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March 10, 2017

Shonee D. Langford
T: Salem 503-540-4261; Portland 503-796-2896
slangford@schwabe.com

HAND DELIVERED

Jerry Sauter
Oregon Water Resources Department
725 Summer Street, NE, Suite A
Salem, OR 97301

RE: Limited License Application
Our File No. 130945-220250

Dear Jerry:

Enclosed for filing on behalf of Willow Creek Dairy is an Application for Limited Water Use License with supporting documentation, including the required map, watermaster review and land use form. I will serve as the applicant's primary agent, and will coordinate with the applicant's consultant Bill Porfily as needed to address any questions or requests for information.

Please deduct the $340.00 fee ($280 base fee plus two additional points of appropriation at $30 each) from Schwabe, Williamson & Wyatt's account with the Department.

The applicant proposes to use no more than a combined maximum of 644 gallons per minute and 1037 acre-feet per year under any combination of limited licenses issued pursuant to this application and application LL-1690. The applicant will work with the Oregon Water Resources Department to determine an appropriate allocation of short-term use under LL-1690 (alluvial source) and this application (basalt source), taking into consideration the applicant's water use needs and the need for protection of groundwater resources. The applicant also proposes mitigation as described in Attachment A to the application.

Pursuant to ORS 537.143(3), this letter serves as the applicant's 15-day notice to the Department in advance of using water under the limited license.

Thank you for your assistance.

Best regards,

Shonee D. Langford

SDL:cw
Enclosure

LL-1692

Cc: Client
Greg Silbernagel (Watermaster) (Via E-Mail)
Mike Ladd (Region Manager, North Central Region) (Via E-Mail)

PDX\130945\220250\SDL\20247897.1-22-25-

LL-1682

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Oregon Water Resources Department
725 Summer Street NE, Suite A
Salem Oregon 97301-1271
(503) 986-0900
www.wrd.state.or.us

Application for Limited Water Use License

License No.: LL-1682

Applicant(s): Willow Creek Dairy c/o Greg te Velde

Agent/Contact: Shonee Langford, Attorney (503) 540-4261; and William Porfily (541) 561-7259

Mailing Address: Willow Creek Dairy, PO Box 1210

Boardman	OR	97818
City	*State*	*Zip*

Telephone No.: te Velde (559) 799-9111 | Langford (503) 540-4261; Porfily (541) 449-1327

Home | *Cell* | *Fax*

I (We) make application for a Limited License to use or store the following described surface waters or groundwater – not otherwise exempt, or to use stored water of for a use of a short-term or fixed-duration:

1. **SOURCE(S) OF WATER:** 3 basalt wells a tributary of Columbia River
2. **AMOUNT OF WATER** to be diverted;
   Maximum instantaneous rate (cubic feet or gallons per minute): 644 gallons per minute
   Total volume (gallons or acre-feet): 1037 AF/yr (5185 AF over 5 yrs). If water is to be used from more than one source, give the quantity from each: N/A. The 3 basalt wells will pump water from the same source aquifer
3. **INTENDED USE(S) OF WATER:** (check all that apply)
   - ☐ Road construction or maintenance
   - ☐ General construction
   - ☐ Forestland and rangeland management; or
   - ☑ Other: Agricultural water use to construct and operate a dairy
4. **DESCRIPTION OF PROPOSED PROJECT:** Include a description of the place of use as shown on the accompanying site map, the method of water diversion, the type of equipment to be used (including pump horsepower, if applicable), length and dimensions of supply ditches and pipelines:

   SEE ATTACHED WELL LOGS AND ATTACHMENTS A AND B

5. **PROJECT SCHEDULE:** (List day, month, and year)

   Date water use will begin: May 1, 2017
   Date water use will be completed: 5 years from approval
   Months of the year water would be diverted and used: Year round

   If for other than irrigation from stored water, how and where will water be discharged after use:
   SEE ATTACHMENT B

SIGNATURE of Applicant or Agent: Shonee Langford, Attorney

Date: 3/10/17

For WRD Use Only

LL-1682

PLEASE READ CAREFULLY

NOTE: A completed water availability statement from the local watermaster, Land Use Information Form completed by the local Planning Department, fees and site map meeting the requirements of OAR 690-340-030 must accompany this request. The fee for this request is **$280** for the first point of diversion pus **$30** for each additional point of diversion. Please review the Department's fee schedule to view fees required to request a limited license for Aquifer Storage and Recovery testing purposes or for Artificial Groundwater Recharge testing purposes.

Failure to provide any of the required information will result in return of your application. The license, if granted, will not be issued or replaced by a new license for a period of more than five consecutive years. The license, if granted, will be subordinate to all other authorized uses that rely upon the same source, or water affected by the source, and may be revoked at any time it is determined the use causes injury to any other water right or minimum perennial streamflow.

If water source is well, well logs or adequate information for the Department to determine aquifer, well depth, well seal and open interval, etc. are required. The licensee shall indicate the intended aquifer. If for multiple wells, each map location shall be clearly tired to a well log.

If a limited license is approved, the licensee shall give notice to the Department (Watermaster) at least 15 days in advance of using the water under the Limited License and shall maintain a record of use. The record of use shall include, but need not be limited to, an estimate of the amount of water used, the period of use and the categories of beneficial use to which the water is applied. During the period of the Limited License, the record of use shall be available for review by the Department upon request.

**A summary of review criteria and procedures that are generally applicable to these applications is available at: http: www.oregon.gov owrd pages pubs forms.aspx*

Mapping Requirements (OAR 690-340-0030):

(1) A request for a limited license shall be submitted on a form provided by the Water Resources Department, and shall be accompanied by the following:

a. A site map of reproducible quality, drawn to a standard, even scale of not less than 2 inches = 1 mile, showing:

i. The locations of all proposed points of diversion referenced by coordinates or by bearing and distance to the nearest established or projected public land survey corner;

ii. The general course of the source for the proposed use, if applicable;

iii. Other topographical features such as roads, streams, railroads, etc., which may be helpful in locating the diversion points in the field.

REMARKS:

SEE COVER LETTER TO APPLICATION, WELL LOGS AND ATTACHMENTS A AND B

For WRD Use Only

LL-1697

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

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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.

LL-1692

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: Willow Creek Dairy c/o Greg te Velde (First) _____ (Last)

Mailing Address: PO Box 1210

Boardman (City) | OR (State) | 97818 (Zip) | Daytime Phone: (559) 779-9111

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:
3N	26E	16	All	500	EEU	☒ Diverted ☒ Conveyed ☒ Used	Agricultural Dairy
3N	26E	15	SWNW	500	EFU	☒ Diverted ☒ Conveyed ☒ Used	Same
			NWSW	500	EFU	☐ Diverted ☒ Conveyed ☒ Used	Same
			SWSW	500	EFU	☐ Diverted ☒ Conveyed ☒ Used	Same

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

Morrow 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) _____

Estimated quantity of water needed: 644 gpm ☐ 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 Agricultural use to construct and operate a dairy

Briefly describe:

The applicant is requesting a limited license (temporary water use authorization) to use three alluvial wells to supply water for agricultural uses associated with construction and operation of a dairy.

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

See bottom of Page 3. ⟶

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For Local Government Use Only

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

Please check the appropriate box below and provide the requested information

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

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

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

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

Name: _____ Title: _____

Signature: _____ Phone: _____ Date: _____

Government Entity: _____

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: Greg Tevelde

City or County: Morrow County Staff contact: Stephanie Loving

Signature: Stephanie Loving Phone: 541-922-4624 Date: 3/10/2017

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RECEIPT DATE 3/10/17 NO. 112133

RECEIVED FROM Porfily Water Rights

ADDRESS

$ 50.00

FOR Te Velde LWCS. (Amendment)

ACCOUNT		
AMT. OF ACCOUNT	50	–
AMT. PAID	50	–
BALANCE DUE	Ø	

○ CASH
⊗ CHECK
○ MONEY ORDER

BY SL

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NOTE: Receipt issued by Morrow County Planning on 3/10/17, to applicant's consultant Bill Porfily, upon presentation of this limited license application.

Shonee Langford

LL-1692

Submitted for Watermaster Review via email by Shonee Langford on 3/10/2017

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This page to be completed by the local Watermaster.

WATER AVAILABILITY STATEMENT

Name of Applicant: Willow Creek Dairy c/o Amy Schelle Limited License Number: LL-1697

1. To your knowledge, has the stream or basin that is the source for this application ever been regulated for prior rights?

☒ Yes ☐ No

If yes, please explain:

This proposed application is seeking water from the Ordnance Basalt Critical Groundwater area. The Ordnance CGWA Order prohibits any new appropriation of groundwater with some exceptions.

2. Based on your observations, would there be water available in the quantity and at the times needed tosupply the use proposed by this application?

☐ Yes ☐ No

Defer to groundwater section for review. It may be possible to consider forebearance of 1037AF of basalt CGWA water of available under existing water right to mitigate impacts of this limited license.

3. Do you observe this stream system during regular fieldwork?

☐ Yes ☒ No

If yes, what are your observations for the stream?

4. If the source is a well and if WRD were to determine that there is the potential for substantial interference with nearby surface water sources, would there still be ground water and surface water available during the time requested and in the amount requested without injury to existing water rights?

☐ Yes ☐ No ☐ N/A Depends on surface water source affected

What would you recommend for conditions on a limited license that may be issued approving this application?

If the license were approved. Flowmeters on all POAs would be required. Monthly water use reports to OWRD (including Watermaster). Certificate identified in application must be forgo use. Owners of these certificates (Bosma) must agree to forebearance and

5. Any other recommendations you would like to make? applicant must provide signed agreement to OWRD.

monitoring well required. Location and depth to be determined by Groundwater Section. Beginning flowmeter readings, serial numbers and power meter use needs to be reported for Bosma wells. Watermaster may check to ensure no use occurs.

Signature Amy Schelle WM District #: 5 Date: 3/10/2017

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ATTACHMENT A -- BASALT WELLS

DESCRIPTION OF PROPOSED PROJECT/ REMARKS

This limited license application requests authorization to use basalt groundwater for agricultural water use for construction and operation of a dairy. The applicant proposes to use three existing basalt wells. For well construction details, please see the attached well logs. The applicant is currently seeking permanent authorization to use the three existing wells for the purposes described in this application (Transfer T-12248). This application, in combination with limited license application LL-1690 (alluvial source), is intended to serve as a bridge to temporarily allow water use for construction and operation of a dairy until transfer T-12248 is approved.

The applicant recognizes that the proposed basalt wells are within the Ordnance Basalt Critical Groundwater Area and proposes to mitigate the short-term use through forbearance of use of the following water rights held by Sage Hollow Ranch, which are more fully described in the Preliminary Determination for Transfer T-12248: a total of 2.38 cubic feet per second (approximately 1068 gallons per minute) for irrigation of 503 acres under Certificates 49726, 49727, 55316 and 55317. The applicant intends to provide Sage Hollow Ranch's written confirmation of forbearance, in a form acceptable to the Department, before the proposed limited license is issued.

The applicant proposes to use no more than a combined maximum of 644 gallons per minute and 1037 acre-feet per year under any combination of limited licenses issued pursuant to this application and application LL-1690. The applicant will work with the Oregon Water Resources Department to determine an appropriate allocation of short-term use under LL-1690 (alluvial source) and this application (basalt source), taking into consideration the applicant's water use needs and the need for protection of groundwater resources.

LL-1692

ATTACHMENT B -- BASALT WELLS

DISCHARGE OF WATER AFTER USE

The dairy will use clean water for cooling milk, cleaning milk equipment, and livestock drinking water. Clear water will be recycled for additional cleaning and livestock water. Dirty water will be recycled for washing pens. The generated wash water and manure stream will be sent to separating systems and then storage lagoons. Recycled lagoon water will be used for flushing the livestock barns. Solid manure and lagoon storage will be land applied according to the Animal Waste Management Plan (AWMP) on file with the Oregon Department of Agriculture (MA# 995129, AWMP# 15229).

This limited license application includes a copy of the AWMP together with a map showing the water system (pump stations, booster stations, irrigation clusters) that will be used for land application of dairy lagoon water.

LL-1687

MORR 52393

STATE OF OREGON
WATER SUPPLY WELL REPORT
(as required by ORS 537.765 & OAR 690-205-0210)

WELL I.D. LABEL# L 117311
START CARD # 103040
ORIGINAL LOG #

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(1) LAND OWNER
Owner Well I.D. Parlor Well
First Name GREG Last Name TE VELDE
Company
Address 5850 AVENUE 160
City TIPTON State CA Zip 93272

(2) TYPE OF WORK
[X] New Well [ ] Deepening [ ] Conversion [ ] Alteration (complete 2a & 10) [ ] Abandonment(complete 5a)

(2a) PRE-ALTERATION

	Dia	+	From	To	Gauge	Stl	Plstc	Wld	Thrd
Casing:									

	Material	From	To	Amt	sacks/lbs
Seal:					

(3) DRILL METHOD
[X] Rotary Air [ ] Rotary Mud [ ] Cable [ ] Auger [ ] Cable Mud
[ ] Reverse Rotary [ ] Other

(4) PROPOSED USE
[ ] Domestic [ ] Irrigation [ ] Community
[X] Industrial/ Commericial [X] Livestock [ ] Dewatering
[ ] Thermal [ ] Injection [ ] Other

(5) BORE HOLE CONSTRUCTION
Special Standard [ ] (Attach copy)
Depth of Completed Well 902.00 ft.

BORE HOLE

Dia	From	To
24	0	155
18	155	427
15	427	707
13	707	727

SEAL

Material	From	To	Amt	sacks/lbs
Cement	0	155	240	S
		Calculated	168.4	
Cement	0	400	576	S
		Calculated	535.75	

How was seal placed: Method [ ] A [ ] B [X] C [ ] D [ ] E
[ ] Other
Backfill placed from ft. to ft. Material
Filter pack from ft. to ft. Material Size
Explosives used: [ ] Yes Type Amount

(5a) ABANDONMENT USING UNHYDRATED BENTONITE
Proposed Amount Actual Amount

(6) CASING/LINER

Casing	Liner	Dia	+	From	To	Gauge	Stl	Plstc	Wld	Thrd
◉	○	18	X	1	156	.375	◉	○	X	
○	◉	14	X	1	400	.375	◉	○	X	
○	○						○	○		
○	○						○	○		
○	○						○	○		

Shoe [ ] Inside [ ] Outside [ ] Other Location of shoe(s)
Temp casing [ ] Yes Dia From To

(7) PERFORATIONS/SCREENS
Perforations Method
Screens Type Material

Perf/ Screen	Casing/ Screen Liner	Dia	From	To	Scrn/slot width	Slot length	# of slots	Tele/ pipe size

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

Yield gal/min	Drawdown	Drill stem/Pump depth	Duration (hr)
600		902	1

Temperature 70 °F Lab analysis [ ] Yes By
Water quality concerns? [ ] Yes (describe below) TDS amount 300 ppm

From	To	Description	Amount	Units

(9) LOCATION OF WELL (legal description)
County MORROW Twp 3.00 N N/S Range 26.00 E E/W WM
Sec 16 SE 1/4 of the NE 1/4 Measured
Tax Map Number
Lat ° ' " or DMS or DD
Long ° ' " or DMS or DD
( ) Street address of well (◉) Nearest address
WEST OF POLELINE RD AND HOMESTEAD LN IN BOARDMAN.

(10) STATIC WATER LEVEL

	Date	SWL(psi)	+	SWL(ft)
Existing Well / Pre-Alteration				
Completed Well	12/12/2016			341

Flowing Artesian? [ ] Dry Hole? [ ]

WATER BEARING ZONES Depth water was first found 30.00

SWL Date	From	To	Est Flow	SWL(psi)	+	SWL(ft)
4/29/2016	30	35	20			30
7/26/2016	203	295	50			80
8/1/2016	324	333	50			80
8/22/2016	436	445	200			341
8/29/2016	683	695	200			341

(11) WELL LOG
Ground Elevation

Material	From	To
silt	0	11
silt and clay	11	30
silt, sand, clay	30	35
sandstone	35	135
broken basalt	135	137
med black basalt	137	145
hard black basalt	145	203
soft fractured basalt	203	208
blue clay	208	264
soft black basalt	264	295
hard black basalt	295	324
broken red vesicular basalt	324	333
fractured black with some vesicular	333	340
hard black basalt	340	436
fractured/vesicular black basalt	436	445
med black basalt	445	598
soft black basalt	598	617
med black basalt	617	683
fractured black basalt	683	687

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Date Started 4/27/2016 Completed 12/12/2016

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

(bonded) Water Well Constructor Certification
I accept responsibility for the construction, deepening, alteration, or abandonment work performed on this well during the construction dates reported above. All work performed during this time is in compliance with Oregon water supply well construction standards. This report is true to the best of my knowledge and belief.
License Number 1766 Date 12/19/2016
Signed BRANDON C BROWN (E-filed)
Contact Info (optional) brandon@waterwelldeveloping.com

ORIGINAL - WATER RESOURCES DEPARTMENT
THIS REPORT MUST BE SUBMITTED TO THE WATER RESOURCES DEPARTMENT WITHIN 30 DAYS OF COMPLETION OF WORK Form Version:

LL-1692

MORR 52393

WATER SUPPLY WELL REPORT - continuation page

WELL I.D. LABEL# L 117311
START CARD # 1030410
ORIGINAL LOG #

(2a) PRE-ALTERATION

Dia	+	From	To	Gauge	Stl	Plstc	Wld	Thrd

Material	From	To	Amt	sacks/lbs

Water Quality Concerns

From	To	Description	Amount	Units

(5) BORE HOLE CONSTRUCTION

BORE HOLE Dia	From	To
9.88	727	902

SEAL Material	From	To	Amt	sacks/lbs
		Calculated		
		Calculated		
		Calculated		
		Calculated		

FILTER PACK

From	To	Material	Size

(10) STATIC WATER LEVEL

SWL Date	From	To	Est Flow	SWL(psi)	+ SWL(ft)
9/9/2016	837	862	200		341

(6) CASING/LINER

Casing Liner	Dia	+	From	To	Gauge	Stl	Plstc	Wld	Thrd

(11) WELL LOG

Material	From	To
black vesicular basalt	687	695
med fractured basalt	695	703
med black basalt	703	714
hard black basalt	714	837
fractured black basalt	837	862
hard black basalt	862	902

(7) PERFORATIONS/SCREENS

Perf/ Screen	Casing/ Liner	Screen Dia	From	To	Scrn/slot width	Slot length	# of slots	Tele/ pipe size

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

Yield gal/min	Drawdown	Drill stem/Pump depth	Duration (hr)

Comments/Remarks

Cemented off hole from 793' to bottom.

LL-1692

STATE OF OREGON
WATER SUPPLY WELL REPORT
(as required by ORS 537.765 & OAR 690-205-0210)

MORR 52351

9/1/2016

WELL I.D. LABEL# L 117307
START CARD # 1029838
ORIGINAL LOG #

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(1) LAND OWNER

Owner Well I.D.
First Name GREG Last Name TE VELDE
Company
Address 5850 AVENUE 160
City TIPTON State CA Zip 93272

(2) TYPE OF WORK

[X] New Well [ ] Deepening [ ] Conversion [ ] Alteration (complete 2a & 10) [ ] Abandonment(complete 5a)

(2a) PRE-ALTERATION

	Dia	+	From	To	Gauge	Stl	Plstc	Wld	Thrd
Casing:									

	Material	From	To	Amt	sacks/lbs
Seal:					

(3) DRILL METHOD

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

(4) PROPOSED USE

[ ] Domestic [ ] Irrigation [ ] Community
[X] Industrial/ Commericial [X] Livestock [ ] Dewatering
[ ] Thermal [ ] Injection [ ] Other

(5) BORE HOLE CONSTRUCTION

Special Standard [ ] (Attach copy)
Depth of Completed Well 900.00 ft.

BORE HOLE

Dia	From	To
24	0	203
18	203	747
16	747	800
10	800	900

SEAL

Material	From	To	Amt	sacks/lbs
Cement	0	203	350	S
		Calculated	22.17	
Cement	203	702	810	S
		Calculated	285.99	

How was seal placed: Method [ ] A [X] B [X] C [ ] D [ ] E
[ ] Other
Backfill placed from ft. to ft. Material
Filter pack from ft. to ft. Material Size
Explosives used: [ ] Yes Type Amount

(5a) ABANDONMENT USING UNHYDRATED BENTONITE

Proposed Amount Actual Amount

(6) CASING/LINER

Casing	Liner	Dia	+	From	To	Gauge	Stl	Plstc	Wld	Thrd
◉	○	14	X	3	702	.375	◉	○	X	
◉	○	18		0	203	.375	◉	○	X	
○	○						○	○		
○	○						○	○		
○	○						○	○		

Shoe [ ] Inside [X] Outside [ ] Other Location of shoe(s)
Temp casing [ ] Yes Dia From To

(7) PERFORATIONS/SCREENS

Perforations Method
Screens Type Material

Perf/ Screen	Casing/ Screen Liner	Dia	From	To	Scrn/slot width	Slot length	# of slots	Tele/ pipe size

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

○ Pump ○ Bailer ◉ Air ○ Flowing Artesian

Yield gal/min	Drawdown	Drill stem/Pump depth	Duration (hr)
200		747	3

Temperature 57 °F Lab analysis [ ] Yes By
Water quality concerns? [ ] Yes (describe below) TDS amount

From	To	Description	Amount	Units

(9) LOCATION OF WELL (legal description)

County MORROW Twp 3.00 N [ ] S/N Range 26.00 E [ ] E/W WM
Sec 22 NW 1/4 of the NW 1/4 Tax Lot 500
Tax Map Number
Lat ° ' " or DMS or DD
Long ° ' " or DMS or DD
( ) Street address of well (◉) Nearest address

NEAREST: WEST OF POLELINE RD AND HOMESTEAD LN IN BOARDMAN.

(10) STATIC WATER LEVEL

	Date	SWL(psi)	+	SWL(ft)
Existing Well / Pre-Alteration				
Completed Well	7/28/2016			384

Flowing Artesian? [ ] Dry Hole? [ ]

WATER BEARING ZONES Depth water was first found 35.00

SWL Date	From	To	Est Flow	SWL(psi)	+	SWL(ft)
3/21/2016	55	195	200			35
5/18/2016	314	322	5			314
5/24/2016	476	493	200			378
6/7/2016	726	731	200			378

(11) WELL LOG

Ground Elevation

Material	From	To
silt	0	10
silty clay	10	55
silty, sandy, clay	55	64
sand stone w\ some brown clay	64	191
broken weathered basalt	191	195
med black basalt	195	198
hard black basalt	198	266
black basalt/ blue clay	266	322
med black basalt	322	371
red fractured vesicular/ blue clay	371	377
fractured black vesicular	377	389
med black basalt	389	476
vesicular basalt	476	493
med black basalt	493	510
hard black basalt	510	726
fractured black vesicular	726	731
hard black basalt	731	894
soft black basalt	894	900

Date Started 3/7/2016 Completed 7/1/2016

(unbonded) Water Well Constructor Certification

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

License Number Date

Signed

(bonded) Water Well Constructor Certification

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

License Number 1766 Date 9/1/2016

Signed BRANDON C BROWN (E-filed)

Contact Info (optional) brandon@watterwelldeveloping.com

ORIGINAL - WATER RESOURCES DEPARTMENT

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WATER SUPPLY WELL REPORT - continuation page

MORR 52351

9/1/2016

WELL I.D. LABEL# L 117307
START CARD # 1029838
ORIGINAL LOG #

(2a) PRE-ALTERATION

Dia	+	From	To	Gauge	Stl	Plstc	Wld	Thrd

Material	From	To	Amt	sacks/lbs

Water Quality Concerns

From	To	Description	Amount	Units

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(5) BORE HOLE CONSTRUCTION

BORE HOLE Dia	From	To

SEAL Material	From	To	Amt	sacks/lbs
Cement	840	900	27	S
		Calculated		
		Calculated		
		Calculated		
		Calculated		

FILTER PACK

From	To	Material	Size

(10) STATIC WATER LEVEL

SWL Date	From	To	Est Flow	SWL(psi)	+	SWL(ft)

(6) CASING/LINER

Casing Liner	Dia	+	From	To	Gauge	Stl	Plstc	Wld	Thrd

(11) WELL LOG

Material	From	To

(7) PERFORATIONS/SCREENS

Perf/ Screen	Casing/ Liner	Screen Dia	From	To	Scrn/slot width	Slot length	# of slots	Tele/ pipe size

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

Yield gal/min	Drawdown	Drill stem/Pump depth	Duration (hr)

Comments/Remarks

Continuous seal installed from 203' to ground surface. Per WRD special requirement.
Continuous seal installed from 702' to ground surface.
Static during drilling process lowered from 378' to 384'.
Static prior to installing casing (384') and after installing casing and continuous seal to ground surface was (384').

LL-1692

MORR 52392

MORR 52392

STATE OF OREGON
WATER SUPPLY WELL REPORT
(as required by ORS 537.765 & OAR 690-205-0210)

WELL I.D. LABEL# L 117310
START CARD # 1032722
ORIGINAL LOG #

(1) LAND OWNER

Owner Well I.D. BATCH PLANT
First Name GREG Last Name TE TEVELDE
Company WILLOW CREEK DAIRY
Address 5850 AVENUE 160
City TIPTON State CA Zip 93272

(2) TYPE OF WORK

☐ New Well ☒ Deepening ☐ Conversion ☐ Alteration (complete 2a & 10) ☐ Abandonment(complete 5a)

(2a) PRE-ALTERATION

	Dia	+	From	To	Gauge	Stl	Plstc	Wld	Thrd
Casing:	18		0	155	.375	◉	○	☒	☐

	Material	From	To	Amt	sacks/lbs
Seal:	Bentonite	0	32	69	Sacks

(3) DRILL METHOD

☒ Rotary Air ☐ Rotary Mud ☐ Cable ☐ Auger ☐ Cable Mud
☐ Reverse Rotary ☐ Other

(4) PROPOSED USE

☐ Domestic ☐ Irrigation ☐ Community
☒ Industrial/ Commericial ☒ Livestock ☐ Dewatering
☐ Thermal ☐ Injection ☐ Other

(5) BORE HOLE CONSTRUCTION

Special Standard ☐ (Attach copy)
Depth of Completed Well 902.00 ft.

BORE HOLE

Dia	From	To
18	0	160
14	160	450
9.88	450	902

SEAL

Material	From	To	Amt	sacks/lbs
Cement	0	380	729	S
		Calculated	90.28	
		Calculated		

How was seal placed: Method ☐ A ☐ B ☒ C ☐ D ☐ E
☐ Other
Backfill placed from 800 ft. to 902 ft. Material CEMENT
Filter pack from ft. to ft. Material Size
Explosives used: ☐ Yes Type Amount

(5a) ABANDONMENT USING UNHYDRATED BENTONITE

Proposed Amount Actual Amount

(6) CASING/LINER

Casing	Liner	Dia	+	From	To	Gauge	Stl	Plstc	Wld	Thrd
◉	○	10	☒	2	380	.250	◉	○	☒	☐
◉	○	14	☐	0	160	.375	◉	○	☒	☐
○	○		☐				○	○	☐	☐
○	○		☐				○	○	☐	☐
○	○		☐				○	○	☐	☐

Shoe ☐ Inside ☒ Outside ☐ Other Location of shoe(s)
Temp casing ☐ Yes Dia From To

(7) PERFORATIONS/SCREENS

Perforations Method
Screens Type Material

Perf/ Screen	Casing/ Screen Liner	Dia	From	To	Scrn/slot width	Slot length	# of slots	Tele/ pipe size

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

◯ Pump ◯ Bailer ◉ Air ◯ Flowing Artesian

Yield gal/min	Drawdown	Drill stem/Pump depth	Duration (hr)
400		700	3

Temperature 69 °F Lab analysis ☐ Yes By
Water quality concerns? ☐ Yes (describe below) TDS amount

From	To	Description	Amount	Units

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(9) LOCATION OF WELL (legal description)

County MORROW Twp 3.00 N Rge 25.0 E E/W WM
Sec 16 NW 1/4 of the SW 1/4 Tax Lot 500
Tax Map Number
Lat ° ' " or DMS or DD
Long ° ' " or DMS or DD
◯ Street address of well ◉ Nearest address

NEAREST:WEST OF POLINE RED ANF HOMESTEAD IN BOARDMAN.

(10) STATIC WATER LEVEL

	Date	SWL(psi)	+	SWL(ft)
Existing Well / Pre-Alteration	10/24/2016			33
Completed Well	12/12/2016			346

Flowing Artesian? ☐ Dry Hole? ☐

WATER BEARING ZONES Depth water was first found 248.00

SWL Date	From	To	Est Flow	SWL(psi)	+	SWL(ft)
10/27/2016	248	265	25			43
11/1/2016	410	438	200			346
11/18/2016	692	699	200			346

(11) WELL LOG

Ground Elevation

Material	From	To
existing hole	0	155
black basalt	155	232
hard brown clay	232	240
softer brown clay	240	248
broken brown basalt	248	257
blue clay w/big gravels	257	265
fractured black basalt	265	317
vesicular black basalt	317	338
med black basalt	338	410
vesicular black basalt	410	438
med black basalt	438	585
hard black basalt	585	660
med black basalt	660	692
vesicular black w/seems of blue clay	692	699
med black basalt	699	740
hard grey basalt	740	902

RECEIVED BY OWRD DEC 22 2016 SALEM, OR

Date Started 10/25/2016 Completed 12/2/2016

(unbonded) Water Well Constructor Certification

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

License Number Date

Signed

(bonded) Water Well Constructor Certification

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

License Number 1766 Date 12/19/2016

Signed BRANDON C BROWN (E-filed)

Contact Info (optional) brandon@waterwelldeveloping.com

ORIGINAL - WATER RESOURCES DEPARTMENT

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MORR 52392

WATER SUPPLY WELL REPORT - continuation page

WELL I.D. LABEL# L 117310
START CARD # 1032722
ORIGINAL LOG #

(2a) PRE-ALTERATION

Dia	+	From	To	Gauge	Stl	Plstc	Wld	Thrd

Material	From	To	Amt	sacks/lbs

(5) BORE HOLE CONSTRUCTION

BORE HOLE Dia	From	To	SEAL Material	From	To	Amt	sacks/ lbs
					Calculated		
					Calculated		
					Calculated		
					Calculated		

FILTER PACK

From	To	Material	Size

(6) CASING/LINER

Casing Liner	Dia	+	From	To	Gauge	Stl	Plstc	Wld	Thrd

(7) PERFORATIONS/SCREENS

Perf/ Screen	Casing/ Screen Liner	Dia	From	To	Scrn/slot width	Slot length	# of slots	Tele/ pipe size

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

Yield gal/min	Drawdown	Drill stem/Pump depth	Duration (hr)

Water Quality Concerns

From	To	Description	Amount	Unit

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(10) STATIC WATER LEVEL

SWL Date	From	To	Est Flow	SWL(psi)	+	SWL(ft)

(11) WELL LOG

Material	From	To

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DEC 22 2016
SALEM, OR

Comments/Remarks

Cemented bottom of hole off from 773' to bottom

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MORR 52314

STATE OF OREGON
WATER SUPPLY WELL REPORT
(as required by ORS 537.765 & OAR 690-205-0210)

3/10/2016

WELL I.D. LABEL# L 117310
START CARD # 1029523
ORIGINAL LOG #

(1) LAND OWNER

Owner Well I D Batch Plant
First Name GREG Last Name TE VELDE
Company
Address 5850 AVENUE 160
City TIPTON State CA Zip 93272

(2) TYPE OF WORK

[X] New Well [ ] Deepening [ ] Conversion [ ] Alteration (complete 2a & 10) [ ] Abandonment(complete 5a)

(2a) PRE-ALTERATION

	Dia	+	From	To	Gauge	Stl	Plstc	Wld	Thrd
Casing:									

	Material	From	To	Amt	sacks/lbs
Seal:					

(3) DRILL METHOD

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

(4) PROPOSED USE

[ ] Domestic [ ] Irrigation [ ] Community
[ ] Industrial/ Commericial [ ] Livestock [ ] Dewatering
[ ] Thermal [ ] Injection [X] Other CONSTRUCTION

(5) BORE HOLE CONSTRUCTION

Special Standard [ ] (Attach copy)
Depth of Completed Well 155 00 ft

BORE HOLE Dia	From	To	SEAL Material	From	To	Amt	sacks/ lbs
24	0	32	Bentonite Chips	0	32	69	S
18	32	155			Calculated	59 12	
					Calculated		

How was seal placed Method [ ] A [ ] B [ ] C [ ] D [ ] E
[X] Other BENTONITE POURED
Backfill placed from ft to ft Material
Filter pack from ft to ft Material Size
Explosives used [ ] Yes Type Amount

(5a) ABANDONMENT USING UNHYDRATED BENTONITE

Proposed Amount Actual Amount

(6) CASING/LINER

Casing	Liner	Dia	+	From	To	Gauge	Stl	Plstc	Wld	Thrd
●	○	18	X	2	137	375	●	○	X	
○	●	12	X	2	135	375	●	○	X	
○	○						○	○		
○	○						○	○		
○	○						○	○		

Shoe [ ] Inside [X] Outside [ ] Other Location of shoe(s)
Temp casing [ ] Yes Dia From To

(7) PERFORATIONS/SCREENS

Perforations Method
Screens Type johnson Material stainless

Perf/ Screen	Casing/ Screen Liner	Dia	From	To	Scrn/slot width	Slot length	# of slots	Tele/ pipe size
Screen	Liner	12	135	155	50			

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

(●) Pump ( ) Bailer ( ) Air ( ) Flowing Artesian

Yield gal/min	Drawdown	Drill stem/Pump depth	Duration (hr)
3	120	130	1

Temperature 57 °F Lab analysis [ ] Yes By
Water quality concerns? [ ] Yes (describe below) TDS amount

From	To	Description	Amount	Units

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(9) LOCATION OF WELL (legal description)

County MORROW Twp 3 00 N N/S Range 26 00 E E/W WM
Sec 16 SW 1/4 of the SW 1/4 Tax Lot 500
Tax Map Number Lot
Lat ° ' " or DMS or DD
Long ° ' " or DMS or DD
( ) Street address of well (●) Nearest address
NEAREST WEST OF POLELINE RD AND HOMESTEAD LN IN BOARDMAN

(10) STATIC WATER LEVEL

	Date	SWL(psi)	+	SWL(ft)
Existing Well / Pre-Alteration				
Completed Well	2/26/2016			33

Flowing Artesian? [ ] Dry Hole? [ ]

WATER BEARING ZONES Depth water was first found 33 00

SWL Date	From	To	Est Flow	SWL(psi)	+	SWL(ft)
2/9/2016	33	155	3			33

(11) WELL LOG

Ground Elevation

Material	From	To
Top soil/ silty sand	0	10
silty sand	10	20
tan silty loam	20	33
brown silty sand	33	58
brown silty loam/gravels	58	112
silty sand/gravels	112	121
silty sand	121	130
brown silt/ gravels	130	142
brown sand/gravels	142	150
broken black basalt	150	151
black basalt	151	155

RECEIVED BY OWRD
DEC 22 2016
SALEM, OR

Date Started 2/1/2016 Completed 2/26/2016

(unbonded) Water Well Constructor Certification

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

License Number Date

Signed

(bonded) Water Well Constructor Certification

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

License Number 1766 Date 3/10/2016

Signed BRANDON C BROWN (E-filed)
Contact Info (optional) brandon@waterwelldeveloping.com

ORIGINAL - WATER RESOURCES DEPARTMENT

THIS REPORT MUST BE SUBMITTED TO THE WATER RESOURCES DEPARTMENT WITHIN 30 DAYS OF COMPLETION OF WORK Form Version

LL-1692

ANIMAL WASTE MANAGEMENT PLAN

For

Lost Valley Ranch

CONFINED ANIMAL FEEDING OPERATION

Located at:
Homestead Lane
Boardman, Oregon

For submittal to

Oregon Department of Agriculture
Natural Resources Division CAFO Program
635 Capitol Street NE
Salem, OR 97301-2532

Prepared by

Fazio Engineering
P.O. Box 246
Milton-Freewater, OR 97862

June 17, 2016

Table of Contents

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Animal Waste Management Plan Signature Page

Plan Owner/Operator:

Greg Te Velde
Travis Love
PO Box 1210
Boardman, OR 97818
(509) 201-0560

As owner and operator of the dairy, I intend to manage in accordance with the practices and operation and maintenance described in this Animal Waste Management Plan. I understand that I am responsible for keeping all necessary records associated with the implementation of this plan.

Signature _____ Date 8-6-15

Prepared By:

Fazio Engineering
P.O. Box 246
Milton-Freewater, OR 97862
(541) 938-6084

LL-1692

ii Utilization

The nutrient management goal is to apply all generated liquids and some solids on owned or managed cropland at agronomic rates and export some of the solids.

2. SPECIFIC DESCRIPTIONS AND CALCULATIONS

a. Description of Production Area and Land Application Location

i Aerial Photo and Topography

Appendix A contains a Production Area Map showing an aerial photograph of the dairy site. Aerial photos and topography of the land application fields is located with the soils information in Appendix B.

ii Site Soils

Appendix B contains the USDA-Natural Resources Conservation Service soil maps for the farm location. The primary soils at the dairy site are Irrigon fine sandy loam, Quincy loamy fine sand, Royal loamy fine sand and Sagehill fine sandy loam. These sandy soils are well drained with no risk of flooding.

b. Manure, Litter and Process Waste Volumes

Estimates of manure and process waste water volumes assume that the dairy has 13,000 milk cows, 2,000 dry cows, 11,000 heifers and 4,000 calves. The specific values are located in the appendix and not included here in the text. This allows for changes in management without changing the text of this AWMP.

ORAWM spreadsheet version 4.9 was used to estimate solid and liquid volumes. A 150-day winter storage period covering October through February was chosen to accommodate the typical growing season of March through September. The required storage capacity will be determined based on the specific water use, manure production and site runoff.

i Manure Volumes

Manure volumes are based on the number milk cows, dry cows, heifers and calves and their respective average weights. It is assumed that all livestock will be confined all year.

ii Bedding Volumes

The dairy uses dry manure for bedding the milk cows. Straw bedding is used for the calves and also for the pens during wet winter conditions.

iii Process and Wash Water Volumes

Parlor water use includes cleaning the milk room floor, pipelines and other equipment. Pre cooler and chiller water is recycled for livestock drinking water and parlor wash water. Wash water amounts are based on planned operation at another dairy.

iv Silage and Feed Processing Leachate

Silage and commodities are stored on slabs and leachate is directed to the lagoon complex. Silage is also stored in Ag Bags without significant leachate.

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c. Contaminated Storm Water

Runoff from the parlor, barn roofs, and open lots is directed and handled with the flush water system and flows into the lagoon complex. Runoff from the manure handling area drains into a separate runoff lagoon. No clean water diversions are anticipated. The dairy site is graded to prevent runoff water to enter the site.

d. Nutrient Content of Manure, Litter and Process Waste

The estimated nutrient content was based on ORAWM after storage losses are shown in Table 1.

Table 1: Manure Nutrient Content

Lagoon Water (#/1,000 gallons)			Solid Manure (#/ton)		
N	P_2O_5	K_2O	N	P_2O_5	K_2O
4.98	4.46	6.24	10.57	5.63	7.81

e. Farm Nutrient Balance

i Nutrients Generated and Losses

The ORAWM spreadsheet was used to estimated amount of nutrients generated and remaining after storage, application, and denitrification losses.

ii NRCS Agronomy Techinal Note #26 and Phosphorous Index

The Site Vulnerability Class has been determined to be LOW for all the fields but one. One field is MEDIUM. The nutrient calculations currently balance for nitrogen.

iii Acreage Owned or Leased

The farm was center pivots, then converted to hybrid poplar trees with drip irrigation, and now is being converted back to center pivots. The farm has about 5,900 irrigated acres. ORAWM was used to estimate the farm nutrient balance assuming some fields are double cropped, so the total irrigated acres in ORAWM may be more than 5,900 acres.

Based on the ORAWM nutrient calculations at the planned herd size, the acreage owned can utilize all the liquids generated and some of the solids. Some solid manure may need to be exported off the farm. The specific amount of manure exported will change based cropping patterns, yields and field soil test results.

f. Application Schedule and Limitations

i Schedule of Applications and Methods

Prior to field application, the owner will test the nutrient levels in both the lagoon and solid manure. The owner will continue to sample both the lagoon and solid manure in the spring, mid-summer and fall until the records consistently and reliably show the approximate nutrient content of the manure at each period.

Application of liquids and solids will be done during favorable climatic conditions and crop condition. Application of manure will be done at appropriate times of the year to utilize nutrients for high forage production. Solids and liquids may be applied when climatic conditions and cropping patterns allow.

Stored liquids are pumped through the center pivots, big guns or shanked into the cropland. Slurry from settling cells is shanked or spread using a honey wagon and slurry wagons. Solid manure is applied using conventional end spreaders or side slingers.

ii Application Limitations and Guidance

The application limitations are:

1. All liquid and solid manure applications are applied at agronomic rates.
2. Manure will not be applied to saturated soil.
3. Manure will not be applied during any precipitation that is excessive enough to cause ponded water.
4. Solid manure intended for field applications, may only be temporarily stored on field corners or staging areas up to 4 months prior to application. Solid manure may not be stored in the field corners from November thru February, and cannot have any free draining moisture.

iii Guidance for Winter Manure Applications

Only apply manure during this time period if the following guidelines can be met. Call the ODA CAFO Program for guidance if a manure application is needed and the guidelines can't be met.

1. Apply manure only to actively growing crops such as pastures or cover crop.
2. Minimize application rates by using the maximum practical travel rates for the application equipment.
3. Maintain a 100 foot setback buffer distance from all down gradient surface ditches or ponds.
4. Do not apply during rainfall events that are expected to result in saturated soils or surface runoff.
5. Do not apply to saturated or flooded soil.
6. Do not apply to slopes greater than 5%.
7. Application of manure to frozen soil should be avoided if possible. Do the following guidelines if manure is applied to frozen soil.
   a. Apply only enough manure to address storage limitations.
   b. Minimize applications to 5 wet tons per acre or less for solids and 6,788 gallons (0.25 inches) per acre for liquids or slurry.
   c. Apply to fields of established hay, pasture or fields containing at least 90% cover and the furthest from surface water sources.
   d. Do not apply manure within 200 feet of surface water sources, drainage ditches, wells, or inlets to subsurface drainage systems.
   e. Runoff control systems such as earthen dikes must be in place where applications are made to fields with slopes greater than 5%.

iv Irrigation Water Management

Application of irrigation water is managed relative to lagoon water applications to minimize leaching of soluble nutrients or runoff. The applications should not exceed the field capacity of the soil. Lagoon water applications will not satisfy crop water requirements. The majority of the crop water requirements will be satisfied using irrigation water. AgriMet will be used for estimating crop specific water requirements. Crop root zone, soil water holding capacity, and allowable depletion values will be those shown in AgriMet.

A local consulting firm provides weekly evapotranspiration (ET) estimates for each crop. The farm operates each pivot the hours per week necessary to meet the weekly ET estimates.

g. Animal Mortality Management

Mortalities are hauled to the designated area approved by ODA for regular pickup by a rendering facility or hauled weekly to the landfill.

h. Mechanical Operation and Maintenance

The following identifies the general operation and maintenance procedures required to ensure proper function of each component of the manure handling facilities. The operator will contain all wastewater within the facilities.

i Screen Separators

The screens are operated and maintained according to the manufactures recommendations and procedures. In the event that the separators are not functioning properly, the manure stream is diverted to the settling cells.

Routine activities include maintaining the concrete pad and curbs such that all runoff and drainage is captured and directed towards the settling cells. Once a separated solids mound has been allowed to free drain of moisture, it is transported to the manure drying area. Any material hauled to crop ground is documented by recording number of loads, date, material, and destination.

ii Settling Cells and Storage Lagoons

Routine operations of the storage lagoon cells include monitoring the collected flush water flow into the settling cells. During the spring and throughout the summer months, the settling cell and storage lagoons are cleaned.

All foreign material such as tumbleweeds and other foreign debris will be removed from the lagoon cells and pipes. Promptly repair all leaks around valves, fittings, and pipelines. Eradicate or otherwise remove all rodents and/or burrowing animals that have or can potentially damage any part of the soil liner. Immediately repair any damage caused by their activity. Do not allow livestock access to the liner. Immediately repair any vandalism, vehicular or livestock damage.

iii Manure Handling Areas

Settled solids removed from the screen separators, settling cells or lagoons are dried and stockpiled for bedding. The grading needs to be maintained so that all runoff is contained within the manure drying area and directed to the storage lagoon.

iv Irrigation Pipeline

Pipeline routes and water line will be inspected periodically for leaks. Any leaks, damaged sprinklers and or broken pipes will be repaired and or replaced. The irrigation pipes will be flushed periodically to assure no sediment buildup in the lines. Water will be drained during cold weather to prevent frozen lines and possible breakage. Shut off valves will be inspected annually. Broken valves will be replaced.

v Pumps

Pump(s) will be operated and maintained according to manufacturer's manual. Liquids will be drained from pump during freezing weather. Pump will be inspected periodically to prevent debris from wrapping around the impeller. Broken lines will be replaced or repaired. Loose connections will be tightened. The agitators, pumps and electrical controls will be periodically

LL-1692

inspected to ensure proper operation. In the event of a power failure generators will be used as backup power.

vi Trough or Tank

Watering facilities will be inspected periodically. Damaged facilities will be repaired. Float valves will be maintained in working order. Areas immediately around the facilities will be maintained in a stable condition.

3. Record Keeping and Reporting

a. Manure and Soil Testing

The nutrient content of all applied manure sources will be tested to determine the correct application rates to satisfy crop requirements. Samples will be taken at least once during the time it is to be used.

Liquid manure samples can be taken from the center pivot sprinklers during application or from the lagoon. Samples will be placed in a screw lid container and frozen prior to shipping unless shipment is to occur that day. Liquid manure tests will include total nitrogen (TKN), phosphorous (P) and potassium (K) at a minimum.

In the case of daily or frequent spreading of slurries or solid manure, samples will be taken over a representative period. In a manure solids pile, collect samples from a variety of locations. The samples will be place in a non-leaking airtight container. The samples will be placed in a freezer until shipment unless shipment is to occur that day. Solid manure tests will include total nitrogen (TKN), phosphorous (P), potassium (K) and moisture content at a minimum.

Soil sampling will be conducted at the depths and frequency as specified in the NPDES permit.

Soil sampling will be required to monitor the nutrient balance of the fields. Nutrient planning will be based on soil tests. Each field will be tested in the fall of each year after harvest. Soils will be sampled with as many as 10-20 samples per field. The samples will be mixed and placed in a suitable container for shipping. If shipping is delayed, the sample will be frozen until shipment. Additional information for soil sampling protocol and interpretation can be found in the OSU Bulletins.

The following documents provide protocols for testing: manure, litter and process waste water; measuring crop nutrient removals; soil testing to evaluate nutrient application and crop uptake, and calculating manure application rates.

- PNW 570-E, Monitoring Soil Nutrients Using a Management Unit Approach
- E306, Manure Sampling & Analysis
- EM 8768, Calculating Dairy Manure Nutrient Application Rates.
- EM 8832-E, Post-harvest Soil Nitrate Testing for Manured Copping Systems West of the Cascades

b. Inspections

1. Daily inspections: water lines.

2. Weekly inspection: storm water diversions, run-off diversions, waste transport, conveyance structures, storage structures, storage structure volumes.
3. Periodic inspections: equipment used for land application of manure liquids and/or solids when in use.
   a. Center pivot sprinkler packages will be checked by using rain gauges to verify the pivot application charts are correct.
   b. Slurry and solid manure equipment calibrations will be done according to EM 8768 listed previously.

c. Record Keeping

i Record results of:

1. Daily inspections.
2. Weekly inspections.
3. Periodic inspections.
4. Corrective actions taken, explain those not corrected.
5. Expected crop yields (if not in the plan).
6. Applications of manure, litter and process waste will be kept, including the date, location, and the amount of N and P applied during each application.
7. Weather conditions at the time of manure, litter or process water application and 24 hours before and after application.
8. Total amount of manure or wastewater transferred to other persons, including date and amount of each transfer and the name and address of each recipient.

ii REPORTING TO OREGON DEPARTMENT OF AGRICULTURE (ODA):

1. Any discharge will be reported orally to ODA within 24 hours. Within 5 days, a written statement describing this discharge will also be submitted to ODA.
2. The amount of manure, litter and process waste applied will be reported annually.
3. The amount of manure, litter and process waste exported will be reported annually.

iii OPERATION REQUIREMENTS

1. Must have depth markers in all surface liquid impoundments (i.e. lagoons, ponds, tanks). Markers must indicate:
   a. Maximum design volume (freeboard).
   b. Minimum capacity necessary to contain 25-year, 24 hours rainfall event.
   c. Depth of manure and process wastewater.
2. Maintain setback area within 100 feet of any down gradient surface water, open tile line intake structure, sinkholes, agricultural wellheads, or other conduits to surface and ground waters where manure, litter, and other process wastewaters are prohibited. As a compliance alternative, and if demonstrated to the satisfaction of ODA, the permittee may:
   a. Establish a 35 ft vegetated buffer where manure, litter and other process waste waters are prohibited: or
   b. Demonstrate that a setback or vegetated buffer is not necessary or may be reduced.

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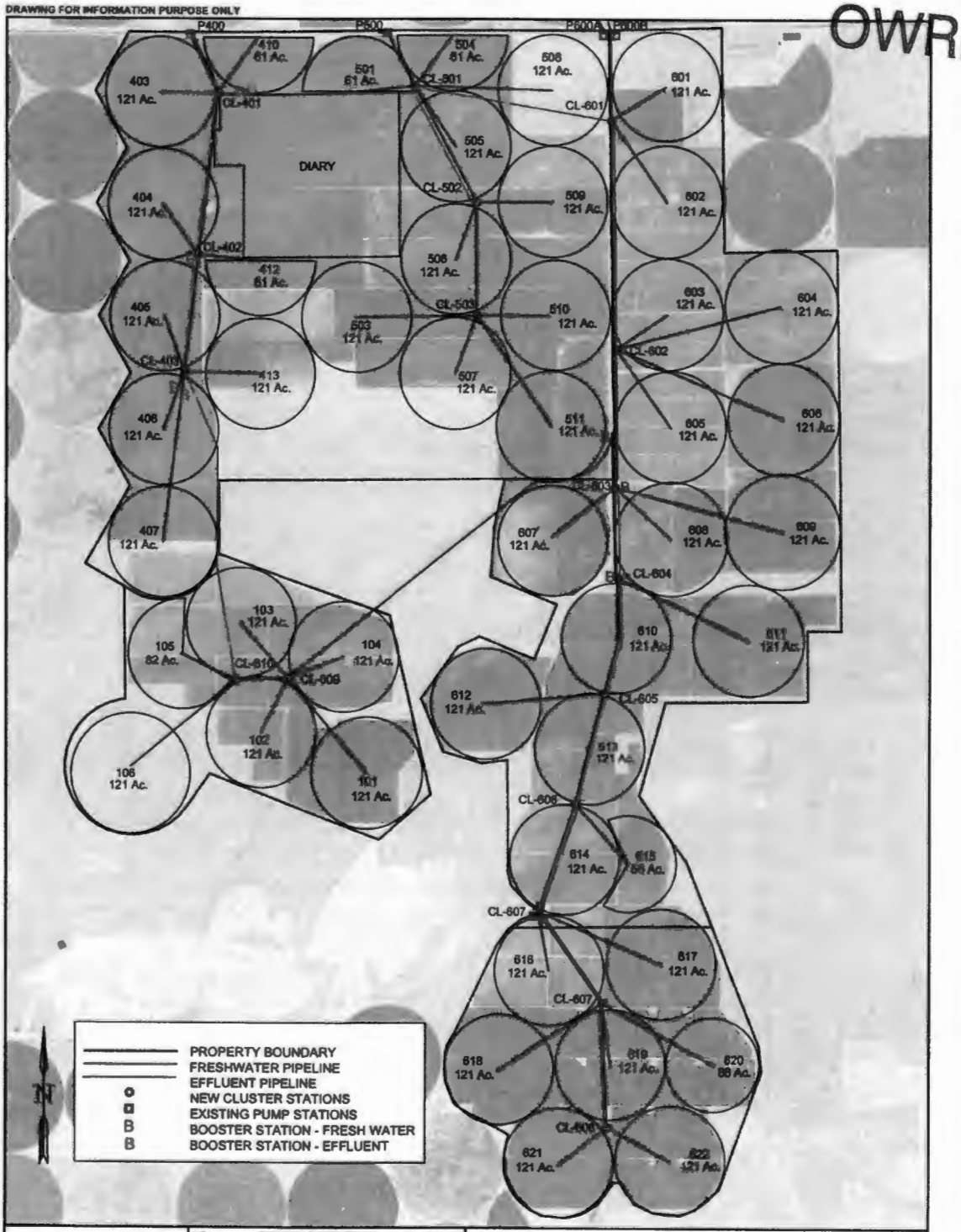
DRAWING FOR INFORMATION PURPOSE ONLY



NO	REVISION DESCRIPTION	DATE
4		
3		
2		
1		

FILE PATH: \\Clients\Willow Creek Dairy - 597\BTF South Farm Maps\BTF South Farm.DWG

WILLOW CREEK DAIRY
SANDLAKE FARM DEVELOPMENT
PIVOTS AND PIPELINES

IRZ Consulting, LLC
500 N 1ST, HERMISTON, OREGON 97838
OFFICE (541) 567-0252 FAX (541) 567-4239

DESIGNED	TOM BUCHHOLTZ
DRAWN	SUVA SHAKYA
SCALE	NTS
SHEET	M1
DATE	09-10-2015
DRAWING NO	518-15-001

CL-1692

Limited License Completeness@ Checklist

Minimum Requirements (OAR 690-340-030) (ORS 537.143)

RECEIVED
MAR 10 2017
OWRD

Received Date: _____	**Township:** _____
Public Notice Date: _____	**Range:** _____
Earliest Issue Date: _____	**Section:** _____
Source: _____	**POD Loc:** _____
Amount: _____	_____
Duration: _____	**Watermaster:** _____
County: _____	**ODFW:** _____
Basin: _____	**DEQ:** _____

- ❍ **Applicant/Organization Name, Mailing Address ,Telephone Number, and Contact Person.** *Signature in ink. Original "wet" signature required.*
- ❍ **Source** listed?

- ❍ **If source is groundwater...**are well log(s) or sufficient information for the Department to determine aquifer, well depth, well seal, open interval, etc. included ? Was the intended aquifer identified?. If for multiple wells, each map location shall be clearly tied to a well log.

- ❍ **Proposed Use of the water....**is each proposed use identified?

- ❍ **If source is stored water....** Is there a contract for delivery of stored water. Must have a copy

- ❍ **If use is supplemental**...is the primary water right listed?

- ❍ **Amount of water** from each source listed in GPM, CFS or AF?

- ❍ **Acreage** being proposed, if applicable.

- ❍ **Duration of Limited License** being requested by applicant.

- ❍ **Project schedule...** Date when water use will start and date when water use will be completed

- ❍ **Is the application signed in ink** by the applicant(s) or by the authorized agent with title or authority if an organization or corporation?

- ❍ **Water Master Report...** Is the local Water Masters report on water availability included?

- ❍ **Land Use Form...** Is the Land Use Form completed by local planning officials included? *Signature must be within the last 12 months. Signature must be an original "wet" signature.*

CONTINUED ON BACK

LL-1692

OREGON WATER RESOURCES DEPARTMENT

ACCOUNT ACTIVITY RECORD

Account Name: Schwabe Williams & Wyatt

Account #: ______________ Activity Date: 3-10-2017

Please complete and leave with Customer Service Representative. CSG, please place in ASD mailbox.

Transaction Description	Number of Items or Hours	Project Name *(If Applicable)*	Customer Contact Name *(Person Making Copies)*	OWRD Personnel Providing Assistance *(Or Verifying Fees)*	Amount ($) of Activity
Deposit to Account:					
Copying: Self Service Agency Assisted					
Faxing:					
Research:					
Other: Limited License #LL-1692		Te Velde	Shonee L.	Jerry S.	$ 340.00
Other:					

Your account may be required to provide an account project number per your accounting department. If required, please have your project number ready upon any service request.

6/13/14 Updated by Cammi Hungate

Attn: Jerry Sauter

File #: LL-1692