

Approved:



MEMO

To: Kristopher Byrd, Well Construction Manager
From: Tommy Laird, Well Construction Program Coordinator
Subject: Review of Water Right Application G-19043
Date: January 21, 2025

The attached application was forwarded to the Well Construction Section by the Groundwater Section. Darrick E. Boschmann reviewed the application. Please see Darrick's Groundwater Review and the Well Reports.

Applicant's Well # "Well #1" (LAKE 1627/LAKE 4448): Based on a review of the Well Reports, Applicant's Well #1 does not appear to comply with current minimum well construction standards (See OAR 690 Division 210). The problem is that according to the Water Supply Well Report, the well was not sealed to the proper depth. Also, the Well Report indicates that the well head is flush with land surface. In order to meet minimum well construction standards, the well head must be extended so that it is at least one-foot above land surface and the well must be resealed with an approved grout to a minimum depth of 302 feet below land surface.

My recommendation is that the Department not issue a permit for Applicant's Well #1 unless it is brought into compliance with current minimum well construction standards or information is provided showing that it is in compliance with current minimum well construction standards.

Bringing Applicant's Well #1 into compliance may not prevent hydraulic connection issues.

Applicant's Well # "Little Hot" (LAKE 1628/LAKE 1626/LAKE 52582): Based on a review of the Well Report, Little Hot does not appear to comply with current minimum well construction standards (See OAR 690 Division 210). The problem is that according to the Water Supply Well Report, the well is not sealed to the proper depth. In order to meet minimum construction standards, the well must be resealed to a minimum depth of 311 feet bgs.

My recommendation is that the Department **not issue** a permit for Little Hot unless it is brought into compliance with current minimum well construction standards or information is provided showing that it is in compliance with current minimum well construction standards.

Bringing applicant's well "Little Hot" into compliance may not prevent hydraulic connection issues.

Applicant's Well SVE #1 (LAKE 52530/52866): Based on a review of the Well Report, Applicant's Well SVE #1 seems to protect the groundwater resource.

The construction of Applicant's Well SVE #1 may not satisfy hydraulic connection issues.

Applicant's Well "SVE #2" (LAKE 52529/LAKE 52865): Based on a review of the Well Report, Applicant's Well SVE #2 seems to protect the groundwater resource.

The construction of Applicant's Well SVE #2 may not satisfy hydraulic connection issues.

LAKE 1627

RECEIVED BY OWRD



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

AUG 10 2015

SALEM, OR

Application for Well ID Number

Do not complete if the well already has a Well Identification Number.

I. OWNER INFORMATION

Current Owner Name (please print): Colahan Enterprises

Mailing Address: PO Box 300

City, State, Zip: Paisley, Oregon 97636

Mail Well ID Tag to: SAME AS ABOVE In Care Of (C/O)

Name & Address: Attn: Lynn Culp, Surprise Valley Electrification Corp. (SVEC); 516 US Highway 395 E.

City, State, Zip: Alturas, CA, 96101

II. WELL LOCATION INFORMATION (Please fill out as completely as possible)

Township: 33S (North / South) Range: 18E (East / West) Section: 23

Tax Lot: 1300 County Lake NW 1/4 of the SW 1/4

GPS Coordinates: already assigned OWRD well log numbers: LAKE 1627/4448 - but no ID #

Street Address of Well, City: → 42.69393 -120.568195

If the property had a different street address in the past: _____

III. GENERAL WELL INFORMATION (Please fill out as completely as possible)

Use of Well (domestic, irrigation, commercial, industrial, monitoring): irrigation

Date Well Constructed (or property built): Sept 1980 Total Well Depth: 983' Casing Diameter: 16"

Owner at time the well was constructed (if known): Ross Colahan

Other Information: Well name: Hot Well

SUBMITTED BY (please print): Lynn Culp / Surprise Valley Electric Corp.

PHONE: (530) 233-3511 **EMAIL &/or FAX:** lynnsvec@frontier.com

Send application to: Oregon Water Resources Department 725 Summer St NE, Suite A, Salem, Oregon 97301; or fax to (503) 986-0902. Applications are processed in the order they are received, and Well ID Numbers are mailed within 4-5 business days.

For Official Use Only by the Oregon Water Resources Department:

Received Date:

8-10-15

Well Log Number:

LAKE 1627 (ORIG.)
LAKE 4448 (ALT.)

Well Identification #:

L-119827

LAKE 4448

RECEIVED BY OWRD



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Received Date:
8-10-15

Well Log Number:
LAKE 1627 (ORIG.)
LAKE 4448 (ALT.)

Well Identification #:
L-119827

LAKE 1628

Lake 1628

NOTICE TO WATER WELL CONTRACTOR
The original and first copy of this report are to be filed with the STATE ENGINEER, SALEM 10, OREGON within 30 days from the date of well completion.

RECEIVED WATER WELL REPORT APR 7 1964 STATE OF OREGON STATE ENGINEER

WATER WELL REPORT STATE OF OREGON (Please type or print)

State Well No. 33/18-23G State Permit No.

(1) OWNER: SALEM, OREGON

Name Ross Colohan Address Paisley, Oregon

(2) LOCATION OF WELL:

County Lake Driller's well number SW 1/4 NE 1/4 Section 23 T. 33S R. 18 E W.M. Bearing and distance from section or subdivision corner 1 1/2 miles NW of Paisley, Oregon

(3) TYPE OF WORK (check):

Well [X] Deepening [] Reconditioning [] Abandon []

(4) PROPOSED USE (check):

Domestic [] Industrial [] Municipal [] Irrigation [X] Test Well [] Other []

(5) TYPE OF WELL:

Rotary [] Driven [] Cable [X] Jetted [] Dug [] Bored []

(6) CASING INSTALLED:

16" Diam. from 0 ft. to 270 ft. Gage .250

(7) PERFORATIONS:

Perforated? [X] Yes [] No Type of perforator used Mills Size of perforations 1/4 in. by 4 in. 1400 perforations from 100 ft. to 240 ft.

(8) SCREENS:

Well screen installed [] Yes [X] No Manufacturer's Name Model No. Slot size Set from ft. to ft.

(9) CONSTRUCTION:

Well seal—Material used in seal puddled clay Depth of seal 22 ft. Was a packer used? NO Diameter of well bore to bottom of seal 22 in. Were any loose strata cemented off? [] Yes [X] No Depth Was a drive shoe used? [X] Yes [] No Was well gravel packed? [] Yes [X] No Size of gravel: Gravel placed from ft. to ft. Did any strata contain unusable water? [] Yes [X] No No Type of water? Depth of strata Method of sealing strata off

(10) WATER LEVELS:

Static level 83 ft. below land surface Date 4/3/64 Artesian pressure lbs. per square inch Date

(11) WELL TESTS:

Drawdown is amount water level is lowered below static level Was a pump test made? [X] Yes [] No If yes, by whom? Contractor Yield: 150 gal./min. with 83 ft. drawdown after 3 hrs. Baller test gal./min. with ft. drawdown after hrs. Artesian flow g.p.m. Date Temperature of water 104 Was a chemical analysis made? [] Yes [X] No

(12) WELL LOG:

Diameter of well below casing 8 Depth drilled 315 ft. Depth of completed well 315 ft. Formation: Describe by color, character, size of material and structure, and show thickness of aquifers and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of formation.

Table with columns: MATERIAL, FROM, TO. Rows include soil zone, gravelly; loose gravel and sand, med.; clay&sand, brown; volcanic gravel & clay, brn; gravel, med. seepage of wat; gravel & clay, brn.; med. gravel & brn.; hard-packed sand and clay; soft sandy clay, brown; sticky clay & gravel, brn.; loose gravel, fine waterbe; boulders & clay, gray; sandy clay, brown; fine gravel, waterbearing; sticky clay & gravel, gray; fine sand, white, waterbe; clay & gravel, brn.; fine sand, wht. & pink, wat; sandy clay & gravel, fine; med. gravel, waterbearing; sticky clay, brn.; basalt rock w/ clay stringers, brown.

Work started 3/7/64 19 Completed 4/3/ 1964 Date well drilling machine moved off of well 4/4 1964

(13) PUMP:

Manufacturer's Name Type: H.P.

Water Well Contractor's Certification:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME Jack Stooksberry, Jr. (Person, firm or corporation) (Type or print)

Address Route 2, Box 47, Lakeview, Ore.

Drilling Machine Operator's License No. 45

[Signed] Jack Stooksberry, Jr. (Water Well Contractor)

Contractor's License No. 211 Date 4/3, 19 64

LAKE 1628



Oregon Water Resources Department
725 Summer Street NE, Suite A
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City, State, Zip: Alturas, CA, 96101

II. WELL LOCATION INFORMATION (Please fill out as completely as possible)

Township: 33S (North / South) Range: 18E (East / West) Section: 23
Tax Lot: 1300 County Lake SW 1/4 of the NW 1/4
GPS Coordinates: already assigned OWRD well log numbers: LAKE 1628/1626/52582 - but no ID #
Street Address of Well, City: → 42.697274 - 120.55813
If the property had a different street address in the past:

III. GENERAL WELL INFORMATION (Please fill out as completely as possible)

Use of Well (domestic, irrigation, commercial, industrial, monitoring): irrigation; application pending for industrial
Date Well Constructed (or property built): April 1964 Total Well Depth: current 270' Casing Diameter: 16"
Owner at time the well was constructed (if known): Ross Colahan
Other Information: Well name: Little Hot Well

SUBMITTED BY (please print): Lynn Culp / Surprise Valley Electric Corp.
PHONE: (530) 233-3511 EMAIL &/or FAX: lynnsvec@frontier.com

Send application to: Oregon Water Resources Department 725 Summer St NE, Suite A, Salem, Oregon 97301; or fax to (503) 986-0902. Applications are processed in the order they are received, and Well ID Numbers are mailed within 4-5 business days.

For Official Use Only by the Oregon Water Resources Department:

Received Date:

8-10-15

Well Log Number:

LAKE 1628 (ORIG.)
LAKE 1626 (DEEP.)
LAKE 52582 (ALT.)

Well Identification #:

L-119826

Well I.D. Number/2

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

LAKE 1626 Lake 1626
 APR 17 1987

33E/18E-23ac
 Deep.

(1) OWNER:
 Name Ross Colohan & Son Owner's Well Number: _____
 Address P.O. Box
 City Paisely State Oreg. Zip 97636

(2) TYPE OF WORK:
 New Well Deepen Recondition Abandon

(3) DRILL METHOD:
 Rotary Air Rotary Mud Cable Other

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

(5) BORE HOLE CONSTRUCTION:
 Depth of Completed Well 415 ft.
 Special Standards date of approval _____

HOLE meter	From		To		SEAL Material	From		To		Amount sacks or pounds
	From	To	From	To		From	To			
3"	306	430	xxx	not	not	disturbed				

How was seal placed? Method A B C D E
 Other not disturbed
 Backfill placed from _____ ft. to _____ ft. Material _____
 Gravel placed from _____ ft. to _____ ft. Size of gravel _____

(6) CASING/LINER:

	Diameter	From	To	Gauge	Steel	Plastic	Welded	Threaded
Casing:	3"	+2	300	.188	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Liner:					<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

location of shoe(s) _____

PERFORATIONS/SCREENS:

Perforations Method none
 Screens Type _____ Material _____

From	To	Slot size	Number	Diameter	Tele/pipe size	Casing	Liner
						<input type="checkbox"/>	<input type="checkbox"/>

(8) WELL TESTS: Minimum testing time is 1 hour
 Pump Bailor Air Flowing Artesian
 Yield gal/min 50 Pumping level _____ Drill stem at 415 Time 1 hr

Temperature of water 175* Depth Artesian Flow Found _____
 Was a water analysis done? Yes By whom no
 Did any strata contain water not suitable for intended use? Too little
 Salty Muddy Odor Colored Other no
 Depth of strata: _____

(9) LOCATION OF WELL by legal description:
 County Lake Latitude _____ Longitude _____
 Township 33S N or S, Range 18E E or W, WM.
 Section 23 SW 1/4 NE 1/4
 Tax Lot _____ Lot _____ Block _____ Subdivision _____
 Street Address of Well (or nearest address) _____

(10) STATIC WATER LEVEL:
120 ft. below land surface. Date Mar. 18-87
 Artesian pressure _____ lb. per square inch. Date _____

(11) WELL LOG: Ground elevation unknown

Material	From	To	WB?	SWL
Hard Grey Basalt	306	329		
Mild Brown Lava	329	331		
Hard Grey Basalt	331	337		
Mild Brown Lava	337	339		
Broken Lava, W/B	339	353	WB-	
Hard Basalt	353	360		
White Clays	360	375		
Brown & Blue Clays	375	430		
Brown & Blue Clays	430	432		

Date started Mar. 9-87 Completed Mar. 18-87

(unbonded) Water Well Constructor Certification:
 I constructed this well in compliance with Oregon well construction standards. Materials used and information reported above are true to my best knowledge and belief.
 Signed [Signature] Date Mar. 22-87

(bonded) Water Well Constructor Certification:
 I accept responsibility for construction of this well and its compliance with all Oregon water well standards. This report is true to the best of my knowledge and belief.
 Signed [Signature] Date 4-9-87
 Company Orvail Buckner Well Drilling, Inc. Co. 369 No. _____

LAKE 1626



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If the property had a different street address in the past: _____

III. GENERAL WELL INFORMATION (Please fill out as completely as possible)

Use of Well (domestic, irrigation, commercial, industrial, monitoring): irrigation; application pending for industrial
Date Well Constructed (or property built): April 1964 Total Well Depth: current 270' Casing Diameter: 16"
Owner at time the well was constructed (if known): Ross Colahan
Other Information: Well name: Little Hot Well

SUBMITTED BY (please print): Lynn Culp / Surprise Valley Electric Corp.
PHONE: (530) 233-3511 EMAIL &/or FAX: lynnsvec@frontier.com

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Received Date:

8-10-15

Well Log Number:

LAKE 1628 (ORIG.)
LAKE 1626 (DEEP.)
LAKE 52582 (ALT.)

Well Identification #:

L-119826

LAKE 52582



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Other Information: Well name: Little Hot Well

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L-119826

Well I.D. Number/2

LAKE 52530

LITHOGRAPHIC DESCRIPTION OF OIL OR GAS WELL

(Not required if a mud log is submitted)

STATE OF OREGON • DEPT OF GEOLOGY & MINERAL INDUSTRIES • 229 BROADALBIN ST SW • ALBANY OR 97321

(In compliance with rules and regulations pursuant to ORS 520.)

(1) Permittee Information

Name	Surprise Valley Electrification Corp.
Mailing Address	516 US Hwy 395 E
City/State/Zip	Alturas, CA 96101
Telephone	530.233.3511
Fax	530.233.2190
Email	lynnsvec@frontier.com
Prepared by	Lynn Culp, Silvio Pezzopane, Roy Mink, Kyle Makovsky

(2) Well Information

Well No.	SVE #1
DOGAMI ID No.	36-037-90009 Lake 448

General Manager

5/29/2012

Signature

Title

Date

(3) Well Cuttings

Depth		Description
From	To	
0	40	Brown clay soil and gravelly sand
40	75	Brownish-grey rounded mixed volcanic (basalt, rhyolite, andesite, tuff, pumice) gravel, qtz-rich sand
75	105	Grey quartz-rich sand, with thin brown and grey clay beds, Water Bearing (WB)
105	150	Greyish-brown mixed volcanic gravel, qtz-sand, and clay, WB
150	165	Brown mixed volcanic (basalt, rhyolite, andesite) gravel, rounded sand and clay
165	175	Brown clayey sand and mixed gravels
175	225	Blackish grey basalt gravel, w/ sand and clay beds, WB
225	240	Blackish grey to brown basalt and andesite gravel, and sand
240	305	Varicolored mixed volcanic (basalt, rhyolite, andesite, tuff) gravel and sand, w/ brown clay beds
305	360	Brown gravelly sand and brown clay beds
360	390	Varicolored (grey, brown, black, red, green) basalt, rhyolite, andesite gravel, sand, and brown clay, WB
390	415	Brownish grey and red volcanic gravel, sand, and clay, WB
415	435	Varicolored mixed volcanic gravel (basalt, rhyolite, andesite, tuff), rounded, reddish brown sand and clay
435	490	Varicolored coarse volcanic gravel, rounded, red to brown sand, brown sticky clay beds
490	530	Varicolored volcanic pebble gravel, rounded, w/ sand and reddish brown sticky clay
530	540	White calcite, black and grey basalt andesite, red rhyolite, red and grey tuff w/ brownish red sticky clay
540	575	Red sticky clay ash, vesicular and fibrous pumice clasts, minor sand, grey pebbles
575	640	Red and grey tuffs w/ altered vesicles, minor grey to greenish to black basalt, andesite, rhyolite, WB?
640	675	Red rhyolite tuff and grey andesite w/ altered vesicles, greenish basalt, blades of calcite
675	715	Light grey basalt, reddish brown and green alteration stains, altered vesicles, pyrite, euhedral calcite and quartz
715	715	Light greyish green rhyolite, reddish brown to dark purple basalt?, altered vesicles, pyrite, calcite and quartz
715	795	Dark greenish grey andesite?, dark purplish brown basalt, minor light red and white tuff, rare euhedral quartz
795	870	Dark grey to brown basalt w/ white pumice chunks, rare red and white tuff cinders, rare euhedral quartz
870	905	Dark greenish grey to dark purplish brown basalt, few pumice, rare euhedral and calcite quartz
905	920	Grey to white calcite flakes, possible fracture zone? no rock data - lost circulation, samples floated up during trip out
920	950	Brown sticky slick clay ash, large (<2 cm dia.) euhedral calcite chunks, red cinders and pumice, dries hard
950	1000	Purple, grey, and brown lithic tuff, poorly-welded?, soft waxy, sticky ashy clay, small calcite and quartz crystals
1000	1050	Green, grey, and brown andesite, alteration stains, red lithic tuff, cinders?, large euhedral calcite and quartz crystals
1050	1080	Dark greenish grey andesite, reddish purple stains, hard, fine-grained, large euhedral calcite flakes (fractures?)
1080	1100	no data - no returns
1100	1100	Red, grey, white, and brown lithic tuff or volcanoclastic sediment (depth uncertain, samples floated up during cleaning)
1100	1120	no data - no returns - lost circulation
1120	1120	Dark greenish grey andesite, reddish purple clay? stains, hard, fine-grained, red lithic tuff w/ euhedral quartz crystals, (depth uncertain, sample picked out of the drill collar)
1120	1133	no data - no returns
1133	1133	Reddish brown, lithic tuff, poorly-welded?, sticky clay, dries hard, small calcite and quartz crystals (depth uncertain, sample stuck to the drill bit face)
1133	1235	no data - no returns
1235	1315	Dark greenish grey andesite, red lithic tuff, euhedral quartz crystals, (depth uncertain, sample stuck to the bailer)
1315	1360	no data - no returns
	1360	- Total Depth



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NOV 03 2014

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City, State, Zip:

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Tax Lot: 1300 County Lake NE 1/4 of the SW 1/4
GPS Coordinates: already assigned a OWRD well Log number: LAKE 52530 - but does not have ID number
Street Address of Well, City:
If the property had a different street address in the past:

III. GENERAL WELL INFORMATION (Please fill out as completely as possible)

Use of Well (domestic, irrigation, commercial, industrial, monitoring): industrial/geothermal & irrigation
Date Well Constructed (or property built): August 2012 Total Well Depth: 1360 Casing Diameter: 13 3/8 "
Owner at time the well was constructed (if known): SVEC is well owner - Colahan's own the property
Other Information: Well name: SVE-1

SUBMITTED BY (please print): Lynn Culp
PHONE: (530) 233-3511 EMAIL &/or FAX: lynnsvec@frontier.com

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Received Date:

11-3-14

Well Log Number:

LAKE 52530

Well Identification #:

L-117043

LAKE 52866

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

WELL I.D. LABEL# L117043
 START CARD # 1041359
 ORIGINAL LOG # LAKE 52530

(1) LAND OWNER

Owner Well I.D. SVE#1
 First Name _____ Last Name _____
 Company Surprise Valley Electric
 Address P. O. Box 691
 City Alturas State CA Zip 96010

(2) TYPE OF WORK

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

(2a) PRE-ALTERATION

Casing: Dia + From To Gauge Stl Plstc Wld Thrd
 Material From To Amt sacks/lbs
 Seal: _____

(3) DRILL METHOD

Rotary Air Rotary Mud Cable Auger Cable Mud
 Reverse Rotary Other _____

(4) PROPOSED USE

Domestic Irrigation Community
 Industrial/ Commercial Livestock Dewatering
 Thermal Injection Other _____

(5) BORE HOLE CONSTRUCTION

Special Standard (Attach copy)

Depth of Completed Well 1,360 ft.

BORE HOLE			SEAL				sacks/ lbs
Dia	From	To	Material	From	To	Amt	
24	0	40	Cement	0	40	40	S
17.5	40	900			Calculated	28.96	
12.25	900	1,360	Cement	40	900	470	S
					Calculated	1,224	

How was seal placed: Method A B C D E
 Other _____

Backfill placed from 0 ft. to 900 ft. Material CEMENT

Filter pack from _____ ft. to _____ ft. Material _____ Size _____

Explosives used: Yes Type _____ Amount _____

(5a) ABANDONMENT USING UNHYDRATED BENTONITE

Proposed Amount Pounds Actual Amount Pounds

(6) CASING/LINER

Casing	Liner	Dia	+	From	To	Gauge	Stl	Plstc	Wld	Thrd
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	20	<input checked="" type="checkbox"/>	4	40	.304	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	13.38	<input checked="" type="checkbox"/>	4	900	.375	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	9.63		806	1,310	.375	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>						<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>						<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Shoe Inside Outside Other Location of shoe(s) _____

Temp casing Yes Dia _____ From + _____ To _____

(7) PERFORATIONS/SCREENS

Perforations Method _____

Screens Type _____ Material _____

Perf/S green	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

Pump Bailer Air Flowing Artesian

Yield gal/min	Drawdown	Drill stem/Pump depth	Duration (hr)
1,300		480	2

Temperature 240 °F Lab analysis Yes By _____

Water quality concerns? Yes (describe below) TDS amount 1,130 mg/L

From	To	Description	Amount	Units

(9) LOCATION OF WELL (legal description)

County LAKE Twp 33 S N/S Range 18 E E/W WM

Sec 23 NW 1/4 of the SW 1/4 Tax Lot 1300

Tax Map Number _____ Lot _____

Lat _____ " or _____ DMS or DD

Long _____ " or _____ DMS or DD

Street address of well Nearest address

2090' N & 1275' E from SW corner of Section 23 Paisley, OR

(10) STATIC WATER LEVEL

Existing Well / Pre-Alteration	Date	SWL(psi)	+	SWL(ft)
Completed Well	10-04-2011			145

Flowing Artesian? Dry Hole?

WATER BEARING ZONES

Depth water was first found 900

SWL Date	From	To	Est Flow	SWL(psi)	+	SWL(ft)
10-04-2011	900	1,360	1,000			145

(11) WELL LOG

Ground Elevation 4,473

Material	From	To
see attached		

Date Started 04-26-2011 Completed 10-04-2011

(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 2012 Date _____

Signed Joan Marie

Contact Info (optional) LP Insurance

WATER SUPPLY WELL REPORT - Map with location identified must be attached and shall include an approximate scale and north arrow

LAKE 52866

12/6/2018

Map of Hole**SUMMARY REPORT - OIL OR GAS WELL**

STATE OF OREGON • DEPT OF GEOLOGY & MINERAL INDUSTRIES • 229 BROADALBIN ST SW • ALBANY OR 97321

(In compliance with rules and regulations pursuant to ORS 520.)

(1) Permittee Information

Name	Surprise Valley Electrification Corp.
Mailing Address	516 US HWY 395 E
City/State/Zip	Alturas, CA 96101
Telephone	530.233.3511
Fax	530.233.2190
Email	lynnsvec@frontier.com
Prepared by	Lynn Culp

(2) Well Information

Well No.	SVE #1
DOGAMI ID No.	Lake 4448
Drilling Commenced	April 26, 2011
Drilling Completed	October 4, 2011
Date P & A	February 8, 2011
Total Depth	1360 ft
Redrill Depth	
Logs Run	

General Manager*Signature**Title**Date***(3) Casing Record**

Size of Hole	Size of Casing	Weight (pounds per foot)	Grade/Type	Depth	Type and Amount of Cement
24"	20"	65	A53B	40ft	Type 2
17.5"	13 3/8"	54	J55	900ft	Type G 470 sk
12.25"	9 5/8"	36	J55	1360ft	bbls.
					bbls.

(4) Plugs & Junk

Plugs / Junk	Geological Marker	Depth

(5) Perforations or Liner

Size of Casing	From	To	Shots/ft.	Method of Perforating		
				Jet	Bullet	Slotted Line
9 5/8"	806'	1310'				2.5" slots 6" centers

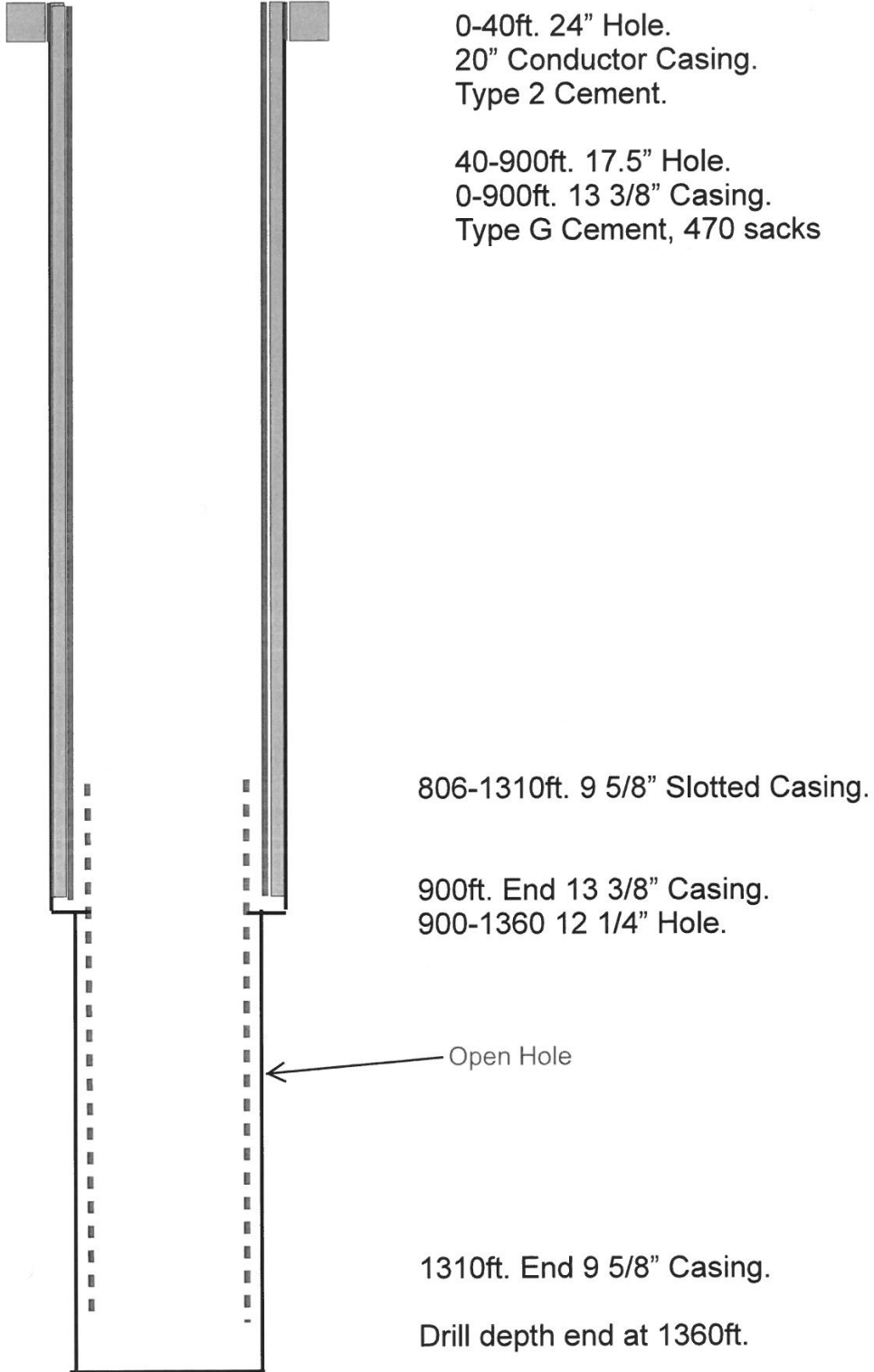
(6) Initial Production

Date	Clean Oil (bbl/day)	Gravity	Percent Water	FTP	FCP	SITP	SICP

12/6/2018

Map of Hole

**Surprise Valley Electric Well #1
Completion Diagram**



12/6/2018

Map of Hole

LAKE 52530

LITHOGRAPHIC DESCRIPTION OF OIL OR GAS WELL

(Not required if a mud log is submitted)

STATE OF OREGON • DEPT OF GEOLOGY & MINERAL INDUSTRIES • 229 BROADALBIN ST SW • ALBANY OR 97321

(In compliance with rules and regulations pursuant to ORS 520.)

(1) Permittee Information

Name	Surprise Valley Electrification Corp.
Mailing Address	516 US Hwy 395 E
City/State/Zip	Alturas, CA 96101
Telephone	530.233.3511
Fax	530.233.2190
Email	lynnsvec@frontier.com
Prepared by	Lynn Culp, Silvio Pezzopane, Roy Mink, Kyle Makovsky

(2) Well Information

Well No.	SVE #1
DOGAMI ID No.	36-037-90009

General Manager

5/29/2012

Signature

Title

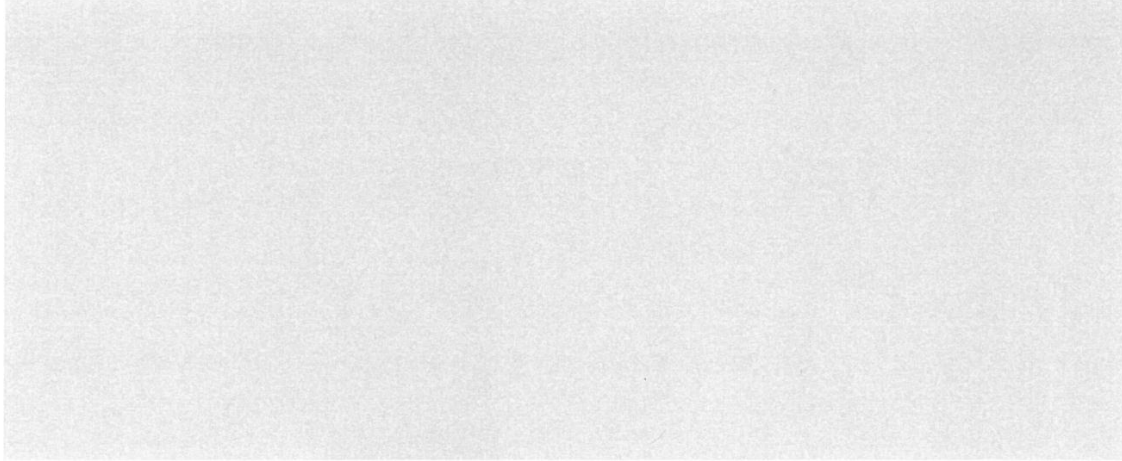
Date

(3) Well Cuttings

Depth		Description
From	To	
0	40	Brown clay soil and gravelly sand
40	75	Brownish-grey rounded mixed volcanic (basalt, rhyolite, andesite, tuff, pumice) gravel, qtz-rich sand
75	105	Grey quartz-rich sand, with thin brown and grey clay beds, Water Bearing (WB)
105	150	Greyish-brown mixed volcanic gravel, qtz-sand, and clay, WB
150	165	Brown mixed volcanic (basalt, rhyolite, andesite) gravel, rounded sand and clay
165	175	Brown clayey sand and mixed gravels
175	225	Blackish grey basalt gravel, w/ sand and clay beds, WB
225	240	Blackish grey to brown basalt and andesite gravel, and sand
240	305	Varicolored mixed volcanic (basalt, rhyolite, andesite, tuff) gravel and sand, w/ brown clay beds
305	360	Brown gravelly sand and brown clay beds
360	390	Varicolored (grey, brown, black, red, green) basalt, rhyolite, andesite gravel, sand, and brown clay, WB
390	415	Brownish grey and red volcanic gravel, sand, and clay, WB
415	435	Varicolored mixed volcanic gravel (basalt, rhyolite, andesite, tuff), rounded, reddish brown sand and clay
435	490	Varicolored coarse volcanic gravel, rounded, red to brown sand, brown sticky clay beds
490	530	Varicolored volcanic pebble gravel, rounded, w/ sand and reddish brown sticky clay
530	540	White calcite, black and grey basalt andesite, red rhyolite, and grey tuff w/ brownish red sticky clay
540	575	Red sticky clay ash, vesicular and fibrous pumice clasts, minor sand, grey pebbles
575	640	Red and grey tuffs w/ altered vesicles, minor grey to greenish to black basalt, andesite, rhyolite, WB?
640	675	Red rhyolite tuff and grey andesite w/ altered vesicles, greenish basalt, blades of calcite
675	715	Light grey basalt, reddish brown and green alteration stains, altered vesicles, pyrite, euhedral calcite and quartz
715	715	Light greyish green rhyolite, reddish brown to dark purple basalt?, altered vesicles, pyrite, calcite and quartz
715	795	Dark greenish grey andesite?, dark purplish brown basalt, minor light red and white tuff, rare euhedral quartz
795	870	Dark grey to brown basalt w/ white pumice chunks, rare red and white tuff cinders, rare euhedral quartz
870	905	Dark greenish grey to dark purplish brown basalt, few pumice, rare euhedral and calcite quartz
905	920	Grey to white calcite flakes, possible fracture zone? no rock data - lost circulation, samples floated up during trip out
920	950	Brown sticky slick clay ash, large (<2 cm dia.) euhedral calcite chunks, red cinders and pumice, dries hard
950	1000	Purple, grey, and brown lithic tuff, poorly-welded?, soft waxy, sticky ashy clay, small calcite and quartz crystals
1000	1050	Green, grey, and brown andesite, alteration stains, red lithic tuff, cinders?, large euhedral calcite and quartz crystals
1050	1080	Dark greenish grey andesite, reddish purple stains, hard, fine-grained, large euhedral calcite flakes (fractures?)
1080	1100	no data - no returns
1100	1100	Red, grey, white, and brown lithic tuff or volcanoclastic sediment (depth uncertain, samples floated up during cleaning)
1100	1120	no data - no returns - lost circulation
1120	1120	Dark greenish grey andesite, reddish purple clay? stains, hard, fine-grained, red lithic tuff w/ euhedral quartz crystals, (depth uncertain, sample picked out of the drill collar)
1120	1133	no data - no returns
1133	1133	Reddish brown, lithic tuff, poorly-welded?, sticky clay, dries hard, small calcite and quartz crystals (depth uncertain, sample stuck to the drill bit face)
1133	1235	no data - no returns
1235	1315	Dark greenish grey andesite, red lithic tuff, euhedral quartz crystals, (depth uncertain, sample stuck to the bailer)
1315	1360	no data - no returns
	1360	- Total Depth

12/6/2018

Map of Hole



SECTION 3: WELL DEVELOPMENT, CONTINUED

Total maximum rate requested: 300 GPM (each well will be evaluated at the maximum rate unless you indicate well-specific rates and annual volumes in the table below).

The table below must be completed for each source to be evaluated or the application will be returned. If this is an existing well, the information may be found on the applicable well log. (If a well log is available, please submit it in addition to completing the table.) If this is a proposed well, or well-modification, consider consulting with a licensed well driller, geologist, or certified water right examiner to obtain the necessary information. SEE ATTACHMENT E FOR COPY OF THE WELL LOGS.

OWNER'S WELL NAME OR NO.	PROPOSED	EXISTING	WELL ID (WELL TAG) NO. OR WELL LOG ID**	FLOWING ARTESIAN	CASING DIAMETER	CASING INTERVALS (IN FEET)	PERFORATED OR SCREENED INTERVALS (IN FEET)	SEAL INTERVALS (IN FEET)	MOST RECENT STATIC WATER LEVEL & DATE (IN FEET)	SOURCE AQUIFER***	TOTAL WELL DEPTH	WELL-SPECIFIC RATE (GPM)	ANNUAL VOLUME (ACRE-FEET)	PROPOSED USE	
SVE1	<input type="checkbox"/>	<input checked="" type="checkbox"/>	L117043	<input type="checkbox"/>	20" 13 3/8"	0-40ft 0-900ft	900-1360ft	0-900ft	159ft June 2014*	Basalt Lithic tuft. See Lithological Description in Well Log	1360ft				
SVE2	<input type="checkbox"/>	<input checked="" type="checkbox"/>	L117044	<input type="checkbox"/>	20" 13 3/8"	0-40ft 0-495ft	495-1260ft	0-495ft	145ft June 2014*	Basalt See Lithological Description in Well Log	1260ft				
	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>											
	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>											
	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>											
	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>											

* STATIC DEPTH ESTIMATE TRUE STATIC WITH NO PUMPING FROM WELLS SEVERAL MONTHS PRIOR

** Licensed drillers are required to attach a Department-supplied Well Tag, with a unique Well ID or Well Tag Number to all new or newly altered wells. Landowners can request a Well ID for existing wells that do not have one. The Well ID is intended to serve as a unique identification number for each well.

*** A well log ID (e.g. MARI 1234) is assigned by the Department to each log in the agency's well log database. A separate well log is required for each subsequent alteration of the well.

**** Source aquifer examples: Troutdale Formation, gravel and sand, alluvium, basalt, bedrock, etc.

Revised 8/1/2017

Ground Water/5

WR

LAKE 52529

WELL I.D. # L

(1) LAND OWNER Well Number SVE # 2
 Name Colaban Enterprises
 Address P.O. Box 300
 City Paisley State OR Zip 97636

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

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

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

(5) BORE HOLE CONSTRUCTION:
 Special Construction approval Yes No Depth of Completed Well 1260 ft.
 Explosives used Yes No Type _____ Amount _____

HOLE		SEAL		Sacks or pounds	
Diameter	From To	Material	From To		
	<u>0</u> <u>1260</u>		<u>0</u> <u>495</u>		

How was seal placed: Method A B C D E
 Other _____

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

(6) CASING/LINER:

Diameter	From	To	Gauge	Steel	Plastic	Welded	Threaded
Casing:				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<u>13 3/8"</u>	<u>0</u>	<u>495</u>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Liner:				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Drive Shoe used Inside Outside None
 Final location of shoe(s) _____

(7) PERFORATIONS/SCREENS:

From To		Slot size	Number	Diameter	Tele/pipe size	Casing	Liner
						<input type="checkbox"/>	<input type="checkbox"/>

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

	Yield gal/min	Drawdown	Drill stem at	Flowing <input type="checkbox"/> Artesian	Time 1 hr.
	<u>~2,000</u>			<input type="checkbox"/>	

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

(9) LOCATION OF WELL by legal description:
 County LAKE Latitude _____ Longitude _____
 Township 33S N or (S) Range 18E or W. WM.
 Section 23 1/4 _____ 1/4 _____
 Tax Lot _____ Lot _____ Block _____ Subdivision _____
 Street Address of Well (or nearest address) 2,665 ft N & 1,725 ft W
from SE corner of section 23

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

(11) WATER BEARING ZONES:

From	To	Estimated Flow Rate	SWL

(12) WELL LOG:
 Ground Elevation _____

Material	From	To	SWL
<u>See attached</u>			

Date started _____ Completed _____

SOURCE OF DATA/INFO
File T-11860
File LL-1450

COMPILED BY: Gerald Grandin
DWRD Groundwater Section

DATE: 22 July 2014

LAKE 52529

LITHOGRAPHIC DESCRIPTION OF OIL OR GAS WELL

(Not required if a mud log is submitted)

STATE OF OREGON • DEPT OF GEOLOGY & MINERAL INDUSTRIES • 229 BROADALBIN ST SW • ALBANY OR 97321

(In compliance with rules and regulations pursuant to ORS 520.)

(1) Permittee Information

Name	Surprise Valley Electrification Corp.
Mailing Address	516 US Hwy 395 E.
City/State/Zip	Alturas, CA 96101
Telephone	530.233.3511
Fax	530.233.2190
Email	lynnsvec@frontier.com
Prepared by	Lynn Culp, Kyle Makovsky, Roy Mink, Silvio Pezzopane

(2) Well Information

Well No.	SVE #2
DOGAMI ID No.	36-037-90027 Lake 1628

General Manager

5/29/2012

Signature

Title

Date

(3) Well Cuttings

Depth		Description
From	To	
0	40	Brown clay soil and gravelly sand
40	60	Light brown ash fragments, reddish rhyolite, black basalt, minor calcite/quartz
60	80	Light brown/grey ash, red rhyolite, black basalt, cinders, rounded grains, black and red cuttings magnetic
80	105	Light grey/brown ash, red rhyolite, black basalt, rounded grains, chert and obsidian magnetic
105	125	Light grey/brown ash, red rhyolite, black basalt, rounded grains, purple, orange alteration, green stone
125	155	Grey/brown ash, red rhyolite, black basalt, rounded grains, black and grey chips magnetic, light tan pumice fragments
155	185	Grey/brown ash, red rhyolite, black basalt, magnetic, white/grey pumice green stone, minor alteration stains
185	210	Grey/brown rhyolite, red rhyolite with alteration, black basalt, white/grey pumice
210	245	Grey/brown rhyolite, red rhyolite, black basalt, light brown pumice
245	300	Grey/brown rhyolite, red and brown rhyolite, black basalt, pumice, rounded grains
300	340	Brown/grey rhyolite, rounded w/ some alteration, light grey tuff, black basalt/rhyolite; light grey tuff, feldspar chips
340	360	Grey/light brown rhyolite, dark grey/black rhyolite, light red/yellow altered rhyolite, some chips rounded
360	410	Grey/brown rhyolite, dark grey/black basalt, light red/yellow altered rhyolite, grey/white pumice, rounded pebbles
410	420	Black basalt, light brown rhyolite, some alteration
425	430	no data - no returns
435	460	Black basalt, light brown/grey rhyolite, red altered rhyolite
460	465	Fine sand of light brown/grey rhyolite, black basalt/rhyolite; light brown/red altered rhyolite
465	475	Light brown/grey rhyolite, black basalt/rhyolite, yellow/red altered rhyolite
475	490	Large amount fine sand, smaller cuttings are same as above with white alteration/pumice
490	510	Altered tuff, light grey to reddish brown to dark brown, waxy texture, amorphous silica present
510	530	no data - no returns
530	565	Dark to light gray basalt, andesite, white and green alteration minerals
565	620	Porphyritic basalt and andesite, pink/dark green/white alteration, opaline quartz, amorphous silica, calcite rhombs
620	695	Dark gray, green, purple, and red basalt, amorphous silica, euhedral quartz, and calcite in vesicles
695	710	Porphyritic andesite, opaline quartz
710	790	Gray green and red basalt, altered, fibrous banded white mineral, calcite rhombs, crystalline and opaline quartz
790	800	Olivine rich basalt, little alteration
800	815	Porphyritic andesite and basalt rock, highly altered, clear crystalline quartz, banded alteration
815	845	Amygdaloidal basalt, amygdules are green, white banded, botryoidal texture, calcite grains
845	890	Gray basalt, little to no alteration
890	905	Vesicular/amydaloidal basalt, high amount of crystalline quartz filling vesicles
905	920	Basalt with pyrite mineralization
920	930	Gray basaltic andesite
930	960	Gray/red/purple basalt, calcite rhombs, some amygdaloidal calcite
960	1010	Dark gray and green basalt, calcite rhombs
1010	1070	Highly altered vesicular/amydaloidal basalt, pyrite mineralization, dark green/white/pink alteration minerals
1070	1260	no data - no returns
	1260	- Total Depth



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

Application for Well ID Number

RECEIVED BY OWRD

Do not complete if the well already has a Well Identification Number.

NOV 03 2014

SALEM, OR

I. OWNER INFORMATION

Current Owner Name (please print): Suprise Valley Electrification Corp. (SVEC); Attn: Lynn Culp
 Mailing Address: 516 US Highway 395 E
 City, State, Zip: Alturas, CA, 96101
 Mail Well ID Tag to: SAME AS ABOVE In Care Of (C/O)
 Name & Address: _____
 City, State, Zip: _____

II. WELL LOCATION INFORMATION (Please fill out as completely as possible)

Township: 33S (North / South) Range: 18E (East / West) Section: 23
 Tax Lot: 1300 County Lake SW 1/4 of the NE 1/4
 GPS Coordinates: already assigned a OWRD well Log number: LAKE 52529 - but does not have ID number
 Street Address of Well, City: _____
 If the property had a different street address in the past: _____

III. GENERAL WELL INFORMATION (Please fill out as completely as possible)

Use of Well (domestic, irrigation, commercial, industrial, monitoring): industrial/geothermal & irrigation
 Date Well Constructed (or property built): Feb 2012 Total Well Depth: 1260 Casing Diameter: 13 3/8 "
 Owner at time the well was constructed (if known): SVEC is well owner - Colahan's own the property
 Other Information: Well Name: SVE-2

SUBMITTED BY (please print): Lynn Culp
 PHONE: (530) 233-3511 EMAIL &/or FAX: lynnsvec@frontier.com

Send application to: Oregon Water Resources Department 725 Summer St NE, Suite A, Salem, Oregon 97301; or fax to (503) 986-0902. Applications are processed in the order they are received, and Well ID Numbers are mailed within 4-5 business days.

For Official Use Only by the Oregon Water Resources Department:		
Received Date: <u>11-3-14</u>	Well Log Number: <u>LAKE 52529</u>	Well Identification #: <u>L-117044</u>

STATE OF OREGON WATER SUPPLY WELL REPORT

LAKE 52865

WELL I.D. LABEL# L

117044

START CARD #

1041357

(as required by ORS 537.765 & OAR 690-205-0210)

12/6/2018

ORIGINAL LOG #

LAKE

52529

(1) LAND OWNER

Owner Well I.D. SVE #2

First Name Last Name Company SURPRISE VALLEY ELECTRIC Address P. O. BOX 691 City ALTURAS State CA Zip 96101

(2) TYPE OF WORK

New Well Deepening Conversion Alteration Abandonment

(2a) PRE-ALTERATION

Casing: Dia From To Gauge Stl Plstc Wld Thrld Seal: Material From To Amt sacks/lbs

(3) DRILL METHOD

Rotary Air Rotary Mud Cable Auger Cable Mud Reverse Rotary Other

(4) PROPOSED USE

Domestic Irrigation Community Industrial/ Commercial Livestock Dewatering Thermal Injection Other

(5) BORE HOLE CONSTRUCTION

Special Standard (Attach copy)

Depth of Completed Well 1210.00 ft.

Table with columns: Dia, From, To, Material, SEAL, Amt, lbs. Rows for Cement at 0-40ft and 40-495ft.

How was seal placed: Method A B C D E

Backfill placed from 0 ft. to 495 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

Table with columns: Casing, Liner, Dia, From, To, Gauge, Stl, Plstc, Wld, Thrld. Rows for 20, 13.38, 9.63, and 7 inch diameters.

Shoe Inside Outside Other Location of shoe(s)

Temp casing Yes Dia From To

(7) PERFORATIONS/SCREENS

Perforations Method slotted

Screens Type Material

Table with columns: Perf, Casing/Screen, 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

Table with columns: Yield gal/min, Drawdown, Drill stem/Pump depth, Duration (hr). Row: 2,000, 50, 400, 1.

Temperature 225 °F Lab analysis Yes By

Water quality concerns? Yes (describe below) TDS amount 1,200 mg/L

Table with columns: From, To, Description, Amount, Units.

(9) LOCATION OF WELL (legal description)

County LAKE Twp 33.00 S N/S Range 18.00 E E/W WM Sec 23 SW 1/4 of the NE 1/4 Tax Lot 1300

2665' N & 1725' W from SE corner of Section 23 Paisley, OR

(10) STATIC WATER LEVEL

Table with columns: Existing Well / Pre-Alteration, Date, SWL(psi), SWL(ft). Row: 2/9/2012, 145.

WATER BEARING ZONES

Table with columns: SWL Date, From, To, Est Flow, SWL(psi), SWL(ft). Row: 2/9/2012, 445, 1,260.

(11) WELL LOG

Ground Elevation 4473.00

Table with columns: Material, From, To. Row: see attached, 0, 1,260. Includes text: No Special Standards associated with this well.

Date Started 4/26/2011 Completed 2/9/2012

(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.

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.

License Number 2012 Date 12/6/2018

Signed JESUS MARIEZCURRENA (E-filed)

Contact Info (optional) LP Insurance

WATER SUPPLY WELL REPORT - Map with location identified must be attached and shall include an approximate scale and north arrow

LAKE 52865

12/6/2018

Map of Hole

SUMMARY REPORT - OIL OR GAS WELL
STATE OF OREGON • DEPT OF GEOLOGY & MINERAL INDUSTRIES • 229 BROADALBIN ST SW • ALBANY OR 97321

(In compliance with rules and regulations pursuant to ORS 520.)

(1) Permittee Information

Name	Surprise Valley Electrification Corp.
Mailing Address	516 US HWY 395 E
City/State/Zip	Alturas, CA 96101
Telephone	530.233.3511
Fax	530.233.2190
Email	lynnsvec@frontier.com
Prepared by	Lynn Culp

(2) Well Information

Well No.	SVE #2
DOGAMI ID No.	
Drilling Commenced	April 26, 2011
Drilling Completed	February 9, 2012
Date P & A	May 2, 2011
Total Depth	1260 ft
Redrill Depth	
Logs Run	

General Manager*Signature**Title**Date***(3) Casing Record**

Size of Hole	Size of Casing	Weight (pounds per foot)	Grade/Type	Depth	Type and Amount of Cement	
24"	20"	65	A53B	40ft	Type 2	
17.5"	13 3/8"	54	J55	495ft	Type G	240 sks
12.25"	9 5/8"	36	J55	1046ft		
	7"	23	K55 LT&C	1210ft		bbls.

(4) Plugs & Junk

Plugs / Junk	Geological Marker	Depth

(5) Perforations or Liner

Size of Casing	From	To	Shots/ft.	Method of Perforating		
				Jet	Bullet	Slotted Line
9 5/8"	445'	1046'				2.5" slots 6" centers
7"	940	1210				.5" holes/40 holes per ft

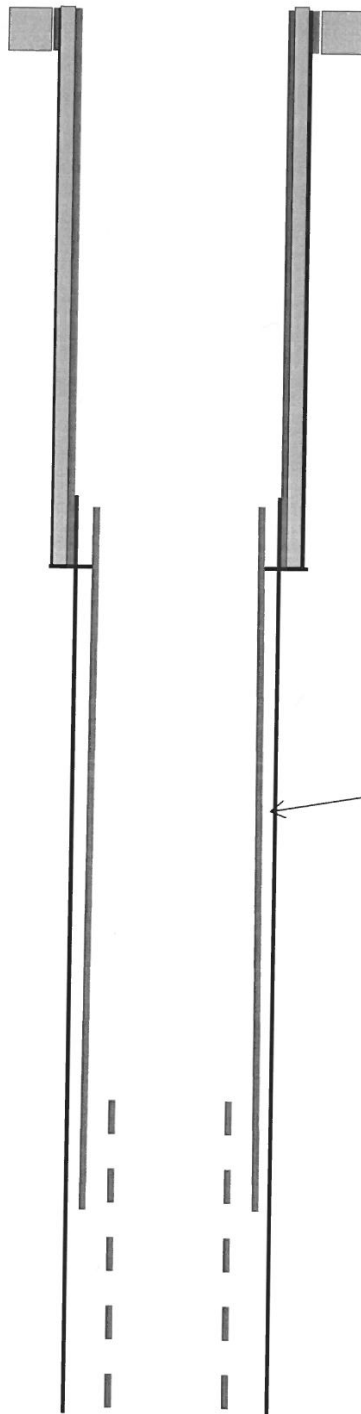
(6) Initial Production

Date	Clean Oil (bbl/day)	Gravity	Percent Water	FTP	FCP	SITP	SICP

12/6/2018

Map of Hole

Surprise Valley Electric Well #2
Completion Diagram



0-40ft. 24" Hole.
20" Conductor Casing.
Type 2 Cement.

0-495ft. 17.5" Hole.
0-495ft. 13 3/8" Casing.
Type G Cement 240 sacks

445-1046ft. 9 5/8" Slotted Casing.

495ft. End 13 3/8" Casing.
900-1260ft 12 1/4" Hole.

Open hole

940-1210ft. 7" Perforated Casing.

1046ft. End 9 5/8" Casing.

1210ft. End 7" Casing.

12/6/2018

Map of Hole

LITHOGRAPHIC DESCRIPTION OF OIL OR GAS WELL

(Not required if a mud log is submitted)

STATE OF OREGON • DEPT OF GEOLOGY & MINERAL INDUSTRIES • 229 BROADALBIN ST SW • ALBANY OR 97321

(In compliance with rules and regulations pursuant to ORS 520.)

(1) Permittee Information

Name	Surprise Valley Electrification Corp.
Mailing Address	516 US Hwy 395 E.
City/State/Zip	Alturas, CA 96101
Telephone	530.233.3511
Fax	530.233.2190
Email	lynnsvec@frontier.com
Prepared by	Lynn Culp, Kyle Makovsky, Roy Mink, Silvio Pezzopane

(2) Well Information

Well No.	SVE #2
DOGAMI ID No.	36-037-90027 Lake 1628

General Manager

5/29/2012

Signature

Title

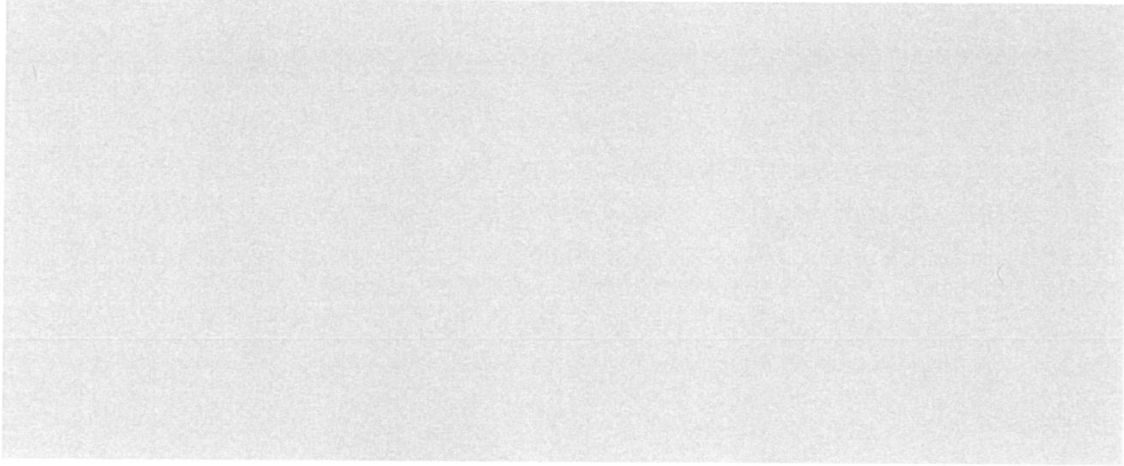
Date

(3) Well Cuttings

Depth		Description
From	To	
0	40	Brown clay soil and gravelly sand
40	60	Light brown ash fragments, reddish rhyolite, black basalt, minor calcite/quartz
60	80	Light brown/grey ash, red rhyolite, black basalt, cinders, rounded grains, black and red cuttings magnetic
80	105	Light grey/brown ash, red rhyolite, black basalt, rounded grains, chert and obsidian magnetic
105	125	Light grey/brown ash, red rhyolite, black basalt, rounded grains, purple, orange alteration, green stone
125	155	Grey/brown ash, red rhyolite, black basalt, rounded grains, black and grey chips magnetic, light tan pumice fragments
155	185	Grey/brown ash, red rhyolite, black basalt, magnetic, white/grey pumice green stone, minor alteration stains
185	210	Grey/brown rhyolite, red rhyolite with alteration, black basalt, white/grey pumice
210	245	Grey/brown rhyolite, red rhyolite, black basalt, light brown pumice
245	300	Grey/brown rhyolite, red and brown rhyolite, black basalt, pumice, rounded grains
300	340	Brown/grey rhyolite, rounded w/ some alteration, light grey tuff, black basalt/rhyolite; light grey tuff, feldspar chips
340	360	Grey/light brown rhyolite, dark grey/black rhyolite, light red/yellow altered rhyolite, some chips rounded
360	410	Grey/brown rhyolite, dark grey/black basalt, light red/yellow altered rhyolite, grey/white pumice, rounded pebbles
410	420	Black basalt, light brown rhyolite, some alteration
425	430	no data - no returns
435	460	Black basalt, light brown/grey rhyolite, red altered rhyolite
460	465	Fine sand of light brown/grey rhyolite, black basalt/rhyolite; light brown/red altered rhyolite
465	475	Light brown/grey rhyolite, black basalt/rhyolite, yellow/red altered rhyolite
475	490	Large amount fine sand, smaller cuttings are same as above with white alteration/pumice
490	510	Altered tuff, light grey to reddish brown to dark brown, waxy texture, amorphous silica present
510	530	no data - no returns
530	565	Dark to light gray basalt, andesite, white and green alteration minerals
565	620	Porphyritic basalt and andesite, pink/dark green/white alteration, opaline quartz, amorphous silica, calcite rhombs
620	695	Dark gray, green, purple, and red basalt, amorphous silica, euhedral quartz, and calcite in vesicles
695	710	Porphyritic andesite, opaline quartz
710	790	Gray green and red basalt, altered, fibrous banded white mineral, calcite rhombs, crystalline and opaline quartz
790	800	Olivine rich basalt, little alteration
800	815	Porphyritic andesite and basalt rock, highly altered, clear crystalline quartz, banded alteration
815	845	Amygdaloidal basalt, amygdules are green, white banded, botryoidal texture, calcite grains
845	890	Gray basalt, little to no alteration
890	905	Vesicular/amygdaloidal basalt, high amount of crystalline quartz filling vesicles
905	920	Basalt with pyrite mineralization
920	930	Gray basaltic andesite
930	960	Gray/red/purple basalt, calcite rhombs, some amygdaloidal calcite
960	1010	Dark gray and green basalt, calcite rhombs
1010	1070	Highly altered vesicular/amygdaloidal basalt, pyrite mineralization, dark green/white/pink alteration minerals
1070	1260	no data - no returns
	1260	- Total Depth

12/6/2018

Map of Hole



SECTION 3: WELL DEVELOPMENT, CONTINUED

Total maximum rate requested: 300 GPM (each well will be evaluated at the maximum rate unless you indicate well-specific rates and annual volumes in the table below).

The table below must be completed for each source to be evaluated or the application will be returned. If this is an existing well, the information may be found on the applicable well log. (If a well log is available, please submit it in addition to completing the table.) If this is a proposed well, or well-modification, consider consulting with a licensed well driller, geologist, or certified water right examiner to obtain the necessary information.

SEE ATTACHMENT E FOR COPY OF THE WELL LOGS

OWNER'S WELL NAME OR NO.	PROPOSED	EXISTING	WELL ID (WELL TAG) NO. OR WELL LOG ID**	FLOWING ARTESIAN	CASING DIAMETER	CASING INTERVALS (IN FEET)	PERFORATED OR SCREENED INTERVALS (IN FEET)	SEAL INTERVALS (IN FEET)	MOST RECENT STATIC WATER LEVEL & DATE (IN FEET)	SOURCE AQUIFER***	PROPOSED USE		
											TOTAL WELL DEPTH	WELL-SPECIFIC RATE (GPM)	ANNUAL VOLUME (ACRE-FEET)
SVE1	<input type="checkbox"/>	<input checked="" type="checkbox"/>	L117043	<input type="checkbox"/>	20" 13 3/8"	0-40ft 0-9000ft	900-1360ft	0-900ft	159ft June 2014*	Basalt Lithic mft. See Lithological Description in Well Log	1360ft		
SVE2	<input type="checkbox"/>	<input checked="" type="checkbox"/>	L117044	<input type="checkbox"/>	20" 13 3/8"	0-40ft 0-495ft	495-1260ft	0-495ft	145ft June 2014*	Basalt See Lithological Description in Well Log	1260ft		
	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>									
	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>									
	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>									
	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>									

* STATIC DEPTH ESTIMATE TRUE STATIC WITH NO PUMPING FROM WELLS SEVERAL MONTHS PRIOR

** Licensed drillers are required to attach a Department-supplied Well Tag, with a unique Well ID or Well Tag Number to all new or newly altered wells. Landowners can request a Well ID for existing wells that do not have one. The Well ID is intended to serve as a unique identification number for each well.

*** A well log ID (e.g. MARI1234) is assigned by the Department to each log in the agency's well log database. A separate well log is required for each subsequent alteration of the well.

**** Source aquifer examples: Troutdale Formation, gravel and sand, alluvium, basalt, bedrock, etc.

Revised 8/1/2017

Ground Water/S

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