 1: FIELD FORMS

Field Report Form

Chain-of-Custody Form

RMS 01: Risk Management Strategy

RMS 02: Field Level Risk Assessment (Fit for Duty), 5-Day

RMS 03: Incident Report

Acronyms & Abbreviations

ASTM	ASTM International
CFR	Code of Federal Regulations
COC	chain of custody
DOT	U.S. Department of Transportation
EPA	U.S. Environmental Protection Agency
QA/QC	Quality Assurance / Quality Control
RPD	relative percent difference
SOP	standard operating procedure
Stantec	Stantec Consulting Services Inc.

1.0 INTRODUCTION

This document presents the quality control/quality assurance (QA/QC) procedures and protocol to be followed during remedial action activities on a portion of the Lithia Springs Property located at 555 Emigrant Creek Road in Ashland, Oregon (referred to herein as “the Property”). The Property is owned by the City and approximately half of it, including the area proposed for remedial action, is leased to the Ashland Gun Club for use as an active shooting range. The remedial action will be performed in conjunction with planned wetland mitigation activities on the Property.

The objective of the QA/QC procedures and protocols described herein is to confirm that project data are of known and appropriate quality and integrity, and sufficient to support their intended use. The results of the QA/QC samples will be used to evaluate precision, accuracy, representativeness, completeness and comparability of the analytical results.

The procedures presented herein are intended to be general in nature and assume field activities will be performed by Stantec Consulting Services Inc. (Stantec) on behalf of the City of Ashland (referred to as “the City”). As the work progresses, appropriate revisions may be made based on current site conditions and when warranted.

2.0 QA/QC PROCEDURES & PROTOCOLS

Standard QA/QC procedures and protocols will be used during field activities and laboratory analysis for the remedial action. The procedures and protocols for field QA/QC and laboratory QA/QC are provided in the following sections.

2.1 Field Documentation

A complete record of field activities will be maintained by Stantec field personnel. Documentation necessary to meet QA/QC objectives for this project include: field notes, field sampling forms, sample container labels, photographs, and sample custody forms.

Following completion of the sampling event, a QA/QC review of the field records will be completed by the Project Manager (or his/her designee). All original documentation will be kept in the Stantec project files. The documentation and other project records will be safeguarded to prevent loss, damage or alteration.

2.1.1 Field Notes

Stantec field personnel providing project oversight will maintain field notes. The field notes will document remedial action field activities when field oversight is provided, field personnel, weather conditions, and provide a record of any necessary modifications to the procedures specified in the work plan. The daily field notes will be recorded with indelible ink on waterproof paper in a bound field notebook or on dated field report forms. The field notes are intended to provide data and observations that will enable project personnel to reconstruct events that occurred during the field activities if called upon to give testimony during legal proceedings.

2.1.2 Field Sampling Forms

Sampling activities associated with this project will be documented on appropriate field sampling forms. The sampling forms will be used to aid field personnel in achieving complete data for field sampling activities. Sampling information to be documented on the field forms will include the following (at a minimum):

- sample identification,
- date and time of collection,
- sample collection and decontamination procedures (if different than work plan),
- sample location and depth,
- laboratory analyses requested,
- description of the sample and any other notable observations, and
- field personnel name(s) and signature(s).

2.1.3 Sample Container Labels

Sample labels will be made of waterproof material and will be self-adhering. An indelible pen will be used to fill out each label. Each sample label will contain the project number, sample identification, preservation technique (if applicable), analyses, date and time of collection, and initials of the field personnel preparing the sample.

2.1.4 Photographs

Photographs will be taken in the field to document remedial action activities and site conditions and may also be taken to document sampling locations. Digital photos will contain an identifier in the file name along with a date on the photo image and/or included in the file name. Photographs will be maintained in the Stantec project files. If required, other notable field observations will be recorded with field photographs and in a field notebook.

2.2 Sample Handling/Custody

Proper and consistent sample handling and custody procedures will be followed in the field to ensure sample quality is not compromised during or after sample collection and prior to submitting the samples to the laboratory.

2.2.1 Sample Packaging, Preservation & Shipping

Samples will be packaged and transported in a manner that will protect the integrity of the sample and prevent detrimental effects due to the possible hazardous nature of the samples. Regulations for packaging, marking, labeling and shipping hazardous materials are promulgated in the Code of Federal Regulations (CFR) by the U.S. Department of Transportation (DOT), 49 CFR 171 through 177.

Following collection, samples will be placed on ice inside of insulated coolers at a target temperature of 4 degrees Celsius (4°C). The coolers will be lined with a large plastic bag and the drain plug on the coolers will be taped shut. Samples will be packaged carefully to avoid breakage or cross contamination using sufficient packing material and will be shipped or transported to the offsite analytical laboratory at the proper temperature. Ice will be added as needed to maintain the proper temperature before and during transit to the analytical laboratory. Samples pending transport to the analytical laboratory will be inventoried by Stantec field personnel at the end of each day. A chain-of-custody (COC) form (see **Section 2.2.2**) will be completed by Stantec field personnel, placed inside a sealed plastic bag, and taped to the inside of the cooler lid.

The cooler will be taped shut with strapping tape and custody seals will be placed on the cooler. Samples will be transported to the laboratory by automobile within a timely manner (typically within 24 hours of collection) to comply with holding time limitations for requested analyses. It is anticipated that the laboratory will provide a courier to pick up samples from the Property. Alternatively, designated field personnel or a commercial courier will transport samples to the laboratory if a courier from the laboratory is not available.

2.2.2 Sample Custody

The primary objective of sample custody is to create an accurate record that can be used to trace the possession and handling of samples for the purpose of documenting and maintaining sample quality and integrity from collection until completion of all required analyses. Sample custody will be achieved by filling out a COC Form. The COC form will be completed by Stantec field personnel collecting the sample and signed by each person accepting custody of the sample thereafter. A sample will be considered to be in custody under the following conditions:

- field or laboratory personnel have the sample in physical possession;
- field or laboratory personnel have the sample in view;
- the sample is locked or secured in a locked container or otherwise sealed so that tampering is evident; and/or
- the sample is kept in a secured area that is restricted to authorized personnel only.

When samples are transferred to another entity, the personnel receiving the samples will document the date and time of transfer and sign the COC Form. Laboratory personnel accepting custody will also document the date and time transfer and sign the COC Form. Laboratory personnel will note any integrity issues on the COC Form and will maintain sample security and custody for the duration of the analytical process.

2.3 Instrument Calibration and Frequency

Measuring and testing equipment used in the field and laboratory will be subject to calibration using widely accepted procedures, such as those published by the U.S. Environmental Protection Agency (EPA) and the ASTM International (ASTM), or procedures provided by manufacturers in equipment manuals. Calibration of measuring and testing equipment may be performed internally using in-house reference standards, or externally by agencies or manufacturers.

Stantec field personnel will be responsible for calibration of field equipment. The analytical laboratory will be responsible for the calibration of laboratory equipment. Documented and approved procedures will be used to calibrate measuring and testing equipment

Calibrated equipment will be uniquely identified by the manufacturer's serial number, a Stantec equipment identification number, or by other means. Records will be prepared and maintained for each piece of calibrated measuring and testing equipment to document that established calibration procedures have been followed. The analytical laboratory will maintain separate equipment calibration records.

Measuring and testing equipment will be calibrated at prescribed intervals and/or as part of operational use. Frequency will be based on the type of equipment, inherent stability, manufacturer's recommendations, national standard values, intended use, and experience. It will be the responsibility of equipment operators to check the calibration status per the due date labels or records prior to using the equipment. Whenever possible, equipment will be calibrated using reference standards associated with nationally recognized standards or accepted values of physical constants. If national standards do not exist, the basis for calibration will be documented.

Physical and chemical reference standards will be used only for calibration. Equipment that fails calibration or becomes inoperable during use will be removed from service, segregated to prevent inadvertent use, and tagged to indicate the fault. Such equipment will be recalibrated and repaired to the satisfaction of the laboratory personnel or Stantec field personnel, as applicable. Equipment that cannot be repaired will be replaced.

2.3.1 Field Instrument Calibration

It is not anticipated that the remedial action will require use of field instruments that require calibration.

2.3.2 Laboratory Instrument Calibration

The proper calibration of laboratory equipment is a key element to the quality of laboratory analysis. Each type of instrumentation and each EPA-approved method have specific calibration procedure requirements, depending on the analytes of interest and the sample medium.

Calibration procedures and frequencies of equipment used to perform analyses will be in accordance with requirements established by the EPA. The laboratory QA manager(s) will be responsible for ensuring that laboratory instrumentation is maintained in accordance with specifications. Individual standard operating procedures (SOPs) will be followed by the laboratory for corrective actions and preventative maintenance frequencies. Laboratory QC, calibration, corrective action, and instrument preventative maintenance procedures are maintained by the laboratory conducting the analysis.

3.0 FIELD & LABORATORY QC SAMPLES

The objective of the QC samples described below is to confirm project data are of known and appropriate quality and integrity, and sufficient to support their intended use. QC in the field and laboratory will be evaluated by collecting QC samples from select field locations and/or performing QC analysis of select samples in the laboratory. The results of the field and laboratory QC samples will be used to evaluate precision, accuracy, representativeness, completeness and comparability of the analytical results.

3.1 Field QC Samples

3.1.1 Blind Field Duplicate Samples

Blind field duplicate samples will be used to evaluate precision and accuracy and will be collected during the soil confirmation sampling event(s) to evaluate whether sample collection methods are reproducible. In general, one duplicate sample will be collected for every 20 soil samples collected, or one duplicate sample will be collected per day. The relative percent difference (RPD) between the original and duplicate sample result should be less than 20 percent. Duplicate samples will be collected from the same soil sample location and at the same time as the original sample and placed in different containers than the primary sample following homogenization. The containers will be labeled such that the laboratory cannot determine the sample location (i.e., the sample location number will not be included in the duplicate sample ID). Samples will be collected by alternately filling sample containers for both the original and corresponding duplicate sample to decrease variability between samples.

3.1.2 Field Blanks

Field blanks will be used to evaluate precision and accuracy. The QC samples described below will be collected for the sampling event(s).

Water Blanks: A water blank sample will be collected in the field to evaluate the potential presence of contamination originating from sources not associated with sample collection procedures. Each sample container is filled with deionized or distilled water in the field, preserved as required, and returned to the laboratory for analysis along with the other samples. In general, one water blank sample will be collected for every 20 original samples.

Equipment/Rinsate Blanks: Following the last equipment decontamination of each sampling day, a distilled water rinse of the sampling equipment used to collect samples at multiple locations (i.e., non-disposable) will be collected, preserved (as required), and returned to the laboratory for analysis along with the other samples. One equipment rinsate sample will be collected per sampling day.

Trip Blanks: Since the only constituents that will be analyzed are non-volatile metals, trip blanks will not be collected for these sampling events.

3.2 Laboratory QC Samples

The samples described below will be used to evaluate laboratory precision and accuracy.

Laboratory Duplicates: Laboratory matrix spike duplicate samples are prepared by the laboratory to assess laboratory precision. One laboratory duplicate sample will be analyzed per batch of 20 samples. The RPD between the original and duplicate sample should be within the laboratory method requirements.

Laboratory Method Blanks: Laboratory method blanks are samples prepared in the laboratory to identify any potential contamination introduced within the laboratory. One method blank will be analyzed per batch of 20 samples. Analytes should not be detected in the laboratory method blank.

Laboratory Matrix Spikes: Laboratory matrix spikes are used to evaluate potential matrix effects on sample analysis for inorganic parameters. One matrix spike and one matrix spike duplicate sample (generally run as a pair) will be included with analyses per batch of 20 samples (at a minimum of one per sampling event). The percent recoveries of target analytes from the matrix spike sample should be within the laboratory method requirements. As described, above, the matrix spike duplicate evaluates precision and the RPD should be within the laboratory method requirements.

Laboratory Control Samples: A laboratory control sample is a sample of known analyte concentrations that is similar to the field sample matrix and is analyzed identically with the field samples in a sample batch. The laboratory control sample demonstrates that the analytical method and instrumentation are within specified control limits for acceptability. One laboratory control sample and one laboratory control sample duplicate (generally run as a pair) will be analyzed per batch of 20 samples (at a minimum of one per sampling event). The percent recoveries of analytes from the laboratory control sample should be within the laboratory method requirements. The laboratory control sample duplicate evaluates precision and the RPD should be within the laboratory method requirements.

3.3 Data Validation

Both field and laboratory QC sample results will be evaluated to ensure sample integrity and data of known quality. Analytical reports from the laboratory will be accompanied by QC sample results to allow data reviewers to determine the quality of the data. The data validation process will identify QA/QC problems and potential limitations associated with use of the data, if any. Results of samples that are outside of the laboratory or field QA/QC requirements will be marked with qualifiers (flags). Data validation will be conducted using the appropriate EPA guidelines for inorganic media (EPA 2008 and EPA 2010b). The QA/QC review will include evaluation of the following:

- COC Forms;
- laboratory data completeness;
- laboratory sample integrity and holding times;
- field and method duplicate samples;
- water and equipment/rinsate blank samples;
- laboratory duplicate and blank samples;

Field & Laboratory QC Samples
QA/QC Procedures, Lithia Springs Property

- laboratory accuracy and precision;
- field sampling and analysis precision;
- field comparability (e.g., similar site conditions, collection techniques, and methods and reporting); and
- sample representativeness.

Copies of the evaluations conducted for the data validation will be maintained in Stantec's project files. Any data qualifiers applied to the data will be documented on the sample results tables attached to the report(s) prepared by Stantec.

4.0 LIMITATIONS

This document entitled, **Quality Assurance/Quality Control Procedures**, was prepared by Stantec Consulting Services Inc. (Stantec) on behalf of the City of Ashland (referred to as "the Client"). The services described herein were performed consistent with generally accepted professional consulting principles and practices. No other warranty, express or implied, is made. These services were performed consistent with the agreement between Stantec and the Client. This document is solely for the use and information of the Client unless otherwise noted. Any reliance on this document by a third party is at such party's sole risk.

The material presented herein reflects Stantec's best judgment in light of the information available to it at the time of preparation. Opinions and recommendations apply to conditions existing when services were performed and are intended only for the Client, purposes, locations, time frames, and project parameters indicated. Stantec is not responsible for the impacts of any changes in environmental standards, practices or regulations subsequent to performance of services. We do not warrant the accuracy of information supplied by others, nor the use of segregated portions of this report.

Any use which a third party makes of this document, or any reliance on or decisions made based on it, are the responsibilities of such third parties. Stantec accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions based on this document.

ATTACHMENT 1: FIELD FORMS

Field Report Form

Chain-of-Custody Form

RMS 01: Risk Management Strategy

RMS 02: Field Level Risk Assessment (Fit for Duty), 5-Day

RMS 03: Incident Report

Project: Lithia Springs Property Remedial Action
 Client: City of Ashland
 Location: 555 Emigrant Creek Road, Ashland, Oregon

File No. n/a
 Project No: 203714196

- **Where a project with fieldwork does not require a Health and Safety Plan (HASP), a Risk Management Strategy (RMS1) must be completed.**
- **If the scope of work for a project that originally did not involve field work changes to include field work, an RMS1 form must be completed and reviewed with employees before field work begins.**
- **Although the RMS1 is intended to be part of the desktop planning process for a project, please be aware that the RMS1 can be carried as a field resource as well, to complement use of the RMS2 – Field Level Risk Assessment.**

1. PROJECT SUMMARY:

Description of the work:

Conduct a remedial action in the vicinity of jurisdictional Wetland 3 and Wetland 5 at the Lithia Springs Property. The remedial action will be performed in conjunction with planned wetland mitigation activities. The remedial action will include the following field tasks: 1) Lead shot reclamation from the RA Project Area. 2) Confirmation soil sampling within the RA Project Area. 3) Data evaluation using statistical methods. 4) Shot/soil segregation and recycling/reuse. 5) Drainage installation. 6) Backfilling and site restoration of the RA Project Area. Stantec will be overseeing a remediation contractor for Tasks 1, 4, 5, and 6.

General

Does a Prime Contractor (Constructor) or Client HSE Program apply? Yes No

If yes, please identify.

If Client, Prime Contractor or Constructor provides Orientation and/or Training, attach a copy of the training record to the project file and provide a copy to the OSEC.

Does this project involve work outside of North America (International) Yes No

(If yes, you must contact international@stantec.com)

2. HAZARD RECOGNITION

Health Hazard (Check all appropriate categories)

Is this work where MSDSs are required? Yes No

If yes, copies of MSDSs must be available at project site and attached to this document.

Chemical

- Acids or Caustics
- Asbestos
- H₂S
- Halogenated Organic Compounds
- Heavy Metals
- Metals
- PCBs
- Pesticides / Herbicides
- Petroleum Hydrocarbons
- Poisonous Materials

Chemical

- Solvents/Flammables
- Other – specify:

Physical

- Cold Stress/Frostbite
- Confined Space
- Driver Fatigue
- Dust / Dusty environments
- Flora or Fauna (type):
- Heat Stress / Sunburn
- Noise

Physical

- Radiation (type):
- Remote Location
- Rough Terrain/Heavy Brush
- Road / Trail Conditions
- Vibration
- Water
- Wildlife
- Working at Heights
- Other – specify:

Ergonomic

- Force
- Posture
- Repetitive Motion
- Tools
- Workplace Design

Safety Hazards (Check all appropriate categories)
Machine

- ATV
- Automobile
- Blades
- Chains / Cables / Ropes
- Crush Points
- Cutting Edges
- Free-Wheeling Point
- Heavy Equipment
- Helicopter
- Hydraulic Systems
- Levers
- Moving Parts
- Pinch Points
- Rotating Parts (i.e. auger)

Ergonomic

- Other – specify:

Biological

- Bacterial Control Cultures
- Domestic Waste

Machine

- Shear Points
- Springs
- Wrap Points
- Other – specify:

Energy

- Chemical
- Electrical
- Hydraulic
- Mechanical
- Pneumatic
- Potential
- Thermal
- Other – specify:

Biological

- Medical Waste
- Sewage / Wastewater
- Other – specify:
- Not Applicable**

Material Handling & Task Completion

- Bending
- Falling/Flying Objects
- Fatigue
- Heavy Load (> 50 pounds)
- Load (< 50 pounds)
- Repetitive
- Sharp/Rough Surface
- Twisting
- Other – specify:

Work Practices

- Deviation of SWP
- Not Applicable**

3. HAZARD ASSESSMENT

Check off all SWPs that apply to job

- **Unless required by client, printing SWPs is not required. However, review of all applicable SWPs before commencing work is mandatory. The most current version of each below is hyperlinked to allow review, and printing where desired.**

100 Series – General HSE

- [102 – Workplace Violence Prevention Program](#)
- [103 – Workplace Hazardous Materials Information System \(WHMIS\)](#)
- [104 - Hazard Communication](#)
- [105 – Personal Protective Equipment \(PPE\)](#)
- [107 – First Aid](#)
- [108 – Bloodborne Pathogens](#)
- [111 – Medical Surveillance](#)
- [113 – Heat Stress](#)
- [114 – Working in Cold Environments](#)
- [115 – Material Handling and Safe Lifting](#)
- [116 – Office Safety](#)
- [118 – Working Alone in the Field](#)

- [124 – Safe Driving](#)

- [125 – Workstation Ergonomics](#)
- [126 – Using a Chainsaw](#)
- [130 – Rail Safety](#)

200 Series – Construction HSE

- [201 – Fall Protection/Working from Heights](#)
- [202 – Ladder Safety](#)
- [203 – Aerial Work Platforms](#)
- [205 – Scaffold Safety](#)
- [206 – Hand and Portable Power Tools](#)
- [208 – Hoisting and Lifting](#)
- [213 – Utility Clearance](#)
- [214 – Entering Excavations and Trenches](#)
- [215 – Supervision of Hydro-Excavation Activities](#)

200 Series – Construction HSE

- [216 – Working Near Mobile Equipment](#)
- [217 – Forklift Operation](#)

300 Series – Hazardous Materials

- [304 – Asbestos Safety](#)
- [305 – Benzene Safety](#)
- [308 – Working in Geotechnical and Materials Laboratories](#)
- [310 – Compressed Gas Cylinders](#)
- [311 – Working in Environmental Laboratories](#)
- [312 – Fueling Gasoline Engines](#)
- [314 - Working Around Hazardous Waste and Wastewater](#)

400 Series – Program Specific

- [406 – Electrical Safety Program](#)
- [407 - Traffic Control and Protection Planning](#)
- [408 – Lock, Tag & Try \(LTT\)](#)
- [409 Respiratory Protection](#)
- [411 – Confined Space Entry](#)
- [414 – Hot Work](#)
- [416 – Supervision of Contracted Drilling Activities](#)

500 – PA/PC/Region Specific Programs

- [501 - Using the Spot Messenger System](#)

500 – PA/PC/Region Specific Programs

- [502 - Use and Handling of Nuclear Density Gauges](#)
- [504 - Backpack and Boat Mounted Electro-fishing](#)
- [507 – Aircraft Safety](#)
- [508 – Wildlife Encounters](#)
- [509 - Guideline for 2-way Radio Use on Radio Controlled Roads in BC](#)
- [510 – Working in Abandoned Buildings](#)
- [513 – Boat and Water Safety](#)

500 – PA/PC/Region Specific Programs

- [514 – Working On or Near Ice](#)
- [516 – Radiation Safety \(US\)](#)
- [517 – Safe Machete Use](#)

Other SWPs not listed

- In dry and windy conditions, dust suppression will be provided by remediation contractor during excavation activities (if needed).

SWP for this task being performed is not available – Quantified Hazard Assessment (RMS7) must be performed, please speak with Regional Safety Environment Coordinator (RSEC) for assistance.

4. PERSONAL PROTECTIVE EQUIPMENT (PPE)

Based on hazard recognition and assessment as identified in the documents above, identify required PPE.

Head Protection (CSA or ANSI) – Type: hard hat (when in vicinity of heavy equipment)

Hearing Protection – Type:

Work Boots (CSA or ANSI) – Type: steel-toed boots

Respiratory Protection – Type:

Eye/Face Protection – Type: safety glasses

Coveralls – Type: coveralls or rain gear during wet weather conditions

High Visibility Vest – Type: Stantec safety vest

Fall Protection – Type:

Gloves – Type: nitrile

Other -

5. JOB ADMINISTRATION

Training

Is there any training required outside that identified in the applicable SWPs? Yes No
If yes, please identify:

Do workers require site-specific orientation? Yes No

Emergency Planning

It is the responsibility of the Project Manager to prepare and communicate an Emergency Preparedness and Response plan to all field staff.

Site Emergency #	206.947.0325	Fire Dept.	911
Ambulance	911	Police	911
OSEC	Andrea Pedersen: 425.977.4994 x103	Environment Dept.	Oregon DEQ: 800.452.4011
		Regional HR	Cristina Obieta: 925.296.2128

Stantec Corporate HSE Representative: Right-click and pick from list based on your location

Stantec Public Relations/Media Contact*: US West - Danny Craig - (949) 923-6085

** Employees who are not authorized to speak on Stantec's behalf must not respond to inquiries from the investment community or media unless specifically asked to do so by an authorized spokesperson. All such inquiries shall be referred to Public Relations.*

Project Contact Information:

Title	Name	Company	Phone Number
Stantec Office	Dana Hutchins	Stantec	541.479.0050 425.977.4994 x101
Project Manager	Rebekah Brooks	Stantec	
Project Site Safety	Gun Club Representative(s)	Ashland Gun Club	541.622.5152
Client or Owner	Mike Morrison, Jr.	City of Ashland	541.552.2325
Stantec After-Hours Number	Rebekah Brooks	Stantec	425.947.0325

Other (specify):

Other (specify):

First Aid facilities are located: Ashland Community Hospital, 280 Maple Street, Ashland, Oregon
541.201.4000

First Aiders on site are: Dana Hutchins

Fire extinguishers are located: Field Vehicle

Fire alarms are located: n/a

MSDSs are located: n/a

Eyewash station is located: n/a

Spill response equipment is: n/a



The nearest phone is: All Stantec field staff have cell phones.

Medical Assistance (Contact to discuss non-emergency signs or symptoms of work-related injury or illness):

AllOne Health - 800-350-4511

Approvals

By signing this approval, the Project Manager is acknowledging that (s)he has communicated the hazards, controls, required PPE and applicable SWPs to the employees working on this project. It also indicates that the Project Manager has verified that employees have all the equipment required to work safely, that the equipment is in working order, and that the employees have the knowledge required to operate/use this equipment.

Prepared by: <u>Andrea Pedersen</u> Print Name	<u></u> Signature	<u>September 21, 2015</u> Date
Approved by: <u>Rebekah Brooks</u> Print Name (Project Manager)	<u></u> Signature (Project Manager)	<u>October 14, 2015</u> Date

Distribution

Original: Project File
Copies: Field Staff

Project: _____ Project No: _____
 Client: _____
 Location: _____
 Start Date: _____

Documentation and Procedure Review

1. Risk Management Strategy (RMS1) form and/or Site Specific Health and Safety Plan signed and reviewed? Yes No*
2. Emergency Response Plan reviewed? Yes No* N/A
3. Tested two-way communications (cell phone, satellite phone) and security measures? Yes No*
4. Attended Client Site Health and Safety meeting? Yes No* N/A
5. Conducted Stantec site safety meeting with all workforces? Yes No* N/A
6. Are there any new or unexpected hazards not identified in the RMS1/HASP?
If yes, include in the Job Safety Analysis (JSA). Yes No
7. Working alone or remote work?
If yes, complete call in/out process – Safe Work form must be completed. Yes No

Notifications and Permits

8. Are work permits required for this site?
If yes, have they been completed and submitted as required? Yes No
 Yes No*
9. Are utility locates required for this site?
If yes, have they been completed and reviewed? Yes No
 Yes No*
10. Does the Client require any notification prior to starting the work?
If yes, has the notification been provided? Yes No
 Yes No*

***Contact your Project Manager immediately.**

Work Description Provide a general description of the work to be conducted.

Personal Protective Equipment

List specific PPE as needed. Verify type and inspect condition.

<input type="checkbox"/> Head Protection Type: _____	<input type="checkbox"/> Hearing Protection: _____	<input type="checkbox"/> Gloves Type: _____
<input type="checkbox"/> Foot Protection Type: _____	<input type="checkbox"/> Respiratory Protection: _____	<input type="checkbox"/> Water Safety Gear: _____
<input type="checkbox"/> Eye Protection Type: _____	<input type="checkbox"/> Fire Retardant Coveralls: _____	_____
<input type="checkbox"/> High Visibility Vest: _____	<input type="checkbox"/> Fall Protection: _____	_____

Tools and Equipment

List specific equipment to be used. Verify type and inspect condition.

<input type="checkbox"/> _____	<input type="checkbox"/> _____	<input type="checkbox"/> _____
<input type="checkbox"/> _____	<input type="checkbox"/> _____	<input type="checkbox"/> _____

Daily Tailgate Discussions/Subcontractor Input

Date:		Time:		Weather:	
Start					
Mid-Day					
Post-Day					
Date:		Time:		Weather:	
Start					
Mid-Day					
Post-Day					
Date:		Time:		Weather:	
Start					
Mid-Day					
Post-Day					
Date:		Time:		Weather:	
Start					
Mid-Day					
Post-Day					
Date:		Time:		Weather:	
Start					
Mid-Day					
Post-Day					

I know the hazards:

By signing here, you are stating the following:

1. I have been involved in the Job Safety Analysis (JSA) and understand the hazards and risk control actions associated with each task I am about to perform.
2. I understand the permit to work requirements applicable to the work I am about to perform (if it includes permitted activities).
3. I am aware that work that has not been risk-assessed must not be performed.
4. I am aware of my ability and obligation to **Stop Work** (*See below*).

I arrived and departed fit for duty (see Fit for Duty card for further information):

5. I am physically and mentally fit for duty.
6. I am not under the influence of any type of medication, drugs or alcohol that could affect my ability to work safely.
7. I am aware of my responsibility to bring any illness, injury (regardless of where or when it occurred), symptoms of soreness or discomfort, or fatigue issue I may have to the attention of the Crew Lead or Supervisor.
8. I sign out uninjured unless I have otherwise informed the Crew Lead or Supervisor.

Insert fitness level under corresponding time column: Fit for Duty = F Alternate Plan = AP															
Team Lead to contact Project Manager for any personnel identified as AP															
Individual Name/Company Name/Signature	Date:			Date:			Date:			Date:			Date:		
	Time:	Time:	Time:	Time:	Time:	Time:	Time:	Time:	Time:	Time:	Time:	Time:	Time:	Time:	Time:

I will STOP WORK any time anyone is concerned or uncertain about safety. **I will STOP WORK** if anyone identifies a hazard or additional mitigation not recorded. **I will** be alert to any changes in personnel or their fitness level (AP), conditions at the work site or hazards. If it is necessary to **STOP WORK**, I will reassess the task, hazards and mitigations; and then proceed only when safe to do so.

Conclusion of day: I certify that the planned work activities are completed for the day and all injuries and first aids have been reported via RMS3.

Signature of Crew Lead: _____	Date: _____
Signature of Crew Lead: _____	Date: _____
Signature of Crew Lead: _____	Date: _____
Signature of Crew Lead: _____	Date: _____
Signature of Crew Lead: _____	Date: _____



Remember to


1. Stop and think
2. Look around
3. Assess risk
4. Control risks
5. Begin/resume work

Are you ready to work safely?

Job Safety Analysis (JSA) Must be completed for all field activities.

Basic Job Steps	Potential Hazards	Controls to Reduce or Eliminate Hazard	Person Responsible

Review the hazard categories below and check the mitigation measures applicable to the identified scope of work.

<p>Environmental Hazards</p> <ul style="list-style-type: none"> 1. Work area clean <input type="checkbox"/> 2. Material storage identified <input type="checkbox"/> 3. Dust/Mist/Fume <input type="checkbox"/> 4. Noise in area <input type="checkbox"/> 5. Extreme temperatures <input type="checkbox"/> 6. Spill potential <input type="checkbox"/> 7. Waste containers needed <input type="checkbox"/> 8. Waste properly disposed <input type="checkbox"/> 9. Waste plan identified <input type="checkbox"/> 10. Excavation permit required <input type="checkbox"/> 11. Other workers in area <input type="checkbox"/> 12. Weather conditions <input type="checkbox"/> 13. MSDS reviewed <input type="checkbox"/> 	<p>Access/Egress Hazards</p> <ul style="list-style-type: none"> 23. Aerial life/Man basket (inspected & tagged) <input type="checkbox"/> 24. Scaffold (inspected & tagged) <input type="checkbox"/> 25. Ladders (tied off) <input type="checkbox"/> 26. Slips & trips <input type="checkbox"/> 27. Hoisting (tools, equipment) <input type="checkbox"/> 28. Evacuation (alarms, routes, ph. #) <input type="checkbox"/> 29. Confined space entry permit required <input type="checkbox"/> 	<p>Rigging & Hoisting Hazards</p> <ul style="list-style-type: none"> 38. Lift study required <input type="checkbox"/> 39. Proper tools used <input type="checkbox"/> 40. Tools inspected <input type="checkbox"/> 41. Equipment inspected <input type="checkbox"/> 42. Slings inspected <input type="checkbox"/> 43. Others working overhead/below <input type="checkbox"/> 44. Critical lift permit <input type="checkbox"/>
<p>Ergonomic Hazards</p> <ul style="list-style-type: none"> 14. Awkward body position <input type="checkbox"/> 15. Over extension <input type="checkbox"/> 16. Prolonged twisting/bending motion <input type="checkbox"/> 17. Working in a tight area <input type="checkbox"/> 18. Lift too heavy/awkward to lift <input type="checkbox"/> 19. Parts of body in line of fire <input type="checkbox"/> 20. Repetitive motion <input type="checkbox"/> 21. Hands not in line of sight <input type="checkbox"/> 22. Working above your head <input type="checkbox"/> 	 <p>Remember to</p> <ol style="list-style-type: none"> 1. Stop and think 2. Look around 3. Assess risk 4. Control risks 5. Begin/resume work 	<p>Electrical Hazards</p> <ul style="list-style-type: none"> 45. GFI test <input type="checkbox"/> 46. Lighting levels too low <input type="checkbox"/> 47. Working on/near energized equipment <input type="checkbox"/> 48. Electrical cords condition <input type="checkbox"/> 49. Electrical tools condition <input type="checkbox"/> 50. Fire extinguisher <input type="checkbox"/> 51. Hot work or electrical permit required <input type="checkbox"/>
	<p>Overhead Hazards</p> <ul style="list-style-type: none"> 30. Barricades & signs in place <input type="checkbox"/> 31. Hole coverings identified <input type="checkbox"/> 32. Harness/lanyard inspected <input type="checkbox"/> 33. 100% Tie-off with harness <input type="checkbox"/> 34. Tie off points identified <input type="checkbox"/> 35. Falling items <input type="checkbox"/> 36. Foreign bodies in eyes <input type="checkbox"/> 37. Hoisting or moving loads overhead <input type="checkbox"/> 	<p>Personal Limitations/Hazards</p> <ul style="list-style-type: none"> 52. Procedure not available for task <input type="checkbox"/> 53. Confusing instructions <input type="checkbox"/> 54. No training for task or tools to be used <input type="checkbox"/> 55. First time performing the task <input type="checkbox"/> 56. Micro break (stretching/flexing) <input type="checkbox"/> 57. Report all injuries to your supervisor <input type="checkbox"/>

**It is important that all relevant hazards have plans in place to reduce risk.
Be sure that all associated permits are closed off at the end of the job.**

Remember: Stop and Think

Reviewed by Name and Signature: _____

Incidents involving injury, potential injury, or report of pain, soreness, or discomfort must be reported immediately (within one hour) to a supervisor. Supervisors will then immediately contact their HSE representative to develop a plan for assessment and care. This form must be completed and submitted within 24 hours of any incident. Do not delay submission waiting for signatures. Email to hse@stantec.com or fax unsigned report to (780) 969-2030 and file locally in compliance with the corporate [records retention policy and practices](#) once all signatures have been obtained.

This document contains privileged and confidential information prepared at the request of Stantec’s Legal Counsel. The contents of this report are restricted to HR personnel, Risk Management Representatives, Project Manager and BC Leader, and Stantec’s Insurer, Adjuster and Legal Counsel. Information collected will be used solely for the purpose of meeting the requirements of Stantec’s HSE and insurance programs, complying with applicable legislation, and will be used in accordance with any governing privacy legislation. The information collected will be maintained electronically and may be included in required reports.

SECTION 1: GENERAL INFORMATION			
Office location:		BC number:	
Location of incident:			
Incident date and time:		Date and time reported:	
Project name:		Project number:	
Client Name:			
Person in charge:		Person in Charge Phone:	

SECTION 2: STANTEC EMPLOYEE INFORMATION (if more than one identify extras in incident details below)			
Name:		Phone:	
Job position:		Group name:	
Time employee began work:		Job Experience (in years)	
Type of employment:	Full Time <input type="checkbox"/> ; Visitor <input type="checkbox"/> ; Contract <input type="checkbox"/> ; Volunteer <input type="checkbox"/> ; Seasonal <input type="checkbox"/>		
Supervisor:		Supervisor Phone:	

SECTION 3: INCIDENT DETAILS	
Type of Incident:	*incident types marked with an asterisk, please complete sections 1, 2 and 3 and signature page only See StanNet for a list of Incident Type Definitions
<input type="checkbox"/> *Report Only <input type="checkbox"/> *Hazard Identification <input type="checkbox"/> *Near Miss <input type="checkbox"/> *Safety Opportunity	<input type="checkbox"/> First Aid <input type="checkbox"/> Medical Aid – No Lost Time <input type="checkbox"/> Restricted Work <input type="checkbox"/> Lost Time <input type="checkbox"/> Fatality <input type="checkbox"/> Violence or Harassment
<input type="checkbox"/> Motor Vehicle Incident <input type="checkbox"/> Property Damage - Vehicle <input type="checkbox"/> Property Damage - Other <input type="checkbox"/> Theft <input type="checkbox"/> Contractor Recordable Incident <input type="checkbox"/> Non-compliance	<input type="checkbox"/> 3 rd Party Incident (i.e., Public) <input type="checkbox"/> Spill or Release <input type="checkbox"/> Utility Strike <input type="checkbox"/> Fire/Explosion/Flood <input type="checkbox"/> Stop Work Authority <input type="checkbox"/> Work Refusal
Describe incident in detail: (include any issues related to people, equipment, materials, environment, and processes)	
Immediate corrective actions taken:	

Canada East (Atlantic) – Jim Elkins (613-404-8508); Canada East (ON/QC) – Jim Elkins (613-404-8508);
 Canada East (Quebec) – Claudine Tremblay (514-668-4820); Canada Mountain – Shawna Robichaud (587-894-2635);
 Canada Prairies – Yvonne Beattie (780-616-8909); International – Kev Metcalfe (780-231-2185); US Northeast & South) – Fred Miller (610-235-7315);
 US Midwest & Mid-Atlantic - Keith Kuhlmann (740-816-6170); US West – Clint Reuter (626-696-2279)

SECTION 4: MEDICAL INFORMATION											
Name of first aid attendant:						Injury recorded in first aid log? Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>					
Description of first aid or medical treatment administered:											
Clinic/hospital sent to:											
Attending physician/paramedic (if known):											
Area of Injury – Please check all that apply:											
<input type="checkbox"/> Head	<input type="checkbox"/> Teeth	<input type="checkbox"/> Upper back	Left	Right	<input type="checkbox"/> Wrist	<input type="checkbox"/> Hip	<input type="checkbox"/> Ankle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Face	<input type="checkbox"/> Neck	<input type="checkbox"/> Lower back	<input type="checkbox"/> Shoulder	<input type="checkbox"/>	<input type="checkbox"/> Hand	<input type="checkbox"/> Thigh	<input type="checkbox"/> Foot	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Eye(s)	<input type="checkbox"/> Chest	<input type="checkbox"/> Abdomen	<input type="checkbox"/> Arm	<input type="checkbox"/>	<input type="checkbox"/> Finger(s)	<input type="checkbox"/> Knee	<input type="checkbox"/> Toe(s)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Ear(s)		<input type="checkbox"/> Pelvis	<input type="checkbox"/> Elbow	<input type="checkbox"/>		<input type="checkbox"/> Lower Leg	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Other	Specify _____										
Has the injured employee had a previous similar injury or disability?						Yes <input type="checkbox"/>			No <input type="checkbox"/>		

SECTION 5: PROPERTY OR VEHICLE DAMAGE: STANTEC			
Ownership Details (choose one):	<input type="checkbox"/> Rented (attach rental agreement)	<input type="checkbox"/> Stantec Owned	<input type="checkbox"/> Personal (employee vehicle)
Year, Make, and Model of Vehicle:	Vehicle ID # (VIN)		
Nature of damage:	Estimated cost of damage:		\$
Description of damaged property:			
Attending police officer (if known):	Badge #:		
Copy of police report received	Yes <input type="checkbox"/> No <input type="checkbox"/> If yes, file number: (attach copy of police report)		
PROPERTY OR VEHICLE DAMAGE: 3 RD PARTY			
Name of owner and contact number:			
Year, Make, and Model of Vehicle:	License Plate Number:		
Insurer and Policy Number:			
Injured parties? Yes <input type="checkbox"/> No <input type="checkbox"/>	If yes, describe Injuries:		
Diagram or photographs attached?	Yes <input type="checkbox"/> No <input type="checkbox"/>		

WITNESS INFORMATION - #1			
Name:	Phone Number:		
Witness statement provided?	Yes (attached) <input type="checkbox"/>		No <input type="checkbox"/>

WITNESS INFORMATION - #2			
Name:	Phone Number:		
Witness statement provided?	Yes (attached) <input type="checkbox"/>		No <input type="checkbox"/>

SECTION 6: SPILL OR RELEASE			
Substance:			
Quantity:	Employee(s) exposed via:	<input type="checkbox"/> Inhalation <input type="checkbox"/> Contact <input type="checkbox"/> Ingestion <input type="checkbox"/> n/a	
Off-site impacts observed or anticipated?	Yes <input type="checkbox"/> No <input type="checkbox"/> If yes, describe:		
Name of regulatory agencies contacted:			
Contact name, number, date and time of call:			

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SECTION 7: ANALYSIS		
IMMEDIATE/DIRECT CAUSES		
A. UNSAFE ACTIONS (check off as many as necessary)		
<input type="checkbox"/> Operating equipment without authority	<input type="checkbox"/> Failing to use personal protective equipment properly	<input type="checkbox"/> Failure to identify hazard or risk
<input type="checkbox"/> Failure to warn	<input type="checkbox"/> Improper loading	<input type="checkbox"/> Inattention
<input type="checkbox"/> Failure to secure	<input type="checkbox"/> Improper placement	<input type="checkbox"/> Failure to communicate
<input type="checkbox"/> Operating at improper speed	<input type="checkbox"/> Improper lifting or handling	<input type="checkbox"/> Other: Specify
<input type="checkbox"/> Making safety devices inoperative	<input type="checkbox"/> Improper position for a task	
<input type="checkbox"/> Removing safety devices	<input type="checkbox"/> Servicing equipment in operation	
<input type="checkbox"/> Using defective/improper equipment	<input type="checkbox"/> Horseplay	
<input type="checkbox"/> Using equipment improperly	<input type="checkbox"/> Failure to follow procedure, policy or practice	
B. UNSAFE CONDITIONS (check off as many as necessary)		
<input type="checkbox"/> Inadequate guards/barriers	<input type="checkbox"/> Radiation exposure	<input type="checkbox"/> Inadequate information/data
<input type="checkbox"/> Improper/inadequate PPE	<input type="checkbox"/> High or low temperature exposures	<input type="checkbox"/> Inadequate preparation/planning
<input type="checkbox"/> Defective tools or equipment	<input type="checkbox"/> Inadequate or excess illumination	<input type="checkbox"/> Inadequate support/assistance
<input type="checkbox"/> Congested work area	<input type="checkbox"/> Inadequate ventilation	<input type="checkbox"/> Road conditions
<input type="checkbox"/> Inadequate warning system	<input type="checkbox"/> Presence of harmful materials	<input type="checkbox"/> Weather conditions
<input type="checkbox"/> Fire and explosion hazards	<input type="checkbox"/> Inadequate instructions/procedures	<input type="checkbox"/> Other: Specify
<input type="checkbox"/> Poor housekeeping; disorder	<input type="checkbox"/> Hazardous environmental conditions; gases, dusts, smokes, fumes, vapours	
<input type="checkbox"/> Noise exposure		
BASIC/ROOT CAUSES		
C. PERSONAL FACTORS (check off as many as necessary)		
<input type="checkbox"/> Inadequate physical capability	<input type="checkbox"/> Mental stress	<input type="checkbox"/> Lack of knowledge
<input type="checkbox"/> Physical stress	<input type="checkbox"/> Lack of skill	<input type="checkbox"/> Other: Specify
D. JOB FACTORS (check off as many as necessary)		
<input type="checkbox"/> Inadequate leadership or supervision	<input type="checkbox"/> Inadequate maintenance (scheduled or preventative)	<input type="checkbox"/> Excessive wear and tear
<input type="checkbox"/> Inadequate engineering	<input type="checkbox"/> Inadequate tools or equipment	<input type="checkbox"/> Inadequate communications
<input type="checkbox"/> Inadequate purchasing	<input type="checkbox"/> Inadequate work standards	<input type="checkbox"/> Improper motivation
<input type="checkbox"/> Abuse or misuse	<input type="checkbox"/> Other: Specify	

SECTION 8: FOLLOW-UP				
Short-term:	Corrective Action	Assigned To	Target Date	Completion Date
Long-term:	Corrective Action	Assigned To	Target Date	Completion Date

Canada East (Atlantic) – Jim Elkins (613-404-8508); Canada East (ON/QC) – Jim Elkins (613-404-8508);
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 US Midwest & Mid-Atlantic - Keith Kuhlmann (740-816-6170); US West – Clint Reuter (626-696-2279)

REVIEW COMMENTS**Involved Employee Comments:**

Signature: _____ Print Name: _____ Date: _____
Job Title: _____

Lead Investigator Comments:

Signature: _____ Print Name: _____ Date: _____
Job Title: _____

Supervisor/Project Manager:

Signature: _____ Print Name: _____ Date: _____
Job Title: _____

HSE Representative (OSEC/JH&S Committee/RSEC/HSE Manager):

Signature: _____ Print Name: _____ Date: _____
Job Title: _____

Management Review:

Signature: _____ Print Name: _____ Date: _____
Job Title: _____

Client Review (if required):

Signature: _____ Print Name: _____ Date: _____
Job Title: _____

Additional Comments: