

Approved:



MEMO

To: Kristopher Byrd, Well Construction Manager
From: Tommy Laird, Well Construction Program Coordinator
Subject: Review of Water Right Application G-17193
Date: July 31, 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.

Applicant's Well #A (MALH 2476): Based on a review of the Well Report and on a review of the Groundwater Application Review, Well #A does not appear to comply with current minimum well construction standards (See OAR 690 Division 210). The problem is that according to the Well Report, the well was not sealed to the proper depth and the 10-inch liner does not overlap a minimum of 8 feet into the 16-inch liner. Additionally, the well head is indicated as being flush with land surface. In order to meet minimum construction standards, the well must be recased and resealed with an approved grout to a minimum depth of 49 feet bgs, the 10-inch liner must extend a minimum of 8 feet into the lower end of the 16-inch liner, and the well head must be at least one foot above land surface.

My recommendation is that the Department **not issue** a permit for Well #A unless it is brought into compliance with current minimum well construction standards or information is provided showing that it is constructed to meet current minimum well construction standards.

The repair of Well #A may not satisfy hydraulic connection issues

Applicant's Well #C (No Log): There is no well report associated with Well #C, and therefore no way to determine if the well meets minimum well construction standards (See OAR 690 Division 210).

My recommendation is that the Department **not issue** a permit for Well #C unless it is brought into compliance with current minimum well construction standards or information is provided showing that it is constructed to meet current minimum well construction standards.

The construction of Well #C may not satisfy hydraulic connection issues

Applicant's Well #D (HARN 1781): Based on a review of the Well Report and on a review of the Groundwater Application Review, Well #D does not appear to comply with current minimum well construction standards (See OAR 690 Division 210). The problem is that according to the Well Report, the well was not sealed to the proper depth. Additionally, the well head is indicated as being flush with land surface. In order to meet minimum construction standards, the well must be recased and resealed with an approved grout to a minimum depth of 150 feet bgs and the well head must be at least one foot above land surface.

My recommendation is that the Department **not issue** a permit for Well #D unless it is brought into compliance with current minimum well construction standards or information is provided showing that it is constructed to meet current minimum well construction standards.

The repair of Well #D may not satisfy hydraulic connection issues

LAIRD Tommy K * WRD

From: BOSCHMANN Darrick E * WRD
Sent: Thursday, July 31, 2025 11:15 AM
To: LAIRD Tommy K * WRD
Subject: RE: G-17193 Well Reports

Hi Tommy,

Groundwater in this area occurs in a variety of sedimentary and volcanic deposits. Groundwater within these deposits is hydraulically connected both vertically and laterally, and the various water-bearing units are not considered to be separate aquifers. Shallow groundwater in this area is unconfined and semi-confined conditions exist with increasing depth.

- Neither of the original driller's well logs for these two wells provide information on water bearing zones as far as I can tell.
- There are some comments about possible water bearing zones on the State Engineers record of the formations for MALH 2476, however it is not clear to me what the ultimate source of this information was, as it is not mentioned on the original driller's log (received 2/25/1963).
 - 265-280: "probably water"
 - 1205-1285: "Water? Static up to 51"
- The depth of first water listed in the table of the groundwater review came from information reported on the application. The ultimate source of that information is not known, and this information cannot be confirmed.
- It is very likely that shallower water bearing zones exist in this area.

MALH 2476:

- Based on the driller's formation descriptions the well penetrates 44 feet of unconsolidated alluvial deposits, below which formations consisting of various lava flows, sedimentary rocks, and tuffaceous rocks are encountered. Based on the driller's descriptions and existing geologic mapping I would consider everything below 44 feet to be consolidated formation.

HARN 1781:

- Based on the driller's formation descriptions the well penetrates 145 feet of unconsolidated alluvial deposits, below which formations consisting of various lava flows, sedimentary rocks, and tuffaceous rocks are encountered. Based on the driller's descriptions and existing geologic mapping I would consider everything below 145 feet to be consolidated formation.

Ultimately, in this area, the various water bearing units are not considered to be separate aquifers.

-Darrick

Darrick E. Boschmann, RG | Hydrogeologist – Groundwater Section

Oregon Water Resources Department
725 Summer ST. NE., Suite A Salem OR 97301

| Phone: 503-437-5346
| Fax: 503-986-0902



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
FEB 25 1963
STATE ENGINEER
SALEM, OREGON

WATER WELL REPORT

STATE OF OREGON
(Please type or print)

State Permit No. _____

(1) OWNER:

Name Whitehorse Ranch Inc.
Address Andrews, Oregon

(2) LOCATION OF WELL:

County Malheur Driller's well number #76
1/4 Section 31 T. 37S R. 37E, W.M.
Bearing and distance from section or subdivision corner
South 45° 30' East 1660'
From the NW. Section corner
5 Section 31, And is in lot 5.

(3) TYPE OF WORK (check):

New Well ☒ Deepening ☐ Reconditioning ☐ Abandon ☐
Abandonment, describe material and procedure in Item 12.

(4) PROPOSED USE (check):

Domestic ☐ Industrial ☐ Municipal ☐
Irrigation ☒ Test Well ☐ Other ☐

(5) TYPE OF WELL:

Rotary ☐ Driven ☐
Cable ☒ Jetted ☐
Dug ☐ Bored ☐

(6) CASING INSTALLED:

Threaded ☐ Welded ☒
20" Diam. from 0 ft. to 20 ft. Gage 1/4"
18" Diam. from 0 ft. to 44 ft. Gage 3/8"
16" Diam. from 0 ft. to 207 ft. Gage 3/4"
10" Diam. from 207 ft. to 441 ft. Gage 1 1/4"

(7) PERFORATIONS:

Type of perforator used _____
Size of perforations in. by in.
perforations from 0 ft. to 20 ft.
perforations from 20 ft. to 44 ft.
perforations from 44 ft. to 207 ft.
perforations from 207 ft. to 441 ft.

(8) SCREENS:

Well screen installed ☐ Yes ☒ No
Manufacturer's Name _____
Model No. _____
Diam. Slot size Set from 0 ft. to 44 ft.
Diam. Slot size Set from 44 ft. to 207 ft.

(9) CONSTRUCTION:

Well seal—Material used in seal Cement
Depth of seal 20' ft. Was a packer used? No
Diameter of well bore to bottom of seal 22" in.
Were any loose strata cemented off? ☒ Yes ☒ No Depth 0-20
Was a drive shoe used? ☐ Yes ☒ No Not on Seal
Was well gravel packed? ☐ Yes ☒ No Size of gravel: _____
Gravel placed from 0 ft. to 20 ft.
Did any strata contain unusable water? ☐ Yes ☒ No
Type of water? _____ Depth of strata _____
Method of sealing strata off _____

(10) WATER LEVELS:

Static level 52 ft. below land surface Date 1/20-63
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? ☒ Yes ☐ No If yes, by whom? Service Center
Yield: 670 gal./min. with 200 ft. drawdown after 4 hrs. New
Bailer test 150 gal./min. with 0 ft. drawdown after 1 hrs.
Artesian flow None g.p.m. Date 2/20-63
Temperature of water 90°F Was a chemical analysis made? ☐ Yes ☒ No

(12) WELL LOG:

Diameter of well below casing 15 1/4"
Depth drilled 1301 ft. Depth of completed well 1301 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.

MATERIAL	FROM	TO
Clay - Yellow - Sandy - Soft	0	5
Quick sand - Brown	5	9
Clay + Gravel - Yellow Soft	9	13
Clay + Gravel - Conglomerate	13	44
Basalt - Black - Hd.	44	67
Sand + Clay - Grey Soft	67	140
Lava Rock - Grey - Hd.	140	160
Shale - Blue - Soft	160	187
Lava - Dk Grey + Blk Hd	187	215
Lava + Ryolite Reddish Brown	215	265
Cinders + Gravel + Clay Red	265	280
Lava - Dark Grey - Hd	280	300
Basalt - Extra Hd	300	340
Cinders + Clay	340	345
Lava - Grey - Hd	345	375
Clay - Red - Sticky	375	378
Lava Grey - Med Hd	378	455
Shale - Green Sticky	455	461
Lava w/ shaker sd - strata	461	522
Shale - Grey - Sticky	522	530
Lava w/ streaks of sand	530	570
Shale - green w/ white sand	570	615
Shale - Black	615	655
cont. on Attached sheet		

Work started Aug 15 1962 Completed Jan 20 1963
Date well drilling machine moved off of well Jan 24 1963

(13) PUMP: None

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 H. C. Cunningham
(Person, firm or corporation) (Type or print)

Address Box 23, Crane, Oregon

Drilling Machine Operator's License No. 256

[Signed] H. C. Cunningham
(Water Well Contractor)

Contractor's License No. 271 Date 2-20, 1963

37/37-31C well #1 (cont.)

Formation Log (Cont)	From	To
Lava Rock w/streaks of sand - Black-Hd	655	675
Sand w/Black shale - Conglom. Color	675	690
Lava Rock w/sand + Cravelly streaks.	690	792
Shale - Green Soft	792	820
Lava Rock w/Thin layers of Green Shale	820	830
Grey + Green Shale w/streaks of sand	830	900
Rock - Brown w/streaks of sand + Brown sticky shale	900	925
Shale - Grey Sandy	925	995
Sand w/Layers of Green sticky shale	995	1068
Shale - Grey + Green - sticky - soft	1068	1155
Lava - Black w/streaks of quartzitic Sand	1155	1202
Shale - Blue Sticky	1202	1205
Sandy Volcanic Gravel	1205	1285
Conglomerate Color		
Lava Black Hd.	1285	1301
		T.D.

RECEIVED
FEB 25 1963
STATE ENGINEER
SALEM, OREGON

STATE ENGINEER
Salem, Oregon

MALH
3368

State Well No. 37/37-31D
County Malheur
Application No.

Well Log

Owner: Whitehorse Ranch Owner's No. 5 4 95

Driller: Stewart, Ralph Date Drilled

CHARACTER OF MATERIAL	(Feet below land surface)		Thickness (feet)
	From	To	
Clay - yellow, sandy, soft	0	5	5
Quicksand	5	9	4
Clay & gravel - yellow, soft	9	13	4
Gravel - w/clay - conglom.	13	44	31
Basalt - black - hard	44	67	23
Sand & gravel - gray - soft	69	140	71
Gray lava - hard	140	160	20
Blue shale - soft	160	187	27
Lava - dark gray & black	187	215	28
Lava & rhyolite - reddish brown - hard	215	265	50
Cinders - red w/gravel & clay, probably water	265	280	15
Lava - dark gray - hard	280	300	20
Basalt - black - hard, extra hard	300	340	40
Cinders & clay - conglom.	340	345	5
Lava - gray - hard	345	375	30
Clay - red- sticky	375	378	3
Lava - gray - medium hard	378	455	77
Shale - green - sticky	455	461	6
Lava - black - med. w/conglom. streaks sd. & sh.	461	522	61
Gray shale - sticky - soft	522	530	8
Lava - w/streaks of sand	530	570	40
Green shale - w/grains of white sand - very sticky	570	615	45
Black shale - w/grains of sand	615	655	40
Lava rock - w/streaks of sand - black - hard	655	675	20

STATE ENGINEER
Salem, Oregon

State Well No. 37/37-31D
County Malheur
Application No. _____

Well Log

Owner: Whitehorse Ranch Owner's No. 549M

Driller: Stewart, Ralph _____ Date Drilled _____

[illegible]

RECEIVED
JAN 31 1964
STATE ENGINEER

WATER WELL REPORT

STATE OF OREGON

State Well No. 37/36-13 N

State Permit No.

(1) OWNER:

Name Whitehorse Ranch Inc
Address Andrews, Oregon

(2) LOCATION OF WELL:

County Horne Owner's number, if any— 7
1/4 Section 13 T. 37S R. 36E W.M.
Bearing and distance from section or subdivision corner
Bearing from SW corner
Sec. 13 N-01° 45' E
776 feet.

(3) TYPE OF WORK (check):

New Well ☒ Deepening ☐ Reconditioning ☐ Abandon ☐
 abandonment, describe material and procedure in Item 11.

(4) PROPOSED USE (check):

Domestic ☐ Industrial ☐ Municipal ☐ Rotary ☐ Driven ☐
Irrigation ☒ Test Well ☐ Other ☐ Cable ☒ Jetted ☐
Dug ☐ Bored ☐

(6) CASING INSTALLED:

Threaded ☐ Welded ☒
20" Diam. from 0 ft. to 19 ft. Gage 1/4"
18" Diam. from 0 ft. to 40 ft. Gage 3/8"
16" Diam. from 0 ft. to 240 ft. Gage 3/8"

(7) PERFORATIONS:

Perforated? ☒ Yes ☒ No
Type of perforator used Mills Mechanical
SIZE of perforations 28 in. by 3 in.
6 perforations from 230 ft. to 180 ft.
4 perforations from 180 ft. to 90 ft.
perforations from ft. to ft.
perforations from ft. to ft.

(8) SCREENS:

Well screen installed ☐ Yes ☒ No
Manufacturer's Name
Type Model No.
Slot size Set from ft. to ft.
Diam. Slot size Set from ft. to ft.

(9) CONSTRUCTION:

Was well gravel packed? ☐ Yes ☒ No Size of gravel: ft.
Gravel placed from ft. to ft.
Was a surface seal provided? ☒ Yes ☐ No To what depth? 19 ft.
Material used in seal— cement
Did any strata contain unusable water? ☐ Yes ☒ No
Type of water? Depth of strata
Method of sealing strata off

(10) WATER LEVELS:

Static level 74 1/2 ft. below land surface Date 10/23-63
Artesian pressure lbs. per square inch Date

Log Accepted by:

[Signed] Whitehorse Ranch Inc. Date _____, 19____
(Owner)

by Lawrence W Miller (USE ADDITIONAL SHEETS IF NECESSARY)

(11) WELL TESTS:

Drawdown is amount water level is lowered below static level
Was a pump test made? ☒ Yes ☐ No If yes, by whom? Nagata Co.
Yield: 400 gal./min. with 165 ft. drawdown after 1 hrs.
" " " "
" " " "
Bailer test gal./min. with ft. drawdown after hrs.
Artesian flow g.p.m. Date
Temperature of water 55 Was a chemical analysis made? ☐ Yes ☒ No

(12) WELL LOG:

Diameter of well 16 inches.
Depth drilled 839 ft. Depth of completed well 593 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.

MATERIAL	FROM	TO
Clay - yellow soft	0	19
Gravel - Brown	19	40
Clay w/ sandy streaks	40	145
Basalt - gray - fld.	145	155
Lava Rock - w/ streaks	155	430
Yellow and red clay	430	500
Basalt - gray very fld.	500	615
Red crystalline rock fld	615	680
Green shale	680	839
Volcanic gravel -		
conglomerate in color		

This well plugged back from 839 to 593 as follows:
Gravel 839-739
Gravel and mud 739-680
Cement 680-636
Gravel and mud 636-608
Cement 608-593

Work started 6/21 1963 Completed 10/12 1963

(13) PUMP:

Manufacturer's Name
Type: H.P.

Well Driller's Statement:

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

NAME C.B. Drilling Co.
(Person, firm, or corporation) (Type or print)

Address Box 23, Crane, Oregon

Driller's well number

[Signed] St. C. Cunningham
(Well Driller)

License No. 271 Date _____, 19____

Drilling Machine Operators License # 256