

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

WELL I.D. LABEL# 116902 START CARD # 1024838 ORIGINAL LOG #

(1) LAND OWNER Owner Well I.D. First Name FRANK Last Name ILLE Company LOVE'S TRAVEL STOP & COUNTRY STORES, LLC Address 10601 PENNSYLVANIA AVE City OKLAHOMA CITY State OK Zip 73120

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

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

(5) BORE HOLE CONSTRUCTION Special Standard (Attach copy) Depth of Completed Well 945 ft.

Table with columns: Dia, From, To, Material, SEAL, To, Amt, sacks/lbs. Rows include Cement and Bentonite Chips.

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

Backfill placed from ft. to ft. Material Filter pack from ft. to ft. Material Size

Explosives used: [] Yes [] No 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 Shoe [] Inside [] Outside [] Other Location of shoe(s) Temp casing [] Yes [] No Dia From To

(7) PERFORATIONS/SCREENS Screens Type Material Perf/S 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 [X] Air [] Flowing Artesian Yield gal/min Drawdown Drill stem/Pump depth Duration (hr)

Table for well tests with columns: Temperature, Lab analysis, Water quality concerns, Description, Amount, Units.

(9) LOCATION OF WELL (legal description) County MORROW Twp 4 N N/S Range 24 E E/W WM Sec 15 NE 1/4 of the SE 1/4 Tax Lot 134 Tax Map Number Lot Lat Long Street address of well Nearest address 78665 TOWER ROAD, BOARDMAN, OR 97818

(10) STATIC WATER LEVEL Date SWL(psi) + SWL(ft) Existing Well / Pre-Alteration Completed Well 07-23-2015 39 Flowing Artesian? Dry Hole?

WATER BEARING ZONES Depth water was first found 89 SWL Date From To Est Flow SWL(psi) + SWL(ft)

(11) WELL LOG Ground Elevation Material From To ATTACHED FORMATION PROFILE RECEIVED BY OWRD AUG 26 2015 SALEM, OR

Date Started 11-24-2014 Completed 07-23-2015

(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 1881 Date 08-18-2015 Signed Contact Info (optional)

WATER SUPPLY WELL REPORT - continuation page

WELL I.D. LABEL# L116902
START CARD # 1024838
ORIGINAL LOG #

(2a) PRE-ALTERATION

Table with columns: Dia, +, From, To, Gauge, Stl, Plstc, Wld, Thrd. Includes a grid for material and a section for 'Material From To Amt sacks/lbs'.

(5) BORE HOLE CONSTRUCTION

Table with columns: BORE HOLE (Dia, From, To), SEAL (Material, From, To, Amt, sacks/lbs). Includes rows for Cement and Calculated values.

FILTER PACK

Table with columns: From, To, Material, Size

(6) CASING/LINER

Table with columns: Casing/Liner, Dia, +, From, To, Gauge, Stl, Plstc, Wld, Thrd. Includes a grid for material with circular patterns.

(7) PERFORATIONS/SCREENS

Table with columns: Perf/Sreen, 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

Table with columns: Yield gal/min, Drawdown, Drill stem/Pump depth, Duration (hr)

Water Quality Concerns

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

(10) STATIC WATER LEVEL

Table with columns: SWL Date, From, To, Est Flow, SWL(psi), +, SWL(ft)

(11) WELL LOG

Table with columns: Material, From, To. Includes text: RECEIVED BY OWRD, AUG 26 2015, SALEM, OR

Comments/Remarks

CEMENT GROUT WAS PUMPED TO SEAL OFF WATER BEARING FORMATIONS, THEN BOREHOLE RE-DRILLED TO TARGET CASING DEPTHS. METHOD "D" USED TO SEAL 10IN CASING AND 8IN CASING.

LOVE'S TRAVEL STOP, BOARDMAN, OR

WELL LABEL - 116902
 PERMIT - G-17263
 11-24-2014 to 7-23-2015

depth	interval	formation
0-3 ft	3'	soil, sand, small gravels
3-7 ft	4'	soft weathered basalt
7-25 ft	18'	solid black basalt
25-27 ft	2'	brown basalt
27-89 ft	62'	black basalt
89-105 ft	16'	brown soft basalt
105-113 ft	8'	black basalt with green claystone
113-138 ft	25'	brown basalt with brown claystone
138-153 ft	15'	brown basalt with green claystone
153-240 ft	87'	black basalt
240-245 ft	5'	black basalt with green claystone
245-290 ft	45'	black basalt
290-305 ft	15'	black basalt with green claystone
305-338 ft	33'	green claystone with some bl basalt
338-460 ft	122'	green claystone-caving area- drill string stuck - hole filled from 150' to bottom- switched over to mud rotary drilling
460-465 ft	5'	green, dark brown, green claystone
465-474 ft	9'	broken black basalt
474-500 ft	26'	black basalt
500-517 ft	17'	black basalt
517-521 ft	4'	black scoria basalt
521-525 ft	4'	black basalt w/trace visicular
525-540 ft	15'	black basalt w/ white granite?/visicular
540-546 ft	6'	broken black basalt w/some visicular
546-555 ft	9'	broken black basalt w/visicular
555-566ft	11'	black basalt
566-583ft	17'	black basalt
583-587ft	4'	black basalt visicular, some brown basalt
587-595ft	8'	black basalt-broken, hard drilling
595-613ft	18'	black basalt- visicular
613-618ft	5'	drill string fell and no returns
618-625ft	7'	broken black visicular basalt w/blue claystone
625-636ft	11'	blk basalt, blue basalt, dk green basalt
636-650ft	14'	black basalt w/ green claystone
650-669ft	19'	green claystone / black basalt
669-683ft	14'	green claystone - soft and caving some
683-690ft	7'	green claystone w/black basalt
690-697ft	7'	black basalt - hard
697-720ft	23'	green claystone + black basalt
720-760ft	40'	black basalt w/ green claystone
760-773ft	13'	green claystone w/black basalt
773-779ft	6'	black basalt w/blue+green claystone, soft
779-869ft	90'	green claystone w/black basalt
869-883ft	14'	black basalt w/green claystone
883-899ft	6'	black basalt w/green claystone, hard
899-929ft	30'	black basalt w/green claystone, hard
929-930ft	1'	black basalt w/visicular - water bearing
930-936ft	6'	black and blue visicular basalt,
936-945ft	9'	broken black visicular basalt, soft



8" casing +2 to 905ft, sealed bottom to top w/ cement grout

16' open hole 0-19ft

12" casing set from + 1.5ft to 18.5ft, cemented seal, continued drilling 12" open hole

sign of water- not enough to measure

water- flowing about 5 GPM with estimated 1-2psi pressure

pressure cemented grout to stop water

water- 50 ft SWL estimated 150 GPM

pressure cemented grout to stop water

water- 75 ft SWL estimated 800 gpm pressure cemented grout to stop water

Ran 10in casing to 496 ft - Halliburton pressure cemented grout seal- bottom to surface

10 in open hole drilling

water- 75 ft SWL estimated over 1400 gpm pressure cemented grout to stop water

water - 76 ft SWL est. 1000gpm+, pressure cemented water zone and redrilled

water - 75 ft SWL est. 2500gpm+, watered out hammer/w/aux air, tripped in roller bit

pressure cemented water zone and redrilled hole w/hammer and aux air

water - 75 ft SWL est. 1000gpm+, watered out hammer, added air booster

water - 90 ft SWL est. 5000gpm

pressure cemented water zone and redrilled hole w/ roller bit

est. 50gpm still leaking in hole after cementing. Left to help keep claystone moist

SWL 91ft

rough drilling-cutting return volumn low

returns good

Last foot-new water-41' SWL, est 1000gpm. Discussed well depth and formations with OWRD, gave the ok to seal casing in this formation. Ran 8in casing to 905', Halliburton style pumped grout bottom to ground surface, 20 yards. Tripped back in and drilled through cement plug.

Extreme amount of water, measured flow in dug canal. Est over 5000gpm

Returns coming out in large pieces, stopped drilling, developed well with air lift

41 ft SWL after 24 hours

39 ft SWL after 60 hours

Took water samples for lab

ZOLLMAN'S LARRY BURD WELL DRILLING, LLC
 LICENSE 1881

RECEIVED BY OWRD

AUG 26 2015

SALEM, OR