G4-36126 Hydrogeologic Analysis

The applicant's well is located approximately 1300 ft north of the Teanaway River, at an area that is approximately 1 mile upstream from its confluence with the Yakima River. The well is completed at a depth of 139 below ground surface into an aquifer composed of what seems to be glacial outwash deposits of sands and gravels. The aquifer is overlain by thick (~ 120 ft) layers of clay that were likely deposited in a Pleistocene age glacio-lacustrine environment.

Wells in the area tend to be completed either in the clay layers or the underlying sands and gravels. The closest mapped well is the June Mcclure well at approximately 500 ft to the southeast from the applicant's well (figure 1). The June Mcclure well is completed into the clay layers at a depth of 220 ft below ground surface. Pumping the applicant's well at the maximum rate requested (20 gpm) until the requested annual volume is consumed (~3.7 days) would not cause impairment to the June Mcclure well.

The applicant plans to use purchased Teanaway River water to mitigate for any impacts that pumping their well might have on surface water sources in the area.
Although the Teanaway River is closer to the applicant's well, groundwater captured by the well would have likely discharged as baseflow to the Yakima River downstream from the applicant's property. This is due to the thick layers of clay in between the aquifer and the Teanaway River. More precise analysis of stream flow impacts in terms of location, quantity, and timing is outside the scope of this report. However, since the Teanaway River is tributary to the Yakima River, mitigation provided by the applicant is expected to address impacts to Yakima River users.

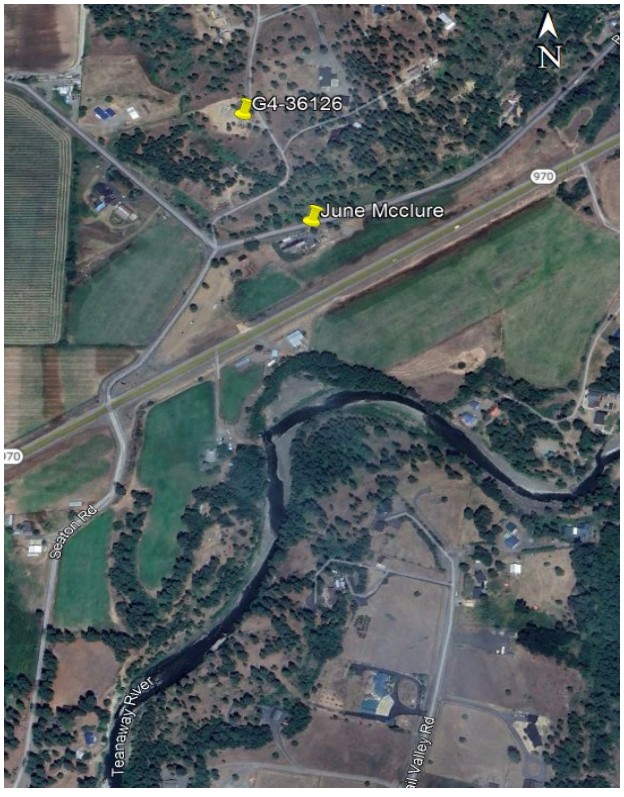

Figure 1

WATER WELL REPORT

DEPARTMENT OF ECOLOGY
State of Washington

Type of Work:
☒ Construction
☐ Decommission ⟹ Original installation NOI No. _____

Proposed Use: ☒ Domestic ☐ Industrial ☐ Municipal ☐ Dewatering ☐ Irrigation ☐ Test Well ☐ Other _____

Construction Type: ☒ New well ☐ Alteration ☐ Deepening ☐ Other _____
Method: ☐ Driven ☐ Jetted ☐ Cable Tool ☐ Dug ☒ Air- ☐ Mud-Rotary

Dimensions: Diameter of boring 6 in., to 131 ft.
Depth of completed well 129 ft.

Construction Details:

Casing	Liner	Diameter	From	To	Wall Thickness	Steel	PVC	Welded	Thread
☒	☐	6 in.	+2	139	.250 in.	☒	☐	☒	☐
☐	☐	____ in.	____	____	____ in.	☐	☐	☐	☐
☐	☐	____ in.	____	____	____ in.	☐	☐	☐	☐
☐	☐	____ in.	____	____	____ in.	☐	☐	☐	☐

Perforations: ☐ Yes ☒ No Type of perforator used _____
No. of perforations _____ Size of perforations _____ in. by _____ in.
Perforated from _____ ft. to _____ ft. below ground surface

Screens: ☐ Yes ☒ No ☐ K-Packer ⟹ Depth _____ ft.
Manufacturer's Name _____
Type _____ Model No. _____
Diameter _____ in. Slot size _____ in. from _____ ft. to _____ ft.
Diameter _____ in. Slot size _____ in. from _____ ft. to _____ ft.

Sand/Filter pack: ☐ Yes ☒ No Size of pack material _____
Materials placed from _____ ft. to _____ ft.

Surface Seal: ☒ Yes ☐ No To what depth? 36 ft.
Material used in seal Bentonite chips
Did any strata contain unusable water? ☐ Yes ☒ No
Type of water? _____ Depth of strata _____
Method of sealing strata off _____

Pump: Manufacturer's Name _____ Type: _____
H.P. _____ Pump intake depth: _____ ft. Designed flow rate: _____ gpm

Water Levels: Land-surface elevation above mean sea level 1947 ft.
Stick-up of top of well casing 2 ft. above ground surface
Static water level 75.5 ft. below top of well casing Date 06-16-21
Artesian pressure _____ lbs. per square inch Date _____
Artesian water is controlled by _____ (cap, valve, etc.)

Well Tests:
Was a pumping test performed? ☒ No ☐ Yes ⟹ by whom? _____
Yield _____ gpm with _____ ft. drawdown after _____ hrs.
Yield _____ gpm with _____ ft. drawdown after _____ hrs.
Yield _____ gpm with _____ ft. drawdown after _____ hrs.
Recovery data (time = zero when pump is turned off – water level measured from well top to water level)

Time	Water Level	Time	Water Level	Time	Water Level

Date of pumping test _____
Bailer test ____ gpm with ____ ft. drawdown after ____ hrs.
Air test 30+ gpm with stem set at 128 ft. for 1 hrs. } Date 06-16-21
Artesian flow ____ gpm
Temperature of water ____ ° F Was a chemical analysis made? ☐ Yes ☒ No

Notice of Intent No. WE 41112
Unique Ecology Well ID Tag No. BNJ 903
Site Well Name (if more than one well): _____
Water Right Permit/Certificate No. WR-21-00038
Property Owner Name Shaughnessy, Robert
Well Street Address 221 Teanaway Heights Rd.
City Cle Elum County Kittitas
Tax Parcel No. 20-16-34020-0015
Was a variance approved for this well? ☐ Yes ☒ No
If yes, what was the variance for? _____

Location (see instructions on page 2): ☐ WWM or ☒ EWM
SW ¼-¼ of the NW ¼; Section 34 Township 20 Range 16
Latitude (Example: 47.12345) 47.18498
Longitude (Example: -120.12345) -120.83303

Driller's Log/Construction or Decommission Procedure
Formation: Describe by color, character, size of material and structure, and the kind and nature of the material in each layer penetrated, with at least one entry for each change of information. Use additional sheets if necessary.

Material	From	To
Brown hard damp clay w/ occasional cobble	0	32
Dk. gray gumbo clay	32	54
Dk. gray gumbo clay, sparce rocks	54	68
Gray silty gumbo clay	67	78
Gray thick silty fine sand WB	78	104
Gravel, boulder, gray clay	104	111
Gray clay, gravel 3-4 gpm	111	119
Gray sandy clay	119	129
Fine sand. gravels WB	129	131

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AUG 12 2021
Dept of Ecology
Central Regional Office

Start Date 06-15-21 Completed Date 06-16-21

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

☒ Driller ☐ Trainee ☐ PE Print Name Brett Phythian
Signature
License No. 1249
IF TRAINEE: Sponsor's License No.
Sponsor's Signature

Drilling Company Tumwater Drilling & Pump Inc.
Address PO Box 249 / 9290 Hwy 2
City, State, Zip Dryden WA 98821
Contractor's Registration No. TUMWADP943RR
Date 06-17-2021

ECY 050-1-20 (Rev 11/18) *If you need this document in an alternate format, please call the Water Resources Program at 360-407-6872. Persons with hearing loss can call 711 for Washington Relay Service. Persons with a speech disability can call 877-833-6341.*

69764

WATER WELL REPORT

STATE OF WASHINGTON

Start Card No. W108715
Unique Well I.D. # AEL820
Water Right Permit No.

OWNER: Name **MCCLURE, JUNE** Address **1234 RED RIDGE RD CLE ELUM,, WA 98922-**

(2) LOCATION OF WELL: County **KITTITAS** - 1/4 **NW** 1/4 Sec **34** T **20** N., R **16W** WM
(2a) STREET ADDRESS OF WELL (or nearest address) ,

(3) PROPOSED USE: **DOMESTIC**.

(4) TYPE OF WORK: Owner's Number of well (If more than one) **1**
NEW WELL Method: **ROTARY**

(5) DIMENSIONS: Diameter of well **6** inches
Drilled **220** ft. Depth of completed well **220** ft.

(6) CONSTRUCTION DETAILS:
Casing installed: **6** " Dia. from **+2** ft. to **96** ft.
WELDED " Dia. from ft. to ft.
" Dia. from ft. to ft.

Perforations: **NO**
Type of perforator used
SIZE of perforations in. by in.
perforations from ft. to ft.
perforations from ft. to ft.
perforations from ft. to ft.

Screens: **NO**
Manufacturer's Name
Type Model No.
Diam. slot size from ft. to ft.
Diam. slot size from ft. to ft.

Gravel packed: **NO** Size of gravel
Gravel placed from ft. to ft.

Surface seal: **YES** To what depth? **20** ft.
Material used in seal **BENTONITE**
Did any strata contain unusable water? **NO**
Type of water? Depth of strata ft.
Method of sealing strata off

(7) PUMP: Manufacturer's Name
Type **NONE** H.P.

(8) WATER LEVELS: Land-surface elevation above mean sea level ... ft.
Static level **60** ft. below top of well Date **06/29/99**
Artesian Pressure lbs. per square inch Date
Artesian water controlled by

(9) WELL TESTS: Drawdown is amount water level is lowered below static level.
Was a pump test made? **NO** If yes, by whom?
Yield: gal./min with ft. drawdown after hrs.

Recovery data

Time	Water Level	Time	Water Level	Time	Water Level

Date of test / /
Bailer test gal/min. ft. drawdown after hrs.
Air test **1+** gal/min. w/ stem set at **220** ft. for 1 hrs.
Artesian flow g.p.m. Date
Temperature of water Was a chemical analysis made? **NO**

(10) WELL LOG C, D, E, F

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 in formation.

MATERIAL	FROM	TO
CLAY BROWN HARD	0	5
SAND COARSE GRAVEL	5	13
WITH COBBLES	13	
SANDY GRAY CLAY	13	32
CLAY BLUE GRAY	32	94
HARD	94	
SHALE GRAY SOME	94	154
GRAY CLAY MEDIUM	154	
W/WATER	154	
SHALE RED BROWN	154	168
MEDIUM	168	
SHALE GRAY WITH	168	209
CLAY	209	
SHALE BROWN SOFT	209	211
SHALE GRAY WITH	211	220
GRAY CLAY	220	
GRAY CLAY	220	

RECEIVED
JUL 26 1999
DEPARTMENT OF ECOLOGY
CENTRAL REGION OFFICE

Work started **06/29/99** Completed **06/29/99**

WELL CONSTRUCTOR CERTIFICATION:
I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

NAME **FOGLE PUMP & SUPPLY, INC.**
(Person, firm, or corporation) (Type or print)

ADDRESS **POB 1450, ELLENSBURG, WA.**

[SIGNED] License No. **2321**

Contractor's Registration No. **FOGLEPSO95L4** Date **07/07/99**