BEST BEST & KRIEGER LLP
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August 7, 2025

VIA E-MAIL ONLY:
JEREMY.T.GIFFIN@WATER.OREGON.GOV
ADAM.M.FREDERICK@WATER.OREGON.GOV
SARAH.A.HENDERSON@WATER.OREGON.GOV

Jeremy Giffin
Watermaster - District 11
Oregon Water Resources Department
231 SW Scalehouse Loop, Suite 103
Bend, OR 97702

Sarah A. Henderson
Adam M. Frederick
Oregon Water Resources Department
725 Summer Street NE, Suite A
Salem, OR 97301

Re: Transfer Application T-14183

Dear Mr. Giffin, Ms. Henderson, and Mr. Frederick :

We represent the Confederated Tribes of the Warm Springs Reservation of Oregon ("Tribe"). The Oregon Water Resources Department ("Department") has provided the Tribe with certain information concerning Transfer Application T-14183, which is further identified in **Appendix A** hereto ("Application").

The Tribe has reviewed the Application. The Tribe is relying in good faith upon the information provided by Department. Based on that information, the Tribe does not object to the Department processing the Application in accordance with applicable law, and the Department's customary practice. The Tribe expressly reserves, and does not waive, all rights, claims, and defenses that it may possess in connection with the Application, including, but not limited to, whether the Application violates the Treaty of June 25, 1855, with the Tribes of Middle Oregon, 12 Stat. 963, or the Confederated Tribes of the Warm Springs Reservation Water Rights Settlement Agreement, dated November 17, 1997, as amended.

Please let us know if you have any questions.

Sincerely,

Alison K. Toivola
for BEST BEST & KRIEGER LLP

AKT

cc: Robert A. Brunoe
Austin Smith, Jr.
Brad Houslet
Josh Newton, Esq.

Appendix A

JORDAN RAMIS

Marika E. Sitz
Marika.Sitz@jordanramis.com
Direct Dial: 541-797-2078

360 SW Bond St., Ste. 510
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T (541) 550-7900
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July 3, 2025

VIA EMAIL ONLY

Alison Toivola and Josh Newton
Best Best & Krieger LLP
360 SW Bond St #400
Bend, OR 97701
E-Mail: alison.toivola@bbklaw.com
josh.newton@bbklaw.com

Re: ***Deschutes Valley Water District's Opal Springs Surface Water to Groundwater Permit Amendment Application***
Our File No. 48915-82537

Alison and Josh:

Thank you again for meeting with us last December to discuss the Confederated Tribes of Warm Springs' review of transfer applications in the Deschutes Basin (the "Basin"). It was helpful to understand the transfer risk categories that your client has developed and to discuss the status of the review process. As you may recall, during the meeting we discussed Deschutes Valley Water District's (the "District") permit amendment application—Application T-14183. The application proposes to change Permit S-36515's authorized point of diversion ("POD") at Opal Springs to four new points of appropriation ("POA")[1] at four wells that are or will be hydraulically connected to Opal Springs.

During our December 10th conversation, we discussed potential options to assist your client with its review of Application T-14183. We determined that the District would prepare supplemental information beyond the information contained in Application T-14183 to assist in that review and to demonstrate that a high-risk designation is not appropriate for this specific permit amendment. The purpose of this letter is to provide essential background information that may not be clear or may not be contained in Application T-14183.

[1] In Oregon, the terms "POA" and "POD" are sometimes used interchangeably to refer to the location where water is withdrawn from a source to be put to beneficial use. However, in this letter, we use the term "POD" to refer to a surface water point of diversion and the term "POA" to refer to a groundwater point of appropriation.

A. District Background

The District provides domestic water for more than 13,000 people across 130 square miles in Jefferson County. In addition to delivering water to individual households in the Culver and Metolius communities, the District delivers water to the City of Madras, its wholesale customer. Opal Springs, the surface water source at issue in Application T-14183, is fed by the Deschutes aquifer and is the sole source of the District's domestic water supply.

The District submitted Application T-14183 for two reasons. First, using groundwater POAs instead of the existing surface water POD and spring box will reduce the risk of contamination for the drinking water that the District delivers to its patrons. Second, due to the artesian pressure at the site of the proposed POAs, the District will be able to reduce its energy use and pumping costs to improve economic and environmental outcomes for the District and surrounding communities. Further, as we discuss in Section C below, implementing the proposed changes in Application T-14183 will also have a beneficial impact on Crooked River flows.

B. POD to POA Changes in Oregon

Application T-14183 is requesting a unique type of water right change. If approved, the District would cease withdrawing water from the designated surface water POD authorized under Permit S-36515 and instead withdraw an equivalent rate and amount of water from four new well POAs.[2]

As a preliminary matter, the District has the legal right to divert 11.92 cfs from Opal Springs under Permit S-36515. *See* Order in the Matter of Partial Perfection of Water Right Permit S-36515 at Oregon Water Resources Department ("OWRD") Volume 74, Page 218; Final Order Approving Management and Conservation Plan, OWRD Special Order Volume 131, 758. Permit S-36515 was approved by OWRD in 1971 following the required review and public notice process. Regardless of whether Application T-14183 is approved or denied, the District will retain the right to divert 11.92 cfs. The proposed permit amendment will only modify the location and means of appropriating the 11.92 cfs.

Pursuant to ORS 537.211(4)(h) and in accordance with Opal Springs' location in the Deschutes Basin Ground Water Study Area, OWRD is required to evaluate Application T-14183 with the standards set forth in ORS 540.531(3) and OAR 690-380-2130(3). Under these standards, a water right permit holder may change a POD to a new POA, but the POA must appropriate groundwater from an aquifer that is hydraulically connected to the surface water source authorized on the original permit, and

[2] The administrative process at issue here has been referred to in shorthand as a "transfer." However, it is technically a permit amendment process because Permit S-36515 is not a "water use subject to transfer" under ORS 540.505(4). Nevertheless, the statutes and rules that apply to surface water POD to groundwater POA *transfers* apply to the surface water POD to groundwater POA permit amendment process at issue here under ORS 537.211(4)(h).

withdrawal of water at the new POA(s) must affect the hydraulically connected surface water source. ORS 540.531(3)(a); ORS 540.531(3)(c). *See also* OAR 690-380-2130(3)(c).

Among the required criteria set forth in statute and rule for such a POD to POA change, two are worth highlighting here:

1. Under ORS 540.531(3)(b), the proposed POD change may not result in enlargement of the original water right. *See also* OAR 690-380-2130(3)(a); OAR 690-380-5000(1)(c); OAR 690-380-0100(2).

2. OWRD may not require that water use at the new POA(s) affect the surface water source similarly to the water use at the original POD. ORS 540.531(c); OAR 690-380-2130(3)(d). The second point identified here is critical, because it means that a permit holder may make a change that actually *reduces the immediate impact* to the surface water source despite underlying hydraulic connectivity with the aquifer at issue.

With regard to the first point above, the prohibition against enlargement is one of two bedrock principles for all permit amendments and transfers in Oregon.[3] Any permit amendment application or transfer application that would cause "expansion of a water right" will violate the prohibition against enlargement will not be approved. *See* OAR 690-380-0100(2). The applicable administrative rule provides various examples of "enlargement," including any change that would result in a water right holder using a greater rate or duty (volume) of water per acre than authorized under the original water right or any change that would allow diversion of more water at the new POA or POD than is legally authorized under the original water right. OAR 690-380-0100(2)(a); OAR 690-380-0100(2)(d). Put simply, once a water right permit is issued in Oregon, the amount of water authorized under that permit (or its subsequent certificate) can never be increased, even by an administrative change.

In accordance with this principle, Application T-14183 is not proposing to increase the rate or amount of water appropriated under Permit S-36515. Rather, the total authorized rate will be divided between four proposed POAs so that the District never appropriates a cumulative total of more than 11.92 cfs from all wells combined. The District completed a similar water right transfer process in 2009, and the subsequent Certificate 97088 issued by OWRD is a good example of how OWRD specifically allocated the cumulative maximum rate among three wells.

Although it is critical to understand what Application T-14183 is and is not proposing to do, we believe that the most important information for your client's review is the information regarding potential

[3] The second bedrock principle is the prohibition on injury to other water rights that would result from a transfer, as "injury" is defined in the Oregon Water Code and the Oregon Administrative Rules. Application T-14183 does not violate the standard definition of injury, but we understand that the Confederated Tribes of Warm Springs are working to develop a more expansive definition of injury to implement in the review. In Section C below, we explain the benefits Application T-14183 will have for Crooked River flows to align with the Confederated Tribes of Warm Springs' broader view of injury.

beneficial impacts to the Crooked River that will result from changing a surface water POD to a set of groundwater POAs.

C. Application T-14183 Context and Anticipated Benefits

Per our discussion, we understand that surface-to-groundwater transfers fall into a "high-risk" category, as do transfers that "raise the potential for measurable impact to flows of Crooked River." We also understand that the Confederated Tribes of Warm Springs are taking a measured approach to develop a broader definition of injury and are striving to ensure that water right transfers do not violate this definition. As discussed in this section, while Application T-14183 may fall into the high-risk buckets based on high-level attributes of the application, the site-specific nature of Application T-14183 coupled with the likely benefits to Crooked River flows if the application is approved support re-classification of Application T-14183 to the low-risk transfer category.

As noted in Section B above, a POD to POA change process is unique among other types of water right changes that are authorized under Oregon law. Further, the nature of water use and the unique hydrology and geography at the District's Opal Springs facilities, shown in **Attachment A**, distinguishes Application T-14183 from other permit amendments and transfers in the Basin. The District's development of Opal Springs and use of artesian wells that are supplied from the same aquifer that supplies Opal Springs—all concentrated in relatively small area—is unusual among other districts and water users in the Basin. It is highly unlikely that any other water user in the Basin will be able to use Application T-14183 as a blueprint for future surface water to groundwater transfers.

Application T-14183 demonstrates the necessary hydraulic connectivity between the proposed POD and the proposed POAs that is required under statute. However, it does not contain any detailed information regarding the specific expected impact to the Crooked River as a result of the permit amendment. Given your client's interest in a wholistic understanding beyond what OWRD's review process may provide, we have worked with the District's water resources consultant, GSI Water Solutions, to assess impacts to the Crooked River at a more granular level.

As discussed above, the District is not proposing to take any additional water from the resource than it is currently authorized to withdraw under Permit S-36515. Further, the current POD for Permit S-36515 is located in close proximity to the proposed POAs, as shown in **Attachment B**. In the worst case scenario, the impact of a POD to POA change at this location will be identical to the current impact of the District's water withdrawal at the POD to the Crooked River (which will continue even if Application T-14183 is not approved). However, our review has shown that the impact may actually be reduced.

Under Application T-14183, the District will cease taking water that would otherwise flow *directly* into the Crooked River. Instead, it will take hydraulically connected water from a groundwater source, reducing the immediate impact on Crooked River flows and instead facilitating a more attenuated, gradual impact to river flows at a location downstream from the Crooked River's confluence with the Deschutes River, beneath Lake Billy Chinook above Pelton Dam. Ken Lite, former OWRD hydrogeologist for the Basin, evaluated information from previous well logs, previous research, and

well tests at the Opal Springs site. The graphic included as **Attachment C** shows the multiple basalt flows that make up the Deschutes aquifer, and includes one of the proposed POAs, JEFF 50263, for reference. As shown in the graphic, while the Deschutes aquifer is continuously saturated, the existing artesian wells—including those proposed as the new POAs under Application T-14183—are developing flow zones in the aquifer (the Pelton Basalts stratigraphic unit) that discharge below the surface of Lake Billy Chinook, downstream from Opal Springs. The impact to the groundwater system from using water from the wells is overwhelmingly horizontal, following the gradient of the basalt flow.[4] As such, if the District begins to take water out of the four groundwater wells identified in Application T-14183 instead of through its existing surface water POD on Opal Springs, the flow of the Crooked River from Opal Springs to Lake Billy Chinook just above Pelton Dam will likely be positively impacted.

Application T-14183 presents a site-specific set of circumstances that are unlikely to be repeated elsewhere in the Basin and are highly likely to benefit flows in the Crooked River from Opal Springs to Lake Billy Chinook. For these reasons, Application T-14183 should be moved to the "low-risk" category identified by the Confederated Tribes of Warm Springs.

D. Conclusion

If Application T-14183 is approved, it will have a significant benefit for the District and for Crooked River flows. As discussed above, the District will continue to divert 11.92 cfs from Opal Springs or from the aquifer that is hydraulically connected to Opal Springs to provide domestic water service to its patrons. Under the approach proposed in Application T-14183, the Crooked River stands to gain a notable benefit while the District improves outcomes for its patrons.

Once you have had the chance to review this letter, we are happy to schedule a meeting to discuss any questions and identify the next steps for the District's application. In the meantime, please do not hesitate to reach out to me with any questions.

Sincerely,

JORDAN RAMIS PC

Marika E. Sitz
Admitted in Oregon and Washington

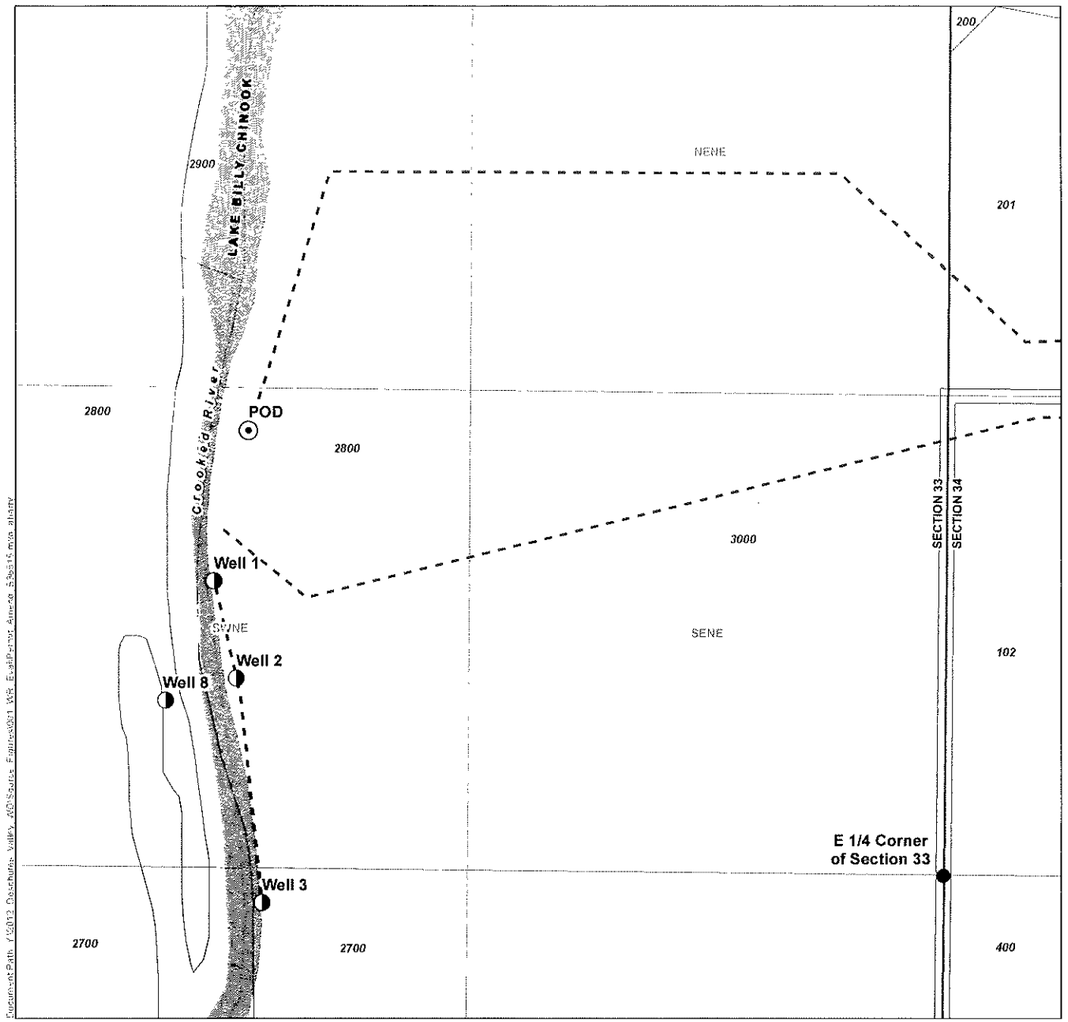
[4] *See* Table 3, Page 22 in Gannett, M.W., K.E. Lite, Jr., J.C. Risley, E.M. Pischel, and J.L. LaMarche. 2017. Simulation of Groundwater and Surface-Water in the Upper Deschutes Basin, Oregon. U.S. Geological Survey Scientific Investigations Report 2017-5097.

ATTACHMENT A

DESCHUTES VALLEY WATER DISTRICT

OPAL SPRINGS PROJECT AREA

ATTACHMENT B



LEGEND

- Authorized Point of Diversion (POD)
- Proposed Point of Appropriation (POA)
- Pipeline
- Tax Lot
- Watercourse
- Waterbody

LOCATION DESCRIPTION

Authorized Point of Diversion
Located 1215 feet North and 1939 feet West from the E 1/4 corner of Section 33, Township 12 South, Range 12 East (W.M.)

Proposed Points of Appropriation

Well 1
Located 815 feet North and 2023 feet West from the E 1/4 corner of Section 33, Township 12 South, Range 12 East (W.M.)

Well 2
Located 545 feet North and 1960 feet West from the E 1/4 corner of Section 33, Township 12 South, Range 12 East (W.M.)

Well 3
Located 78 feet South and 1890 feet West from the E 1/4 corner of Section 33, Township 12 South, Range 12 East (W.M.)

Well 8
Located 475 feet North and 2169 feet West from the E 1/4 corner of Section 33, Township 12 South, Range 12 East (W.M.)

Permit Amendment Application
Deschutes Valley Water District
Authorized Point of Diversion and Proposed Points of Appropriation

Permit S-36515

Jefferson County
Township 12 South, Range 12 East (W.M.)

DISCLAIMER
This map was prepared for the purpose of identifying the location of a water right only and it is not intended to provide legal dimensions or location of property ownership lines

Date: January 31, 2023
Data Sources: BLM, ESRI, OWRD, USGS, Jefferson Co., Newton Consultants (2017)

N
0 200 400
1 inch = 400 feet

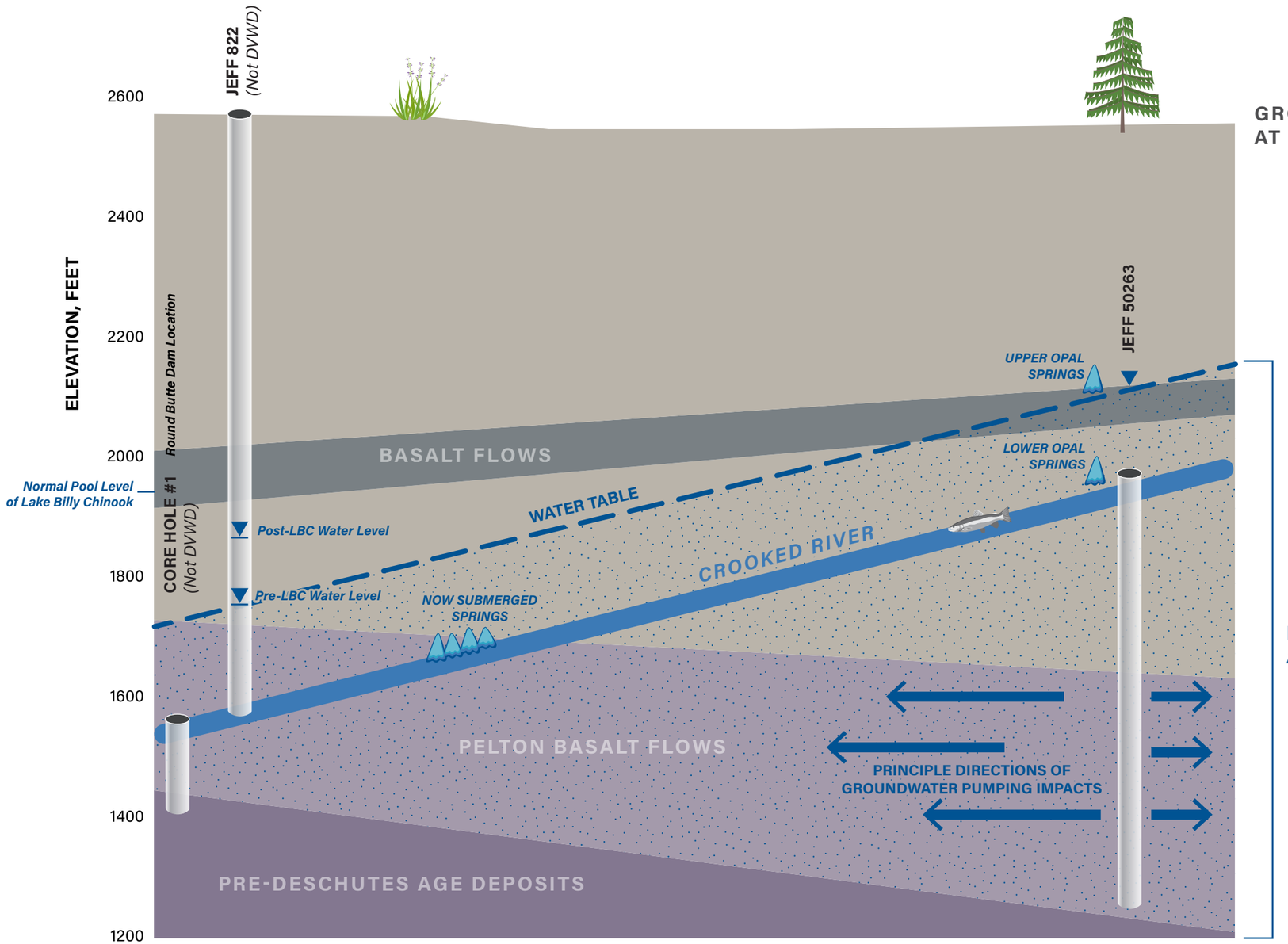
GSI Water Solutions, Inc.

14183

ATTACHMENT C

Illustrated Geologic Cross Section of Opal Springs and Pelton Dam Area

Deschutes Valley Water District



LEGEND

- Well Location
- Sping Location
- Water Level

CITATIONS

Bechtel Corporation, 1958, Round Butte project geology report: San Francisco, California [Consulting Engineers report, prepared for Portland General Electric Company, Portland, Oregon] 34 p.

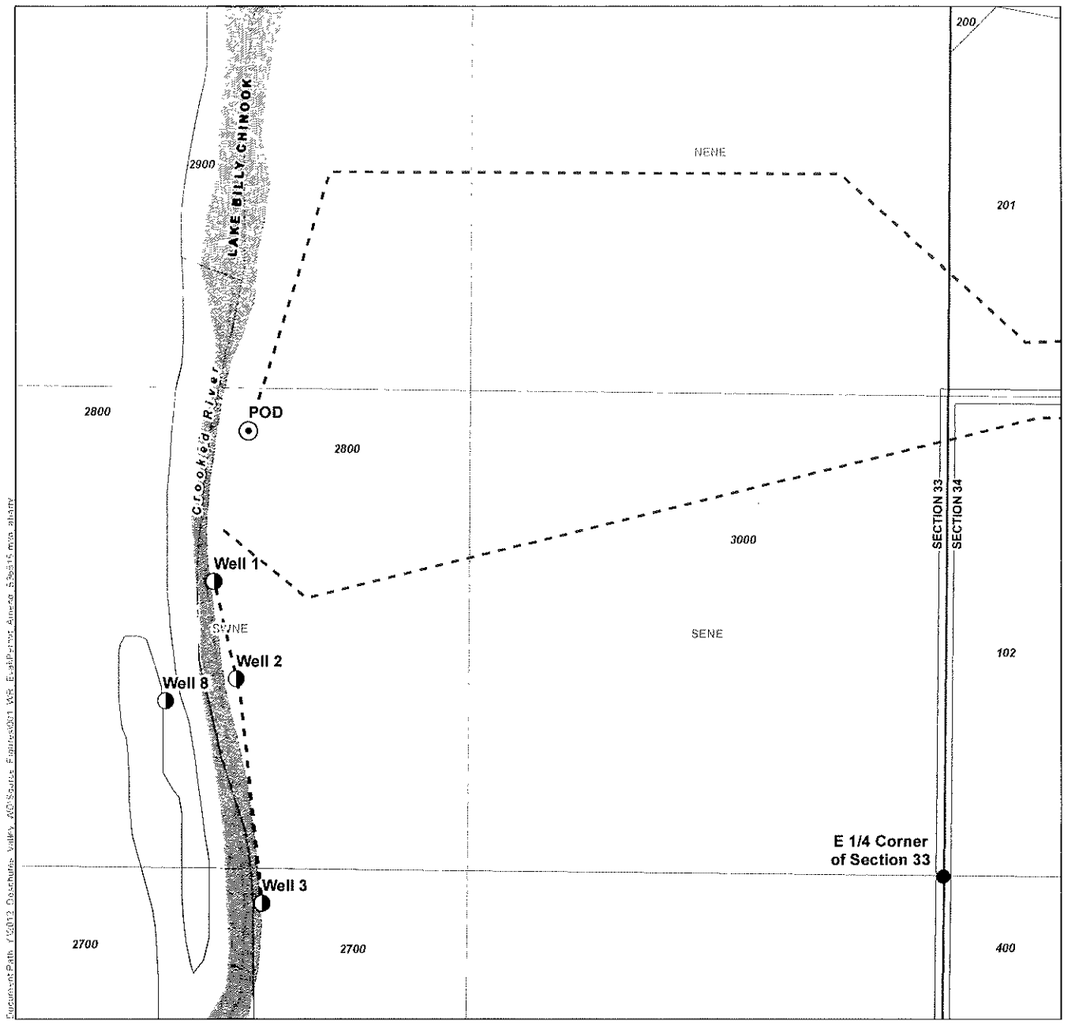
Gannett, M.W., K.E. Lite, Jr., J.C. Risley, E.M. Pischel, and J.L. LaMarche. 2017. Simulation of Groundwater and Surface-Water in the Upper Deschutes Basin, Oregon. U.S. Geological Survey Scientific Investigations Report 2017-5097, 68 p.

Lite, K.E. Jr., and M.W. Gannett. 2002. Geologic Framework of the Regional Ground-water Flow System in the Upper Deschutes Basin, Oregon. U.S. Geological Survey Water Resources Investigations Report 02-4015, 44 p.

Stearns, H.T., 1931. Geology and water resources of the middle Deschutes River basin, Oregon (No. 637-D, pp. 125-220). US Geological Survey.

GSI Water Solutions, Inc.

Y:\2012_Deschutes_Valley_WD\Source_Figures\001_WR_Eval



LEGEND

- Authorized Point of Diversion (POD)
- Proposed Point of Appropriation (POA)
- Pipeline
- Tax Lot
- Watercourse
- Waterbody

LOCATION DESCRIPTION

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Well 1
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Located 545 feet North and 1960 feet West from the E 1/4 corner of Section 33, Township 12 South, Range 12 East (W.M.)

Well 3
Located 78 feet South and 1890 feet West from the E 1/4 corner of Section 33, Township 12 South, Range 12 East (W.M.)

Well 8
Located 475 feet North and 2169 feet West from the E 1/4 corner of Section 33, Township 12 South, Range 12 East (W.M.)

Permit Amendment Application
Deschutes Valley Water District
Authorized Point of Diversion and Proposed Points of Appropriation

Permit S-36515

Jefferson County
Township 12 South, Range 12 East (W.M.)

DISCLAIMER
This map was prepared for the purpose of identifying the location of a water right only and it is not intended to provide legal dimensions or location of property ownership lines

Date: January 31, 2023
Data Sources: BLM, ESRI, OWRD, USGS, Jefferson Co., Newton Consultants (2017)

N
0 200 400
1 inch = 400 feet

GSI Water Solutions, Inc.

14183

R12E R13E

R13E R14E

T9S T10S

T10S T11S

T11S T12S

T12S T13S

Warm Springs

Gateway Tank

Plains Tank

Round Butte Tank

Lake Billy Chinook

Metolius

Metolius Tanks

Madras

Culver

KOA Tank

Haystack Reservior

Opal Springs - POD

Juniper Tank

Main Tanks

Certified Water Right Examiner
119 WRE
DONALD J. NEWTON
JUN. 18, 1996
STATE OF OREGON

5,280' 0' 5,280' 10,560'

SCALE: 1" = 5,280'

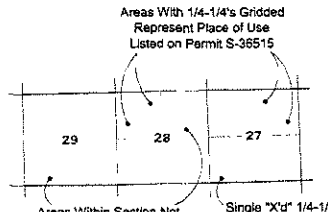
Notes

1. This map was prepared for the purpose of identifying the location of water rights only and is not intended to provide legal dimensions or locations of property ownership lines.

Explanation

POD - Opal Springs, Permit S-36515
1,215.44 ft North and 1,939.8 ft West
from the East 1/4 Corner of Section 33
Being Within SW-NE of Section 33
Township 12.S, Range 12.E, W.M.

Areas With 1/4-1/4's Gridded Represent Place of Use Listed on Permit S-36515



Areas Within Section Not Gridded Are Not Listed As Place of Use on Permit S-36515

Single "X'd" 1/4-1/4's Represent Single 1/4-1/4 Not Listed As Place of Use on Permit S-36515.

RECEIVED
SEP 20 2007
WATERRESOURCES DEPT
SALEM OREGON

NO.	DATE	BY	REVISIONS

PATH: G:\0400\450\108\Cad\Water\W450108_F1_CBU 14:27 09/14/2007 SS

NEWTON CONSULTANTS INC.
Earth, Water and Rock Specialists
Ph: 541 504-3960 Fax: 541 504-4981

NORTH

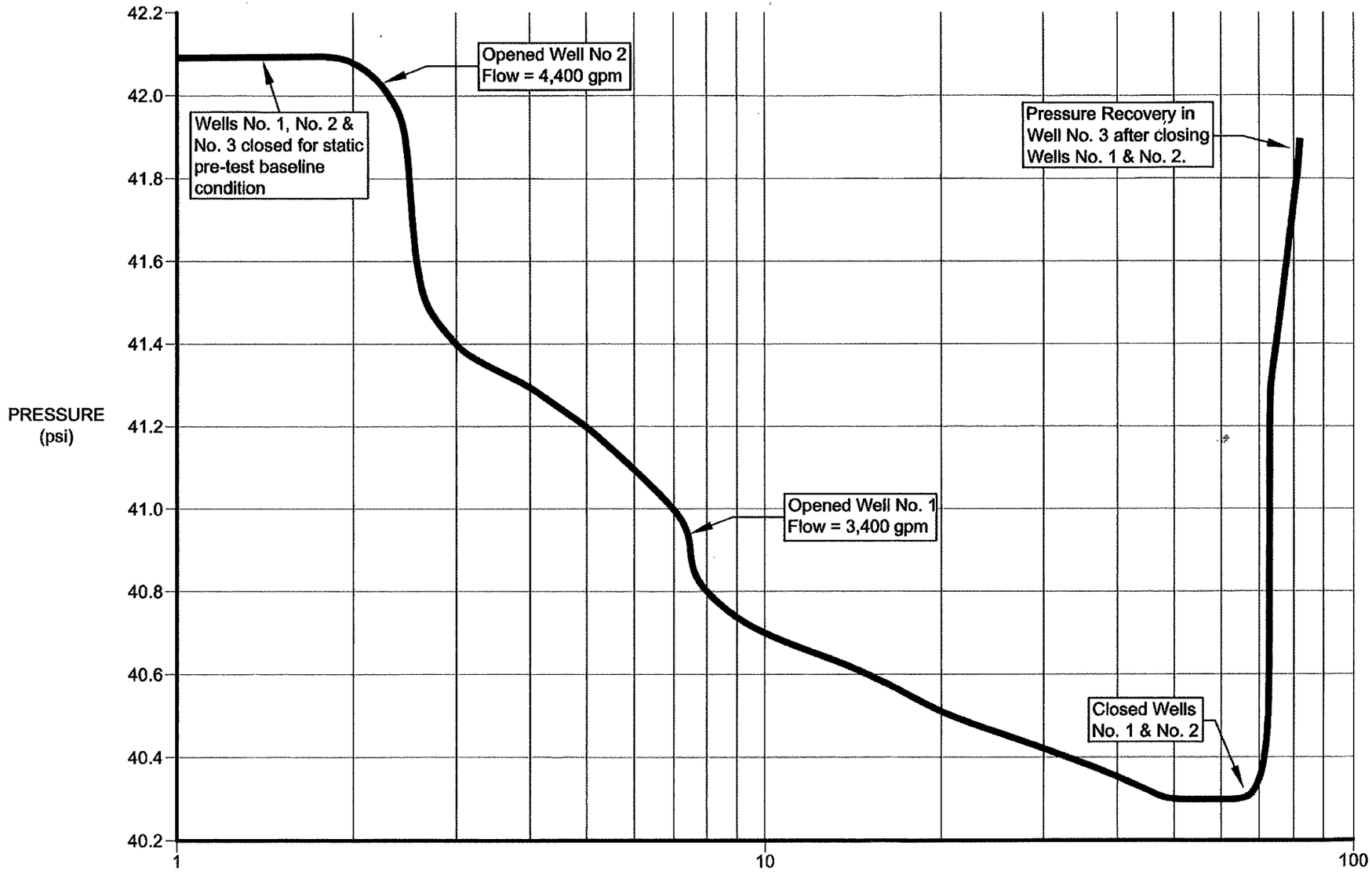
Claim of Beneficial Use - Permit S-36515
Service Area Boundary
Deschutes Valley Water District
Deschutes County, Oregon

PROJECT NO:	DATE:	FIGURE
450-108	May 2007	1
DESIGNED BY: M.Perle	DRAWN BY: S.Schenck	

14183

EARTH$_2$0 Pressure Testing

Deschutes Valley Water District Artesian Well No. 3 - Pressure vs. Time



Starting at 8:00 am Monday 4/12/04 and ending at 5:00 p.m. Thursday 4/15/04

1) Falcom Digital pressure gauges were installed on wells No. 2 & No. 3 on 4/12/2004, 7:00am. The gauges have a pressure range from 0.0 to 60.0 psi and +/- 0.25% accuracy.

2) Wells No. 1, No. 2 & No. 3 were closed at 4:30 p.m. Sunday, 4/11/04 to provide static pre-test baseline, until the pressure test began at 9:00 am Monday 4/12/2004.

3) At 9:00 am, Monday 4/12/04 Well No. 2 was opened at a discharge rate of 4,400 gpm from artesian pressure. Well No. 2 remained open until 5:00 p.m. Thursday, 4/15/2004.

4) At 2:00 p.m., Monday 4/12/04 Well No. 1 was opened at a discharge rate of 3,400 gpm from artesian pressure. Wells No. 1 and No. 2 remained open until 8:00 am Thursday, 4/15/2004.

5) At 8:00 am Thursday, 4/15/2004 closed all wells and returned system to static condition. Pressure in Well No. 3 increased from 40.3 psi to 41.9 psi within 10 hours of closing Wells No. 1 & No. 2.

NEWTON CONSULTANTS INC.
Earth, Water and Rock Specialists
Ph: 503 742-1800 Fax: 503 742-1801

G:\0900\980\101\Cad\Water\W980101_F4 11:07 03/08/2005 SS

14183

RECEIVED
MAR 08 2023
OWRD

Application for Permit Amendment

Part 1 of 5 – Minimum Requirements Checklist

OREGON WATER RESOURCES DEPARTMENT
Oregon Water Resources Department
725 Summer Street NE, Suite A
Salem, Oregon 97301-1266
(503) 986-0900
www.oregon.gov/OWRD

This permit amendment application will be returned if Parts 1 through 5 and all required attachments are not completed and included.

Check all items included with this application. (N/A = Not Applicable)

☒ Part 1 – Completed Minimum Requirements Checklist.

☒ Part 2 – Completed Application Map Checklist.

☒ Part 3 – Application Fee, payable by check to the Oregon Water Resources Department, and completed Fee Worksheet, page 3. Try the new online fee calculator at: http://apps.wrd.state.or.us/apps/misc/wrd_fee_calculator.

☒ Part 4 – Completed Applicant Information and Signature.

☒ Part 5 – Information about Permits to be Amended: **Number of permits to be amended: 1**
List the Permits here: S-36515 (see Attachment A)
Please include a separate Part 5 for each permit. (See instructions on page 6)

☒ Completed Permit Amendment Application Map (Does not have to be prepared by a Certified Water Right Examiner). **See Attachment B.**

☐ ☒ N/A Request for Assignment Form and statutory fee. The request for assignment form has to be completed if the applicant is **not** the permit holder of record and needs to be assigned to the permit; **or** the landowner of the proposed place of use is **not** the permit holder of record and needs to be assigned to the permit (the Request for Assignment Form is available online at https://www.oregon.gov/OWRD/Forms/Pages/default.aspx). Assignment is not needed if the applicant is the permit holder of record.

☐ ☒ N/A Affidavit(s) of Consent are required from all permit holder(s) of record if the permit is not assigned to the applicant **or** other permit holders of record that are not listed as applicants.

☒ ☐ N/A Oregon Water Resources Department's Land Use Information Form with approval and signature (or signed land use form receipt stub) from each local land use authority in which water is to be diverted, conveyed, and/or used. Not required if water is to be diverted, conveyed, and/or used only on federal lands or if **all** of the following apply: a) a change in place of use only, b) no structural changes, c) the use of water is for irrigation only, and d) the use is located within an irrigation district or an exclusive farm use zone. **See Attachment C.**

☒ ☐ N/A Water Well Report/Well Log for changes in point(s) of appropriation (well(s)) or additional point(s) of appropriation. **See Attachment D.**

☐ ☒ N/A Geologist Report for a change from a surface water point of diversion to a ground water point of appropriation (well), if the proposed well is more than 500 feet from the surface water source and more than 1000 feet upstream or downstream from the point of diversion. (ORS 540.531(2) or (3)). **The point of diversion is in the Deschutes Basin groundwater study area, and the proposed wells are hydraulically connected to the authorized surface water source. (See June 10, 2009 memo from Ken Lite, which was developed for Transfer T-9720, in Attachment E.)**

(For Staff Use Only)

WE ARE RETURNING YOUR APPLICATION FOR THE FOLLOWING REASON(S):

___ Application fee not enclosed/insufficient ___ Map not included or incomplete
___ Land Use Form not enclosed or incomplete
___ Additional signature(s) required ___ Part _____ is incomplete
Other/Explanation _____
Staff: _____ 503- _____ Date: ____/____/14183

Part 2 of 5 – Permit Amendment Map Checklist

Your permit amendment application will be returned if any of the map requirements listed below are not met.

Please be sure that the map you submit includes all the items listed below and meets the requirements of OAR 690-380-3100, however, the map does not have to be prepared by a Certified Water Right Examiner. Check all boxes that apply.

☐ ☒ N/A If **more than three** permits are involved, separate maps for each permit.

☒ Permanent quality printed with dark ink on good quality paper.

☒ The size of the map can be 8½ x 11 inches, 8½ x 14 inches, 11 x 17 inches, or up to 30 x 30 inches. For 30 x 30 inch maps, one extra copy is required.

☒ A north arrow, a legend, and scale.

☒ The scale of the map must be: 1 inch = 400 feet, 1 inch = 1,320 feet, the scale of the county assessor map if the scale is not smaller than 1 inch = 1,320 feet, or a scale that has been pre-approved by the Department.

☒ Township, Range, Section, ¼ ¼, DLC, Government Lot, and other recognized public land survey lines.

☒ Tax lot boundaries (property lines) are required. Tax lot numbers are recommended.

☒ Major physical features including rivers and creeks showing direction of flow, lakes and reservoirs, roads, and railroads.

☒ Major water delivery system features from the point(s) of diversion/appropriation such as main pipelines, canals, and ditches.

☒ Existing place of use that includes separate hachuring for each water use permit, priority date, and use including number of acres in each quarter-quarter section, government lot, or in each quarter-quarter section as projected within government lots, donation land claims, or other recognized public land survey subdivisions. If less than the entirety of the permit is being changed, a separate hachuring is needed for the portion of the permit left unchanged.

☐ ☒ N/A If you are proposing a change in place of use, show the proposed place of use with hachuring that includes separate hachuring for each permit, priority date, and use including number of acres in each quarter-quarter section, government lot, or in each quarter-quarter section as projected within government lots, donation land claims, or other recognized public land survey subdivisions.

☒ Existing point(s) of diversion or well(s) with distance and bearing or coordinates from a recognized survey corner. This information can be found in your water use permit.

☒ ☐ N/A If you are proposing a change in point(s) of diversion or well(s), show the proposed location and label it clearly with distance and bearing or coordinates. If GPS coordinates are used, latitude-longitude coordinates may be expressed as either degrees-minutes-seconds with at least one digit after the decimal (example – 42°32'15.5") or degrees-decimal with five or more digits after the decimal (example – 42.53764°).

Part 4 of 5 – Applicant Information and Signature

Applicant Information

APPLICANT/BUSINESS NAME			PHONE NO.	ADDITIONAL CONTACT NO.
Deschutes Valley Water District Attn: Joel Gehrett			**541.475.3849**	
ADDRESS				FAX NO.
881 SW Culver Hwy				
CITY	STATE	ZIP	E-MAIL	
Madras	**OR**	**97741**	**jgehrett@dvwd.org**	
BY PROVIDING AN E-MAIL ADDRESS, CONSENT IS GIVEN TO RECEIVE ALL CORRESPONDENCE FROM THE DEPARTMENT ELECTRONICALLY. COPIES OF THE FINAL ORDER DOCUMENTS WILL ALSO BE MAILED.				

Agent Information – The agent is authorized to represent the applicant in all matters relating to this application.

AGENT/BUSINESS NAME			PHONE NO.	ADDITIONAL CONTACT NO.
GSI Water Solutions, Inc. Attn: Owen McMurtrey			**541.257.9005**	
ADDRESS				FAX NO.
1600 SW Western Boulevard, Suite 240				
CITY	STATE	ZIP	E-MAIL	
Corvallis	**OR**	**97333**	**omcmurtrey@gsiws.com**	
BY PROVIDING AN E-MAIL ADDRESS, CONSENT IS GIVEN TO RECEIVE ALL CORRESPONDENCE FROM THE DEPARTMENT ELECTRONICALLY. COPIES OF THE FINAL ORDER DOCUMENTS WILL ALSO BE MAILED.				

Explain in your own words what you propose to accomplish with this permit amendment; and why:
The Applicant is requesting to amend the permit to change the authorized point of diversion to four points of appropriation at four hydraulically connected wells in the Deschutes Basin groundwater study area.

If you need additional space, continue on a separate piece of paper and attach to the application as "Attachment 1".

☐ Check this box if this project is fully or partially funded by the American Recovery and Reinvestment Act. (Federal stimulus dollars)

Is the applicant the permit holder of record? ☒ Yes ☐ No

If NO, include either:

☐ A completed assignment form (with required statutory assignment fee), assigning all or a portion of the permit to the applicant(s), **OR**

☐ An affidavit of consent from the permit holder(s) of record that gives permission for the applicant to amend the permit.

Has the Completion ("C") Date of the permit(s) in this application expired? ☐ Yes ☒ No

If YES, this application will not be accepted by the Department.

If NO, what are the completion dates of the permit(s)? October 1, 2028

- If the permit completion date expires while the Permit Amendment Application is pending, the Department will not approve the Permit Amendment Application until an Extension of Time Application is approved for the permit.
- You may consider using the Reimbursement Authority process to expedite the processing of this Permit Amendment Application if the completion date of the permit expires within 6 months of the date of filing this application.

By my signature below, I confirm that I understand:

- Prior to Department approval of the permit amendment, I may be required to submit payment to the Department for publication of a notice in a newspaper with general circulation in the area where the permit is located, once per week for two consecutive weeks. If more than one qualifying newspaper is available, I suggest publishing the notice in the following newspaper: Madras Pioneer

I (we) affirm that the information contained in this application is true and accurate.

Applicant Signature	Joel Gehrett, General Manager Print Name (and Title if applicable)	2/28/2023 Date

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Part 3 of 5 – Fee Worksheet

FEE WORKSHEET for PERMIT AMENDMENT			
1	Base Fee (includes one type of change to one permit for up to 1 cfs)	*1*	$1,360
2	Types of change proposed: ☐ Place of Use ☒ Point of Diversion/Appropriation Number of above boxes checked = 1 (2a) Subtract 1 from the number in line 2a = 0 (2b) *If only one change, this will be 0* Multiply line 2b by $1090 and enter »	*2*	$0
3	Number of permits included in Permit Amendment 1 (3a) Subtract 1 from the number in 3a: 0 (3b) *If only one permit this will be 0* Multiply line 3b by $610 and enter »	*3*	$0
4	Do you propose to add or change a well, or change from a surface water POD to a well? ☐ No: enter 0 ☒ Yes: enter $480 for the 1st well to be added or changed $480 (4a) Do you propose to add or change additional wells? ☐ No: enter 0 ☒ Yes: multiply the number of additional wells by $410 $1,230 (4b) Add line 4a to line 4b and enter » » » » » » » » » » » » » » »	*4*	$1,710
5	Do you propose to change the place of use? ☒ No: enter 0 on line 5 ☐ Yes: enter the cfs for the portions of the permits to be amended (see below*): (5a) Subtract 1.0 from the number in 5a above: (5b) If 5b is 0, enter 0 on line 5 » » » » » » » » » » » » » » » » » » If 5b is greater than 0, round up to the nearest whole number: (5c) and multiply 5c by $350, then enter on line 5 »	*5*	$0
6	Add entries on lines 1 through 5 above » » » » » » » » » » Subtotal:	*6*	$3,070
7	Is this permit amendment: ☐ necessary to complete a project funded by the Oregon Watershed Enhancement Board (OWEB) under ORS 541.932? ☐ endorsed in writing by ODFW as a change that will result in a net benefit to fish and wildlife habitat? If one or more boxes is checked, multiply line 6 by 0.5 and enter on line 7 If no box is applicable, enter 0 on line 7» » » » » » » » » » » » »	*7*	$0
8	Subtract line 7 from line 6 » » » » » » » » » » » » » » » **Permit Amendment Fee:**	***8***	**$3,070**

*Example for Line 5a calculation to transfer 45.0 acres of Primary Permit S-12345 (total 1.25 cfs for 100 acres) and 45.0 acres of Supplemental Permit S-87654 (1/80 cfs per acre) on the same land:

1. For irrigation calculate cfs for each permit involved as follows:
   a. Divide total authorized cfs by total acres in the permit *(for S-12345, 1.25 cfs ÷100 ac)*; then multiply by the number of acres to be changed to get the application cfs *(x 45 ac= 0.56 cfs)*.
   b. If the water right permit does not list total cfs, but identifies the allowable use as 1/40 or 1/80 of a cfs per acre; multiply number of acres proposed for change by either 0.025 (1/40) or 0.0125 (1/80). *(For S-87654, 45.0 ac x 0.0125 cfs/ac = 0.56 cfs)*
2. Add cfs for the portions of permits on all the land included in the application; however **do not count cfs for supplemental permits on acreage for which you have already calculated the cfs fee for the primary permit on the same land**. The fee should be assessed only once for each "on the ground" acre included in the application. *(In this example, blank 5a would be only 0.56 cfs, since both permits serve the same 45.0 acres. Blank 5b would be 0 and Line 5 would then also become 0).*

Check one of the following:

☒ The applicant is responsible for completion of change(s). Notices and correspondence should continue to be sent to the applicant.

☐ The permit holder(s) of record will be responsible for completing the proposed change(s) after the final order is issued. Copies of notices and correspondence should be sent to the permit holder(s) of record.

Check the appropriate box, if applicable:

☒ Check here if any of the permits proposed for amendment are or will be located within or served by an irrigation or other water district. **The Applicant is a water district. The Applicant's service area overlaps with the boundaries of North Unit Irrigation District (NUID) but the proposed POAs are not within NUID's boundaries.**

IRRIGATION DISTRICT NAME	ADDRESS	
North Unit Irrigation District	**2024 NW Beech St.**	
CITY	STATE	ZIP
Madras	**OR**	**97741**

☐ Check here if water for any of the permits supplied under a water service agreement or other contract for stored water with a federal agency or other entity.

ENTITY NAME	ADDRESS	
CITY	STATE	ZIP

To meet State Land Use Consistency Requirements, you must list all local governments (each county, city, municipal corporation, or tribal government) within whose jurisdiction water will be diverted, conveyed or used.

ENTITY NAME	ADDRESS	
Jefferson County	**85 SE D Street**	
CITY	STATE	ZIP
Madras	**OR**	**97441**

ENTITY NAME	ADDRESS	
CITY	STATE	ZIP

ENTITY NAME	ADDRESS	
CITY	STATE	ZIP

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Part 5 of 5 – Water Use Permit Information

Please use a separate Part 5 for each permit being changed. See instructions on page 6, to copy and paste additional Part 5s, or to add additional rows to tables within the form.

PERMIT # S-36515

Table 1. Location of Authorized and Proposed Point(s) of Diversion (POD) or Appropriation (POA)
(Note: If the POD/POA name is not specified in the permit, assign it a name or number here.)

POD/POA Name or Number	Is this POD/POA Authorized by the permit or is it Proposed?	If POA, OWRD Well Log ID# (or Well ID Tag # if ___)	Twp	Rng	Sec	¼ ¼	Tax Lot, DLC or Gov't Lot	Measured Distances (from a recognized survey corner)
POD	☒ Authorized ☐ Proposed	**NA**	**12 S**	**12 E**	**33**	**SW NE**	**2800**	**1215 feet north, 1940 feet west from east ¼ corner of Section 33**
Well 1	☐ Authorized ☒ Proposed	**JEFF 50263 JEFF 50287 L-22903**	**12 S**	**12 E**	**33**	**SW NE**	**2800**	**815 feet north, 2023 feet west from east ¼ corner of Section 33**
Well 2	☐ Authorized ☒ Proposed	**JEFF 50418 L-22300**	**12 S**	**12 E**	**33**	**SW NE**	**2800**	**545 feet north, 1960 feet west from east ¼ corner of Section 33**
Well 3	☐ Authorized ☒ Proposed	**JEFF 50654 L-38435**	**12 S**	**12 E**	**33**	**NW SE**	**2700**	**78 feet south, 1890 feet west from east ¼ corner of Section 33**
Well 8	☐ Authorized ☒ Proposed	**N/A**	**12 S**	**12 E**	**33**	**SW NE**	**2800**	**475 feet north, 2169 feet west from east ¼ corner of Section 33.**

Check all type(s) of change(s) proposed below (change "CODES" are provided in parentheses):

- ☐ Place of Use (POU)
- ☐ Point of Diversion (POD)
- ☐ Additional Point of Diversion (APOD)
- ☐ Point of Appropriation/Well (POA)
- ☐ Additional Point of Appropriation (APOA)
- ☒ Surface water POD to Ground Water POA (SW/GW)

Will all of the proposed changes affect the entire water use permit?

- ☒ Yes — Complete only the proposed ("to" lands) section of Table 2 on the next page. Use the "CODES" listed above to describe the proposed changes.
- ☐ No — Complete all of Table 2 to describe the portion of the permit to be changed.

For a change in place of use:

Does the permit holder of record own or control the land TO which the place of use is being moved?
☐ Yes ☐ No ☒ **N/A**

If NO, the landowner of the land TO which the place of use is being **moved must be assigned to the permit as a permit holder of record** by submitting a completed Request for Assignment form and the required statutory fee for an assignment.

Is the proposed place of use contiguous to the authorized place of use? ☐ Yes ☐ No ☒ **N/A**

Please use and attach additional pages of Table 2 as needed.
See page 6 for instructions.

Do you have questions about how to fill-out the tables?
Contact the Department at 503-986-0900 and ask for Transfer

Table 2. Description of Changes to Water Use Permit # S-36515

List the change proposed for the acreage in each ¼ ¼. If more than one change is proposed, specify the acreage associated with each change. If there is more than one POD/POA involved in the proposed changes, specify the acreage associated with each POD/POA.

AUTHORIZED (the "from" or "off" lands) The listing that appears on the certificate BEFORE PROPOSED CHANGES. List only that part or portion of the water right that will be changed.											Proposed Changes (see "CODES" from previous page)	PROPOSED (the "to" or "on" lands) The listing as it would appear AFTER PROPOSED CHANGES are made.										
Twp		Rng		Sec	¼ ¼		Tax Lot	Gvt Lot or DLC	Acres (if applicable)	POD(s) or POA(s) (name or number from Table 1)	Priority Date		Twp		Rng		Sec	¼ ¼	Tax Lot	Gvt Lot or DLC	Acres (if applicable)	POD(s) or POA(s) to be used (from Table 1)	Priority Date
EXAMPLE																						
2	**S**	**9**	**E**	**15**	**NE**	**NW**	**100**		**15.0**	**POD #1 POD #2**		**POU/POD**	**2**	**S**	**9**	**E**	**15**	**NW**	**NW**	**100**	**1**	**10.0**	**POD #5**	
"	"	"	"	"	"	"	"	"	**EXAMPLE**	"		"	**2**	**S**	**9**	**E**	**15**	**SW**	**NW**	**200**		**5.0**	**POD #6**	
												SW/GW	**Please see the place of use listed in Permit S-36515 provided in Attachment A**									**N/A**	**Well 1 Well 2 Well 3 Well 8**	**12/29/1971**
TOTAL ACRES													TOTAL ACRES									**N/A**		

Additional remarks: **In an earlier transfer (Transfer T-9720), the Applicant changed the other portion of Permit S-36515, then evidenced by Certificate 83733, to authorize use from nine proposed points of appropriation, including Wells 1, 2, 3, and 8, which are the proposed POAs included in this application. As shown in Attachment E, OWRD found that the proposed wells were hydraulically connected to Lower Opal Springs.**

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Are there other water rights certificates, water use permits or ground water registrations associated with the "from" or "to" lands? ☐ Yes ☐ No ☒ **NA; the permit is for quasi-municipal use so layering does not apply**.

If YES, list the other certificate, permit, or ground water registration numbers: _____

If the permit(s) are for irrigation or supplemental irrigation use, other water rights existing on the same land for irrigation that are subject to transfer must either change concurrently or be cancelled. Any change to a water right certificate or ground water registration must be filed separately in a water right transfer application or ground water registration modification application, respectively.

For a change in point(s) of appropriation (well(s)) or additional point(s) of appropriation:

☒ Well log(s) are attached for each authorized and proposed well(s) that are clearly labeled and associated with the corresponding well(s) in Table 1 above and on the accompanying application map. (**Tip**: You may search for well logs on the Department's web page at: http://apps.wrd.state.or.us/apps/gw/well_log/Default.aspx) See Attachment D for well logs and as-builds.

AND/OR

☒ Describe the construction of the authorized and proposed well(s) in Table 3 for any wells that do not have a well log. For *proposed wells not yet constructed or built*, provide "a best estimate" for each requested information element in the table. The Department recommends you consult a licensed well driller, geologist, or certified water right examiner to assist with assembling the information necessary to complete Table 3.

Table 3. Construction of Point(s) of Appropriation

Any well(s) in this listing must be clearly tied to corresponding well(s) described in Table 1 and shown on the accompanying application map. Failure to provide the information will delay the processing of your transfer application until it is received. The information is necessary for the department to assess whether the proposed well(s) will access the same source aquifer as the authorized point(s) of appropriation (POA). The Department is prohibited by law from approving POA changes that do not access the same source aquifer. **See Attachment D for well logs and as-builds for Wells 1, 2 and 3.**

Proposed or Authorized POA Name or Number	Is well already built? (Yes or No)	If an existing well, OWRD Well ID Tag No. L-____	Total well depth	Casing Diameter	Casing Intervals (feet)	Seal depth(s) (intervals)	Perforated or screened intervals (in feet)	Static water level of completed well (in feet)	Source aquifer (sand, gravel, basalt, etc.)	Well - specific rate (cfs or gpm). If less than full rate of water right
Well 8	No	NA	**400 to 750 feet**	**12-16 inches**	**0 to 200-450 feet**	**250-450 feet**	**NA**	**Likely Artesian**	**Basalt**	**NA**

GSI
Water Solutions, Inc.

February 28, 2023

Kelly Starnes
Oregon Water Resources Department
725 Summer Street NE, Suite A
Salem, OR 97301

RE: Permit Amendment Application for Permit S-36515 in the name of Deschutes Valley Water District

Dear Kelly:

Deschutes Valley Water District (DVWD) is seeking to amend Permit S-36515 to change the authorized point of diversion (Lower Opal Springs) to four hydraulically connected wells. Please find enclosed a permit amendment application and related documents.

Also enclosed is a check for the required processing fee of $3,070.

Please contact me if you have any questions or concerns. You can reach me at OMcMurtrey@gsiws.com.

Sincerely,

Owen McMurtrey

Owen McMurtrey
Water Resources Consultant

Enclosures: Water Right Permit Amendment Application
Check for application fee in the amount of $3,070

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Attachment A

Water Use Permit S-36515

Application for Permit Amendment – Deschutes Valley Water District

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Permit No. 36515

*APPLICATION FOR PERMIT

T-9720

To Appropriate the Public Waters of the State of Oregon

I, Deschutes Valley Water District
(Name of applicant)

of Rt. 1. Box 17, Madras
(Mailing address)

State of Oregon, do hereby make application for a permit to appropriate the following described public waters of the State of Oregon, SUBJECT TO EXISTING RIGHTS:

If the applicant is a corporation, give date and place of incorporation

Municipal Corporation, inc. July 1919

1. The source of the proposed appropriation is Opal Springs
(Name of stream)
a tributary of Crooked River

2. The amount of water which the applicant intends to apply to beneficial use is 14.379 cubic feet per second. by 1990 and 22.336 c.f.s by the year 2010
(If water is to be used from more than one source, give quantity from each)

**3. The use to which the water is to be applied is to reserve supplies for future 0 -20 year needs and 20 - 40 year needs for quasi-municipal.
(Irrigation, power, mining, manufacturing, domestic supplies, etc.)

4. The point of diversion is located 1215.44 ft. N (N. or S.) and 1939.84 ft. W (E. or W.) from the E¼ corner of Sec. 33
(Section or subdivision)

(If preferable, give distance and bearing to section corner)

(If there is more than one point of diversion, each must be described. Use separate sheet if necessary)

being within the SW¼ NE¼ of Sec. 33, Tp. 12S (N. or S.), R. 12 E (E. or W.), W. M., in the county of Jefferson

5. The (Main ditch, canal or pipe line) to be (Miles or feet) in length, terminating in the (Smallest legal subdivision) of Sec., Tp. (N. or S.), R. (E. or W.), W. M., the proposed location being shown throughout on the accompanying map.

DESCRIPTION OF WORKS

Diversion Works—

6. (a) Height of dam feet, length on top feet, length at bottom feet; material to be used and character of construction (Loose rock, concrete, masonry, rock and brush, timber crib, etc., waste way over or around dam)

(b) Description of headgate (Timber, concrete, etc., number and size of openings)

(c) If water is to be pumped give general description Two - 700 HP., 2000 G.P.M. pump and motor installations in combination with existing turbine and pumping equipment
(Size and type of pump) (Size and type of engine or motor to be used, total head water is to be lifted, etc.)

*A different form of application is provided where storage works are contemplated.

**Application for permits to appropriate water for the generation of electricity, with the exception of municipalities, must be made to the Hydroelectric Commission. Either of the above forms may be secured, without cost, together with instructions by addressing the State Engineer, Salem, Oregon.

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Canal System or Pipe Line—

36515

7. (a) Give dimensions at each point of canal where materially changed in size, stating miles from headgate. At headgate: width on top (at water line) ..... feet; width on bottom ..... feet; depth of water ..... feet; grade ..... feet fall per one thousand feet.

(b) At ..... miles from headgate: width on top (at water line) ..... feet; width on bottom ..... feet; depth of water ..... feet; grade ..... feet fall per one thousand feet.

(c) Length of pipe, 97,152 ft.; size at intake, 20 in.; size at 97,152 ft. from intake 20 in.; size at place of use 20 & 16 in.; difference in elevation between intake and place of use, 350 ft. Is grade uniform? yes (generally). Estimated capacity, (4000 gpm) 8.912 sec. ft.

8. Location of area to be irrigated, or place of use 200 sq. miles (see attached map)

Township North or South	Range E. or W. of Willamette Meridian	Section	Forty-acre Tract	Number Acres To Be Irrigated
	SEE ATTACHMENT PAGE NUMBER ONE THROUGH EIGHT			

(If more space required, attach separate sheet)

(a) Character of soil .....

(b) Kind of crops raised .....

Power or Mining Purposes—

9. (a) Total amount of power to be developed ..... theoretical horsepower.

(b) Quantity of water to be used for power ..... sec. ft.

(c) Total fall to be utilized ..... (Head) feet.

(d) The nature of the works by means of which the power is to be developed .....

.....

(e) Such works to be located in ..... (Legal subdivision) of Sec. ..... Tp. ..... (No. N. or S.), R. ..... (No. E. or W.), W. M.

(f) Is water to be returned to any stream? ..... (Yes or No)

(g) If so, name stream and locate point of return .....

....., Sec. ....., Tp. ..... (No. N. or S.) R. ..... (No. E. or W.), W. M.

(h) The use to which power is to be applied is .....

(i) The nature of the mines to be served .....

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TWP	RANGE	SECTION NO.	SECTION PORTION	SECTION PORTIONS NW¼	NE¼	SW¼	SE¼
11S	12E	23	ALL				
"	"	14	ALL				
12S	13E	1	ALL				
"	"	2	ALL				
"	"	3	ALL				
"	"	4	ALL				
"	"	5	ALL				
"	"	6	ALL				
"	"	7	ALL				
"	"	8	ALL				
"	"	9	ALL				
"	"	10	ALL				
"	"	11	ALL				
"	"	12	14/16	ALL	ALL	ALL	NW¼, SW¼
"	"	13	11/16	ALL	NW¼, SW¼	ALL	NW¼
"	"	14	ALL				
"	"	15	ALL				
"	"	16	ALL				
"	"	17	ALL				
"	"	18	ALL				

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TABULATION OF SECTIONS AND ¼ SECTIONS REQUIRING WATER IN THE NEXT 20 YEARS

TWP	RANGE	SECTION NO.	SECTION PORTION	SECTION PORTIONS NW¼	NE¼	SW¼	SE¼
13S	12E	1	7/16	ALL		NW¼, NE¼, SW¼	
"	"	2	ALL				
"	"	12	8/16	NW¼, SW¼		ALL	NW¼, SW¼
"	"	11	ALL				
"	"	13	3/16	NW¼, NE¼	NW¼		
"	"	14	2/16		NW¼, NE¼		
12S	12E	1	ALL				
"	"	12	ALL				
"	"	13	ALL				
"	"	24	ALL				
"	"	25	ALL				
"	"	26	ALL				
"	"	35	ALL				
"	"	36	13/16	ALL	ALL	ALL	NW¼
11S	12E	12	4/16			SW¼, SE¼	SW¼, SE¼
"	"	13	ALL				
"	"	24	ALL				
"	"	25	ALL				
"	"	36	ALL				
"	"	26	8/16		ALL		ALL

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TWP	RANGE	SECTION NO.	SECTION PORTION	SECTION PORTIONS NW¼	NE¼	SW¼	SE¼
11S	13E	10	ALL				
"	"	11	ALL				
"	"	12	ALL				
"	"	13	ALL				
"	"	14	ALL				
"	"	15	ALL				
"	"	16	ALL				
"	"	17	ALL				
"	"	18	ALL				
"	"	19	ALL				
"	"	20	ALL				
"	"	21	ALL				
"	"	22	ALL				
"	"	23	ALL				
"	"	24	ALL				
"	"	25	ALL				
"	"	26	ALL				
"	"	27	ALL				
"	"	28	ALL				
"	"	29	ALL				

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TWP	RANGE	SECTION NO.	SECTION PORTION	SECTION PORTIONS NW¼	NE¼	SW¼	SE¼
12S	13E	19	ALL				
"	"	20	ALL				
"	"	21	ALL				
"	"	22	ALL				
"	"	23	10/16	ALL	NW¼, NE¼	ALL	
"	"	24	2/16	NW¼, NE¼			
"	"	26	5/16	NW¼, NE¼		NW¼, SW¼, SE¼	
"	"	27	14/16	ALL	ALL	NW¼, NE¼	ALL
"	"	28	12/16	ALL	ALL	NW¼, NE¼	NW¼, NE¼
"	"	29	14/16	ALL	ALL	ALL	NW¼, NE¼
"	"	30	ALL				
"	"	31	2/16	NW¼, NE¼			
11S	13E	1	ALL				
"	"	2	ALL				
"	"	3	ALL				
"	"	4	ALL				
"	"	5	8/16		ALL		ALL
"	"	7	4/16			SW¼, SE¼	SW¼, SE¼
"	"	8	10/16		ALL	SW¼, SE¼	ALL
"	"	9	ALL				

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TWP	RANGE	SECTION NO.	SECTION PORTION	SECTION PORTIONS NW¼	NE¼	SW¼	SE¼
10S	13E	20	ALL				
"	"	21	ALL				
"	"	22	ALL				
"	"	23	ALL				
"	"	24	ALL				
"	"	25	ALL				
"	"	26	ALL				
"	"	27	ALL				
"	"	28	ALL				
"	"	29	ALL				
"	"	32	8/16		ALL		ALL
"	"	33	ALL				
"	"	34	ALL				
"	"	35	ALL				
"	"	36	ALL				
9S	13E	34	ALL				
"	"	35	ALL				
"	"	36	ALL				
12S	14E	6	ALL				
		7	4/16	NW¼, NE¼	NW¼, NE¼		

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TWP	RANGE	SECTION NO.	SECTION PORTION	SECTION PORTIONS NW¼	NE¼	SW¼	SE¼
11S	13E	30	ALL				
"	"	31	ALL				
"	"	32	ALL				
"	"	33	ALL				
"	"	34	ALL				
"	"	35	ALL				
"	"	36	ALL				
10S	13E	1	ALL				
"	"	2	ALL				
"	"	3	ALL				
"	"	10	ALL				
"	"	11	ALL				
"	"	12	ALL				
"	"	13	ALL				
"	"	14	ALL				
"	"	15	ALL				
"	"	16	ALL				
"	"	17	ALL				
"	"	18	8/16		ALL		ALL
"	"	19	10/16		ALL	NE¼, SE¼	ALL

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TWP	RANGE	SECTION NO.	SECTION PORTION	SECTION PORTIONS NW¼	NE¼	SW¼	SE¼
10S	14E	15	ALL				
"	"	16	ALL				
"	"	17	ALL				
"	"	18	ALL				
"	"	19	ALL				
"	"	20	ALL				
"	"	21	ALL				
"	"	22	ALL				
"	"	28	ALL				
"	"	29	ALL				
"	"	30	ALL				
"	"	31	ALL				
"	"	32	ALL				
"	"	33	8/16	ALL		ALL	
9S	14E	31	ALL				
"	"	32	ALL				
"	"	33	ALL				
"	"	34	ALL				
"	"	35	14/16	ALL	NW¼, SW¼	ALL	ALL
"	"	36	4/16			ALL	

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TWP	RANGE	SECTION NO.	SECTION PORTION	SECTION PORTIONS NW¼	NE¼	SW¼	SE¼
11S	14E	5	8/16	ALL		ALL	
"	"	6	ALL				
"	"	7	ALL				
"	"	18	ALL				
"	"	19	ALL				
"	"	30	ALL				
"	"	31	ALL				
10S	14E	1	8/16	ALL		ALL	
"	"	2	ALL				
"	"	3	ALL				
"	"	4	ALL				
"	"	5	ALL				
"	"	6	ALL				
"	"	7	ALL				
"	"	8	ALL				
"	"	9	ALL				
"	"	10	ALL				
"	"	11	ALL				
"	"	12	8/16	ALL		ALL	
10S	14E	14	ALL				

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TWP	RANGE	SECTION NO.	SECTION PORTION	SECTION PORTIONS NW¼	NE¼	SW¼	SE¼
11S	12E	12	12/16	ALL	ALL	NW¼, NE¼	NW¼, NE¼
"	"	~~1~~	~~6/16~~ ALL		~~ALL~~		~~NE¼, SW¼~~
"	"	2	11/16	SE¼	ALL	SE¼, NE¼	ALL
10S	12E	36	13/16	SE¼	ALL	ALL	ALL
"	"	25	1/16				SE¼
"	"	35	1/16				SE¼
13S	13E	7	3/16			SE¼	SW¼, SE¼
"	"	16	6/16			NE¼, SW¼, SE¼	NW¼, SW¼, SE¼
"	"	17	8/16	ALL		ALL	
"	"	18	ALL				
"	"	19	ALL				
"	"	20	ALL				
"	"	21	ALL				
"	"	22	1/16			SW¼	
"	"	27	7/16	NW¼, SW¼, SE¼		ALL	
"	"	28	ALL				
"	"	29	ALL				
"	"	30	ALL				
"	"	31	10/16	ALL	ALL		NW¼, NE¼
		32	15/16	ALL	ALL	ALL	NW¼, NE¼, SW¼
		33	2/16		NW¼, NE¼		

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TABULATION OF SECTIONS OR ¼ SECTIONS REQUIRING ADDITIONAL WATER IN THE 20 TO 40 YEAR PERIOD

TWP	RANGE	SECTION NO.	SECTION PORTION	SECTION PORTIONS NW¼	NE¼	SW¼	SE¼
13S	12E	3	All				
"	"	4	3/16		NW¼, NE¼, SE¼		
"	"	10	4/16		All		
"	"	13	13/16	SW¼, SE¼	NE¼, SW¼, SE¼	ALL	ALL
"	"	14	4/16	NE¼	SW¼, SE¼		NE¼
"	"	24	4/16		All		
12S	12E	34	All				
"	"	33	8/16		ALL		ALL
"	"	27	9/16		SW¼, SE¼	NE¼, SE¼, SW¼	ALL
"	"	23	12/16	NE¼, SE¼	ALL	NE¼, SE¼	ALL
"	"	14	8/16		ALL		ALL
"	"	11	8/16		ALL		ALL
"	"	2	8/16		ALL		ALL
11S	12E	35	12/16	NE¼, SE¼	ALL	NE¼, SE¼	ALL
"	"	27	3/16		NW¼, NE¼, SE¼		
"	"	26	8/16	ALL		ALL	
"	"	22	5/16		NE¼, SE¼		NE¼, SE¼, SW¼
"	"	15	7/16		ALL		NE¼, SE¼, NW¼
"	"	10	4/16			SE¼	NE¼, SW¼, SE¼
"	"	11	15/16	NE¼, SW¼, SE¼	All	All	ALL

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TWP	RANGE	SECTION NO.	SECTION PORTION	SECTION PORTIONS			
				NW¼	NE¼	SW¼	SE¼
9S	13E	23	All				
"	"	24	14/16	NW¼, SW¼	ALL	ALL	ALL
"	"	25	ALL				
"	"	26	ALL				
"	"	27	ALL				
"	"	28	ALL				
"	"	29	8/16		ALL		ALL
"	"	31	3/16		SE¼		NE¼, SE¼
"	"	32	14/16	SW¼, SE¼	ALL	ALL	ALL
"	"	33	ALL				
12S	14E	4	3/16	NW¼, NE¼	NW¼		
"	"	5	14/16	ALL	ALL	ALL	NW¼, NE¼
"	"	8	2/16	NW¼, NE¼			
11S	14E	3	5/16	NW¼, SW¼		NW¼, SW¼, SE¼	
"	"	4	ALL				
"	"	5	8/16		ALL		ALL
"	"	8	ALL				
"	"	9	ALL				
"	"	10	4/16	ALL			
"	"	16	ALL				

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TWP	RANGE	SECTION NO.	SECTION PORTION	SECTION PORTIONS			
				NW¼	NE¼	SW¼	SE¼
13S	13E	34	7/16	NW¼, NE¼, SE¼	SW¼		NW¼, SW¼, SE¼
11S	13E	5	8/16	ALL		ALL	
"	"	6	ALL				
"	"	7	12/16	ALL	ALL	NW¼, NE¼	NW¼, NE¼
"	"	8	6/16	ALL		NW¼, NE¼	
10S	13E	4	ALL				
"	"	5	ALL				
"	"	6	8/16		ALL		ALL
"	"	7	1/16				SE¼
"	"	8	14/16	SW¼, SE¼	ALL	ALL	ALL
"	"	9	ALL				
"	"	30	12/16		ALL	ALL	ALL
"	"	31	ALL				
"	"	32	8/16	ALL		ALL	
9S	13E	14	5/16			ALL	SW¼
"	"	15	6/16			NE¼, SE¼	ALL
"	"	16	3/16			SE¼	SW¼, SE¼
"	"	20	4/16		SE¼		NE¼, SW¼, SE¼
"	"	21	ALL				
"	"	22	ALL				

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TWP	RANGE	SECTION NO.	SECTION PORTION	SECTION PORTIONS NW¼	NE¼	SW¼	SE¼
11S	14E	20	ALL				
"	"	17	ALL				
"	"	21	12/16	ALL		ALL	ALL
"	"	28	ALL				
"	"	29	ALL				
"	"	32	ALL				
"	"	33	14/16	ALL	ALL	ALL	NW¼, SW¼
10S	14E	12	8/16		ALL		ALL
"	"	13	ALL				
"	"	23	14/16	ALL	ALL	ALL	NW¼, NE¼
"	"	24	14/16	ALL	ALL	ALL	NW¼, SW¼
"	"	26	4/16	ALL			
"	"	27	ALL				
"	"	33	8/16		ALL		ALL
"	"	34	13/16	ALL	NW¼, NE¼, SW¼	ALL	NW¼, SW¼
9S	14E	7	9/16		NE¼, SW¼, SE¼	NE¼, SE¼	ALL
"	"	8	6/16	ALL		NW¼, NE¼	
"	"	17	4/16			SW¼, SE¼	SW¼, SE¼
"	"	18	ALL				
"	"	19	ALL				

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TWP	RANGE	SECTION NO.	SECTION PORTION	SECTION PORTIONS NW¼	NE¼	SW¼	SE¼
9S	14E	20	ALL				
"	"	16	3/16			SW¼, SE¼	SW¼
"	"	21	ALL				
"	"	22	4/16			NW¼, SW¼, SE¼	SW¼
"	"	26	2/16			NW¼, SW¼	
"	"	27	14/16	ALL	NW¼, SW¼	ALL	ALL
"	"	28	ALL				
"	"	29	ALL				
"	"	30	ALL				

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PERMIT

STATE OF OREGON, }
County of Marion, } ss.

This is to certify that I have examined the foregoing application and do hereby grant the same, SUBJECT TO EXISTING RIGHTS and the following limitations and conditions:

The right herein granted is limited to the amount of water which can be applied to beneficial use and shall not exceed 22.3 cubic feet per second measured at the point of diversion from the stream, or its equivalent in case of rotation with other water users, from Opal Springs

The use to which this water is to be applied is quasi-municipal

If for irrigation, this appropriation shall be limited to ..... of one cubic foot per second or its equivalent for each acre irrigated .....

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and shall be subject to such reasonable rotation system as may be ordered by the proper state officer.

The priority date of this permit is December 29, 1971

Actual construction work shall begin on or before March 13, 1974 and shall thereafter be prosecuted with reasonable diligence and be completed on or before October 1, 1974

Extended to October 1, 1993 Extended to October 1, 1988 Extended to Oct. 1, 1983 Extended to Oct. 1978 Extended to Oct. 1977

Complete application of the water to the proposed use shall be made on or before October 1, 1975

Extended to October 1, 19.. Extended to October 1, 1988 Extended to Oct. 1, 1983 Extended to Oct. 1978 Extended to Oct. 1977

WITNESS my hand this 13th day of March, 1973

STATE ENGINEER

B+C to 10-1-98

BCφ3

Application No. 48343
Permit No. 36515

PERMIT
TO APPROPRIATE THE PUBLIC WATERS OF THE STATE OF OREGON

This instrument was first received in the office of the State Engineer at Salem, Oregon, on the 29th day of December, 19 71, at 4:00 o'clock P. M.

Returned to applicant:

Approved:
March 13, 1973

Recorded in book No. 36515
Permits on page

CHRIS L. WHEELER, STATE ENGINEER

Drainage Basin No. 4-5 page 4.16
Fees $20.00

State Printing 8131

14183

36515

Municipal or Domestic Supply—

10. (a) To supply the city of (Culver, Metolius, Madras and the balance of the residents, industry & manufacturing contained within the Districts 200 sq. mile area of Jefferson (Name of) County, having a present population of 6310 (service) and an estimated population of 7,935 in 19 92 10,851 in 2012.

(b) If for domestic use state number of families to be supplied (1570 - 1972
(1958 - 1992
(2713 - 2012

(Answer questions 11, 12, 13, and 14 in all cases)

11. Estimated cost of proposed works, $ 2,468,000

12. Construction work will begin on or before 1982

13. Construction work will be completed on or before 1985

14. The water will be completely applied to the proposed use on or before 1985

Deschutes Valley Wtr Dist
(Signature of applicant)
WS MacKenzie Mgr

Remarks: Due to the size of the project, a three year or longer construction period will be required. First phase will include construction of the pump house structure, placement of the 700 hp motors, pumps, valves, electrical controls and switch gear, all to be located at Opal Springs. Second phase will include construction of the 20" dia. trunk transmission line from the pump house structure at Opal Springs with placement north-easterly through the intensified agricultural areas lying west of the City of Culver, Metolius and Madras. Cross connections will be made to the above Cities to improve present water demand requirements and to provide some cushion for projected future domestic, industrial and commercial needs. From the development that is now occurring it is realized by the D.V.W.D. that both immediate and long range planning is an absolute necessity if the D.V.W.D. is to keep pace with projected future water demand requirements and if the County's successes in the next 0 - 20 - 40 years are to match those that have occurred over the past 40 years.

STATE OF OREGON, }
County of Marion, } ss.

This is to certify that I have examined the foregoing application, together with the accompanying maps and data, and return the same for correction and completion

In order to retain its priority, this application must be returned to the State Engineer, with corrections on or before March 24, 19 72.

WITNESS my hand this 24th day of January, 19 72

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FEB 22 1972
STATE ENGINEER
SALEM OREGON

CHRIS L. WHEELER
STATE ENGINEER

By Wayne J. Overcash
ASSISTANT

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Attachment B

Permit Amendment Application Maps

Application for Permit Amendment – Deschutes Valley Water District

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Attachment C

Land Use Information Form

Application for Permit Amendment – Deschutes Valley Water District

14183

Land Use Information Form

OREGON WATER RESOURCES DEPARTMENT
Oregon Water Resources Department
725 Summer Street NE, Suite A
Salem, Oregon 97301-1266
(503) 986-0900
www.oregon.gov/OWRD

Applicant(s): Deschutes Valley Water District

Mailing Address: 881 SW Culver Hwy

City: Madras State: OR Zip Code: 97741 Daytime Phone: 541.475.3849

A. Land and Location

Please include the following information for all tax lots where water will be diverted (taken from its source), conveyed (transported), and/or used or developed. Applicants for municipal use, or irrigation uses within irrigation districts may substitute existing and proposed service-area boundaries for the tax-lot information requested below.

Township	Range	Section	¼ ¼	Tax Lot #	Plan Designation (e.g., Rural Residential/RR-5)	Water to be:	Proposed Land Use:
12 S	12 E	33	SW NE	2800	A1-Farm Use	☒ Diverted ☒ Conveyed ☐ Used	Quasi Municipal 3777
12 S	12 E	33	NW SE	2700	A1-Farm Use	☒ Diverted ☒ Conveyed ☐ Used	Quasi Municipal 3776

List all counties and cities where water is proposed to be diverted, conveyed, and/or used or developed:

Jefferson County

B. Description of Proposed Use

Type of application to be filed with the Water Resources Department:

☐ Permit to Use or Store Water ☐ Water Right Transfer ☒ Permit Amendment or Ground Water Registration Modification
☐ Limited Water Use License ☐ Allocation of Conserved Water ☐ Exchange of Water

Source of water: ☐ Reservoir/Pond ☐ Ground Water ☒ Surface Water (name) Opal Springs

Estimated quantity of water needed: 11.92 ☒ cubic feet per second ☐ gallons per minute ☐ acre-feet

Intended use of water: ☐ Irrigation ☐ Commercial ☐ Industrial ☐ Domestic for _____ household(s)
☐ Municipal ☒ Quasi-Municipal ☐ Instream ☐ Other _____

Briefly describe:

The Applicant is requesting to amend a surface water permit to change the authorized point of diversion to four groundwater wells that are hydraulically connected to Opal Springs.

Note to applicant: If the Land Use Information Form cannot be completed while you wait, please have a local government representative sign the receipt at the bottom of the next page and include it with the application filed with the Water Resources Department.

See bottom of Page 3. →

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For Local Government Use Only

The following section must be completed by a planning official from each county and city listed unless the project will be located entirely within the city limits. In that case, only the city planning agency must complete this form. This deals only with the local land-use plan. Do not include approval for activities such as building or grading permits.

Please check the appropriate box below and provide the requested information

☑ Land uses to be served by the proposed water uses (including proposed construction) are allowed outright or are not regulated by your comprehensive plan. Cite applicable ordinance section(s):

☐ Land uses to be served by the proposed water uses (including proposed construction) involve discretionary land-use approvals as listed in the table below. (Please attach documentation of applicable land-use approvals which have already been obtained. Record of Action/land-use decision and accompanying findings are sufficient.) **If approvals have been obtained but all appeal periods have not ended, check "Being pursued."**

Type of Land-Use Approval Needed (e.g., plan amendments, rezones, conditional-use permits, etc.)	Cite Most Significant, Applicable Plan Policies & Ordinance Section References	Land-Use Approval:	
		☐ Obtained ☐ Denied	☐ Being Pursued ☐ Not Being Pursued
		☐ Obtained ☐ Denied	☐ Being Pursued ☐ Not Being Pursued
		☐ Obtained ☐ Denied	☐ Being Pursued ☐ Not Being Pursued
		☐ Obtained ☐ Denied	☐ Being Pursued ☐ Not Being Pursued
		☐ Obtained ☐ Denied	☐ Being Pursued ☐ Not Being Pursued

Local governments are invited to express special land-use concerns or make recommendations to the Water Resources Department regarding this proposed use of water below, or on a separate sheet.

JEFFERSON COUNTY
COMMUNITY DEVELOPMENT DEPT.
85 SE "D" STREET
MADRAS OREGON 97741

Zone: EFU-A1

Name: Tanya Coutrier Title: Assistant Planner

Signature: Tanya Coutrier Phone: 541-475-4462 Date: 2/27/25

Government Entity: Jefferson Co.

Note to local government representative: Please complete this form or sign the receipt below and return it to the applicant. If you sign the receipt, you will have 30 days from the Water Resources Department's notice date to return the completed Land Use Information Form or WRD may presume the land use associated with the proposed use of water is compatible with local comprehensive plans.

Receipt for Request for Land Use Information

Applicant name: _____

City or County: _____ Staff contact: _____

Signature: _____ Phone: _____ Date: _____

Well 1: JEFF 50263 and JEFF 50287

Well 2: JEFF 50418

Well 3: JEFF 50654

Attachment D

Well Logs and As-Builts

Application for Permit Amendment – Deschutes Valley Water District

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Jeff
50263

STATE OF OREGON
WATER SUPPLY WELL REPORT
(as required by ORS 537.765)

WELL I.D.# _____ (START CARD) # _____

Instructions for completing this report are on the last page of this form.

(1) OWNER: Well Number _____
Name _____
Address _____
City _____ State _____ Zip _____

(2) TYPE OF WORK
☐ New Well ☐ Deepening ☐ Alteration (repair/recondition) ☐ Abandonment

(3) DRILL METHOD:
☐ Rotary Air ☐ Rotary Mud ☐ Cable ☐ Auger
☐ Other _____

(4) PROPOSED USE:
☐ Domestic ☐ Community ☐ Industrial ☐ Irrigation
☐ Thermal ☐ Injection ☐ Livestock ☐ Other _____

(5) BORE HOLE CONSTRUCTION:
Special Construction approval ☐ Yes ☐ No Depth of Completed Well _____ ft.
Explosives used ☐ Yes ☐ No Type _____ Amount _____

HOLE			SEAL			
Diameter	From	To	Material	From	To	Sacks or pounds

How was seal placed: Method ☐ A ☐ B ☐ C ☐ D ☐ E
☐ Other _____
Backfill placed from _____ ft. to _____ ft. Material _____
Gravel placed from _____ ft. to _____ ft. Size of gravel _____

(6) CASING/LINER:

	Diameter	From	To	Gauge	Steel	Plastic	Welded	Threaded
Casing:					☐	☐	☐	☐
					☐	☐	☐	☐
					☐	☐	☐	☐
					☐	☐	☐	☐
Liner:					☐	☐	☐	☐
					☐	☐	☐	☐

Final location of shoe(s) _____

(7) PERFORATIONS/SCREENS:
☐ Perforations Method _____
☐ Screens Type _____ Material _____

From	To	Slot size	Number	Diameter	Tele/pipe size	Casing	Liner
						☐	☐
						☐	☐
						☐	☐
						☐	☐
						☐	☐

(8) WELL TESTS: Minimum testing time is 1 hour

☐ Pump ☐ Bailer ☐ Air ☐ Flowing Artesian

Yield gal/min	Drawdown	Drill stem at	Time
			1 hr.

Temperature of water _____ Depth Artesian Flow Found _____
Was a water analysis done? ☐ Yes By whom _____
Did any strata contain water not suitable for intended use? ☐ Too little
☐ Salty ☐ Muddy ☐ Odor ☐ Colored ☐ Other _____
Depth of strata: _____

(9) LOCATION OF WELL by legal description:
County _____ Latitude _____ Longitude _____
Township _____ N or S Range _____ E or W. WM.
Section _____ 1/4 _____ 1/4
Tax Lot _____ Lot _____ Block _____ Subdivision _____
Street Address of Well (or nearest address) _____

(10) STATIC WATER LEVEL:
_____ ft. below land surface. Date _____
Artesian pressure _____ lb. per square inch. Date _____

(11) WATER BEARING ZONES:
Depth at which water was first found _____

From	To	Estimated Flow Rate	SWL

(12) WELL LOG:
Ground Elevation _____

Material	From	To	SWL
hard vesicular basalt, some fractures	370	410	
hard, broken basalt	412	413	
hard, idense basalt app. 2500gpm artesian flow	413	427	

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WATER RESOURCES DEPT.
SALEM, OREGON

Date started _____ Completed _____

(unbonded) Water Well Constructor Certification:
I certify that the work I performed on the construction, alteration, or abandonment of this well is in compliance with Oregon water supply well construction standards. Materials used and information reported above are true to the best of my knowledge and belief.
WWC Number _____
Signed _____ Date _____

(bonded) Water Well Constructor Certification:
I accept responsibility for the construction, alteration or abandonment work performed on this well during the construction dates reported above. All work performed during this time is in compliance with Oregon water supply well construction standards. This report is true to the best of my knowledge and belief.
WWC Number _____
Signed _____ Date _____

ORIGINAL & FIRST COPY-WATER RESOURCES DEPARTMENT SECOND COPY-CONSTRUCTOR THIRD COPY-CUSTOMER

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WATER RESOURCES DEPT.
SALEM, OREGON

L22903

STATE OF OREGON
WATER SUPPLY WELL REPORT
(as required by ORS 537.765)

WELL I.D.# _____ START CARD # 104266

Instructions for completing this report are on the last page of this form.

(1) OWNER: Well Number 450-103

Name Deschutes Valley Water district

Address 1141 SW Culver Hwy

City Culver State OR Zip 97741

(2) TYPE OF WORK

[X] New Well [ ] Deepening [ ] Alteration (repair/recondition) [ ] Abandonment

(3) DRILL METHOD:

[X] Rotary Air [ ] Rotary Mud [ ] Cable [ ] Auger

[ ] Other _____

(4) PROPOSED USE:

[ ] Domestic [X] Community [X] Industrial [ ] Irrigation

[ ] Thermal [ ] Injection [ ] Livestock [ ] Other _____

(5) BORE HOLE CONSTRUCTION:

Special Construction approval [ ] Yes [X] No Depth of Completed Well 425 ft.

Explosives used [ ] Yes [X] No Type _____ Amount _____

HOLE Diameter	From	To	SEAL Material	From	To	Sacks or pounds
19"	0	30	bent/cem	0	68	260 sacks
16"	30	231	cement	20	231	30 sacks

How was seal placed: Method [ ] A [ ] B [X] C [ ] D [ ] E

[ ] Other poured dry on bentonite

Backfill placed from 50 ft. to 68 ft. Material hole plug

Gravel placed from _____ ft. to _____ ft. Size of gravel _____

(6) CASING/LINER:

	Diameter	From	To	Gauge	Steel	Plastic	Welded	Threaded
Casing:	12"	0	231	.375	[X]	[ ]	[X]	[ ]
					[ ]	[ ]	[ ]	[ ]
					[ ]	[ ]	[ ]	[ ]
					[ ]	[ ]	[ ]	[ ]
Liner:					[ ]	[ ]	[ ]	[ ]
					[ ]	[ ]	[ ]	[ ]

Final location of shoe(s) _____

(7) PERFORATIONS/SCREENS:

[ ] Perforations Method _____

[ ] Screens Type _____ Material _____

From	To	Slot size	Number	Diameter	Tele/pipe size	Casing	Liner
						[ ]	[ ]
						[ ]	[ ]
						[ ]	[ ]
						[ ]	[ ]
						[ ]	[ ]

(8) WELL TESTS: Minimum testing time is 1 hour

[ ] Pump [ ] Bailer [ ] Air [X] Flowing Artesian

Yield gal/min	Drawdown	Drill stem at	Time
			1 hr.
4,500			2hr

Temperature of water 53 Depth Artesian Flow Found 253

Was a water analysis done? [ ] Yes By whom _____

Did any strata contain water not suitable for intended use? [ ] Too little

[ ] Salty [ ] Muddy [ ] Odor [ ] Colored [X] Other Sandy

Depth of strata: 3'-216'

(9) LOCATION OF WELL by legal description:

County Jefferson Latitude _____ Longitude _____

Township 12S N or S Range 12E E or W. WM.

Section 33 1/4 SW 1/4 NE

Tax Lot _____ Lot _____ Block _____ Subdivision _____

Street Address of Well (or nearest address) 7676 SW Lasalle LN Culver OR

(10) STATIC WATER LEVEL:

Flowing ft. below land surface. Date _____

Artesian pressure 48 lb. per square inch. Date 11-26-97

(11) WATER BEARING ZONES:

Depth at which water was first found 3'

From	To	Estimated Flow Rate	SWL
3'	216'	1,500gpm	2'
253	415	4,500gpm	48psi

(12) WELL LOG:

Ground Elevation 3116

Material	From	To	SWL
basalt rubble	0	41	2'
cemented vokanies	41	64	2'
conglomerate red			
cemented sand drk brown	64	165	2'
with some gravel grey			
cemented volcan conglom	165	216	2'
basalt light grey hard	216	231	
hard vesicular basalt	231	253	
broken,weathered,basalt	253	270	
significant water	270	274	
harder basalt	274	285	
course sand, gravel &			
cobbles~cem.app.300gpm	285	305	
more cobbles & coarse gr	305	318	
more sand,fewer cobbles	318	325	
app.700 gpm artesian			
flow,increasing to1200g	325	335	
broken,weathered,basalt			
w/clay infilling	335	370	

CONTINUE TO NEXT PAGE

Date started 10-14-97 Completed 11-27-97

(unbonded) Water Well Constructor Certification:

I certify that the work I performed on the construction, alteration, or abandonment of this well is in compliance with Oregon water supply well construction standards. Materials used and information reported above are true to the best of my knowledge and belief.

WWC Number 1513

Signed Robert Date 11-27-97

(bonded) Water Well Constructor Certification:

I accept responsibility for the construction, alteration, or abandonment work performed on this well during the construction dates reported above. All work performed during this time is in compliance with Oregon water supply well construction standards. This report is true to the best of my knowledge and belief.

WWC Number 723

Signed _____ Date 12-27-97

ORIGINAL & FIRST COPY-WATER RESOURCES DEPARTMENT SECOND COPY-CONSTRUCTOR THIRD COPY-CUSTOMER

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STATE OF OREGON

WATER SUPPLY WELL REPORT

JEFF 50287

(as required by ORS 537.765)
Instructions for completing this report are on the last page of this form.

Received Date 5/17/1998
Well ID # L
Start Card # 112147

(1) OWNER

Well Number

Name
DESCHUTES VALLEY WATER DISTRICT
Street 1141 SW CULVER HWY
City MADRAS State OR Zip 97741

(2) TYPE OF WORK

☐ New ☐ Alter (Recondition) ☐ Alter (Repair)
☒ Deepening ☐ Abandonment

(3) DRILL METHOD

☒ Rotary Air ☐ Rotary Mud ☐ Cable ☐ Auger
Other

(4) PROPOSED USE

☐ Domestic ☒ Community ☐ Industrial ☐ Irrigation ☐ Injection
☐ Livestock ☐ Thermal Other

(5) BORE HOLE CONSTRUCTION

Special Standards ☐ Depth of completed well 740 ft
Explosives Used ☐ Amount Type

Diameter	From	To
12.00	230.00	427
8.00	427.00	740

Material	Begin Depth	End Depth	Material Amount	Units
Cement	10.00	427.00	1 200	SI

How as seal placed: Method Other
Backfill placed from ft TO ft Material
Filter pack from ft TO ft Size in

(6) CASING/LINER

Casing or Liner	Diameter	Begin Depth	End Depth	Gauge	Material	Construction Weld	Construction Threaded	Location Of Shoe
C	10.00	0.00	425.00		S	■	■	

(7) PERFORATION/SCREENS

☐ Perforation Method
☐ Screens Type Material

(8) WELL TESTS (Minimum testing time is 1 hour)

Type of Test	Yield	Units	Drawdown	Stem at	Duration of Test
Flowing Artes	3500.0	G			1.0

Temperature of water 53 °F/C Depth artesian flow found ft
Was water analysis done? ☐
By Whom? DAVID J. NEWTON ASSOCIATES
Did any strata contain water not suitable for intended use? ☐ Too Little ☐ Salty
☐ Muddy ☐ Odor ☐ Colored Other
Depth of strata ft

(9) LOCATION OF HOLE By legal description

County Jefferson Latitude Longitude
Township 12.00 S Range 12.00 E Subdivision
Tax lot 2800 Lot Block
Section 33 SW 1/4 NE 1/4
Street Address of Well (or nearest address)
7676 SW LASALLE LANE, CULVER
MAP with location indentified must be attached

(10) STATIC WATER LEVEL

Ft. below land surface. Date
Artesian Pressure 60 lb/sq. in. Date 6/28/1998

(11) WATER BEARING ZONES

Depth at which water was first found ft

From	To	Est. Flow Rate	SWL
437	740		

(12) WELL LOG

Ground Elevation ft

Material	From	To	SWL
BLACK BASALT	427	437	
BROKEN RED CINDERS	437	440	
WEATHERED BASALT	440	445	
MEDIUM HARD BASALT	445	455	
HARD BLACK VISCOUS BASALT	455	482	
WEATHERED BASALT, W/CLAY	482	504	
HARD BLACK VISCOUS BASALT	504	564	
HARD BLACK BASALT, FRACTURE	564	606	
VERY HARD BASALT	606	616	
HARD BLACK BASALT	616	654	
HARD BLACK BASALT, CLAY	654	655	
FRACTURED HARD BLACK BASAL	655	684	
BROKEN HARD BLACK BASALT	684	694	
BROKEN HARD BLACK BASALT, C	694	702	
FRACTURED BASALT	702	713	
HARD BLACK VISCOUS BASALT	713	720	
HARD BLACK BASALT, FRACTURE	720	740	

Date started 5/11/1998 Completed 5/28/1998

(unbonded) Water Well Constructor Certification:

I certify that the work I performed on the construction, alteration, or abandonment of this well is in compliance with Oregon well construction standards. Materials used and information reported above are true to the best knowledge and belief.

WWC Number 1523

Signed By ROBERT STADELI

(bonded) Water Well Constructor Certification:

I accept responsibility for the construction, alteration, or abandonment work performed on this well during the construction dates reported above. All work performed during this time is in compliance with Oregon well construction standards. This report is true to the best of my knowledge and belief.

WWC Number 1464

Signed By GREG MCINNIS GEO-TECH EXPLORATIONS

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STATE OF OREGON

WATER SUPPLY WELL REPORT

(as required by ORS 537.765)

Instructions for completing this report are on the last page of this form.

JEFF 50287

Amended 11/16/98

Received Date 6/17/1998

Well ID # L 22300

Start Card # 112147

(1) OWNER

Well Number

Name

DESCHUTES VALLEY WATER DISTRICT

Street 1141 SW CULVER HWY

City MADRAS State OR Zip 97741

(2) TYPE OF WORK

☐ New ☐ Alter (Recondition) ☐ Alter (Repair)

☒ Deepening ☐ Abandonmen

(3) DRILL METHOD

☒ Rotary Air ☐ Rotary Mud ☐ Cable ☐ Auger

Other

(4) PROPOSED USE

☐ Domestic ☒ Community ☐ Industria ☐ Irrigatio ☐ Injectio

☐ Livestoc ☐ Thermal Other

(5) BORE HOLE CONSTRUCTION

Special Standards ☐ Depth of completed well 740 ft.

Explosives Used ☐ Amount Type

From	To	Material	Amount	Seal Grout Weight	Units
41 0	427	CO	12		S

How as seal placed: Method Other

Backfill placed from ft. TO ft. Material

Filter pack from ft. TO ft. Size in.

(6) CASING/LINER

Diameter	From	To	Gauge	Material	Welded	Glued	Threaded
10.00	0	426		S	☒	☐	☐

(7) PERFORATION/SCREENS

☐ Perforation Method

☐ Screens Type Material

(8) WELL TESTS (Minimum testing time is 1 hour)

Temperature of water 53 °F/C Depth artesian flow found ft.

Was water analysis done? ☐

By Whom? DAVID J. NEWTON ASSOCIATES

Did any strata contain water not suitable for intended use? ☐ Too Little ☐ Salty

☐ Mudd ☐ Odor ☐ Colored Other

Depth of strata ft.

(9) LOCATION OF HOLE By legal description

County Jefferson Latitude Longitude

Township 12.00 S Range 12.00 E Subdivision

Tax lot 2800 Lot Block

Section 33 SW 1/4 NE 1/4

Street Address of Well (or nearest address)

7676 SW LASALLE LANE, CULVER

MAP with location indentified must be attached

(10) STATIC WATER LEVEL

Ft below land surface. Date

Artesian Pressure 50 lb/sq. in. Date 5/28/1998

(11) WATER BEARING ZONES

Depth at which water was first found ft.

From	To	Est. Flow Rate	SWL
437	740		

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SALEM, OREGON

(12) WELL LOG

Ground Elevation ft

Material	From	To	SWL
BLACK BASALT	427	437	
BROKEN RED CIND	437	440	
WEATHERED BASA	440	445	
MEDIUM HARD BAS	445	456	
HARD BLACK VISC	456	484	
WEATHERED BASA	484	504	
HARD BLACK VISC	504	554	
HARD BLACK BASA	554	606	
VERY HARD BASAL	606	615	
HARD BLACK BASA	615	654	
HARD BLACK BASA	654	656	
FRACTURED HARD	656	684	
BROKEN HARD BLA	684	694	
BROKEN HARD BLA	694	702	
FRACTURED BASAL	702	713	
HARD BLACK VISC	713	720	
HARD BLACK BASA	720	740	

Date started 5/11/1998 Completed 5/28/1998

(unbonded) Water Well Constructor Certification:

I certify that the work I performed on the construction, alteration, or abandonment of this well is in compliance with Oregon well construction standards. Materials used and information reported above are true to the best knowledge and belief

WWC Number 1523

Signed By ROBERT STADELI

(bonded) Water Well Constructor Certification:

I accept responsibility for the construction, alteration, or abandonment work performed on this well during the construction dates reported above. All work performed during this time is in compliance with Oregon well construction standards. This report is true to the best of my knowledge and belief

WWC Number 1464

Signed By GREG MCINNIS

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STATE OF OREGON

WATER SUPPLY WELL REPORT

(as required by ORS 537.765)

JEFF 50418 Amendment

Instructions for completing this report are on the last page of this form.

Received Date 12/16/1998
Well ID Tag # L 29717
Start Card # 117231

(1) OWNER

Well Number 29717

Name
DESCHUTES VALEY WATER DISTRICT
Street 1141 SW CULVER HWY
City MADRAS State OR Zip 97741

(2) TYPE OF WORK

☒ New ☐ Alter (Recondition) ☐ Alter (Repair)
☐ Deepening ☐ Abandonment

(3) DRILL METHOD

☒ Rotary Air ☐ Rotary Mud ☐ Cable ☐ Auger
Other

(4) PROPOSED USE

☐ Domestic ☒ Community ☐ Industrial ☐ Irrigatio ☐ Injection
☐ Livestock ☐ Thermal Other

(5) BORE HOLE CONSTRUCTION

Special Standards ☒ Depth of completed well 513 ft.
Explosives Used ☐ Amount Type

Diameter	From	To
20.00	0.00	258
15.00	258.00	513

Material	Begin Depth	End Depth	Material Amount	Units
Cement	0.00	65.00	110.00	S
Cement	30.00	258.00	44.00	S

How as seal placed: Methoc C Other
Backfill placed from 65 ft. TO 70 ft. Material BE
Filter pack from ft. TO ft. Size in

(6) CASING/LINER

Casing or Liner	Diameter	Begin Depth	End Depth	Gauge	Material	Construction: Welded	Construction: Threaded	Location Of Shoe
C	16.00	0.00	258.00	0.375	S	■	■	

(7) PERFORATION/SCREENS

☐ Perforation Method
☐ Screens Type Material

(8) WELL TESTS (Minimum testing time is 1 hour)

Type	Yield	Units	Drawdown	Stem at	Duration
Flowing Artes	5000.0	G			1.0

Temperature of water 53 °F/C Depth artesian flow found 267 ft
Was water analysis done?
By Whom? DAVID EVANS ASSOCIATES
Did any strata contain water not suitable for intended use? ☐ Too Little ☐ Salty
☐ Mudd ☐ Odor ☐ Colored Other
Depth of strata ft

(9) LOCATION OF HOLE By legal description

County Jefferson Latitude Longitude
Township 12.00 S Range 12.00 E Subdivision
Tax lot 2800 Lot Block
Section 33 SW 1/4 NE 1/4
Street Address of Well (or nearest address)
7676 SW LASALLE LANE, CULVER
MAP with location indentified must be attached

(10) STATIC WATER LEVEL

~~48.0~~ Ft. below land surface Date ~~12/05/1998~~
Artesian Pressure 46.0 lb/sq. in. Date 12/05/1998

(11) WATER BEARING ZONES

Depth at which water was first found 46 ft.

From	To	Est. Flow Rate	SWL
17	245	1500	
267	453	5000	46

(12) WELL LOG

Ground Elevation ft.

Material	From	To	SWL
LOOSE SOIL & PUMICE FILL	0	9	
BASALT RUBBLE	9	25	
SAND & GRAVELS CONGLOMERAT	25	41	
UP TO 1 INCH DIAMETER	41	80	46
SAND STONE TUFF & BASALT	80	80	
CONGLOMERATE	80	70	
CEMENTED SAND & GRAVELS	70	105	
LARGE COBBLES CEMENTED	105	117	
BASALT & GRAVELS	117	122	
BROWN TUFF STONE	122	128	
TUFF & GRAVELS	128	225	
BROKEN WEATHERED BASALT	225	245	
BASALT HARD REDISH GRAY	245	267	
BROKEN WEATHERED BASALT	267	268	
WEATHERED BASALT SAND & GRA	268	305	
BROKEN WEATHERED BASALT	305	387	
HARD BASALT	387	405	
BASALT HARD W/ SOME FRACTURE	405	420	
BROKEN WEATHERED BASALT	420	423	
BROKEN BASALT WITH CINDERS	423	442	
BASALT GREY HARD	442	448	
BROKEN BASALT WITH CINDERS	448	453	
HARD GREY BASALT	453	513	

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SALEM, OREGON

Date started 11/18/1998 Completed 2/05/1998

(unbonded) Water Well Constructor Certification:

I certify that the work I performed on the construction, alteration, or abandonment of this well is in compliance with Oregon well construction standards. Materials used and information reported above are true to the best knowledge and belief.

Signed By ROBERT STADELI
(bonded) Water Well Constructor Certification WWC Number 1523

I accept responsibility for the construction, alteration, or abandonment work performed on this well during the construction dates reported above. All work performed during this time is in compliance with Oregon well construction standards. This report is true to the best of my knowledge and belief.

WWC Number 1484
Signed By GREG MCINNIS GEO-TECH EXPLORATIONS

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SITE MAP

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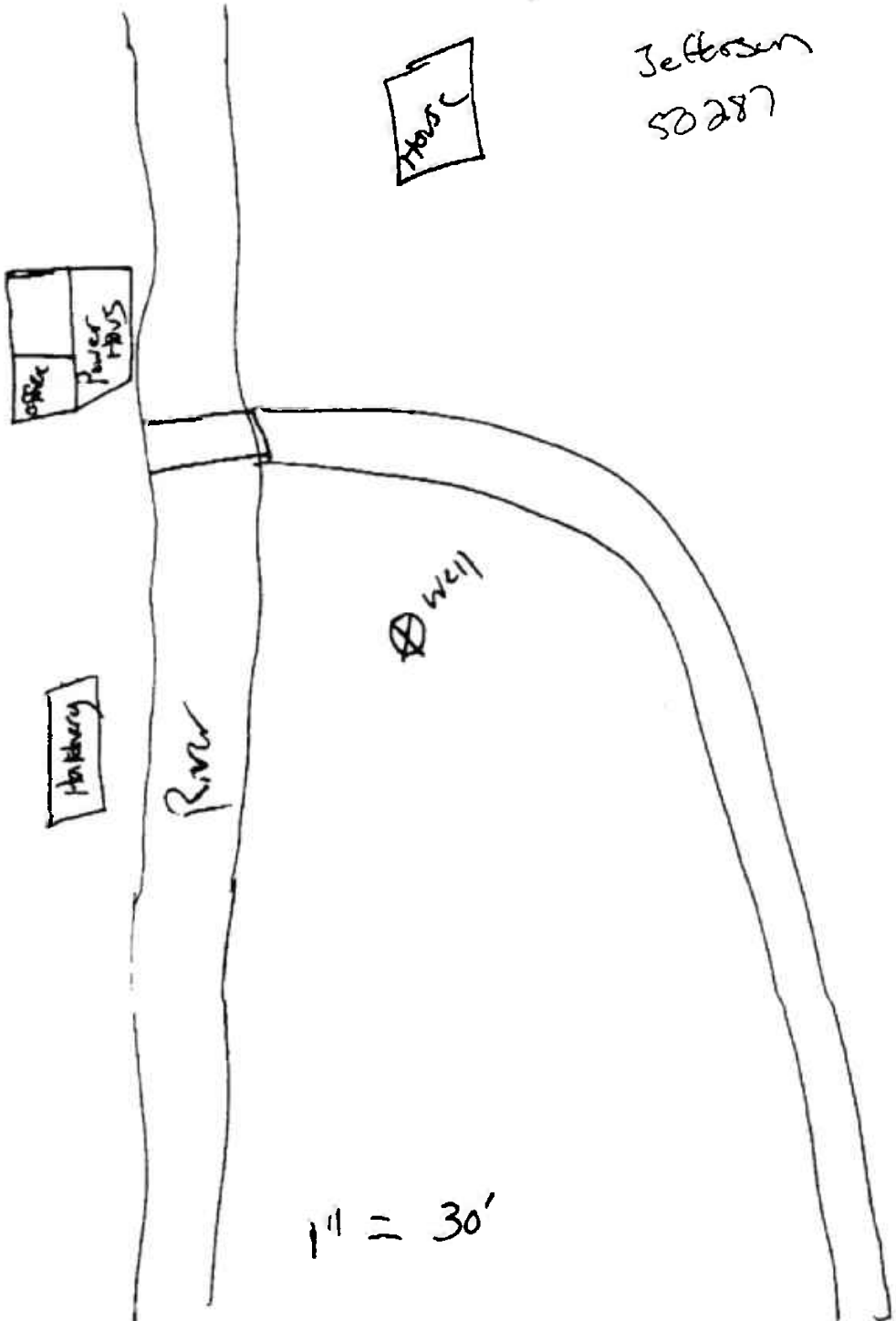

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STATE OF OREGON
WATER SUPPLY WELL REPORT
(as required by ORS 537.765)

Jeff 50654

JUL 2 7 2000

WELL I.D. # L 38435
START CARD # 12952

Instructions for completing this report are on the last page of this form.

WATER RESOURCES DEPT.
SALEM, OREGON

(1) OWNER:
Name Deschutes Valley Water District
Address 881 SW Culver Hwy
City Madras State OR Zip 97741

Well Number 3

(2) TYPE OF WORK
☒ New Well ☐ Deepening ☐ Alteration (repair/recondition) ☐ Abandonment

(3) DRILL METHOD:
☒ Rotary Air ☐ Rotary Mud ☐ Cable ☐ Auger
☐ Other

(4) PROPOSED USE:
☐ Domestic ☒ Community ☐ Industrial ☐ Irrigation
☐ Thermal ☐ Injection ☐ Livestock ☐ Other

(5) BORE HOLE CONSTRUCTION:
Special Construction approval ☒ Yes ☐ No Depth of Completed Well 665 ft.
Explosives used ☐ Yes ☒ No Type ____ Amount ____

HOLE Diameter	From	To	Material	SEAL From	To	Sacks or pounds
20"	0	17	cement	0	60	34 sacks
18"	17	270	cement	250	270	[redacted] sacks
15"	270	665				

How was seal placed: Method ☐ A ☐ B ☒ C ☐ D ☐ E
☒ Other Bottom Seal Pumped inside out
Backfill placed from ____ ft. to ____ ft. Material ____
Gravel placed from ____ ft. to ____ ft. Size of gravel ____

(6) CASING/LINER:

	Diameter	From	To	Gauge	Steel	Plastic	Welded	Threaded
Casing:	16"	0	270	.375	☒	☐	☒	☐
					☐	☐	☐	☐
					☐	☐	☐	☐
					☐	☐	☐	☐
Liner:					☐	☐	☐	☐
					☐	☐	☐	☐

Final location of shoe(s) ____

(7) PERFORATIONS/SCREENS:
☐ Perforations Method ____
☐ Screens Type ____ Material ____

From	To	Slot size	Number	Diameter	Tele/pipe size	Casing	Liner
						☐	☐
						☐	☐
						☐	☐
						☐	☐
						☐	☐

(8) WELL TESTS: Minimum testing time is 1 hour
☐ Pump ☐ Bailer ☐ Air ☒ Flowing Artesian

Yield gal/min	Drawdown	Drill stem at	Time
			1 hr.
3-4000			

Temperature of water 48 Depth Artesian Flow Found 297
Was a water analysis done? ☐ Yes By whom ____
Did any strata contain water not suitable for intended use? ☐ Too little
☐ Salty ☐ Muddy ☐ Odor ☐ Colored ☐ Other ____
Depth of strata: ____

WELL LOCATION OF WELL by legal description:
County Jefferson Latitude ____ Longitude ____
Township 12 N or (S) Range 12 (E) or W. WM.
Section 33 SW 1/4 NE 1/4
Tax Lot 280 Lot ____ Block ____ Subdivision ____
Street Address of Well (or nearest address) 7675 SW Lo Sullehn

(10) STATIC WATER LEVEL:
[redacted] ft. below land surface. Date [redacted]
Artesian pressure 48 lb. per square inch. Date 7-27-01

(11) WATER BEARING ZONES:
Depth at which water was first found 17'

From	To	Estimated Flow Rate	SWL
17'	260	500-1000 GPM	12'
297	665	3-4,000 GPM	[redacted] 48 PS

(12) WELL LOG:
Ground Elevation ____

Material	From	To	SWL
Cinders, Gravels	0	1	
Lg Basalt boulders & Gravels	1	90	
Basalt gravels & brown sandstone	90	100	
Coarse Basalt Gravel	100	110	
Coarse Basalt Gravels, F/Boulders	110	240	
Basalt Gravels, sandstone, clay	240	247	
Weathered Basalt	247	250	
W/Basalt - Hard - Sm Brs/s	250	256	
W/Basalt soft & Gravels	256	260	
W/Basalt - more weathered	260	270	
Tuff w/Basalt	270	272	
Fine Sandy Silts Tuffs w/Basalt & Gravels	272	276	
Hard Basalt	276	280	
Basalt w/brown clay	280		
See Attached —			

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SALEM, OREGON

Date started 5-31-2000 Completed 7-2-2000

(unbonded) Water Well Constructor Certification:
I certify that the work I performed on the construction, alteration, or abandonment of this well is in compliance with Oregon water supply well construction standards. Materials used and information reported above are true to the best of my knowledge and belief.
Signed Gordon E. Barnes WWC Number 1751 Date 7-11-2000

(bonded) Water Well Constructor Certification:
I accept responsibility for the construction, alteration, or abandonment work performed on this well during the construction dates reported above. All work performed during this time is in compliance with Oregon water supply well construction standards. This report is true to the best of my knowledge and belief.
Signed [signature] WWC Number 1464 Date 7/26/00

ORIGINAL & FIRST COPY-WATER RESOURCES DEPARTMENT SECOND COPY-CONSTRUCTOR THIRD COPY-CUSTOMER

14183

STATE OF OREGON

WATER SUPPLY WELL REPORT

(as required by ORS 537.765)

Instructions for completing this report are on the last page of this form.

JEFF 50418

Received Date 12/16/1998
Well ID Tag # L 29717
Start Card # 117231

(1) OWNER

Well Number 29717

Name
DESCHUTES VALEY WATER DISTRICT
Street 1141 SW CULVER HWY
City MADRAS State OR Zip 97741

(2) TYPE OF WORK

☒ New ☐ Alter (Recondition) ☐ Alter (Repair)
☐ Deepening ☐ Abandonment

(3) DRILL METHOD

☐ Rotary Air ☐ Rotary Mud ☐ Cable ☒ Auger
Other

(4) PROPOSED USE

☐ Domestic ☒ Community ☐ Industrial ☐ Irrigatio ☐ Injection
☐ Livestock ☐ Thermal Other

(5) BORE HOLE CONSTRUCTION

Special Standards ☒ Depth of completed well 513 ft.
Explosives Used ☐ Amount Type

Diameter	From	To
20.00	0.00	258
15.00	58.00	513

Material	Begin Depth	End Depth	Material Amount	Units
Cement	0.00	58.00	116.0	S
Cement	230.0	258.00	44.00	S

How as seal placed: Method C Other
Backfill placed from 58 ft. TO 70 ft. Material BE
Filter pack from ft. TO ft. Size in

(6) CASING/LINER

Casing or Liner	Diameter	Begin Depth	End Depth	Gauge	Material	Construction Weld	Construction Threaded	Location Of Shoe
C	16.00	0.00	258.00	.325	S	■	■	

(7) PERFORATION/SCREENS

☐ Perforation Method
☐ Screens Type Material

(8) WELL TESTS (Minimum testing time is 1 hour)

Type	Yield	Units	Drawdown	Stem at	Duration
Flowing	000.0	G			1.0

Temperature of water 53 °F/C Depth artesian flow found 287 ft.
Was water analysis done? ☐
By Whom? DAVID EVANS ASSOCIATES
Did any strata contain water not suitable for intended use? ☐ Too Little ☐ Salty
☐ Muddy ☐ Odor ☐ Colored Other
Depth of strata ft.

(9) LOCATION OF HOLE By legal description

County Latitude Longitude
Township 12.00 S Range 12.00 E Subdivision
Tax lot 2800 Lot Block
Section 33 SW 1/4 NE 1/4
Street Address of Well (or nearest address)
7676 SW LASALLE LANE, CULVER
MAP with location indentified must be attached

(10) STATIC WATER LEVEL

46.0 Ft. below land surface. Date 12/05/1998
Artesian Pressure lb/sq. in. Date

(11) WATER BEARING ZONES

Depth at which water was first found 46 ft.

From	To	Est. Flow Rate	SWL
17	245	1500	9
267	453	5000	46

(12) WELL LOG

Ground Elevation ft.

Material	From	To	SWL
LOOSE SOIL & PUMICE FILL	0	6	
BASALT RUBBLE	6	25	
SAND & GRAVELS CONGLOMERA	25	41	
UP TO 1 INCH DIAMETER	41	50	46
SAND STONE TUFF & BASALT	50	60	
CONGLOMERATE	60	79	
CEMENTED SAND & GRAVELS	79	108	
LARGE COBBLES CEMENTED	108	117	
BASALT & GRAVELS	117	122	
BROWN TUFF STONE	122	128	
TUFF & GRAVELS	128	223	
BROKEN WEATHERED BASALT	223	245	
BASALT HARD REDDISH GRAY	245	267	
BROKEN WEATHERED BASALT	267	268	
WEATHERED BASALT SAND & GR	268	308	
BROKEN WEATHERED BASALT	308	387	
HARD BASALT	387	400	
BASALT HARD W/ SOME FRACTU	400	420	
BROKEN WEATHERED BASALT	420	423	
BROKEN BASALT WITH CINDERS	423	442	
BASALT GREY HARD	442	448	
BROKEN BASALT WITH CINDERS	448	453	
HARD GREY BASALT	453	513	

Date started 11/18/1998 Completed 2/05/1998

(unbonded) Water Well Constructor Certification:

I certify that the work I performed on the construction, alteration, or abandonment of this well is in compliance with Oregon well construction standards. Materials used and information reported above are true to the best knowledge and belief.

Signed By ROBERT STADELI

(bonded) Water Well Constructor Certification: WWC Number 1523

I accept responsibility for the construction, alteration, or abandonment work performed on this well during the construction dates reported above. All work performed during this time is in compliance with Oregon well construction standards.

This report is true to the best of my knowledge and belief.

WWC Number 1484

Signed By GREG MCINNIS GEO-TECH EXPLORATIONS

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SALEM, OREGON

Hard Weathered Basalt With Tan Clays	510	521
Slightly Softer Basalt	521	530
Some Tan Clay	530	542
Cinders, Weathered Basalt, Tan Clay	542	545
Very Cindery, Weathered	545	547
Hard, Fractured Basalt With Tan Clay	547	572
More Fractured Broken Weathered Basalt	572	587
More Fractured Basalt, Tan Clay	587	591
Decreasing Fractured Basalt	591	600
Medium to Hard Basalt	600	601
U. Hard Basalt	601	607
Fractured, Weathered Basalt, With Tan Clay	607	611
Red Cinders, Weathered Basalt With Lots of Clay	611	620
Red Cinder, Weathered Basalt & Tan Clay	620	625
Decreasing Cinders	625	627
Decreasing Clay	627	630
Weathered Basalt	630	638
Large Fractured Tan Clay	638	640
Weathered Basalt and Tan Clay	640	650
Fractured Basalt, Tan Clay	650	652
Some Fractured Basalt, Clay	652	655
Harder Basalt, Some Fractured	655	660
Dense Hard Basalt	660	665

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JEFF 50654

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JUL 2 7 2000

WATER RESOURCES DEPT
SALEM, OREGON

Well Log (Cont.)

Basalt with Brown Silty Clay	276	277
Basalt some tan clays, gray to dark red	277	278
Basalt some silts, black and red	278	282
Basalt darken, less clay and silts	282	283
Basalt, dark gray, some weathered	283	284
Hard Dense Basalt	284	293
Hard Dense Basalt, some fractured	293	295
Hard Dense Basalt with tan clays	295	297
Fractured, broke basalt	297	300
Weathered red coarse sandstone & basalt gravel	300	304
Coarse Basalt and Gravel	304	308
Coarse Brown Sandy Silts, w/light brown ash	308	317
V. Coarse Basalt and Gravel	317	321
Weathered Basalt, w/some gravel	321	324
Hard Dense Basalt, weathered	324	335
Tan Sandy Silt and Clay	335	338
Less Weathered Hard Basalt	338	345
Coarse Sand and Gravel	345	353
Dark Gray Coarse Soft Sand and Silts	353	363
Some Hard Basalt	363	365
Sand and Gravel, Soft	365	370
Sand and Gravel	370	388
Hard Weathered Basalt, Small Fractured	388	410
Hard Dense Basalt	410	431
Weathered Broken Basalt, Some Tan Class Filling	431	437
Broken Basalt With Red Cinders	437	440
Broken Weathered Basalt, Hard	440	445
Hard Dense Basalt	445	448
Broken Weathered Basalt	448	450
Some Tan Clay	450	453
Hard Dense Basalt	453	500
Hard Fractured Basalt w/Tan Clay	500	505
Weathered Red Basalt With Tan Clay	505	510

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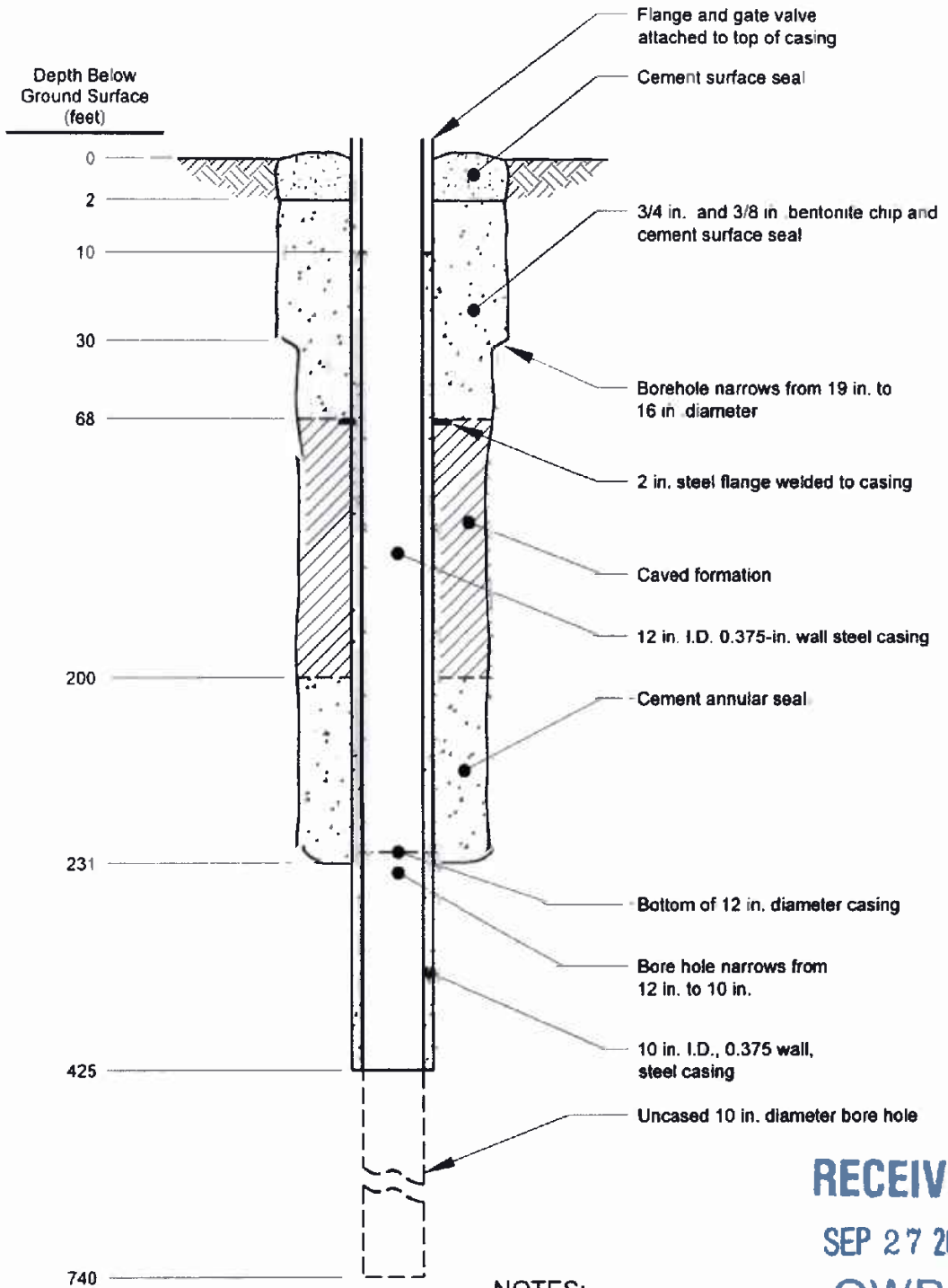

NOT TO SCALE

NOTES:

GROUND SURFACE ELEV. .....1983 feet MSL
COMPLETION DATE .....May 20, 1998
OWRD LOG ID No. .....50263 / 50287

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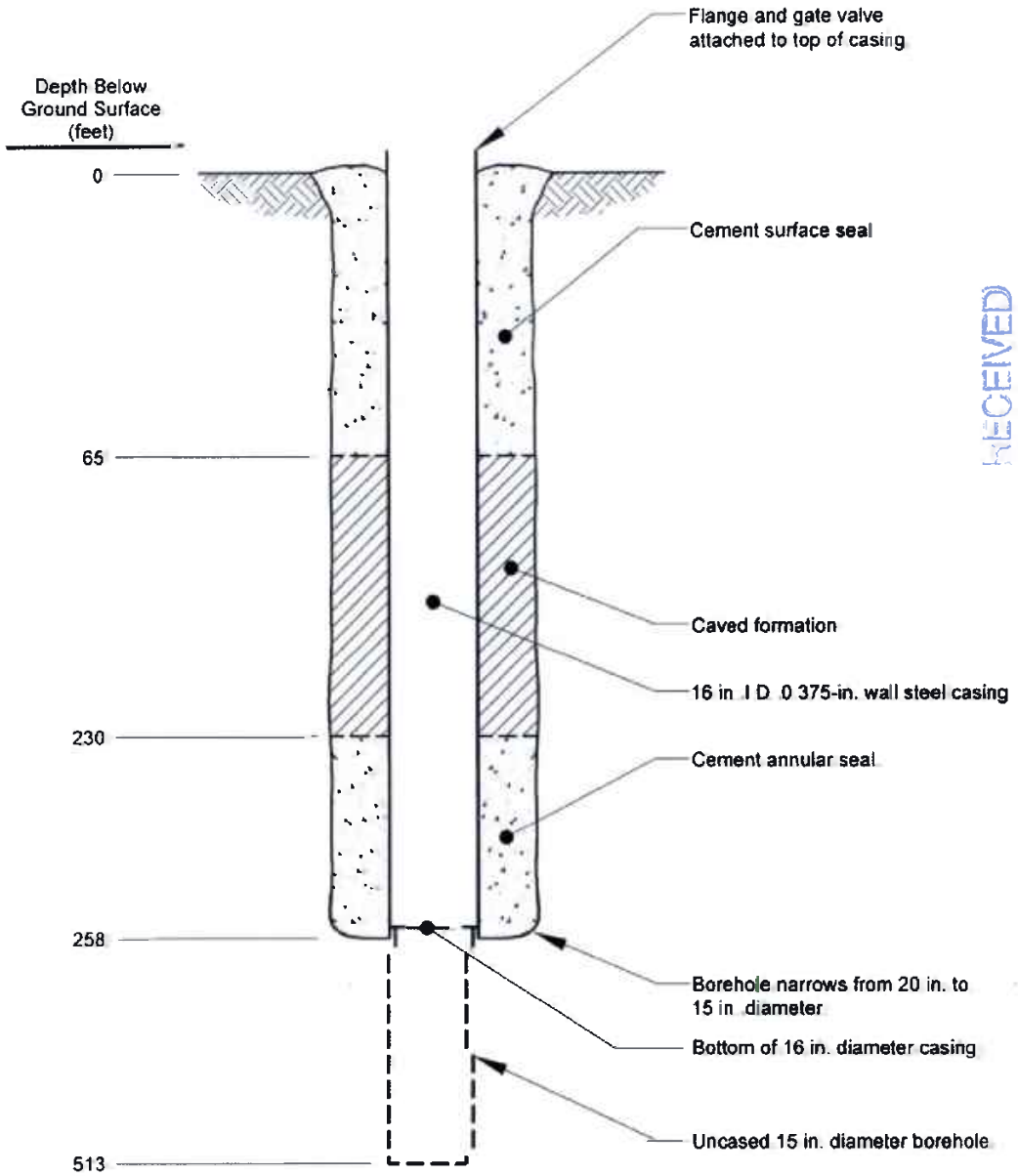
NEWTON CONSULTANTS INC.
Water, Earth, and Rock Specialists
Ph 541 504-9960 Fax 541 504-9961

Well No. 1 As-Built - T-9720
CONSTRUCTION DETAILS

DESIGNED BY	DRAWN BY	DATE	PROJECT NO	FIGURE
D. Newton	S. Schenck	JUNE 2003	450 - 117	1

G:\0400\450\117\Cad\Water\W450117_F1_WellDet 13:47 08/30/2017 SS

14183



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SEP. 27 2017
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NOTES:

GROUND SURFACE ELEV. .....1993 feet MSL
COMPLETION DATE .....February 5, 1998
OWRD LOG ID No. 50418

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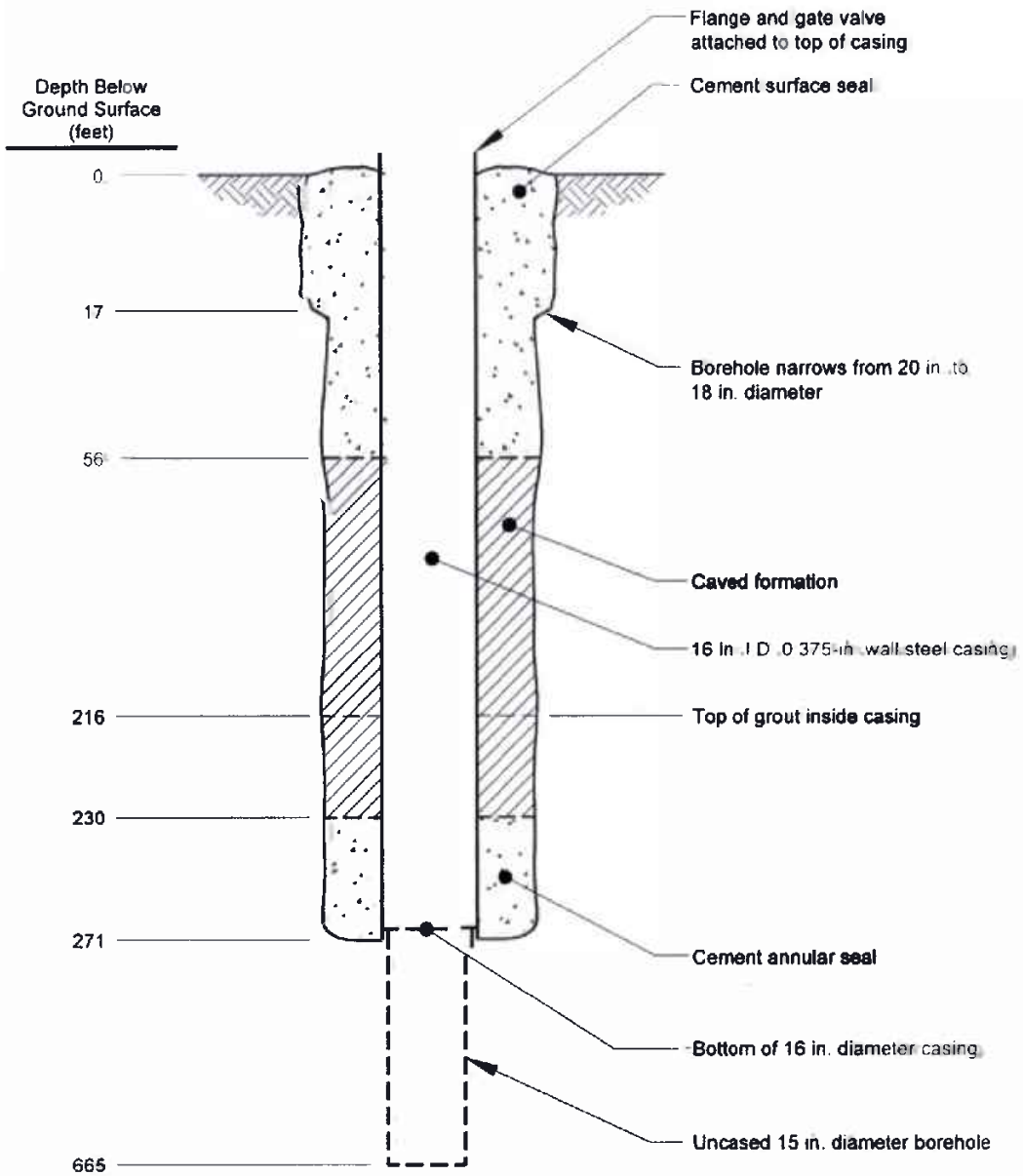
Ph. 541 504 9860 Fax 541 504-9961

Well No. 2 As-Built - T-9720
CONSTRUCTION DETAILS

DESIGNED BY	DRAWN BY	DATE	PROJECT NO.	FIGURE
D. Newton	S. Schenck	JUNE 2003	450 - 117	2

G:\0450\450\117\Cad\Water\W450117_F1_WellDet 13.47 08/30/2017 SS



NOT TO SCALE

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OWRD

NOTES:
GROUND SURFACE ELEV. .....2002 feet MSL
COMPLETION DATE .....July 11, 2000
OWRD LOG ID No. 50654

NEWTON CONSULTANTS INC.
Water, Earth, and Rock Specialists
Ph: 541 504-9960 Fax: 541 504-9961

Well No. 3 As-Built - T-9720 CONSTRUCTION DETAILS

DESIGNED BY	DRAWN BY	DATE	PROJECT NO	FIGURE
D. Newton	S. Schenck	JUNE 2003	450 - 117	3

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Attachment E

June 10, 2009 Memo from Ken Lite (Transfer T-9720)

Application for Permit Amendment – Deschutes Valley Water District

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Date: Tue, 12 Apr 2005 10:00:10 -0700
From: "Dave Newton" <dnewton@newtonconsultants.com>
To: kenneth.E.LITE@wrd.state.or.us
Subject: Opal Springs Flow Test Data
X-Security: MIME headers sanitized on kettle.wrd.state.or.us
See http://www.impsec.org/email-tools/sanitizer-intro.html
for details. $Revision: 1.139 $Date: 2003-09-07 10:14:23-07
X-Mailer: Microsoft Outlook CWS, Build 9.0.2416 (9.0.2910.0)
Importance: Normal
X-Spam-Checker-Version: SpamAssassin 2.63 (2004-01-11) on
kettle.wrd.state.or.us
X-Spam-Status: No, hits=0.0 required=5.0 tests=none autolearn=ham version=2.63
X-Spam-Level:

Ken:

I have found flow test data for a 30-day test conducted in March 2001.

The data is in table form and is attached for your use in evaluating the Deschutes Valley Water District transfer application-Opal Springs to wells.

When you look at the table, you will see that Well #1 and Well #3 were left shut in. The artesian pressure for each of the shut-in wells is shown on the table. Well # 2 was opened to flow at 4,500 gpm initially, then dropped to 4,400 gpm. The changes in Opal Springs staff gage are shown during the test on the far right side of the table.

I am also looking for a graphic representation of an additional flow test we conducted and will get it to you as soon as possible.

I hope this is helpful Ken.

David


30 Day Flow Test data.xls

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Memorandum

June 10, 2009

TO: T-9720RA

FROM: Ken Lite, Hydrogeologist, Oregon Water Resources Dept.

SUBJECT Hydraulic Connection Finding

Transfer T-9720RA is being proposed to move 10.38 CFS from a surface water POA (Lower Opal Springs) to 3 nearby wells constructed to depths ranging from 513-feet to 740-feet, and 6 proposed wells (proposed depths 400-750'). The wells appear to be hydraulically connected to Lower Opal Springs as evidenced by an apparent pressure response at the spring collection facility during the operation of Well #1 (Newton, 2001 unpublished data). In addition, Wells 2 and 3 have also been shown to respond to the operation of Well #1(Newton, 2004 unpublished data).

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Opal Springs Flow Test Data

Deschutes Valley Water District

30-day Flow Test

	Date	Time	Elapsed Time (hour)	Well #1 (psi)	Well #2 (gpm)	Well #3 (psi)	Spring staff gage
Pre-test							
	2/23/2001	720					
	2/23/2001	810		49	47	44	
Test							
	2/23/2001	900	0	49	4500	44	0.14
	2/23/2001	1100	2	48	4500	44	0.14
	2/23/2001	1300	4	47	4500	44	0.13
	2/23/2001	1500	6	47	4400	44	0.12
	2/23/2001	1700	8	47	4400	44	0.13
	2/24/2001	700	22	47	4400	44	0.14
	2/24/2001	900	24	48	4400	44	0.13
	2/24/2001	1100	26	48	4400	44	0.12
	2/24/2001	1300	28	47	4400	44	0.12
	2/24/2001	1500	30	47	4400	44	0.12
	2/24/2001	1700	32	47	4400	44	0.12
	2/25/2001	700	46	48	4400	44	0.13
	2/25/2001	900	48	48	4400	44	0.14
	2/25/2001	1100	50	48	4400	44	0.14
	2/25/2001	1300	52	48	4400	44	0.14
	2/25/2001	1500	54	48	4400	44	
	2/25/2001	1700	56	48	4400	44	
	2/26/2001	730	70.3	49	4400	43	0.13
	2/26/2001	1630	79.3	49	4400	44	0.13
	2/27/2001	730	94.3	48	4400	44	0.12
	2/27/2001	1600	103	50	4400	44	0.12
	2/28/2001	800	119	47	4400	44	0.12
	2/28/2001	1230	123.3	47	4400	44	0.12
	2/28/2001	1630	127.3	47	4400	44	0.12
	3/1/2001	800	143	47	4400	44	0.13
	3/1/2001	1230	147.3	47	4400	44	0.12
	3/1/2001	1645	151.45	47	4400	44	0.13
	3/2/2001	700	166	47	4400	43	0.13
	3/2/2001	1200	171	49	4400	44	0.12
	3/2/2001	1630	175.3	48	4400	44	0.13
	3/3/2001	730	190.3	47	4400	43	0.12
	3/3/2001	1200	195	47	4400	44	0.13
	3/3/2001	1630	199.3	47	4400	44	0.12
	3/4/2001	730	214.3	47	4400	43	0.12

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3/4/2001	1200	219	48	4400	44	0.12
3/4/2001	1630	223.3	48	4400	44	0.12
3/5/2001	730	238.3	47	4400	43	0.12
3/5/2001	1630	247.3	48	4400	44	0.12
3/6/2001	730	262.3	47	4400	43	0.12
3/6/2001	1630	271.3	48	4400	44	0.12
3/7/2001	730	286.3	47	4400	44	0.12
3/7/2001	1200	291	48	4400	44	0.12
3/7/2001	1630	295.3	48	4400	44	0.12
3/8/2001	730	310.3	47	4400	44	0.12
3/8/2001	1200	315	48	4400	44	0.12
3/8/2001	1630	319.3	48	4400	44	0.12
3/9/2001	715	334.15	47	4400	43	0.12
3/9/2001	1200	339	48	4400	44	0.12
3/9/2001	1630	343.3	48	4400	44	0.12
3/10/2001	730	358.3	47	4400	43	0.12
3/10/2001	1200	363	48	4400	44	0.12
3/10/2001	1630	367.3	48	4400	44	0.13
3/11/2001	730	382.3	47	4400	44	0.12
3/11/2001	1200	387	47	4400	44	0.12
3/11/2001	1630	391.3	47	4400	44	0.12
3/12/2001	730	406.3	48	4400	44	0.12
3/12/2001	1600	415	48	4400	44	0.12
3/13/2001	730	430.3	48	4400	44	0.12
3/13/2001	1630	439.3	48	4400	44	0.12
3/14/2001	800	455	48	4400	44	0.12
3/14/2001	1200	459	48	4400	44	0.12
3/14/2001	1630	463.3	48	4400	44	0.12

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