State of Oregon
Water Resources Department
725 Summer Street NE, Suite A
Salem, Oregon 97301-1266
(503) 986-0900

Application for Permanent Water Right Transfer

Part 1 of 5 – Minimum Requirements Checklist

This transfer application will be returned if Parts 1 through 5 and all required attachments are not completed and included.
For questions, please call (503) 986-0900, and ask for Transfer Section.

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

☒ Part 1 – Completed Minimum Requirements Checklist.

☒ Part 2 – Completed Transfer 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. If you have questions, call Customer Service at (503) 986-0801.

☒ Part 4 – Completed Applicant Information and Signature.

☒ Part 5 – Information about Water Rights to be Transferred: **How many water rights are to be transferred? 2 List them here: Certificates 61416 and 27707**
Please include a separate Part 5 for each water right. (See instructions on page 6)

Attachments:

☒ Completed Transfer Application Map.

☒ Completed Evidence of Use Affidavit and supporting documentation.

☐ ☒ N/A Affidavit(s) of Consent from Landowner(s) (if the applicant does not own the land the water right is on.)

☒ ☐ N/A Supplemental Form D – For water rights served by or issued in the name of an irrigation district. Complete when the transfer applicant is not the irrigation district.

☒ ☐ N/A Land Use Information Form with approval and signature (or signed land use form receipt stub). 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.

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

☒ ☐ 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' from the surface water source and more than 1000' upstream or downstream from the point of diversion. See OAR 690-380-2130 for requirements and applicability.

(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: _____ 503-986-0___ Date: ____/____/____

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Your transfer application <u>will be returned</u> if any of the map requirements listed below are not met.

Please be sure that the transfer application map you submit includes all the required items and matches the existing water right map. Check all boxes that apply.

☒ ☐ N/A Certified Water Right Examiner (CWRE) Stamp and Original Signature. For a list of CWREs, see http://apps.wrd.state.or.us/apps/wr/cwre_license_view/. CWRE stamp and signature are not required for substitutions.

☐ ☒ N/A If **more than three** water rights are involved, separate maps are needed for each water right.

☒ 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 Final Proof/Claim of Beneficial Use Map (the map used when the permit was certificated), 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 right, 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 water right is being changed, a separate hachuring is needed for lands left unchanged.

☒ ☐ N/A Proposed place of use that includes separate hachuring for each water right, 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 right certificate or 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°).

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FEE WORKSHEET for PERMANENT TRANSFER			
1	Base Fee (includes one type of change to one water right for up to 1 cfs)	*1*	$1,160
	Types of change proposed: ☒ Place of Use ☐ Character of Use ☒ Point of Diversion/Appropriation Number of above boxes checked = 2 (2a) Subtract 1 from the number in line 2a = 1 (2b) *If only one change, this will be 0*		
2	Multiply line 2b by $930 and enter » » » » » » » » » » » » » »	*2*	930
	Number of water rights included in transfer 2 (3a) Subtract 1 from the number in 3a above: 1 (3b) *If only one water right this will be 0*		
3	Multiply line 3b by $520 and enter » » » » » » » » » » » » » »	*3*	520
	Do you propose to add or change a well, or change from a surface water POD to a well? ☐ No: enter 0 »		
4	☒ Yes: enter $410 »	*4*	410
	Do you propose to change the place of use or character of use? ☐ No: enter 0 on line 5 » ☒ Yes: enter the cfs for the portions of the rights to be transferred (see example below*): 0.83 (5a) Subtract 1.0 from the number in 5a above: -0.17 (5b) If 5b is 0 or less, enter 0 on line 5 » » » » » » » » » » » » » » » »		
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*	3020
	Is this transfer: ☐ 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 »		
7	If no box is applicable, enter 0 on line 7» » » » » » » » » » » » »	*7*	0
8	Subtract line 7 from line 6 » » » » » » » » » » » » » **Transfer Fee:**	***8***	**3020**

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

1. For irrigation calculate cfs for each water right involved as follows:
   a. Divide total authorized cfs by total acres in the water right *(for C12345, 1.25 cfs ÷100 ac)*; then multiply by the number of acres to be transferred to get the transfer cfs *(x 45 ac= 0.56 cfs)*.
   b. If the water right certificate 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 C87654, 45.0 ac x 0.0125 cfs/ac = 0.56 cfs)*
2. Add cfs for the portions of water rights on all the land included in the transfer; however **do not count cfs for supplemental rights on acreage for which you have already calculated the cfs fee for the primary right on the same land**. The fee should be assessed only once for each "on the ground" acre included in the transfer. *(In this example, blank 5a would be only 0.56 cfs, since both rights serve the same 45.0 acres. Blank 5b would be 0 and Line 5 would then also become 0).*

FEE WORKSHEET for SUBSTITUTION			
1	Base Fee (includes change to one well)	*1*	$840.00
	Number of wells included in substitution _____ (2a) Subtract 1 from the number in 3a above: _____ (2b) *If only one well this will be 0*		
2	Multiply line 2b by $410 and enter » » » » » » » » » » » » » »	*2*	
3	Add entries on lines 1 through 2 above » » » » » » **Fee for Substitution:**	***3***	

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Part 4 of 5 – Applicant Information and Signature

Applicant Information

APPLICANT/BUSINESS NAME			PHONE NO.	ADDITIONAL CONTACT NO.
GWM Trucking, LLC			**(503) 871-3998**	**(541) 327-2840**
ADDRESS				FAX NO.
13274 Marlatt Rd. S				**(541) 327-1596**
CITY	STATE	ZIP	E-MAIL	
Jefferson	**OR**	**97352**	**gmfarms@croisan.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.				

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.
George W. Meyer			**(503) 871-3998**	**(541) 327-2840**
ADDRESS				FAX NO.
13274 Marlatt Rd. S				**(541) 327-1596**
CITY	STATE	ZIP	E-MAIL	
Jefferson	**OR**	**97352**	**gmfarms@croisan.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 transfer application, and why:
Permanent transfer T-12485, which proposed to irrigate uncovered land on the Meyer New Farm with Santiam Water Control District (SWCD) certificate 68663 from a hydraulically connected well, is not being approved by OWRD. It is now proposed to make a new permanent transfer application to replace temporary application T-12691 to cover the area covered by T-12485 (56.83 acres) and the area covered by approved temporary transfer T-12355 (9.5 acres) and then cancel T-12355 all being subject to revised T-12485 being approved by OWRD. This new permanent transfer "To" lands will be irrigated from the hydraulically connected well. The new permanent transfer "From" acreage will come from Meyer certificates 27707 and 61416. It is proposed then to revise permanent transfer T-12485 to cover the "From" lands with SWCD certificate 68663 which will be pumped from a surface water APOD.

The 66.33 acres on the Meyer Home Farm ("From" acreage) are covered by a supplemental water right through Sidney Irrigation Cooperative Permit S-54817. The intent is for this 66.33 acres of supplemental water right is to stay in place and become attached to the 66.33 acres of SWCD certificate 68663.

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)

Check One Box

☒ By signing this application, I understand that, upon receipt of the draft preliminary determination and prior to Department approval of the transfer, I will be required to provide landownership information and evidence that I am authorized to pursue the transfer as identified in OAR 690-380-4010(5); **OR**

☐ I affirm the applicant is a municipality as defined in ORS 540.510(3)(b) and that the right is in the name of the municipality or a predecessor; **OR**

☐ I affirm the applicant is an entity with the authority to condemn property and is acquiring by condemnation the property to which the water right proposed for transfer is appurtenant and have supporting documentation.

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Check the following boxes that apply:

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

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

☐ Both the receiving landowner and applicant will be responsible for completion of change(s). Copies of notices and correspondence should be sent to this landowner and the applicant.

At this time, are the lands in this transfer application in the process of being sold? ☐ Yes ☒ No

If YES, and you know who the new landowner will be, please complete the receiving landowner information table below. If you do not know who the new landowner will be, then a request for assignment will have to be filed for at a later date.

If a property sells, the certificated water right(s) located on the land belong to the new owner, unless a sale agreement or other document states otherwise. For more information see: http://www.oregon.gov/owrd/docs/transfer-propertytransactions.pdf

RECEIVING LANDOWNER NAME			PHONE NO.	ADDITIONAL CONTACT NO.
ADDRESS				FAX NO.
CITY	STATE	ZIP	E-MAIL	

Describe any special ownership circumstances here: _____

☒ Check here if any of the water rights proposed for transfer are or will be located within or served by an irrigation or other water district. (**Tip**: **Complete and attach Supplemental Form D.**)

IRRIGATION DISTRICT NAME **Santiam Water Control District**	ADDRESS **284 E Water St.**	
CITY **Stayton**	STATE **OR**	ZIP **97383**

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

ENTITY NAME **Sidney Irrigation Cooperative**	ADDRESS **P.O. Box 736**	
CITY **Jefferson**	STATE **OR**	ZIP **97352**

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

ENTITY NAME **Marion County**	ADDRESS **5155 Silverton Rd. NE**	
CITY **Salem**	STATE **OR**	ZIP **97305**

ENTITY NAME	ADDRESS	
CITY	STATE	ZIP

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INSTRUCTIONS for editing the Application Form

To add additional lines to tables within the forms or to copy and paste additional Part 5 pages, please **save the application form to your computer**. Unlock the document by using one of the following instructions for your Microsoft Word software version:

Once the application has been unlocked, you may:

- add additional rows to tables using the Table tools, and
- select and copy the pages of Part 5 and paste as many additional sets of Part 5 pages as needed at the end of the application.

After editing, re-lock the document to enable checkboxes to work.

Microsoft Word 2003

Unlock the document by one of the following:

- Using the **Tools** menu => click **Unprotect Document;**

OR

- Using the **Forms** toolbar => click on the **Protect/Unprotect** icon.

To relock the document to enable the checkboxes to work, you will need to:

- Using the **Tools** menu => click **Protect Document;**

OR

- Using the **Forms** toolbar => click on the **Protect/Unprotect** icon.

Microsoft Word 2007

- Unlock the document by clicking the **Review** tab, then click **Protect Document**, then click **Stop Protect**
- To relock the document, click **Editing Restrictions**, then click **Allow Only This Type of Editing**, select **Filling In Forms** from the drop-down menu, then check **Yes, Start Enforcing Protection**.

Microsoft Word 2010

- Unlock the document by clicking the **Review** tab; toggle the **Restrict Editing icon** at the upper right, then click **Stop Protect** at the bottom right. Then uncheck the "**Allow only this type of editing** in the document: **Filling in forms**" in the "Editing restrictions" section on the right-hand list of options.
- To relock the document, check the **Editing Restrictions/Allow Only This Type of Editing/Filling In Forms** box from the drop-down menu, then check **Yes, Start Enforcing Protection**. You do not need to assign a password for the editing restrictions.

Other Alternatives:

- Photocopy pages or tables in Part 5, ~~mark through~~ any non-applicable information, insert/attach photocopied pages to document in the appropriate location, and manually amend page numbers as necessary (e.g. Page ~~5~~ 6 of ~~9~~ 10).
- You may refer to additional attachments that you may include, such as separately produced tables or spreadsheets to convey large numbers of rows of place of use listings, owner/property parcels, etc. You may contact the Department at 503-986-0900 and ask for Transfer Staff if you have questions.

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

CERTIFICATE # 27707

Description of Water Delivery System

System capacity: **3.49** cubic feet per second (cfs) **OR**

_____ gallons per minute (gpm)

Describe the current water delivery system or the system that was in place at some time within the last five years. Include information on the pumps, canals, pipelines, and sprinklers used to divert, convey, and apply the water at the authorized place of use. **A 60 HP Cornell pump (3YB60-2) delivers water through 8" and 6" PVC buried mainline to a 1.3 (450 gpm) Evergreen Watermaster reel gun sprinkler (see attached pictures).**

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

POD/POA Name or Number	Is this POD/POA Authorized on the Certificate or is it Proposed?	If POA, OWRD Well Log ID# (or Well ID Tag # L-___)	Twp		Rng		Sec	¼	¼	Tax Lot, DLC or Gov't Lot	Measured Distances (from a recognized survey corner)
Authorized POD	☒ Authorized ☐ Proposed		**9**	**S**	**3**	**W**	**29**	**SE**	**NW**	**DLC 48**	**SENW as projected within Roby, DLC 48. 1830' S and 1060' W from NE corner DLC 48.**
Proposed POD	☐ Authorized ☒ Proposed	**MARI 15351**	**9**	**S**	**3**	**W**	**30**	**NE**	**SW**	**TL 1000**	**2 ch. N and 31 ch. W of SE corner from J. Pritchett DLC 46.**
	☐ Authorized ☐ Proposed										
	☐ Authorized ☐ Proposed										

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

- ☒ Place of Use (POU)
- ☐ Character of Use (USE)
- ☒ Point of Diversion (POD)
- ☐ Additional Point of Diversion (APOD)
- ☐ Surface Water POD to Ground Water POA (SW/GW)
- ☐ Supplemental Use to Primary Use (S to P)
- ☐ Point of Appropriation/Well (POA)
- ☐ Additional Point of Appropriation (APOA)
- ☐ Substitution (SUB)
- ☐ Government Action POD (GOV)

Will all of the proposed changes affect the entire water right?

☐ Yes Complete only the Proposed ("to" or "on" 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 water right to be changed.

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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 Staff.

Table 2. Description of Changes to Water Right Certificate # 27707

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	Type of USE listed on Certificate	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	New Type of USE	POD(s)/ POA(s) to be used (from Table 1)	Priority Date
EXAMPLE																										
2	**S**	**9**	**E**	**15**	**NE**	**NW**	**100**		**15.0**	**Irrigation**	**POD #1 POD #2**	**1901**	**POU/POD**	**2**	**S**	**9**	**E**	**1**	**NW**	**NW**	**500**	**1**	**10.0**		**POD #5**	**1901**
9	**S**	**3**	**W**	**29**	**NW**	**NE**	**600**	48	0.4	**Irrigation**	Authorized POD	1956	**POU/POD**	**9**	**S**	**3**	**W**	**30**	**NW**	**NE**	**200**	46	0.9	**Irrigation**	Proposed POD	1956
9	**S**	**3**	**W**	**29**	**NE**	**NW**	**600**	48	1.2	**Irrigation**	Authorized POD	1956	**POU/POD**	**9**	**S**	**3**	**W**	**30**	**NW**	**NE**	**300**	46	0.5	**Irrigation**	Proposed POD	1956
9	**S**	**3**	**W**	**29**	**NE**	**NW**	**500**	48	2.0	**Irrigation**	Authorized POD	1956	**POU/POD**	**9**	**S**	**3**	**W**	**30**	**SW**	**NE**	**300**	46	0.83	**Irrigation**	Proposed POD	1956
9	**S**	**3**	**W**	**29**	**SE**	**NW**	**500**	48	2.4	**Irrigation**	Authorized POD	1956	**POU/POD**	**9**	**S**	**3**	**W**	**30**	**SW**	**NE**	**200**	46	8.6	**Irrigation**	Proposed POD	1956
9	**S**	**3**	**W**	**29**	**SE**	**NW**	**600**	48	3.43	**Irrigation**	Authorized POD	1956	**POU/POD**													
9	**S**	**3**	**W**	**29**	**SW**	**NE**	**600**	48	1.4	**Irrigation**	Authorized POD	1956	**POU/POD**													
TOTAL ACRES:									10.83					TOTAL ACRES:									10.83			

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Additional remarks: _____.

For Place of Use or Character of Use Changes

Are there other water right certificates, water use permits or ground water registrations associated with the "from" or the "to" lands? ☒ Yes ☐ No

If YES, list the certificate, water use permit, or ground water registration numbers: **S-54817.**

Pursuant to ORS 540.510, any "layered" water use such as an irrigation right that is supplemental to a primary right proposed for transfer must be included in the transfer or be cancelled. Any change to a ground water registration must be filed separately in a ground water registration modification application.

For Substitution (ground water supplemental irrigation will be substituted for surface water primary irrigation)

Ground water supplemental Permit or Certificate # _____;
Surface water primary Certificate # _____.

For a change from Supplemental Irrigation Use to Primary Irrigation Use

Identify the primary certificate to be cancelled. Certificate # _____

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

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.

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 han full rate of water right
Proposed POD	**Yes**	**Dug Well**	**16'**	**4'**				**2'**	**sand/gravel**	

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CERTIFICATE # 61416

Description of Water Delivery System

System capacity: **3.49** cubic feet per second (cfs) **OR**

_____ gallons per minute (gpm)

Describe the current water delivery system or the system that was in place at some time within the last five years. Include information on the pumps, canals, pipelines, and sprinklers used to divert, convey, and apply the water at the authorized place of use. **A 60 HP Cornell pump (3YB60-2) delivers water through 8" and 6" PVC buried mainline to a 1.3 (450 gpm) Evergreen Watermaster reel gun sprinkler (see attached pictures).**

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(Note: If the POD/POA name is not specified on the certificate, assign it a name or number here.)

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Authorized POD	☒ Authorized ☐ Proposed		**9**	**S**	**3**	**W**	**29**	**SE**	**NW**	**DLC 48**	**SENW as projected within Roby, DLC 48. 1830' S and 1060' W from NE corner DLC 48.**
Proposed POD	☐ Authorized ☒ Proposed	**MARI 15351**	**9**	**S**	**3**	**W**	**30**	**NE**	**SW**	**TL 1000**	**2 ch. N and 31 ch. W of SE corner from J. Pritchett DLC 46.**
	☐ Authorized ☐ Proposed										
	☐ Authorized ☐ Proposed										

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- ☐ Character of Use (USE)
- ☒ Point of Diversion (POD)
- ☐ Additional Point of Diversion (APOD)
- ☐ Surface Water POD to Ground Water POA (SW/GW)
- ☐ Supplemental Use to Primary Use (S to P)
- ☐ Point of Appropriation/Well (POA)
- ☐ Additional Point of Appropriation (APOA)
- ☐ Substitution (SUB)
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☐ No Complete all of Table 2 to describe the portion of the water right to be changed.

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Table 2. Description of Changes to Water Right Certificate # 61416

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	Type of USE listed on Certificate	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	New Type of USE	POD(s)/ POA(s) to be used (from Table 1)	Priority Date
EXAMPLE																										
2	**S**	**9**	**E**	**15**	**NE**	**NW**	**100**		**15.0**	**Irrigation**	**POD #1 POD #2**	**1901**	**POU/POD**	**2**	**S**	**9**	**E**	**1**	**NW**	**NW**	**500**	**1**	**10.0**		**POD #5**	**1901**
													POU/POD	**9**	**S**	**3**	**W**	**30**	**NW**	**NE**	**300**	**46**	3.1	**Irrigation**	Proposed POD	1975
													POU/POD	**9**	**S**	**3**	**W**	**30**	**NE**	**NW**	**300**	**46**	9.3	**Irrigation**	Proposed POD	1975
													POU/POD	**9**	**S**	**3**	**W**	**30**	**SW**	**NE**	**300**	**46**	2.77	**Irrigation**	Proposed POD	1975
													POU/POD	**9**	**S**	**3**	**W**	**30**	**SE**	**NW**	**300**	**46**	2.75	**Irrigation**	Proposed POD	1975
													POU/POD	**9**	**S**	**3**	**W**	**30**	**NE**	**NW**	**700**	**46**	0.4	**Irrigation**	Proposed POD	1975
													POU/POD	**9**	**S**	**3**	**W**	**30**	**SE**	**NW**	**700**	**46**	4.93	**Irrigation**	Proposed POD	1975
													POU/POD	**9**	**S**	**3**	**W**	**30**	**NW**	**NW**	**700**	**46**	6.5	**Irrigation**	Proposed POD	1975
													POU/POD	**9**	**S**	**3**	**W**	**30**	**SW**	**NW**	**700**	**46**	22.0	**Irrigation**	Proposed POD	1975
													POU/POD	**9**	**S**	**3**	**W**	**30**	**SW**	**NW**	**800**		3.0	**Irrigation**	Proposed POD	1975
													POU/POD	**9**	**S**	**4**	**W**	**25**	**SE**	**NE**	**800**		0.75	**Irrigation**	Proposed POD	1975
TOTAL ACRES:														TOTAL ACRES:									55.5			

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Additional remarks:_____

For Place of Use or Character of Use Changes

Are there other water right certificates, water use permits or ground water registrations associated with the "from" or the "to" lands? ☒ Yes ☐ No

If YES, list the certificate, water use permit, or ground water registration numbers: **S-54817.**

Pursuant to ORS 540.510, any "layered" water use such as an irrigation right that is supplemental to a primary right proposed for transfer must be included in the transfer or be cancelled. Any change to a ground water registration must be filed separately in a ground water registration modification application.

For Substitution (ground water supplemental irrigation will be substituted for surface water primary irrigation)

Ground water supplemental Permit or Certificate # _____;
Surface water primary Certificate # _____.

For a change from Supplemental Irrigation Use to Primary Irrigation Use

Identify the primary certificate to be cancelled. Certificate # _____

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

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.

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 han full rate of water right
Proposed POD	**Yes**	**Dug Well**	**16'**	**4'**				**2'**	**sand/gravel**	

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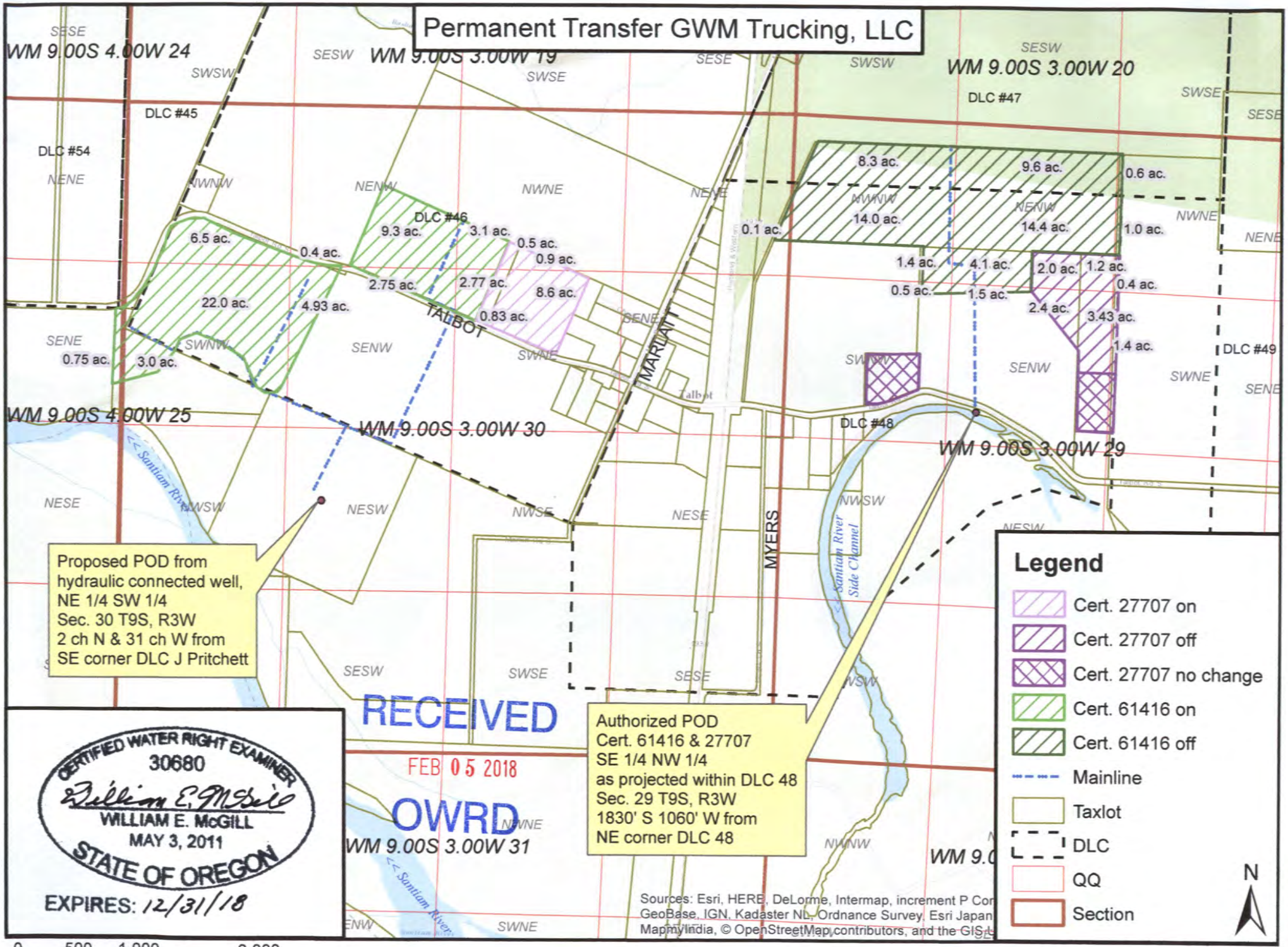
Permanent Transfer GWM Trucking, LLC
WM 9.00S 4.00W 24
WM 9.00S 3.00W 19
WM 9.00S 3.00W 20
WM 9.00S 4.00W 25
WM 9.00S 3.00W 30
WM 9.00S 3.00W 29
WM 9.00S 3.00W 31
DLC #45
DLC #54
DLC #46
DLC #47
DLC #48
DLC #49
TALBOT
MARIATT
MYERS
Santiam River
Santiam River Side Channel
6.5 ac.
0.4 ac.
9.3 ac.
3.1 ac.
0.5 ac.
0.9 ac.
2.75 ac.
2.77 ac.
8.6 ac.
0.83 ac.
22.0 ac.
4.93 ac.
0.75 ac.
3.0 ac.
8.3 ac.
9.6 ac.
0.6 ac.
14.0 ac.
0.1 ac.
14.4 ac.
1.0 ac.
1.4 ac.
4.1 ac.
2.0 ac.
1.2 ac.
0.5 ac.
1.5 ac.
0.4 ac.
2.4 ac.
3.43 ac.
1.4 ac.
Proposed POD from hydraulic connected well, NE 1/4 SW 1/4 Sec. 30 T9S, R3W 2 ch N & 31 ch W from SE corner DLC J Pritchett
Authorized POD Cert. 61416 & 27707 SE 1/4 NW 1/4 as projected within DLC 48 Sec. 29 T9S, R3W 1830' S 1060' W from NE corner DLC 48
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CERTIFIED WATER RIGHT EXAMINER
30680
WILLIAM E. McGILL
MAY 3, 2011
STATE OF OREGON
EXPIRES: 12/31/18
Legend
Cert. 27707 on
Cert. 27707 off
Cert. 27707 no change
Cert. 61416 on
Cert. 61416 off
Mainline
Taxlot
DLC
QQ
Section
N
0 500 1,000 2,000 Feet
Sources: Esri, HERE, DeLorme, Intermap, increment P Cor GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan MapmyIndia, © OpenStreetMap contributors, and the GIS
Map prepared by McGill

Application for Water Right
Transfer
Evidence of Use Affidavit

Oregon Water Resources Department
725 Summer Street NE, Suite A
Salem, Oregon 97301-1266
(503) 986-0900
www.wrd.state.or.us

Please print legibly or type. Be as specific as possible. Attach additional pages if you need more spacing. Supporting documentation must be attached.

State of Oregon)
) ss
County of MARION)

I, GEORGE W. MEYER, in my capacity as OWNER,

mailing address 13274 MARLATT RD S, JEFFERSON, OR 97352

telephone number (503)871-3998, being first duly sworn depose and say:

1. My knowledge of the exercise or status of the water right is based on (check one):

☒ Personal observation ☐ Professional expertise

2. I attest that:

☒ Water was used during the previous five years on the **entire** place of use for Certificate # 27707 & 61416; **OR**

☐ My knowledge is specific to the use of water at the following locations within the last five years:

Certificate #	Township		Range		Mer	Sec	¼ ¼	Gov't Lot or DLC	Acres (if applicable)

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OR

☐ Confirming Certificate # ____ has been issued within the past five years; **OR**

☐ Part or all of the water right was leased instream at some time within the last five years. The instream lease number is: ____ (Note: If the entire right proposed for transfer was not leased, additional evidence of use is needed for the portion not leased instream.); **OR**

☐ The water right is not subject to forfeiture and documentation that a presumption of forfeiture for non-use would be rebutted under ORS 540.610(2) is attached.

☐ Water has been used at the actual current point of diversion or appropriation for more than 10 years for Certificate # ____(For Historic POD/POA Transfers)

(continues on reverse side)

3. The water right was used for: (e.g., crops, pasture, etc.): CROPS

4. I understand that if I do not attach one or more of the documents shown in the table below to support the above statements, my application will be considered incomplete.

Signature of Affiant

6/13/17
Date

Signed and sworn to (or affirmed) before me this 13 day of JUNE, 20 17.

OFFICIAL STAMP
RENEE CLAIRE GONZALEZ
NOTARY PUBLIC-OREGON
COMMISSION NO. 937531
MY COMMISSION EXPIRES MARCH 30, 2019

Notary Public for Oregon

My Commission Expires: 3/30/2019

Supporting Documents	Examples
☐ Copy of a water right certificate that has been issued within the last five years. (not a remaining right certificate)	Copy of **confirming** water right certificate that shows issue date
☒ Copies of receipts from sales of irrigated crops or for expenditures related to use of water	• Power usage records for pumps associated with irrigation use • Fertilizer or seed bills related to irrigated crops • Farmers Co-op sales receipt
☐ Records such as FSA crop reports, irrigation district records, NRCS farm management plan, or records of other water suppliers	• District assessment records for water delivered • Crop reports submitted under a federal loan agreement • Beneficial use reports from district • IRS Farm Usage Deduction Report • Agricultural Stabilization Plan • CREP Report
☐ Aerial photos containing sufficient detail to establish location and date of photograph	Multiple photos can be submitted to resolve different areas of a water right. If the photograph does not print with a "date stamp" or without the source being identified, the date of the photograph and source should be added. Sources for aerial photos: OSU –www.oregonexplorer.info/imagery OWRD – www.wrd.state.or.us Google Earth – earth.google.com TerraServer – www.terraserver.com
☐ Approved Lease establishing beneficial use within the last 5 years	Copy of instream lease or lease number

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PACIFIC POWER

Questions about your bill: Call toll free 1-888-221-7070 pacificpower.net

BILLING DATE: Jul 2, 2015 ACCOUNT NUMBER: 14958231-007 9 DATE DUE: Jul 21, 2015 AMOUNT DUE: $11,366.84

ITEM 6 - ELECTRIC SERVICE

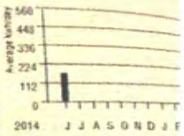
0903 293501 60HP Jefferson OR
Horse Power Rating : 0060.0 Home Farm Schedule 1XL
Service ID: 552266071-001

METER NUMBER	SERVICE PERIOD From To	ELAPSED DAYS	METER READINGS Previous Current	METER MULTIPLIER	AMOUNT USED THIS MONTH
21499224	May 29, 2015 Jun 30, 2015	32	183041 200891	1.0	17,850 kwh
21499224	Demand Jun 30, 2015		49.522	1.0	50 kw

Next scheduled read date: 07-30. Date may vary due to scheduling or weather.

NEW CHARGES - 06/15	UNITS	COST PER UNIT	CHARGE
Delivery Charge Secondary			
for 30 day(s)	16,734 kwh	0.0367800	615.48
for 2 day(s)	1,116 kwh	0.0365600	40.80
(Season End Est Charge Sec Is $750.00)			
Supply Energy Sec Summer	17,850 kwh	0.0579200	1,033.87
Public Purpose		0.0300000	50.70
Energy Conservation Charge	17,850 kwh	0.0022100	39.45
Low Income Assistance	17,850 kwh	0.0005000	8.93
J C Boyle Dam Removal Surcharg	17,850 kwh	0.0003600	6.43
Copco Iron Gate Dams Remv Schg	17,850 kwh	0.0010900	19.46
Total New Charges			1,815.12

Historical Data - ITEM 6



Your Average Daily kwh Usage

PERIOD ENDING	JUN 2
Avg. Daily Temp	6
Total kwh	178
Avg. kwh per Day	5
Cost per Day	$5

ITEM 18 - ELECTRIC SERVICE

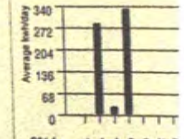
3636 Talbot Rd S # 50HP Jefferson OR
50hp Davidson Farm #2 Schedule 1XL
Service ID: 560457871-001

METER NUMBER	SERVICE PERIOD From To	ELAPSED DAYS	METER READINGS Previous Current	METER MULTIPLIER	AMOUNT USED THIS MONTH
35753186	Jun 1, 2015 Jul 1, 2015	30	93041 99979	1.0	6,938 kwh
35753186	Demand Jul 1, 2015		33.489	1.0	33 kw

Next scheduled read date: 07-30. Date may vary due to scheduling or weather.

NEW CHARGES - 06/15	UNITS	COST PER UNIT	CHARGE
Delivery Charge Secondary	6,938 kwh	0.0367800	255.18
(Season End Est Charge Sec Is $510.00)			
Supply Energy Sec Summer	6,938 kwh	0.0579200	401.85
Public Purpose		0.0300000	19.71
Energy Conservation Charge	6,938 kwh	0.0022100	15.33
Low Income Assistance	6,938 kwh	0.0005000	3.47
J C Boyle Dam Removal Surcharg	6,938 kwh	0.0003600	2.50
Copco Iron Gate Dams Remv Schg	6,938 kwh	0.0010900	7.56
Total New Charges			705.60

Historical Data - ITEM



Your Average Daily kwh U

PERIOD ENDING	J
Avg. Daily Temp.	
Total kwh	
Avg. kwh per Day	
Cost per Day	

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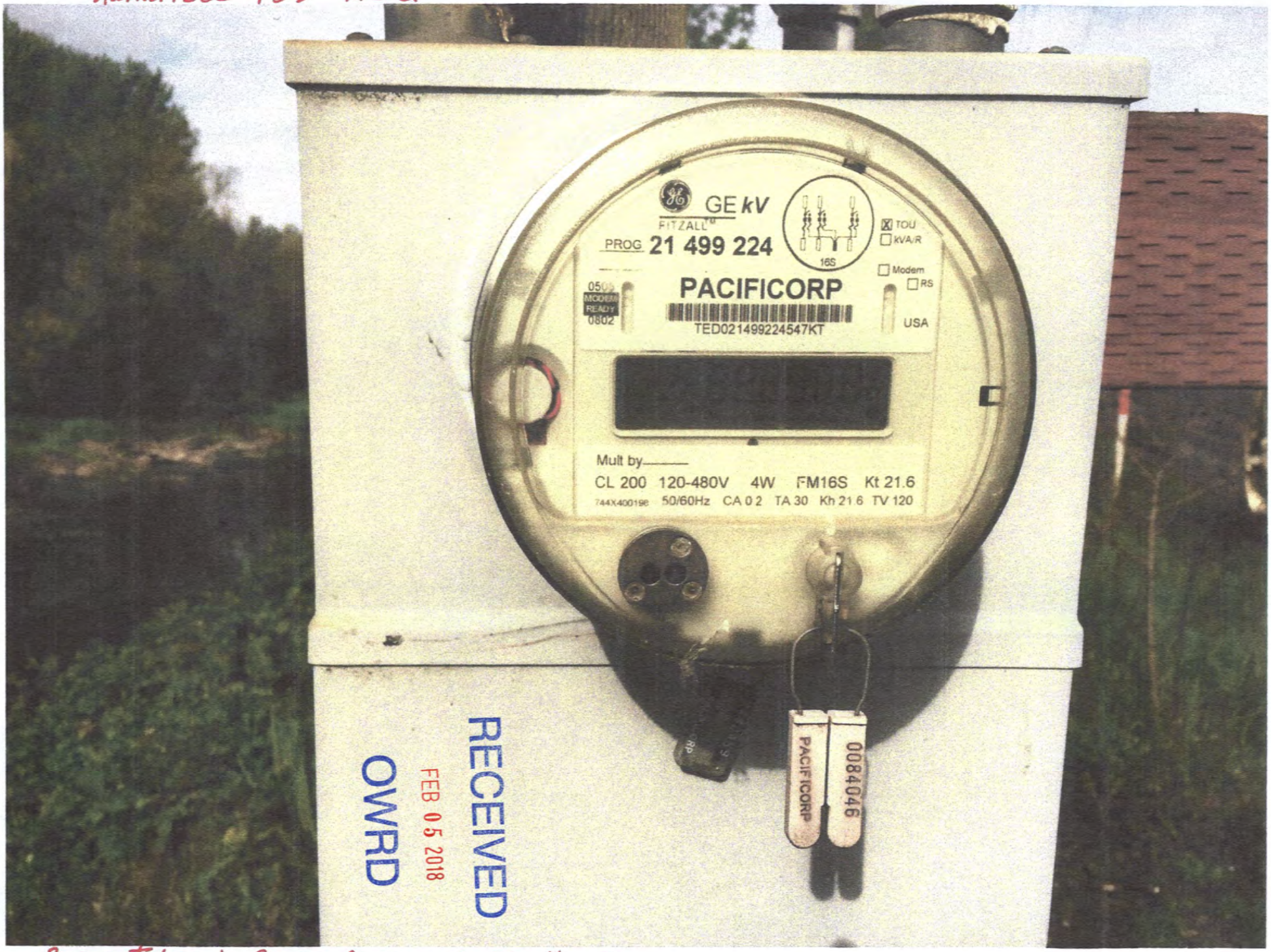
From George Meyer
4-26-16 MEM

Authorized POD Meter



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Picture Taken by George Meyer 4-26-16 WSM

District Water Right Transfer
Supplemental Form D

WATER RIGHTS ISSUED IN THE NAME OF OR WITHIN THE BOUNDARIES OF A DISTRICT

The Department encourages applicants to coordinate with districts during the planning and preparation of transfer applications involving water rights issued in the name of a district or involving the transfer of water rights located within the boundaries of a district.

This form must be included with your transfer application if the transfer involves rights issued in the name of a district or rights located within district boundaries. This form can be used for both permanent and temporary transfers.

1. APPLICANT INFORMATION

Name: George W. Meyer for GWM Trucking, LLC

Address: 13274 Marlatt Rd S

City: Jefferson State:OR Zip:97352

Home Phone: (541) 327-2840 Work Phone: _____ Other Phone: (503) 871-3991

Fax: (541) 327-1596**E-Mail Address: gmfarms@croisan.com

2. DISTRICT INFORMATION

District Name: Santiam Water Control District

Address: 284 E Water St

City: Stayton State: OR Zip:97382

Home Phone: _____ Work Phone: (503) 769-2669 Other Phone: (503) 559-2695

Fax: _____**E-Mail Address: brents.swcd@wvi.com

**** By providing an e-mail address, the district and the applicant consent to receive all correspondence from the Department electronically. Copies of final order documents will also be mailed.**

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3. WATER RIGHT(S) ISSUED IN THE NAME OF ADISTRICT(S) OR LOCATED WITHIN THE BOUNDARIES OF A DISTRICT

List the water right(s) involved in this transfer:

	Application / Decree	Permit / Previous Transfer	Certificate
1.		-	27707
2.		-	61416
3.		S-54817 (T-11606)	
4.		-	
5.		-	
6.		-	

4. DISTRICT CONCURRENCE WITH PROPOSED WATER RIGHT TRANSFER

The district certifies the following:

(1) The applicant has conferred with the district about the proposed water right transfer application;
(2) The district has reviewed the applicant's proposed water right transfer application and maps; and
(3) The district concurs with the proposed water right transfer application.

District Manager Signature	Brent Stevenson Name (print)	6-13-17 Date

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District Water Right Transfer
Supplemental Form D

WATER RIGHTS ISSUED IN THE NAME OF OR WITHIN THE BOUNDARIES OF A DISTRICT

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1. APPLICANT INFORMATION

Name: George W. Meyer for GWM Trucking, LLC

Address: 13274 Marlatt Rd S

City: Jefferson State:OR Zip:97352

Home Phone: (541) 327-2840 Work Phone: _____ Other Phone: (503) 871-3991

Fax: (541) 327-1596**E-Mail Address: gmfarms@croisan.com

2. DISTRICT INFORMATION

District Name: Sidney Irrigation Cooperative

Address: P.O. Box 736

City: Jefferson State:OR Zip:97352

Home Phone: _____ Work Phone: _____ Other Phone: (541) 971-3421

Fax: _____**E-Mail Address: _____

**** By providing an e-mail address, the district and the applicant consent to receive all correspondence from the Department electronically. Copies of final order documents will also be mailed.**

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3. WATER RIGHT(S) ISSUED IN THE NAME OF ADISTRICT(S) OR LOCATED WITHIN THE BOUNDARIES OF A DISTRICT

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4.		-	
5.		-	
6.		-	

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(2) The district has reviewed the applicant's proposed water right transfer application and maps; and
(3) The district concurs with the proposed water right transfer application.

District Manager Signature

Keith Johnston
Name (print)

8-14-17
Date

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Land Use Information Form

Oregon Water Resources Department
725 Summer Street NE, Suite A
Salem, Oregon 97301-1266
(503) 986-0900
www.wrd.state.or.us

NOTE TO APPLICANTS

In order for your application to be processed by the Water Resources Department (WRD), this Land Use Information Form must be completed by a local government planning official in the jurisdiction(s) where your water right will be used and developed. The planning official may choose to complete the form while you wait, or return the receipt stub to you. Applications received by WRD without the Land Use Form or the receipt stub will be returned to you. Please be aware that your application will not be approved without land use approval.

This form is NOT required if:

1) Water is to be diverted, conveyed, and/or used only on federal lands; **OR**
2) The application is for a water right transfer, allocation of conserved water, exchange, permit amendment, or ground water registration modification, and **all** of the following apply:
   a) The existing and proposed water use is located entirely within lands zoned for exclusive farm-use or within an irrigation district;
   b) The application involves a change in place of use only;
   c) The change does not involve the placement or modification of structures, including but not limited to water diversion, impoundment, distribution facilities, water wells and well houses; and
   d) The application involves irrigation water uses only.

NOTE TO LOCAL GOVERNMENTS

The person presenting the attached Land Use Information Form is applying for or modifying a water right. The Water Resources Department (WRD) requires its applicants to obtain land-use information to be sure the water rights do not result in land uses that are incompatible with your comprehensive plan. Please complete the form or detach the receipt stub and return it to the applicant for inclusion in their water right application. You will receive notice once the applicant formally submits his or her request to the WRD. The notice will give more information about WRD's water rights process and provide additional comment opportunities. You will have 30 days from the date of the notice to complete the land-use form and return it to the WRD. If no land-use information is received from you within that 30-day period, the WRD may presume the land use associated with the proposed water right is compatible with your comprehensive plan. Your attention to this request for information is greatly appreciated by the Water Resources Department. If you have any questions concerning this form, please contact the WRD's Customer Service Group at 503-986-0801.

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Land Use Information Form

Oregon Water Resources Department
725 Summer Street NE, Suite A
Salem, Oregon 97301-1266
(503) 986-0900
www.wrd.state.or.us

Applicant(s): George W. Meyer for GWM Trucking, LLC

Mailing Address: 13274 Marlatt Rd S

City: Jefferson State: OR Zip Code: 97352 Daytime Phone: (503) 871-3998

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:
9S	3W	30	NWNE SWNE	200	EFU	☐ Diverted ☐ Conveyed ☒ Used	Farming
9S	3W	30	NWNE NENW SENW SWNE	300	EFU	☐ Diverted ☐ Conveyed ☒ Used	Farming
9S	3W	30	NENW NWNW SWNW SENW	700	EFU	☐ Diverted ☐ Conveyed ☒ Used	Farming
9S	3W	30	SWNW	800	EFU	☐ Diverted ☐ Conveyed ☒ Used	Farming
9S	4W	25	SENE	800	EFU	☐ Diverted ☐ Conveyed ☒ Used	Farming

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

Marion 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) Santiam River

Estimated quantity of water needed: 166 ☐ 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:

It is proposed to change the place of use and POD for 66.33 acres of certificate water rights.

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): 17.136.020(a)

☐ 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

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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.

Name: Brooke Rich Title: Senior Planner

Signature: [signature] Phone: 541-523-6543 Date: 6-14-17

Government Entity: Wasco County

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: _____

Permit A-41E-3-59 State Printing 1957

Certi 27707

STATE OF OREGON

COUNTY OF MARION

CERTIFICATE OF WATER RIGHT

This Is to Certify, That ALBERT E. COLE

of Rt. 1, Box 149, Jefferson, State of Oregon, has made proof to the satisfaction of the STATE ENGINEER of Oregon, of a right to the use of the waters of Old Channel of Santiam River a tributary of Santiam River for the purpose of irrigation of 17.8 acres

under Permit No. 24026 of the State Engineer, and that said right to the use of said waters has been perfected in accordance with the laws of Oregon; that the priority of the right hereby confirmed dates from January 20, 1956

that the amount of water to which such right is entitled and hereby confirmed, for the purposes aforesaid, is limited to an amount actually beneficially used for said purposes, and shall not exceed 0.22 cubic foot per second

or its equivalent in case of rotation, measured at the point of diversion from the stream. The point of diversion is located in the SE¼ NW¼, as projected within Roby DLC 48, Section 29, T. 9S., R. 3W., W.M.

The amount of water used for irrigation, together with the amount secured under any other right existing for the same lands, shall be limited to one-eightieth of one cubic foot per second per acre, or its equivalent for each acre irrigated and shall be further limited to a diversion of not to exceed 2½ acre feet per acre for each acre irrigated during the irrigation season of each year,

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

A description of the place of use under the right hereby confirmed, and to which such right is appurtenant, is as follows:

0.4 acre NW¼ NE¼
2.2 acres SW¼ NE¼
3.2 acres NE¼ NW¼
3.4 acres SW¼ NW¼
8.6 acres SE¼ NW¼
Section 29
T. 9S., R. 3W., W.M.

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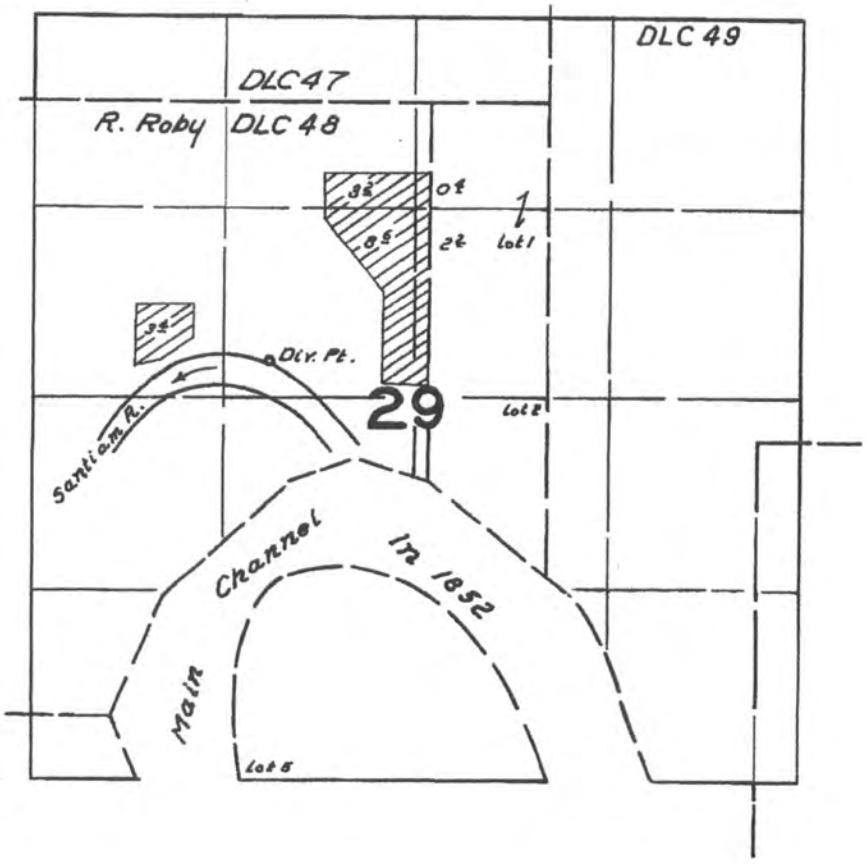
The right to the use of the water for the purposes aforesaid is restricted to the lands or place of use herein described.

WITNESS the signature of the State Engineer, affixed this date. OCTOBER 21 1960

LEWIS A. STANLEY
State Engineer

Recorded in State Record of Water Right Certificates, Volume 19, page 27707

T. 9S. R. 3W. W.M.



FINAL PROOF SURVEY
UNDER

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Application No. 30515 Permit No. 24026
IN NAME OF

Albert E. Cole

Surveyed April 30 1959, by C.O. Bartels

19592

Cert. 61461

STATE OF OREGON

COUNTY OF MARION

CERTIFICATE OF WATER RIGHT

THIS CERTIFICATE ISSUED TO

VERNON W. AND DOROTHY B. MEYER
ROUTE 1, BOX 186-A
JEFFERSON, OREGON, 97356

confirms the right to use the waters of A SLOUGH, a tributary of THE SANTIAM RIVER, for the purpose of IRRIGATING 55.5 ACRES.

The right has been perfected under Permit 39853. The date of priority is FEBRUARY 24, 1975. The right is limited to not more than 0.69 CUBIC FOOT PER SECOND or its equivalent in case of rotation, measured at the point of diversion from the source.

The point of diversion is located as follows:

SE 1/4 NW 1/4, AS PROJECTED WITHIN DLC 48, SECTION 29, T 9 S, R 3 W, W.M.; 1830 FEET SOUTH AND 1060 FEET WEST FROM NE CORNER DLC 48.

The amount of water used for irrigation, together with the amount secured under any other right existing for the same lands, shall be limited to ONE-EIGHTIETH of one cubic foot per second per acre, or its equivalent for each acre irrigated and shall be further limited to a diversion of not to exceed 2.5 acre-feet per acre for each acre irrigated during the irrigation season of each year.

The right shall conform to such reasonable rotation system as may be ordered by the proper state officer.

A description of the place of use under the right, and to which such right is appurtenant, is as follows:

SEE NEXT PAGE

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NW 1/4 NE 1/4 1.0 ACRE
AS PROJECTED WITHIN DLC 48
NW 1/4 NE 1/4 0.6 ACRE
NE 1/4 NW 1/4 9.6 ACRES
BOTH AS PROJECTED WITHIN DLC 47
NE 1/4 NW 1/4 18.5 ACRES
NW 1/4 NW 1/4 15.4 ACRES
BOTH AS PROJECTED WITHIN DLC 48
NW 1/4 NW 1/4 8.3 ACRES
AS PROJECTED WITHIN DLC 47
SW 1/4 NW 1/4 0.5 ACRE
SE 1/4 NW 1/4 1.5 ACRES
BOTH AS PROJECTED WITHIN DLC 48
SECTION 29

NE 1/4 NE 1/4 0.1 ACRE
AS PROJECTED WITHIN DLC 48
SECTION 30
TOWNSHIP 9 SOUTH, RANGE 3 WEST, W.M.

55.5

The right to the use of the water for the above purpose is restricted to beneficial use on the lands or place of use described. The right is subject to minimum flows established by the Water Resources Commission with an effective date prior to this right.

WITNESS the signature of the Water Resources Director, affixed this date JUNE 6, 1989.

/s/ WILLIAM H. YOUNG
Water Resources Director

Recorded in State Record of Water Right Certificates numbered 61416

52799.TES

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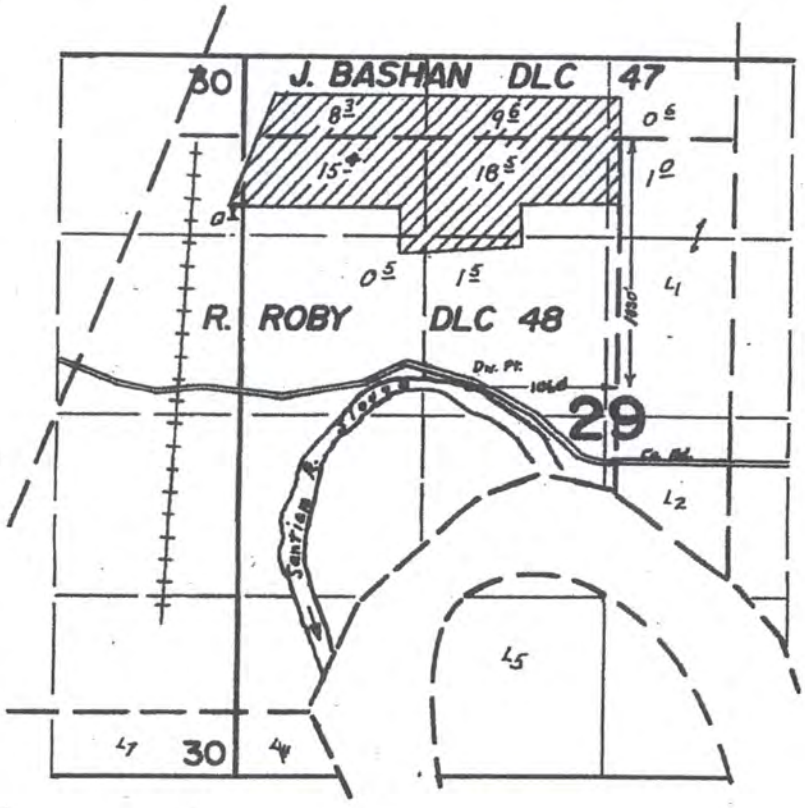
T.9S. R.3W., W.M.



FINAL PROOF SURVEY

UNDER

Application No. 52799... Permit No. 39853.....

IN NAME OF

VERNON W. & DOROTHY B. MEYER

Surveyed MAY 15 1979 by L. H. NUNN

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Authorized POD (60 HP Pump)

Picture taken by George Meyer 4-26-16 WBM

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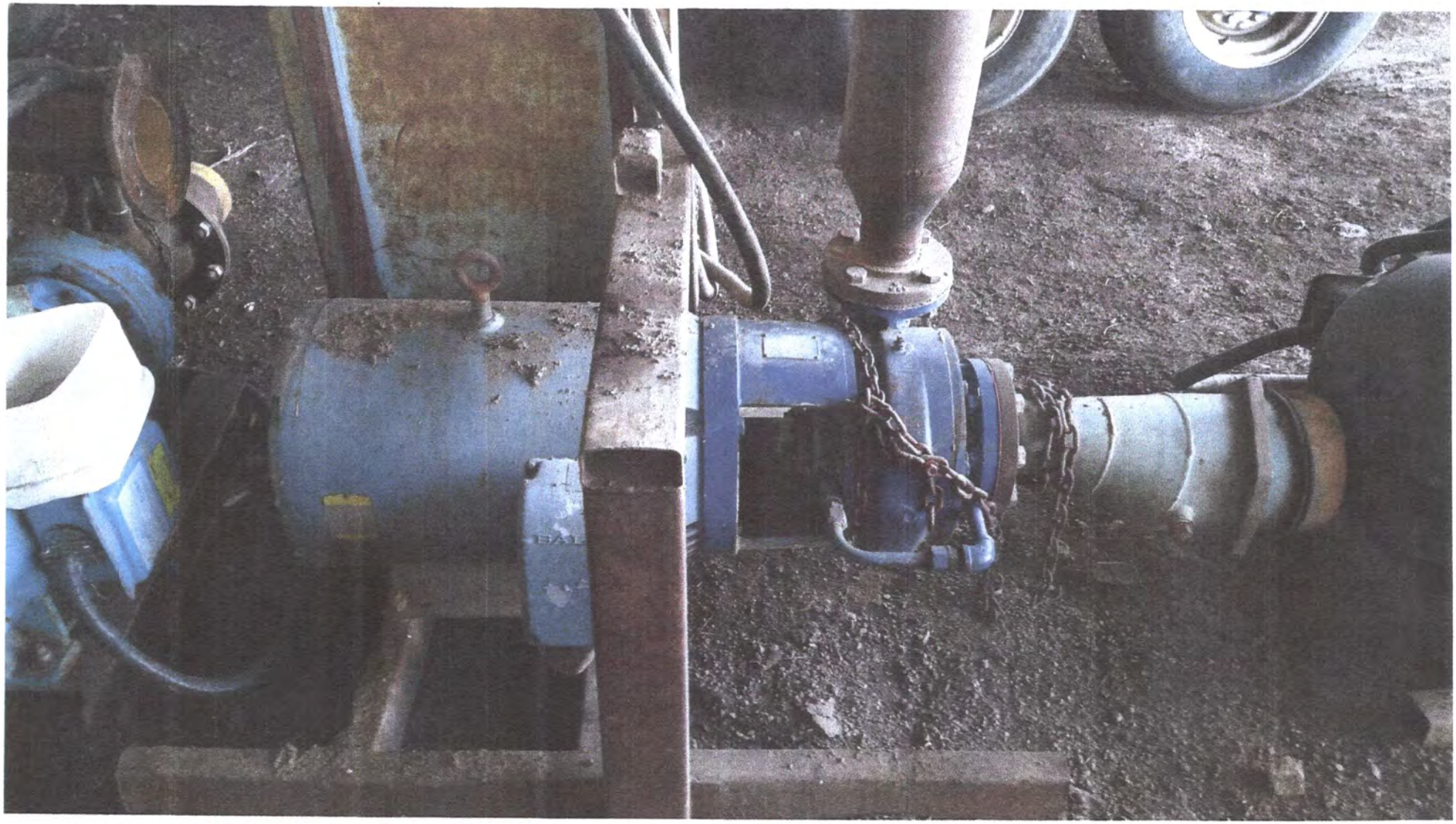

POD 60HP Pump 4-4-16 WEM
(Authorized POD)

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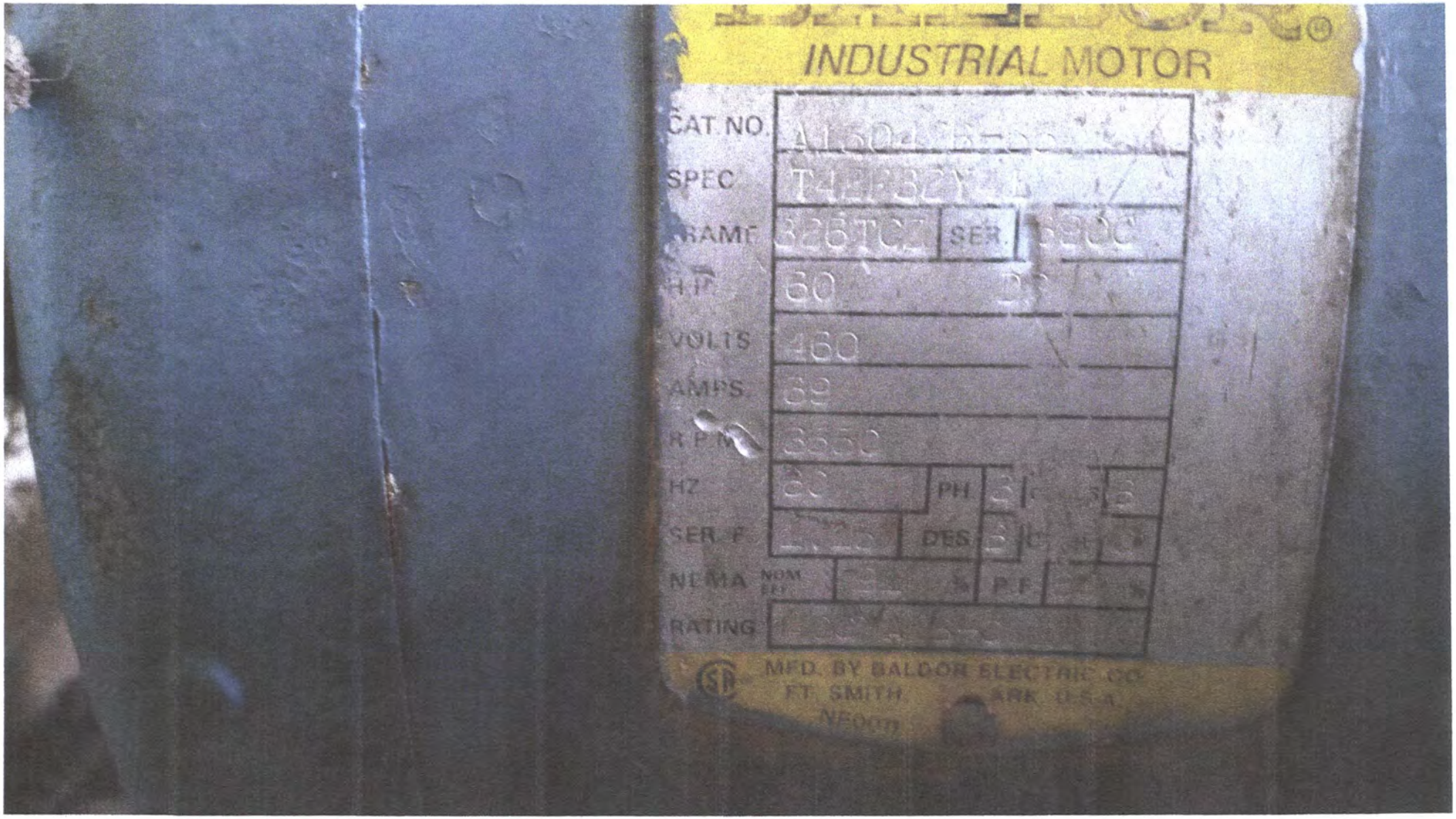

POD 60 HP Pump Motor Tag 4-4-16 WEM

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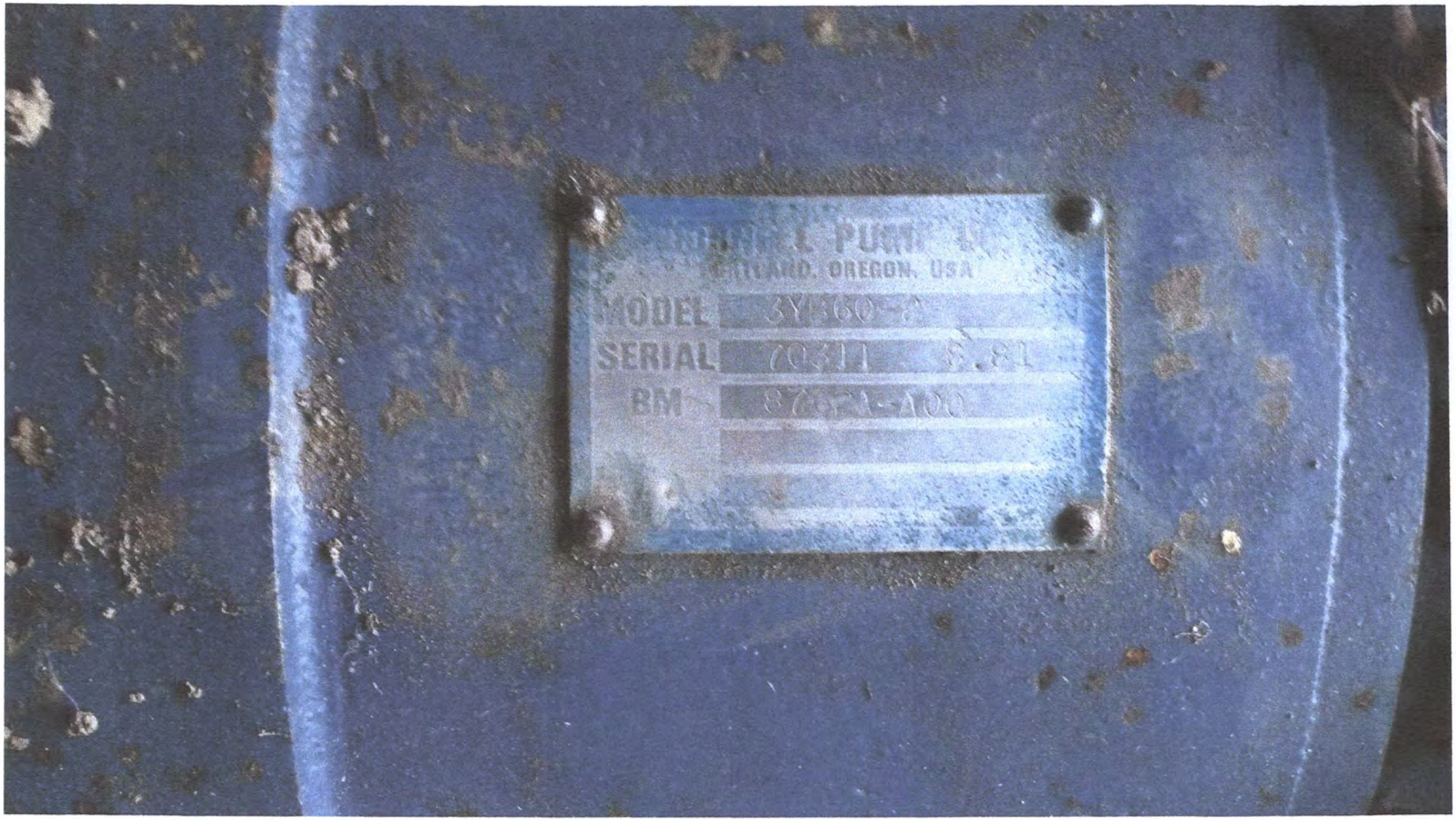

POD 60 HP Pump Tag 4-4-16 WEM

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"~~Temporary~~ Proposed POD"

STATE ENGINEER
Salem, Oregon

Well Record

STATE WELL NO. 9/3W-30L
COUNTY Marion
~~APPLICATION NO.~~ GR-3310

OWNER: D. A. Davidson

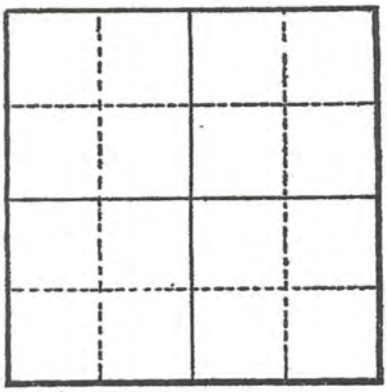
MAILING ADDRESS: Route 1, Box 129

CITY AND STATE: Jefferson, Oregon

LOCATION OF WELL: Owner's No. _____

NE ¼ SW ¼ Sec. 30 T. 9 ~~N.~~ S., R. 3 ~~E.~~ W., W.M.

Bearing and distance from section or subdivision corner 2 ch. N. & 31 ch. W.



Section _____

Altitude at well _____

TYPE OF WELL: dug Date Constructed 1938

Depth drilled 16' Depth cased _____

CASING RECORD:

FINISH:

AQUIFERS:
Loam, Sand, Gravel

WATER LEVEL:

PUMPING EQUIPMENT: Type Rainflow H.P. 20
Capacity 500 G.P.M.

WELL TESTS:
Drawdown _____ ft. after _____ hours _____ G.P.M.
Drawdown _____ ft. after _____ hours _____ G.P.M.

USE OF WATER Irrigation Temp. _____ °F. _____, 19____
SOURCE OF INFORMATION GR-3072
DRILLER or DIGGER _____
ADDITIONAL DATA:
Log x Water Level Measurements _____ Chemical Analysis _____ Aquifer Test _____

REMARKS:

Loam	12	
Sand	1	
Gravel	3	16

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State Printing 89316

EnviroLogic Resources, Inc.
ENVIRONMENTAL • WATER RESOURCES SCIENTISTS

March 14, 2016
10404.001

GM Meyer Farms, LLC
13274 Marlatt Rd S
Jefferson, OR 97532

VIA First Class/Email

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Attention: **George Meyer**

Subject: **Surface Water to Groundwater Substitution**
Stream Depletion Evaluation
Jefferson, Oregon

Dear Mr. Meyer:

EnviroLogic Resources, Inc., was retained to evaluate effects on the Santiam River by pumping a well on farmland intended to be irrigated via a transfer of surface water rights from Santiam Water Control District to the well as the point of diversion. In order for the transfer to be considered for approval, the Oregon Water Resources Department (WRD) expects the requirements of Oregon Administrative Rule (OAR) 690-380-2130 to be met. Among these requirements are that the proposed change in point of diversion will affect the surface water source similarly to the authorized point of diversion. "Similarly" means that the use of groundwater at the new point of diversion affects the same surface water source specified in the water right and would result in stream depletion of at least 50 percent of the rate of appropriation within 10 days of continuous pumping. **Our analysis shows the proposed new point of diversion meets these requirements.**

The farm is located in rural Marion County approximately 5.5 miles northwest of the town of Jefferson. The well (MARI 15351) proposed for use is 800 feet from the Santiam River. The well will be used to irrigate 62 acres. In addition, the well is used to irrigate 45.8 acres under GR-3310. The relationship of the well to the river is shown on Figure 1.

LOCAL HYDROGEOLOGY

The proposed new place of use is along the lower Santiam River in the Ankeny Bottom area. The Santiam River and tributary streams in the Ankeny Bottom area meander in belts ½- to

3-miles wide (Helm and Leonard, 1977). The geologic materials present in this area include, from youngest to oldest, Younger Alluvium, Older Alluvium, Terrace Deposits, and Consolidated Tertiary Rocks. Of these units, the Younger Alluvium is of most importance to this analysis. The Consolidated Tertiary Rocks are composed of marine sediments and volcanics, which may be part of a regional aquifer that occurs beneath the alluvial materials. The Terrace Deposits generally occur on slopes above the water table. The Older Alluvium occurs at depth, below the Younger Alluvium.

The Younger Alluvium underlies the floodplain of the Santiam River and its tributaries. Along the major rivers the Younger Alluvium consists of gravel, sand, and some silt and clay. The thickness of the Younger Alluvium varies from a few feet along tributaries to a few tens of feet along the river. Where the saturated thickness is large enough, the Younger Alluvium yields large quantities of water to wells. In the area of the farm, the Younger Alluvium aquifer is estimated to be about 30 feet thick based on nearby well logs. At the location of well MARI 15351, the minimum thickness of the aquifer can be considered to be the difference between the water table (about 2 feet below ground surface) and the depth of the well (16 feet), or 14 feet thick.

The specific yield for the Younger Alluvium has been estimated by Helm and Leonard (1977) to be between 0.18 and 0.22 in the Ankeny Bottom area. These values are reasonable for alluvial sand and gravel aquifers.

The specific capacity can be used to estimate transmissivity, T, in an unconfined aquifer using the equation:

$$T = \text{Specific Capacity} * 200$$

Well MARI 15351 produces approximately 450 gallons per minute (gpm) with a few feet of drawdown. Its specific capacity is between 150-200 gpm/ft of drawdown. This value fits in the range of specific capacities in the Ankeny Bottom area, which may range from 8.3-600 gpm/ft of drawdown, but are more typically about 200 gpm/ft of drawdown (Helm and Leonard, 1977). Using the above equation, we calculate a transmissivity between 30,000 ft^2/d and 40,000 ft^2/d.

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The hydraulic conductivity, K, is estimated from transmissivity using the equation:

$K = T/b$,
where b is the aquifer thickness

For an aquifer thickness of 30 feet, the hydraulic conductivity may range from 1000 ft/d to 1333 ft/d. It is our understanding that the Oregon WRD considers the hydraulic conductivity to be in the range of 250 ft/d to 1000 ft/d in the Ankeny Bottom area (K. Wozniak, 2016, personal communication). Based on well performance, it appears that the hydraulic

conductivity is likely closer to 1000 ft/d than 250 ft/d.

STREAM DEPLETION MODEL

A stream depletion model coded by the US Geological Survey (Reeves, 2008) was used to evaluate stream depletion characteristics in the Santiam River when pumping the well. The analytical solution determined by Hunt (1999) for a partially penetrating stream with streambed resistance was used. In addiiton, a comparison to the Jenkins (1968) solution was made as part of the sensitivity analysis. Table 1 shows the input parameters and results for various scenarios.

The range of aquifer parameters established by several sources, as well as site specific information from the onsite well, form the basis for the "expected case," shown as Run 1. We used a hydraulic conductivity of 1000 ft/d and an aquifer thickness of 14 feet to determine a conservative transmissivity for the analysis. A mid-point value for the specific yield was selected for the storage coefficient. Streambed conductance was considered to be slightly smaller than the hydraulic conductivity to evaluate a conservative solution, even though it is likely that fine particles will be winnowed out of the streambed by the rapidly flowing water.

These parameters were entered into the online stream depletion model (USGS, 2013) and the well was "pumped" for 10 days. The pumping rate used represents the total amount of water to be pumped from the wells to service existing rights (GR-3310) and the new proposed transfer. GR-3310 authorizes irrigation of 45.8 acres, which at 1/80th cubic feet per second/acre (cfs/acre) amounts to 257 gpm. The proposed transfer allows for irrigation of about 62 acres, which at 1/80th cfs/acre amounts to 348 gpm. The total amount to be pumped from the well (new point of diversion) will be about 605 gpm.

To meet the regulatory requirement of 50 percent contribution to pumping from the stream within 10 days, approximately 0.39 cfs will need to be depleted from the stream by that time. Under the expected case shown on Figure 2, approximately 0.65 cfs is contributed from the stream. This amount meets the regulatory requirement that the new point of appropriation affect the stream "similarly" as the original point of diversion.

SENSITIVITY ANALYSIS

A sensitivity analysis was conducted to evaluate how changing various parameters might affect the results. Table 1 shows the results of 21 runs of the STRMDEPL08 model that consider variations in the input parameters. The hydraulic conductivity reportedly may range from 250-1333 ft/d. Varying K between these values results in a range of stream contribution of between 0.22 cfs to 0.73 cfs. The analysis appears to be somewhat sensitive to changes in hydraulic conductivity. Only at the very low end of K does the proposed new point of appropriation not divert the required 50 percent contribution from the stream. As discussed

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earlier, it is unlikely that the actual hydraulic conductivity is as low as 250 ft/d.

Varying aquifer thickness, and thus transmissivity, creates some differences in the amount of stream depletion after 10 days. Comparing results of runs with an aquifer thickness of 14 feet with those with an aquifer thickness of 30 feet shows that the thicker the aquifer, the larger the depletion from the stream. The stream depletion ranges from 0.43 to 0.9 cfs. In all cases, the runs where an aquifer thickness of 30 feet was selected meet the regulatory requirement.

The storage coefficient, which is equivalent to specific yield in unconfined aquifers was varied from 0.15 to 0.25. In cases where the storage coefficient is smaller, a larger amount of water is contributed by the stream to the production in the well. This is because the cone of depression propagates quicker with a lower storage coefficient, allowing the stream to contribute to the production in the well sooner. In all variations of storage coefficient the proposed point of appropriation meets the regulatory requirement for stream depletion (0.73 to 0.58 cfs).

Streambed conductance was varied from 250 ft/d to 1000 ft/d while keeping hydraulic conductivity and aquifer thickness the same. Streambed conductance has little effect on the amount of water contributed by the stream to the well. Varying the streambed conductance resulted in stream depletion in a range of 0.6 to 0.65 cfs.

The effects of changing the pumping rate were considered as part of the sensitivity analysis. If only the amount of water provided by the transfer (350 gpm) were pumped by the well, approximately 0.37 cfs would be contributed by the stream after 10 days. This amount is slightly less than the regulatory requirement of 0.39 cfs. Extending the evaluation to 11 days would allow the well to pump 50 percent of the proposed transfer amount by depleting the stream. Similarly, if the aquifer were 2 feet thicker (16 feet vs 14 feet) the regulatory requirement is met. In addition, if the storage coefficient were 0.18 vs the modeled 0.20, the regulatory requirement is met. The use of 605 gpm in the analysis is consistent with our understanding of Oregon WRD policy regarding stream depletion analyses where a point of appropriation services more than one water right.

Finally, a comparison to the Jenkins (1968) solution was made. The primary differences are that Jenkins assumes the stream is fully penetrating (i.e., the depth of the stream is equivalent to the aquifer thickness), and that there is no streambed resistance. The results of the Jenkins model run are similar to the Hunt solution – 0.67 vs. 0.65 cfs.

The selection of the Hunt (1999) solution, and the aquifer variables presented, to evaluate stream depletion related to the proposed transfer appears to provide results that are consistent with site conditions. The hydraulic conductivity and aquifer thickness variables create the largest differences in results for the ranges modeled. However, nearly all combination of aquifer characteristics modeled result in stream depletion that meets the regulatory

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requirements for approval of the transfer.

ADDITIONAL REGULATORY REQUIREMENTS

With respect to requirements promulgated in OAR 690-380-5000, we believe the proposed transfer meets these requirements. The water right affected by the proposed transfer is a water right subject to transfer and no portion proposed for transfer has been canceled. The proposed transfer will not result in enlargement of the water right. Because the new point of diversion is downstream, no injury to other water right holders is expected. In fact, the proposed transfer will allow more water to remain in-stream for a longer reach, benefiting fish and wildlife dependent on river flows. In addition, because the new point of diversion is a well near the river rather than a pump station constructed in the river, a fish screen will not be necessary and aesthetic uses of the river can be maintained.

CLOSING COMMENTS

The stream depletion analysis described in this report was conducted using accepted hydrogeologic practices and vetted models. The selection of input variables reflects our understanding of site conditions. The analysis shows that within 10 days, 50 percent of the transferred water right is produced by depleting the stream, meeting the regulatory requirement to affect the surface water "similarly" to the original diversion.

Thank you for the opportunity to provide professional hydrogeologic services. Please feel free to call me at (503) 768-5121 if you have any questions or comments.

Sincerely,
EnviroLogic Resources, Inc.

Thomas J Calabrese, RG, CWRE
Principal Hydrogeologist
Project Manager

ATTACHMENTS

Table 1	STRMDEPL08 Model Variables
Figure 1	Well Location and Relationship to Santiam River
Figure 2	Run 1 – Expected Case

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REFERENCES

Driscoll, 1986, Groundwater and wells: Johnson Filtration Systems, Inc., 2nd Edition, 1089 p.

Helm, D.C. and Leonard, A.R., 1977, Ground-waater resources of the lower Santiam River Basin, Middle Wilamette Valley, Oregon: Oregon Water Resources Department Ground-Water Report No. 25, in cooperation with the US Geological Survey.

Hunt, Bruce, 1999, Unsteady stream depletion from ground water pumping: Ground Water, v. 37, no. 1, p. 98-102.

Jenkins, C.T., 1968, Computation of rate and volume of stream depletion by wells: U.S. Geological Survey Techniques of Water-Resources Investigations, book 4, chap. D1, 17 p.

Reeves, H.W., 2008, STRMDEPL08—An extended version of STRMDEPL with additional analytical solutions to calculate streamflow depletion by nearby pumping wells: U.S. Geological Survey Open-File Report 2008–1166, 22 p. Date Posted: June 16, 2008: [http://pubs.water.usgs.gov/ofr20081166/]

United States Geological Survey, 2013, STRMDEPL08: posted at http://mi.water.usgs.gov/software/groundwater/CalculateWell/index.html

Wozniak, Karl, 2016, personal communication January 12, 2016.

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TABLE 1
STRMDEPL08 Model Variables
GM Meyer Farms, LLC
Jefferson, Oregon

Run Number	Distance (ft)	Aquifer Thickness (ft)	Hydraulic Conductivity (ft/d)	Transmissivity (ft2/d)	Storage Coefficient	Streambed Conductance ft/d	Pumping Rate gpm	Days of Pumping	Depletion cfs	Pass/Fail
Range	800	14-30	250-1333	3500-40000	.15-.25	250-1333	350-605	10		
Expected Case										
Run 1	800	14	1000	14000	0.2	800	605	10	0.65	Pass
Vary Hydraulic Conductivity										
Run 2	800	14	250	3500	0.2	250	605	10	0.22	Fail
Run 3	800	14	625	8750	0.2	625	605	10	0.51	Pass
Run 4	800	14	800	11200	0.2	800	605	10	0.59	Pass
Run 5	800	14	1000	14000	0.2	1000	605	10	0.65	Pass
Run 6	800	14	1333	18662	0.2	1333	605	10	0.73	Pass
Vary Aquifer Thickness										
Run 7	800	30	250	7500	0.2	250	605	10	0.43	Pass
Run 8	800	30	625	18750	0.2	625	605	10	0.71	Pass
Run 9	800	30	800	24000	0.2	800	605	10	0.78	Pass
Run 10	800	30	1000	30000	0.2	1000	605	10	0.84	Pass
Run 11	800	30	1333	40000	0.2	1333	605	10	0.9	Pass
Vary Storage Coefficient										
Run 12	800	14	1000	14000	0.15	800	605	10	0.73	Pass
Run 13 (Run 1)	800	14	1000	14000	0.2	800	605	10	0.65	Pass
Run 14	800	14	1000	14000	0.25	800	605	10	0.58	Pass
Vary Streambed Conductance										
Run 15	800	14	1000	14000	0.2	250	605	10	0.6	Pass
Run 16	800	14	1000	14000	0.2	625	605	10	0.64	Pass
Run 17	800	14	1000	14000	0.2	800	605	10	0.65	Pass
Run 18 (Run 5)	800	14	1000	14000	0.2	1000	605	10	0.65	Pass
Vary Production Rate/Days Pumping										
Run 19	800	14	1000	14000	0.2	800	350	10	0.37	Fail
Run 20	800	14	1000	14000	0.2	800	350	11	0.39	Pass
Compare Hunt and Jenkins Solutions										
Run 21	800	14	1000	14000	0.2	–	605	10	0.67	Pass

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FIGURE 1

Well Location and Relationship to Santiam River

GM Meyer Farms, LLC
Jefferson, Oregon

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EnviroLogic Resources, Inc.
ENVIRONMENTAL · WATER RESOURCES SCIENTISTS

Partially penetrating stream with streambed resistance (Hunt, 1999)

Distance (ft):	800
Transmissivity (ft2/day):	14000
Storage Coefficient:	.2
Streambed Conductance (ft/day):	800
Pumping Rate (gpm):	605
Days of Pumping:	10

Reset Submit

Units used

- ft: foot
- ft2/day: square foot per day
- gpm: gallons per minute
- ft/day: foot per day
- Note, 1 cubic foot per second = 448.8 gallons per minute

USGS science for a changing world

Day	Stream Depletion (cubic foot per second) 1 cubic foot per second=448.8 gallons per minute
1	0.0353
2	0.1555
3	0.2672
4	0.3572
5	0.4296
6	0.4888
7	0.5382
8	0.5801
9	0.6162
10	0.6478

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FIGURE 2

Run 1 – Expected Case

GM Meyer Farms, LLC
Jefferson, Oregon

STATE ENGINEER
Salem, Oregon

"~~Temporary~~ Proposed POD"

Well Record

STATE WELL NO. 9/3W-30L
COUNTY Marion
~~APPLICATION NO.~~ GR-3310

OWNER: D. A. Davidson

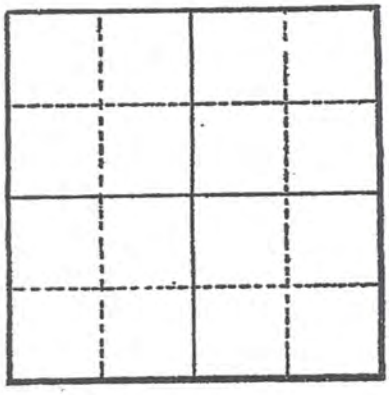
MAILING ADDRESS: Route 1, Box 129

CITY AND STATE: Jefferson, Oregon

LOCATION OF WELL: Owner's No. _____

NE ¼ SW ¼ Sec. 30 T. 9 ~~N.~~ S., R. 3 ~~E.~~ W., W.M.

Bearing and distance from section or subdivision corner 2 ch. N. & 31 ch. W.



Section _____

Altitude at well _____

TYPE OF WELL: dug Date Constructed 1938

Depth drilled 16' Depth cased _____

CASING RECORD:

FINISH:

AQUIFERS:
Loam, Sand, Gravel

WATER LEVEL:

PUMPING EQUIPMENT: Type Rainflow H.P. 20
Capacity 500 G.P.M.

WELL TESTS:
Drawdown _____ ft. after _____ hours _____ G.P.M.
Drawdown _____ ft. after _____ hours _____ G.P.M.

USE OF WATER Irrigation Temp. _____ °F. _____, 19____
SOURCE OF INFORMATION GR-3072
DRILLER or DIGGER _____
ADDITIONAL DATA:
Log X Water Level Measurements _____ Chemical Analysis _____ Aquifer Test _____

REMARKS:

Loam	12	
Sand	1	
Gravel	3	16

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EnviroLogic Resources, Inc.
ENVIRONMENTAL • WATER RESOURCES SCIENTISTS

March 14, 2016
10404.001

GM Meyer Farms, LLC
13274 Marlatt Rd S
Jefferson, OR 97532

VIA First Class/Email

Attention: **George Meyer**

Subject: **Surface Water to Groundwater Substitution**
Stream Depletion Evaluation
Jefferson, Oregon

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Dear Mr. Meyer:

EnviroLogic Resources, Inc., was retained to evaluate effects on the Santiam River by pumping a well on farmland intended to be irrigated via a transfer of surface water rights from Santiam Water Control District to the well as the point of diversion. In order for the transfer to be considered for approval, the Oregon Water Resources Department (WRD) expects the requirements of Oregon Administrative Rule (OAR) 690-380-2130 to be met. Among these requirements are that the proposed change in point of diversion will affect the surface water source similarly to the authorized point of diversion. "Similarly" means that the use of groundwater at the new point of diversion affects the same surface water source specified in the water right and would result in stream depletion of at least 50 percent of the rate of appropriation within 10 days of continuous pumping. **Our analysis shows the proposed new point of diversion meets these requirements.**

The farm is located in rural Marion County approximately 5.5 miles northwest of the town of Jefferson. The well (MARI 15351) proposed for use is 800 feet from the Santiam River. The well will be used to irrigate 62 acres. In addition, the well is used to irrigate 45.8 acres under GR-3310. The relationship of the well to the river is shown on Figure 1.

LOCAL HYDROGEOLOGY

The proposed new place of use is along the lower Santiam River in the Ankeny Bottom area. The Santiam River and tributary streams in the Ankeny Bottom area meander in belts ½- to

3-miles wide (Helm and Leonard, 1977). The geologic materials present in this area include, from youngest to oldest, Younger Alluvium, Older Alluvium, Terrace Deposits, and Consolidated Tertiary Rocks. Of these units, the Younger Alluvium is of most importance to this analysis. The Consolidated Tertiary Rocks are composed of marine sediments and volcanics, which may be part of a regional aquifer that occurs beneath the alluvial materials. The Terrace Deposits generally occur on slopes above the water table. The Older Alluvium occurs at depth, below the Younger Alluvium.

The Younger Alluvium underlies the floodplain of the Santiam River and its tributaries. Along the major rivers the Younger Alluvium consists of gravel, sand, and some silt and clay. The thickness of the Younger Alluvium varies from a few feet along tributaries to a few tens of feet along the river. Where the saturated thickness is large enough, the Younger Alluvium yields large quantities of water to wells. In the area of the farm, the Younger Alluvium aquifer is estimated to be about 30 feet thick based on nearby well logs. At the location of well MARI 15351, the minimum thickness of the aquifer can be considered to be the difference between the water table (about 2 feet below ground surface) and the depth of the well (16 feet), or 14 feet thick.

The specific yield for the Younger Alluvium has been estimated by Helm and Leonard (1977) to be between 0.18 and 0.22 in the Ankeny Bottom area. These values are reasonable for alluvial sand and gravel aquifers.

The specific capacity can be used to estimate transmissivity, T, in an unconfined aquifer using the equation:

$$T = \text{Specific Capacity} * 200$$

Well MARI 15351 produces approximately 450 gallons per minute (gpm) with a few feet of drawdown. Its specific capacity is between 150-200 gpm/ft of drawdown. This value fits in the range of specific capacities in the Ankeny Bottom area, which may range from 8.3-600 gpm/ft of drawdown, but are more typically about 200 gpm/ft of drawdown (Helm and Leonard, 1977). Using the above equation, we calculate a transmissivity between 30,000 ft^2/d and 40,000 ft^2/d.

The hydraulic conductivity, K, is estimated from transmissivity using the equation:

$$K = T/b,$$

where b is the aquifer thickness

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For an aquifer thickness of 30 feet, the hydraulic conductivity may range from 1000 ft/d to 1333 ft/d. It is our understanding that the Oregon WRD considers the hydraulic conductivity to be in the range of 250 ft/d to 1000 ft/d in the Ankeny Bottom area (K. Wozniak, 2016, personal communication). Based on well performance, it appears that the hydraulic

conductivity is likely closer to 1000 ft/d than 250 ft/d.

STREAM DEPLETION MODEL

A stream depletion model coded by the US Geological Survey (Reeves, 2008) was used to evaluate stream depletion characteristics in the Santiam River when pumping the well. The analytical solution determined by Hunt (1999) for a partially penetrating stream with streambed resistance was used. In addiiton, a comparison to the Jenkins (1968) solution was made as part of the sensitivity analysis. Table 1 shows the input parameters and results for various scenarios.

The range of aquifer parameters established by several sources, as well as site specific information from the onsite well, form the basis for the "expected case," shown as Run 1. We used a hydraulic conductivity of 1000 ft/d and an aquifer thickness of 14 feet to determine a conservative transmissivity for the analysis. A mid-point value for the specific yield was selected for the storage coefficient. Streambed conductance was considered to be slightly smaller than the hydraulic conductivity to evaluate a conservative solution, even though it is likely that fine particles will be winnowed out of the streambed by the rapidly flowing water.

These parameters were entered into the online stream depletion model (USGS, 2013) and the well was "pumped" for 10 days. The pumping rate used represents the total amount of water to be pumped from the wells to service existing rights (GR-3310) and the new proposed transfer. GR-3310 authorizes irrigation of 45.8 acres, which at 1/80th cubic feet per second/acre (cfs/acre) amounts to 257 gpm. The proposed transfer allows for irrigation of about 62 acres, which at 1/80th cfs/acre amounts to 348 gpm. The total amount to be pumped from the well (new point of diversion) will be about 605 gpm.

To meet the regulatory requirement of 50 percent contribution to pumping from the stream within 10 days, approximately 0.39 cfs will need to be depleted from the stream by that time. Under the expected case shown on Figure 2, approximately 0.65 cfs is contributed from the stream. This amount meets the regulatory requirement that the new point of appropriation affect the stream "similarly" as the original point of diversion.

SENSITIVITY ANALYSIS

A sensitivity analysis was conducted to evaluate how changing various parameters might affect the results. Table 1 shows the results of 21 runs of the STRMDEPL08 model that consider variations in the input parameters. The hydraulic conductivity reportedly may range from 250-1333 ft/d. Varying K between these values results in a range of stream contribution of between 0.22 cfs to 0.73 cfs. The analysis appears to be somewhat sensitive to changes in hydraulic conductivity. Only at the very low end of K does the proposed new point of appropriation not divert the required 50 percent contribution from the stream. As discussed

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earlier, it is unlikely that the actual hydraulic conductivity is as low as 250 ft/d.

Varying aquifer thickness, and thus transmissivity, creates some differences in the amount of stream depletion after 10 days. Comparing results of runs with an aquifer thickness of 14 feet with those with an aquifer thickness of 30 feet shows that the thicker the aquifer, the larger the depletion from the stream. The stream depletion ranges from 0.43 to 0.9 cfs. In all cases, the runs where an aquifer thickness of 30 feet was selected meet the regulatory requirement.

The storage coefficient, which is equivalent to specific yield in unconfined aquifers was varied from 0.15 to 0.25. In cases where the storage coefficient is smaller, a larger amount of water is contributed by the stream to the production in the well. This is because the cone of depression propagates quicker with a lower storage coefficient, allowing the stream to contribute to the production in the well sooner. In all variations of storage coefficient the proposed point of appropriation meets the regulatory requirement for stream depletion (0.73 to 0.58 cfs).

Streambed conductance was varied from 250 ft/d to 1000 ft/d while keeping hydraulic conductivity and aquifer thickness the same. Streambed conductance has little effect on the amount of water contributed by the stream to the well. Varying the streambed conductance resulted in stream depletion in a range of 0.6 to 0.65 cfs.

The effects of changing the pumping rate were considered as part of the sensitivity analysis. If only the amount of water provided by the transfer (350 gpm) were pumped by the well, approximately 0.37 cfs would be contributed by the stream after 10 days. This amount is slightly less than the regulatory requirement of 0.39 cfs. Extending the evaluation to 11 days would allow the well to pump 50 percent of the proposed transfer amount by depleting the stream. Similarly, if the aquifer were 2 feet thicker (16 feet vs 14 feet) the regulatory requirement is met. In addition, if the storage coefficient were 0.18 vs the modeled 0.20, the regulatory requirement is met. The use of 605 gpm in the analysis is consistent with our understanding of Oregon WRD policy regarding stream depletion analyses where a point of appropriation services more than one water right.

Finally, a comparison to the Jenkins (1968) solution was made. The primary differences are that Jenkins assumes the stream is fully penetrating (i.e., the depth of the stream is equivalent to the aquifer thickness), and that there is no streambed resistance. The results of the Jenkins model run are similar to the Hunt solution – 0.67 vs. 0.65 cfs.

The selection of the Hunt (1999) solution, and the aquifer variables presented, to evaluate stream depletion related to the proposed transfer appears to provide results that are consistent with site conditions. The hydraulic conductivity and aquifer thickness variables create the largest differences in results for the ranges modeled. However, nearly all combination of aquifer characteristics modeled result in stream depletion that meets the regulatory

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requirements for approval of the transfer.

ADDITIONAL REGULATORY REQUIREMENTS

With respect to requirements promulgated in OAR 690-380-5000, we believe the proposed transfer meets these requirements. The water right affected by the proposed transfer is a water right subject to transfer and no portion proposed for transfer has been canceled. The proposed transfer will not result in enlargement of the water right. Because the new point of diversion is downstream, no injury to other water right holders is expected. In fact, the proposed transfer will allow more water to remain in-stream for a longer reach, benefiting fish and wildlife dependent on river flows. In addition, because the new point of diversion is a well near the river rather than a pump station constructed in the river, a fish screen will not be necessary and aesthetic uses of the river can be maintained.

CLOSING COMMENTS

The stream depletion analysis described in this report was conducted using accepted hydrogeologic practices and vetted models. The selection of input variables reflects our understanding of site conditions. The analysis shows that within 10 days, 50 percent of the transferred water right is produced by depleting the stream, meeting the regulatory requirement to affect the surface water "similarly" to the original diversion.

Thank you for the opportunity to provide professional hydrogeologic services. Please feel free to call me at (503) 768-5121 if you have any questions or comments.

Sincerely,
EnviroLogic Resources, Inc.

Thomas J Calabrese, RG, CWRE
Principal Hydrogeologist
Project Manager

ATTACHMENTS

Table 1	STRMDEPL08 Model Variables
Figure 1	Well Location and Relationship to Santiam River
Figure 2	Run 1 – Expected Case

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TABLE 1
STRMDEPL08 Model Variables
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Run Number	Distance (ft)	Aquifer Thickness (ft)	Hydraulic Conductivity (ft/d)	Transmissivity (ft2/d)	Storage Coefficient	Streambed Conductance ft/d	Pumping Rate gpm	Days of Pumping	Depletion cfs	Pass/Fail
Range	800	14-30	250-1333	3500-40000	.15-.25	250-1333	350-605	10		
Expected Case										
Run 1	800	14	1000	14000	0.2	800	605	10	0.65	Pass
Vary Hydraulic Conductivity										
Run 2	800	14	250	3500	0.2	250	605	10	0.22	Fail
Run 3	800	14	625	8750	0.2	625	605	10	0.51	Pass
Run 4	800	14	800	11200	0.2	800	605	10	0.59	Pass
Run 5	800	14	1000	14000	0.2	1000	605	10	0.65	Pass
Run 6	800	14	1333	18662	0.2	1333	605	10	0.73	Pass
Vary Aquifer Thickness										
Run 7	800	30	250	7500	0.2	250	605	10	0.43	Pass
Run 8	800	30	625	18750	0.2	625	605	10	0.71	Pass
Run 9	800	30	800	24000	0.2	800	605	10	0.78	Pass
Run 10	800	30	1000	30000	0.2	1000	605	10	0.84	Pass
Run 11	800	30	1333	40000	0.2	1333	605	10	0.9	Pass
Vary Storage Coefficient										
Run 12	800	14	1000	14000	0.15	800	605	10	0.73	Pass
Run 13 (Run 1)	800	14	1000	14000	0.2	800	605	10	0.65	Pass
Run 14	800	14	1000	14000	0.25	800	605	10	0.58	Pass
Vary Streambed Conductance										
Run 15	800	14	1000	14000	0.2	250	605	10	0.6	Pass
Run 16	800	14	1000	14000	0.2	625	605	10	0.64	Pass
Run 17	800	14	1000	14000	0.2	800	605	10	0.65	Pass
Run 18 (Run 5)	800	14	1000	14000	0.2	1000	605	10	0.65	Pass
Vary Production Rate/Days Pumping										
Run 19	800	14	1000	14000	0.2	800	350	10	0.37	Fail
Run 20	800	14	1000	14000	0.2	800	350	11	0.39	Pass
Compare Hunt and Jenkins Solutions										
Run 21	800	14	1000	14000	0.2	--	605	10	0.67	Pass

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FIGURE 1

Well Location and Relationship to Santiam River

GM Meyer Farms, LLC
Jefferson, Oregon

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Partially penetrating stream with streambed resistance (Hunt, 1999)

Distance (ft):	800
Transmissivity (ft2/day):	14000
Storage Coefficient:	.2
Streambed Conductance (ft/day):	800
Pumping Rate (gpm):	605
Days of Pumping:	10

Reset Submit

Units used

- ft: foot
- ft2/day: square foot per day
- gpm: gallons per minute
- ft/day: foot per day
- Note, 1 cubic foot per second = 448.8 gallons per minute

USGS science for a changing world

Day	Stream Depletion (cubic foot per second) 1 cubic foot per second=448.8 gallons per minute
1	0.0353
2	0.1555
3	0.2672
4	0.3572
5	0.4296
6	0.4888
7	0.5382
8	0.5801
9	0.6162
10	0.6478

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FIGURE 2

Run 1 – Expected Case

GM Meyer Farms, LLC
Jefferson, Oregon