PROMOTER: Willamette Country Music Concerts, LLC

EVENT: Bi Mart Willamette Country Music Festival

DATES OF EVENT: August 15, 16, 17 and 18, 2019

SANITATION PLAN

The Bi Mart Willamette Country Music Festival has secured the services **United Site Services (Salem, OR)** to provide all portable toilets, handicapped toilets, hand washing stations, portable shower facilities, gray water food service disposal, camping and solid waste facilities necessary to serve the proposed number of guests and ticket holders at this event.

Contact: United Site Services – Kathie Standley Cell Phone: 503-969-3173

POTABLE WATER

Potable and drinking water is available on-site at the festival water station located adjacent to the 2nd entrance gate leading into the primary festival property and at a water station inside the festival venue in the service corridor for the food vendors. The festival has made application for a permit to use ground water from a well to be drilled by Nugent Well Drilling, said well to be constructed to state of Oregon standards and tested to assure that the water from the well meets state standards for potability (**Potable water testing reports to be submitted annually within 30 days of the Event**). Food vendors needing potable water will have access to potable water manifolds connected to the tested well or connection to the water bladders should the well water prove unpotable**.** Food vendors can also provide their own water source under the supervision and regulation of the Marion County Health Department. Hand washing units are provided in the event food vendor area to maintain sanitary food service conditions. Food vendors also have access to (10) 150-gallon disposal tanks for all gray water and grease disposal.

As per OAR 333-039-0015 section B which states that as determined by the health department, a minimum of 6 gallons per attendee realizing that most of the attendees are day attendees, 180,000 gallons shall be held in reserve by the festival in potable water bladders. These will be filled and maintained by contracted potable water haulers. There will be 4 trailers of bottled potable water totaling 21,600 gallons of potable water on site, this is in addition to the bottled water offered by vendors at the festival. The festival will also have a contracted water hauler providing water to campers

each day each truck hauling 5,000 gallons per trip. The water for the contracted haulers and the bladder will be arranged under contract from a municipal water system. It should be noted that the RVs camping on site, an anticipate 10,000 campers (4000 camp sites) will have potable water storage tanks with the average tank size of 100 gallons. At even half that amount, there is an additional 20,000 gallons of water on site.

FOOD VENDORS/PROVIDERS

All food vendors are notified in their application to serve at the festival that they will not be allowed to serve until or unless they have a Marion County temporary restaurant license, or they are operating in a mobile unit that is licensed in Marion County. Further, they will not be allowed to serve until they have passed inspection prior to festival opening by the Marion County Health Department.

RV CAMPERS

RV campers are required to be self-contained. Each camper will have the opportunity to dump their waste through appointment by **United Site Services** mobile units. In regard to potable water for RV's, RV campers can leave the venue to fill theirs tanks or RV campers may request potable water for the refilling of their RV's storage tanks for a fee by calling a designated cell number provided in the camping handbook. Portable toilet facilities will be placed in the RV camping area to accommodate those RV campers who choose not to use their RV units for personal waste. Portable hand washing units will be placed in the same area as portable toilet facilities.

TENT CAMPERS

Tent campers are required to provide their own potable, bottled water or may use water station near the entrance gate free of charge (Tent campers must provide container to carry water). Portable toilet units will be placed in tent camping area to accommodate the total number of campers required by State and County health regulations. Hand washing units will be placed in the same area as portable toilet units. A minimum of three gray water disposal tanks will be in the tent camping area.

WASTE DISPOSAL

On Friday, Saturday and Sunday morning during the festival, **United Site Services** will enter the festival grounds to dump and service all restroom waste and gray water disposal tanks, as well as hand washing stations and holding tanks for the portable shower units. The festival does not use any existing waste facilities located on the leased festival property, all waste management and removal are done by the contracted provider United Site Services. All water used for the units provided by United Site Services shall be brought from off site, with no site water used for their maintenance.

TRASH DISPOSAL

All trash and recyclables will be disposed of by volunteer staff as directed the festival operations team. The event places 32-gallon garbage cans throughout all areas of the festival property, including the main concert venue, backstage and RV and Tent camping areas. All trash is bagged using heavy-duty garbage bags. Garbage bags are made available to both Tent and RV Campers so that they can bag waste and place the filled bags at the designated collection sites, which will be next to each portable restroom station throughout the campgrounds. Staff and volunteers will then on a scheduled rotation pickup those bags at the designated collection sites and take them to place in the dumpsters located on the festival site. Pacific Sanitation will be contracted to provide and haul the dumpsters as necessary to assure that no garbage remains on the site. At the end of the festival after the campers are gone, staff and volunteers will sweep the property and place any remaining trash in a final dumpster to be hauled by Pacific Sanitation. As per agreement with Pacific Sanitation, they will provide:

8x30 yd. Drop Boxes, 6 for garbage and 2 for co-mingle

Delivered – On the Monday prior to the event weekend

These boxes are scheduled for one dump when removed but may also be dumped as needed.

ON-SITE FACILITIES

The State of Oregon Mass Gathering Code requires the event to have 1 portable restroom for every 100 people. The 2019 BWCMF event permit is written to allow 30 thousand guests and attendees. This requires the event to have at least 300 portable toilets on call. The event anticipates a crowd of 30 thousand attendees and will have at least 300 portable toilets on-site, distributed throughout the venue and campgrounds to assure adequate facilities are in each area.

Regular Toilets: 300 (Dispersed in camping areas and main concert venue)

Handicapped Toilets: 40 (Dispersed in camping areas and main concert venue)

Hand Washing Sinks: 140 (Dispersed in camping, food court, beer garden, and main venue)

Waste Water Holding Tanks (150 gallon): 10 (Vendor Area) **6** (Camping Area (2) RV Area and (4) Tent Area)

TRASH CARTS

Garbage Containers: 250 (Dispersed throughout site)

Recycle Units: 70 (Dispersed throughout venue)

PORTABLE SHOWER UNITS

Portable shower units will be provided by Granny's Alliance. These units will have designated showers for men and women. There will be a minimum of 32 shower stalls with the units being cleaned between users by BWCMF volunteers. The units will be connected to a water line but will also have a reserve tank with pump and the ability to use water from bladders filled by the contracted water haulers, in the event that for some unforeseen reason the water system has a temporary failure. United Site Services will remove the waste water as needed to assure that the system remains safe for public use. All gray water removed from the festival grounds, including used shower water.

If this mass gathering were granted by the Marion County Board of Commissioners, I approve of WCMC, LLC implementing the plan as described.

_____

Signed, Marion County Health Department

Oregon Water Resources Department

Final Order
Limited License Application LL-1739

OREGON WATER RESOURCES DEPARTMENT

Appeal Rights

This is a final order in other than a contested case. This order is subject to judicial review under ORS 183.484. Any petition for judicial review must be filed within the 60-day time period specified by ORS 183.484(2). Pursuant to ORS 536.075 and OAR 137-004-0080 you may either petition for judicial review or petition the Director for reconsideration of this order. A petition for reconsideration may be granted or denied by the Director, and if no action is taken within 60 days following the date, the petition was filed, the petition shall be deemed denied.

Requested Water Use

On March 6, 2018, the Water Resources Department received completed application **LL-1739** from Willamette Country Music Concerts LLC for the use of 50 gallons per minute from a well, located in the SE ¼, SE ¼, Section 21, Township 9 South, Range 3 West, W.M., for commercial uses at a country music festival, for the period August 5, 2019, through August 28, 2023, during the month of August only.

Authorities

The Department may approve a limited license pursuant to its authority under ORS 537.143, 537.144 and OAR 690-340-0030.

ORS 537.143(2) authorizes the Director to revoke the right to use water under a limited license if it causes injury to any water right or a minimum perennial streamflow.

A limited license will not be issued for more than five consecutive years for the same use, as directed by ORS 537.143(8).

Findings of Fact

1. The forms, fees, and map have been submitted, as required by OAR 690-340-0030(1).

2. The Department provided public notice of the application, on March 13, 2018, as required by OAR 690-340-0030(2).

3. This limited license request is limited to an area within a single drainage basin as required by OAR 690-340-0030(3).

4. The Department has determined that there is water available for the requested use.

5. The Department has determined that the proposed source has not been withdrawn from further appropriation per ORS 538.200.

6. The Department can allow issue a limited license for no longer than five years (ORS 537.143).

7. As part of its review to determine ground water availability, the Department's Ground Water/Hydrology Section has stipulated conditions pertaining to measurement and reporting, and decline in static water level.

8. The Department has not received other comments related to the possible issuance of the limited license.

9. Pursuant to OAR 690-340-0030(4)(5), conditions have been added with regard to notice and water-use measurement.

10. Marion County has indicated that the proposed use is compatible with the applicable acknowledged comprehensive land-use plan. A copy of the land use compatibility is in the file.

Conclusions of Law

The proposed water use will not impair or be detrimental to the public interest pursuant to OAR 690-340-0030(2), as limited in the order below.

Order

Therefore, pursuant to ORS 537.143, ORS 537.144, and OAR 690-340-0030, application **LL-1739** is approved as conditioned below.

1. The period and rate of use for **LL-1739** shall be from August 5, 2019, through August 28, 2023, for the use of 50 gallons per minute from a well, for the purpose of commercial uses at a country music festival.

2. The licensee shall give notice to the Watermaster in the district where use is to occur not less than 15 days or more than 60 days in advance of using the water under the limited license. The notice shall include the location of the diversion, the quantity of water to be diverted and the intended use and place of use.

3. Before water use may begin under this limited license, the licensee shall install a totalizing flow meter at each point of appropriation. The totalizing flow meter must be installed and maintained in good working order. In addition the licensee shall maintain a record of all water use, including the total number of hours of pumping, the total quantity pumped, and the categories of beneficial use to which the water is applied. During the period of the limited license, the record of use shall be submitted to the Department annually, and shall be submitted to the Watermaster upon request.

4. The Director may revoke the right to use water for any reason described in ORS 537.143(2), and OAR 690-340-0030(6). Such revocation may be prompted by field regulatory activities or by any other information.

5. Use of water under a limited license shall not have priority over any water right exercised according to a permit or certificate, and shall be subordinate to all other authorized uses that rely upon the same source.

6. A copy of this limited license shall be kept at the place of use, and be available for inspection by the Watermaster or other state authority.

NOTE: This water-use authorization is temporary. Applicants are advised that issuance of this final order does not guarantee that any permit for the authorized use will be issued in the future; any investments should be made with that in mind.

Issued April 12, 2018

Dwight French, Water Right Services Division Administrator
for Thomas M. Byler, Director, Oregon Water Resources Department

Enclosures - limited license

cc: Joel M. Plahn, District 16 Watermaster
Elise Kelly, ODFW
Nancy Gramlich, DEQ
Hydrographics
File

If you need further assistance, please contact the Water Rights Section at the address, phone number, or fax number below. When contacting the Department, be sure to reference your limited license number for fastest service.

Remember, this limited license does not provide a secure source of water. Water use can be revoked at any time. Such revocation may be prompted by field regulatory activities or many other reasons.

Water Rights Section
Oregon Water Resources Department
725 Summer Street NE, Suite A
Salem OR 97301-1271
Phone: (503) 986-0817 Fax: (503) 986-0901

Groundwater Application Review Summary Form

Application # ~~G~~ LL-1739

GW Reviewer DENNIS ORLOWSKI **Date Review Completed:** 4/4/2018

Summary of GW Availability and Injury Review:

[ ] Groundwater for the proposed use is either over appropriated, will not likely be available in the amounts requested without injury to prior water rights, OR will not likely be available within the capacity of the groundwater resource per Section B of the attached review form.

Summary of Potential for Substantial Interference Review:

[ ] There is the potential for substantial interference per Section C of the attached review form.

Summary of Well Construction Assessment:

[ ] The well does not appear to meet current well construction standards per Section D of the attached review form. Route through Well Construction and Compliance Section.

This is only a summary. Documentation is attached and should be read thoroughly to understand the basis for determinations and for conditions that may be necessary for a permit (if one is issued).

PUBLIC INTEREST REVIEW FOR GROUNDWATER APPLICATIONS

TO: Water Rights Section Date 4/04/2018
FROM: Groundwater Section Dennis Orlowski
Reviewer's Name
SUBJECT: Application LL- 1739 Supersedes review of
Date of Review(s)

PUBLIC INTEREST PRESUMPTION; GROUNDWATER

OAR 690-310-130 (1) *The Department shall presume that a proposed groundwater use will ensure the preservation of the public welfare, safety and health as described in ORS 537.525.* Department staff review groundwater applications under OAR 690-310-140 to determine whether the presumption is established. OAR 690-310-140 allows the proposed use be modified or conditioned to meet the presumption criteria. **This review is based upon available information and agency policies in place at the time of evaluation.**

A. GENERAL INFORMATION:

Applicant's Name: Willamette Country Music Festival, LLC County: Marion

A1. Applicant(s) seek(s) 0.111 cfs from one well(s) in the Willamette Basin, Willamette subbasin

A2. Proposed use Commercial Seasonality: Year-round (8/5/2019-8/28/2023)

A3. Well and aquifer data (**attach and number logs for existing wells; mark proposed wells as such under logid**):

Well	Logid	Applicant's Well #	Proposed Aquifer*	Proposed Rate(cfs)	Location (T/R-S QQ-Q)	Location, metes and bounds, e.g. 2250' N, 1200' E fr NW cor S 36
1	**Proposed**		**Alluvium**	**0.11**	**T9S/R3W-21 SE-SE**	**575' N,475'W fr SE cor S 21**

* Alluvium, CRB, Bedrock

Well	Well Elev ft msl	First Water ft bls	SWL ft bls	SWL Date	Well Depth (ft)	Seal Interval (ft)	Casing Intervals (ft)	Liner Intervals (ft)	Perforations Or Screens (ft)	Well Yield (gpm)	Draw Down (ft)	Test Type
1	**210**	**TBD**	**10-15 (est.)**	**TBD**	**60**	**TBD**	**TBD**	**TBD**	**TBD**	**TBD**	**TBD**	**TBD**

Use data from application for proposed wells.

A4. **Comments:** The proposed POA location is within the Ankeny Bottom lowlands adjacent to the south flank of the South Salem Hills. The application indicates a targeted depth for the proposed well between 40 and 60 feet, "depending upon where the driller hits water", and completed in "sand and gravel." Nearby well logs and geologic maps confirm the presence of alluvial sand and gravel deposits within the proposed well depth range (Conlon and others, 2005; Woodward and others, 1998).

The estimated SWL range in Table A3 is based on a USGS groundwater map (Woodward and others, 1998) and levels reported on nearby well logs.

Despite the "year-round' seasonal use designation in WRIS, the applicant states that water from the proposed POA is intended "to provide potable water for the annual Willamette Country Music Festival each year **in the month of August**."

A5. ☐ **Provisions of the** Willamette Basin rules relative to the development, classification and/or management of groundwater hydraulically connected to surface water ☐ **are**, *or* ☒ **are not**, activated by this application. (Not all basin rules contain such provisions.)
Comments: The proposed POA will obtain groundwater from an unconfined aquifer, but it will not be within ¼ of a perennial stream reach. Therefore the pertinent basin rules (OAR 690-502-0240) do not apply.

A6. ☐ **Well(s) #** _____, _____, _____, _____, _____, tap(s) an aquifer limited by an administrative restriction.
Name of administrative area: **South Salem Hills Groundwater Limited Area**
Comments: The proposed POA location is within the South Salem Hills Groundwater Limited Area (GWLA); use restrictions in this area apply only to the basalt aquifer system (OAR 690-502-0200). However, the proposed POA will obtain groundwater from an alluvial aquifer system, and thus the GWLA restrictions are NOT relevant.

B. GROUNDWATER AVAILABILITY CONSIDERATIONS, OAR 690-310-130, 400-010, 410-0070

B1. **Based upon available data**, I have determined that groundwater* for the proposed use:

a. ☐ **is** over appropriated, ☒ **is not** over appropriated, *or* ☐ **cannot be determined to be** over appropriated during any period of the proposed use. * This finding is limited to the groundwater portion of the over-appropriation determination as prescribed in OAR 690-310-130;

b. ☐ **will not** *or* ☒ **will** likely be available in the amounts requested without injury to prior water rights. * This finding is limited to the groundwater portion of the injury determination as prescribed in OAR 690-310-130;

c. ☐ **will not** *or* ☒ **will** likely to be available within the capacity of the groundwater resource; or

d. ☒ **will, if properly conditioned**, avoid injury to existing groundwater rights or to the groundwater resource:
   i. ☒ The permit should contain condition #(s) **7c (7-yrs measurements); medium-water use reporting**;
   ii. ☒ The permit should be conditioned as indicated in item 2 below.
   iii. ☐ The permit should contain special condition(s) as indicated in item 3 below;

B2. a. ☐ **Condition** to allow groundwater production from no deeper than _____ ft. below land surface;

b. ☐ **Condition** to allow groundwater production from no shallower than _____ ft. below land surface;

c. ☒ **Condition** to allow groundwater production only from the **alluvial** groundwater reservoir ~~between approximately _____ ft. and _____ ft. below land surface;~~

d. ☐ **Well reconstruction** is necessary to accomplish one or more of the above conditions. The problems that are likely to occur with this use and without reconstructing are cited below. Without reconstruction, I recommend withholding issuance of the permit until evidence of well reconstruction is filed with the Department and approved by the Groundwater Section.

Describe injury –as related to water availability– that is likely to occur without well reconstruction (interference w/ senior water rights, not within the capacity of the resource, etc): _____

B3. **Groundwater availability remarks:** The proposed POA/Well 1 will obtain groundwater from unconfined sand and gravel deposits (Willamette Aquifer). The coarser water-bearing sands and gravels are approximately 15-20 feet thick in this area, and are overlain by about 15-20 of fine-grained silt and clay deposits that begin at ground surface (Willamette Silt) (Conlon and others, 2005; Woodward and others, 1998).

Groundwater exploitation, and thus available groundwater level data, is extremely sparse in the Ankeny Bottom area. The area is predominantly agricultural, and most irrigation needs appear to be met from surface water sources conveyed via an extensive canal network. There are about 5-6 farmhouses within about 1 mile of the proposed POA location, and each of these might possess a domestic use well. However, the limited requested allocation (relatively-low rate used for only a month or so each year) suggests little likelihood of potential adverse impacts on nearby groundwater users.

Groundwater data available from locations several miles away but in a similar hydrogeologic setting (outlying portions of Ankeny Bottom, and American Bottom to the northwest) show long-term stability, albeit with moderately-large seasonal ranges (~15-20 ft) at some locations (see attached hydrograph). Little local groundwater development, coupled with relatively-high recharge rates, suggests that the requested use will likely be available within the capacity of the groundwater resource. Nonetheless, the permit conditions are recommended to provide data by which OWRD can better assess groundwater conditions in this area.

C. GROUNDWATER/SURFACE WATER CONSIDERATIONS, OAR 690-09-040

C1. **690-09-040 (1):** Evaluation of aquifer confinement:

Well	Aquifer or Proposed Aquifer	Confined	Unconfined
1	**Alluvium (Willamette Aquifer)**	☐	☒

Basis for aquifer confinement evaluation: Nearby well logs (MARI 19658, MARI 16293, etc.) show SWLs approximately coincident with the first encountered water-bearing sand and gravel deposits at those well locations. This fact indicates generally unconfined conditions in the local, shallow alluvial aquifer system.

C2. **690-09-040 (2) (3):** Evaluation of distance to, and hydraulic connection with, surface water sources. All wells located a horizontal distance less than ¼ mile from a surface water source that produce water from an unconfined aquifer shall be assumed to be hydraulically connected to the surface water source. Include in this table any streams located beyond one mile that are evaluated for PSI.

Well	SW #	Surface Water Name	GW Elev ft msl	SW Elev ft msl	Distance (ft)	Hydraulically Connected? YES	NO	ASSUMED	Potential for Subst. Interfer. Assumed? YES	NO
1	**1**	**Chehulpum Creek**	**195-200**	**205-210**	**3980**	☒	☐	☐	☐	☒
1	**2**	**Santiam River**	**195-200**	**190-195**	**7500**	☒	☐	☐	☐	☒

Basis for aquifer hydraulic connection evaluation: The estimated groundwater elevation range and the elevation range of the perennial reach of SW1 within about 1 mile of the proposed Well 1 location is generally coincident. This suggests hydraulic connection between the shallow alluvial groundwater system and SW1.

It should be noted that many natural surface water features in the Ankeny Bottom area have been largely altered, such as the channelization of some sections of natural streams (e.g., the Power Ditch which runs about 400 ft SW of the proposed Well 1 location, and which is directly connected to SW1, Chehulpum Creek).

Water Availability Basin the well(s) are located within: Santiam River > Willamette River – at mouth (WID 167)

C3a. **690-09-040 (4):** Evaluation of stream impacts for each well that has been determined or assumed to be **hydraulically connected and less than 1 mile** from a surface water source. Limit evaluation to instream rights and minimum stream flows that are pertinent to that surface water source, and not lower SW sources to which the stream under evaluation is tributary. Compare the requested rate against the 1% of 80% *natural* flow for the pertinent Water Availability Basin (WAB). If Q is not distributed by well, use full rate for each well. Any checked ☒ box indicates the well is assumed to have the potential to cause PSI.

Well	SW #	Well < ¼ mile?	Qw > 5 cfs?	Instream Water Right ID	Instream Water Right Q (cfs)	Qw > 1% ISWR?	80% Natural Flow (cfs)	Qw > 1% of 80% Natural Flow?	Interference @ 30 days (%)	Potential for Subst. Interfer. Assumed?
1	**1**	☐	☐	**MF167A**	**320**	☐	**923**	☐	**<<25%**	☐

C3b. **690-09-040 (4):** Evaluation of stream impacts by total appropriation for all wells determined or assumed to be **hydraulically connected and less than 1 mile** from a surface water source. **Complete only if Q is distributed among wells**. Otherwise same evaluation and limitations apply as in C3a above.

	SW #		Qw > 5 cfs?	Instream Water Right ID	Instream Water Right Q (cfs)	Qw > 1% ISWR?	80% Natural Flow (cfs)	Qw > 1% of 80% Natural Flow?	Interference @ 30 days (%)	Potential for Subst. Interfer. Assumed?
			☐			☐		☐		☐

Comments: C3a: Potential depletion of SW1 was estimated using the Hunt 2003 analytical stream depletion model (Hunt, 2003). Aquifer parameters used for the model are typical of those reported for this hydrogeologic regime (Conlon and others, 2003, 2005; Iverson, 2002; Woodward and others, 1998).

The Hunt 2003 analytical modeling results indicate that depletion of SW1 is expected to be substantially less than 25% (of well discharge) after 30 days of continuous pumping.

C3b: not applicable

C4a. **690-09-040 (5):** Estimated impacts on **hydraulically connected surface water sources greater than one mile** as a percentage of the proposed pumping rate. Limit evaluation to the effects that will occur up to one year after pumping begins. This table encompasses the considerations required by 09-040 (5)(a), (b), (c) and (d), which are not included on this form. Use additional sheets if calculated flows from more than one WAB are required.

Non-Distributed Wells Well	SW#	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
		%	%	%	%	%	%	%	%	%	%	%	%
Well Q as CFS													
Interference CFS													
Distributed Wells Well	SW#	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
		%	%	%	%	%	%	%	%	%	%	%	%
Well Q as CFS													
Interference CFS													
(A) = Total Interf.													
(B) = 80 % Nat. Q													
(C) = 1 % Nat. Q													
(D) = (A) > (C)		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
(E) = (A / B) x 100		%	%	%	%	%	%	%	%	%	%	%	%

(A) = total interference as CFS; (B) = WAB calculated natural flow at 80% exceed. as CFS; (C) = 1% of calculated natural flow at 80% exceed. as CFS; (D) = highlight the checkmark for each month where (A) is greater than (C); (E) = total interference divided by 80% flow as percentage.

Basis for impact evaluation: Not applicable

C4b. **690-09-040 (5) (b) The potential to impair or detrimentally affect the public interest is to be determined by the Water Rights Section.**

C5. ☐ **If properly conditioned**, the surface water source(s) can be adequately protected from interference, and/or groundwater use under this permit can be regulated if it is found to substantially interfere with surface water:

i. ☐ The permit should contain condition #(s)_____;

ii. ☐ The permit should contain special condition(s) as indicated in "Remarks" below;

C6. **SW / GW Remarks and Conditions:** _____

References Used: Application file: LL-1739

Conlon, T.D., Wozniak, K.C., Woodcock, D., Herrera, N.B., Fisher, B.J., Morgan, D.S., Lee, K.K., and Hinkle, S.R., 2005, Ground-water hydrology of the Willamette Basin, Oregon: U.S. Geological Survey Scientific Investigations Report 2005-5168.

Gannett, M.W. and Caldwell, R., 1998, Geologic framework of the Willamette Lowland aquifer system, Oregon and Washington: U.S. Geological Survey Professional Paper 1424-A, 32 p.

Hunt, B., 2003, Unsteady stream depletion when pumping from semiconfined aquifer: Journal of Hydrologic Engineering, January/February, 2003.

Iverson, J., 2002, Investigation of the hydraulic, physical, and chemical buffering capacity of Missoula flood deposits for water quality and supply in the Willamette Valley of Oregon: Unpublished M.S. thesis, Oregon State University, 147 p.

Woodward, D.G., Gannett, M.W., and Vaccaro, J.J., 1998, Hydrogeologic framework of the Willamette Lowland aquifer system, Oregon and Washington: U.S. Geological Survey Professional Paper 1424-B, 82 p.

D. WELL CONSTRUCTION, OAR 690-200

D1. **Well #:** _____ **Logid:** _____

D2. **THE WELL does not appear to meet current well construction standards based upon:**

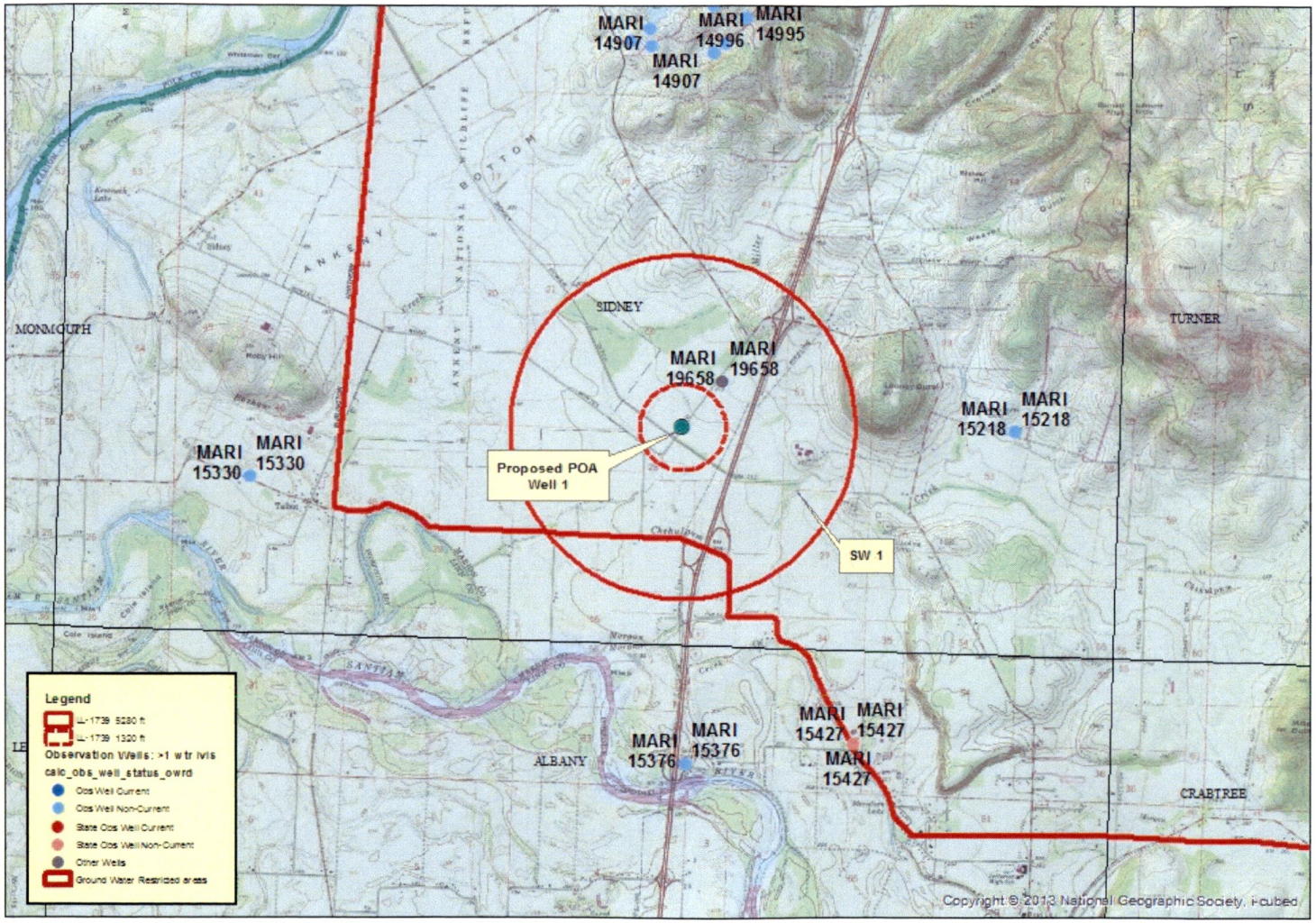
a. ☐ review of the well log;
b. ☐ field inspection by _____;
c. ☐ report of CWRE _____;
d. ☐ other: (specify) _____

D3. **THE WELL construction deficiency or other comment is described as follows:** _____

D4. ☐ **Route to the Well Construction and Compliance Section for a review of existing well construction.**

Well Location Map

App LL-1739 Willamette Country Music Concerts, LLC
T9S, R3W, Section 21



Version: 04/20/2015

Water Availability Table

Oregon Water Resources Department
Water Availability Analysis

Main Help
Return Contact Us

Water Availability Analysis
Detailed Reports

SANTIAM R > WILLAMETTE R - AT MOUTH
WILLAMETTE BASIN

Water Availability as of 4/4/2018

Watershed ID #: 167 (Map)
Date: 4/4/2018

Exceedance Level: 80%
Time: 10:51 AM

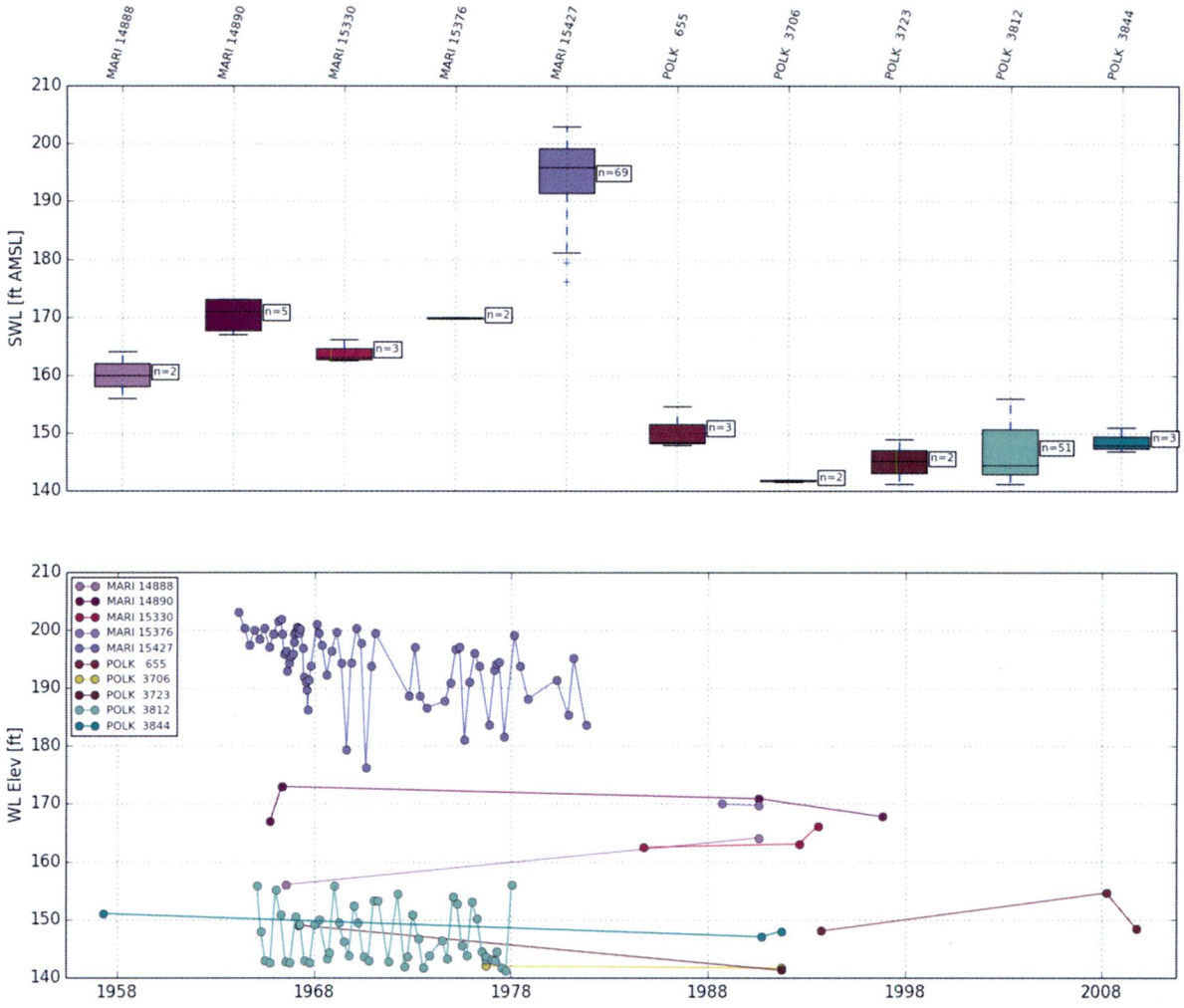
Water Availability Calculation | Consumptive Uses and Storages | Instream Flow Requirements | Reservations
Water Rights | Watershed Characteristics

Water Availability Calculation

Monthly Streamflow in Cubic Feet per Second
Annual Volume at 50% Exceedance in Acre-Feet

Month	Natural Stream Flow	Consumptive Uses and Storages	Expected Stream Flow	Reserved Stream Flow	Instream Flow Requirement	Net Water Available
JAN	5,860.00	1,050.00	4,810.00	0.00	320.00	4,490.00
FEB	6,590.00	3,320.00	3,270.00	0.00	320.00	2,950.00
MAR	5,870.00	2,890.00	2,980.00	0.00	320.00	2,660.00
APR	5,370.00	2,880.00	2,490.00	0.00	320.00	2,170.00
MAY	5,020.00	1,930.00	3,090.00	0.00	320.00	2,770.00
JUN	2,600.00	1,080.00	1,520.00	0.00	320.00	1,200.00
JUL	1,380.00	1,020.00	363.00	0.00	320.00	42.70
AUG	1,030.00	957.00	72.90	0.00	320.00	-247.00
SEP	923.00	847.00	75.80	0.00	320.00	-244.00
OCT	1,020.00	766.00	254.00	0.00	320.00	-66.20
NOV	2,820.00	720.00	2,100.00	0.00	320.00	1,780.00
DEC	5,940.00	713.00	5,230.00	0.00	320.00	4,910.00
ANN	4,380,000.00	1,090,000.00	3,290,000.00	0.00	232,000.00	3,060,000.00

Water-Level Trends in Nearby Wells



Hunt 2003 Analytical Stream Depletion Model Results

PyHunt stream depletion analysis tool

Application type:	LL
Application number:	1739
Well number:	1
Stream Number:	1
Pumping rate (cfs):	.111
Pumping duration (days):	365

Parameter	Symbol	Scenario 1	Scenario 2	Scenario 3	Units
Distance from well to stream	a	3980	3980	3980	ft
Aquifer transmissivity	T	200	2000	5000	ft2/day
Aquifer storativity	S	.15	0.15	0.15	-
Aquitard vertical hydraulic conductivity	Kva	.005	0.005	0.005	ft/day
Aquitard saturated thickness	ba	20	20.0	20	ft
Aquitard thickness below stream	babs	15	15	15	ft
Aquitard specific yield	Sya	0.2	0.2	0.2	-
Stream width	ws	30	30	30	ft

Stream depletion for Scenario 2:

Days	30	60	90	120	150	180	210	240	270	300	330	360
Depletion (%)	0	0	0	0	0	0	0	0	0	0	0	0
Depletion (cfs)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00