



MEMORANDUM

Date: April 24, 2017

File: 38000-25/CI Hullcar

To: Cindy Meays
Deputy Director
Environmental Protection Division
Ministry of Environment

From: Nicole Pyett, M.Sc., P.Geo.
Regional Hydrogeologist
Ministry of Forests, Lands and Natural Resource
Operations

RE: Memorandum regarding the April 11, 2017 site inspection in Hullcar, BC

Background

An untreated water sample collected from the Steele Springs Waterworks community water supply system (Steele Springs) on March 20, 2017 by the Ministry of Environment was found to contain an E. Coli count of 49 CFU/100mL. This prompted the Hullcar Inter-Ministry Working Group to request Ministry of Forests, Lands and Natural Resource Operations (FLNRO) Regional Hydrogeologist, Nicole Pyett, FLNRO Groundwater Protection Officer, John Pogson, and Ministry of Environment (ENV) Environmental Protection Officer, Devan Oldfield, to attend the Hullcar area. The purpose of the visit was to assess the nearby land surface, inspect existing wells, and observe the Steele Springs water system to establish any factors that may contributing to the elevated E. coli levels.

N. Pyett, J. Pogson, and D. Oldfield attended the site on April 11, 2017 and were accompanied by FLNRO Natural Resource Officers: Don Lemp, Tammy Jones, Dan Krywonos, and Samuel Isaak; to increase team capacity and provide an opportunity for groundwater cross-training.

Project Scope

The scope of this site visit was limited to:

1. A visual inspection of the Steele Springs water intake line and collection point;
2. A ground surface inspection focused along the ridge of the re-entrant (draw) containing the Steele Springs collection point; and,
3. Inspections of known wells within 0.5 km of the Steele Springs intake.

A site map is provided as Figure 1 below.

Observations

1. *A visual inspection of the Steele Springs intake line and collection point*

Steele Springs board members Brian Upper and Murray Todd received provincial government staff at the Steele Springs pump house along Schubert Road. D. Oldfield collected a water quality sample consistent with the previously employed sampling methodology for a standardized list of water parameters. N. Pyett and J. Pogson were guided by M. Todd from the pump house, upgradient along the supply line, to the point of collection. N. Pyett and J. Pogson inspected the supply line for any potential points of entry for contaminants (Figure 2). The supply line is comprised of segmented PVC piping, with friction fitted joints, placed along the bed of the re-entrant. The supply line was in direct contact with surface water and sediments in many areas. One joint appeared to have space for water entry as the friction fitting was cross-loaded to allow the pipe to fit the desired route up the re-entrant (Figure 3). Several joints were buried below the surface and were therefore not available for visual inspection (Figure 4). Approximately two thirds of the way up the re-entrant from the pump house to the intake point, provincial staff observed two overflow ports that were open to the air (Figure 5). Water was flowing rapidly from the downgradient port but was only dripping from the upgradient port. While these ports are open, it does not appear as though the water level has been high enough within the re-entrant to allow surface water to flow back into the supply line. Two intentional cross connections built into the system between the main supply line and secondary piping were observed to be closed at the time of inspection (Figure 6).

The system intake was described by B. Upper as a screened pipe buried into 1.5 m (5 feet) of sediment, consistently experiencing positive pressure flow conditions. The intake pipe is located within a shallow concrete building with footings approximately 0.6 m (2 feet) below the ground surface (Figure 7). The intake was observed to be located in the lowest point of the re-entrant allowing surface water to potentially pool against the protective building or the intake to receive upgradient shallow flow (Figure 8). Surface soils were wet upgradient of the intake, possibly from surface flows occurring during recent rains.

2. *A ground surface inspection focused along the ridge of the re-entrant (draw) containing the Steele Springs collection point*

There were no large holes, channels, or excavations on the ground surface near the Steele Springs intake. Coarse sediments (primarily sands) were visible at the ground surface. There was manure observed on the ground surface within an approximately 0.5 km upslope from the collection point. The age of the manure is unknown.

3. *Inspections of nearby wells*

Wells within an approximately 0.5 km horizontal distance upgradient from the Steele Springs intake were identified using the *water wells* layer within provincial mapping software, iMapBC. This setback was selected to focus available provincial staff capacity in the vicinity of the water sample collection point reporting observed E. Coli contamination.

Well registration with the BC Ministry of Environment has historically been voluntary within British Columbia. In addition to nine registered wells, one unregistered well was identified within the area of interest. Other wells may exist but were not observed during the April 11, 2017 field visit.

Four of the registered wells had previously been inspected by provincial groundwater staff and were found to be compliance with Part 3, Division 3 of the *Water Sustainability Act* (WSA) and the Groundwater Protection Regulation (GWPR). The five additional wells plus one unregistered well were inspected to ensure they were not creating points of entry for contaminants to move from the ground surface into the surficial aquifer. Provincial staff also visualized eight other light blue or orange coloured pipe stickups at

beyond the inspection radius at distances of approximately 0.5 – 1.0 km to the Steele Springs intake (Figure 9). They are likely part of an irrigation water distribution system and were not open to surface at the time of the site visit.

Well inspection results:

The unregistered well (Well inspection 1 below) was found to be likely out of compliance with the Groundwater Protection Regulation but was deemed not likely a significant potential cause of surface contamination to the aquifer due to the nature of the construction of the well pit and the lack of pooling water around the wellhead.

Four of the registered wells (Well inspections 2 – 5 below) were found to be constructed and maintained in a sanitary manner, and were deemed not likely a cause of surface contamination introduction into the aquifer.

The fifth registered well (Well inspection 6 below) was found to be constructed in a sanitary manner but was located in a close proximity to a horse enclosure. The well construction and grading around the wellhead indicates this well is not a significant potential hazard to surficial aquifer water quality.

Well inspection summaries and supporting figures are found below. The original well inspection forms are included in this memorandum as Appendix A.

Well Inspection 1 (Figure 10)



No Well Tag Number or Well Identification Plate

Observations:

- Approximately six inch well located in a well pit with a pressure tank and distribution line;
- Dripping observed from distribution line;
- Coarse sand floor with no standing water;
- Stick up on well pit preventing direct surface flows into well pit;
- No visible well plate; and,

- Unknown if the well is currently in use.

Follow-up:

J. Pogson to contact well owner to establish well status and have well brought into compliance with Part 3, Division 3 of the WSA and the GWPR.

Well Inspection 2 (Figure 11)

[REDACTED]

Well I.D. Plate No. 25853

Observations:

- Outside irrigation well;
- Appropriate grading around wellhead;
- Appears sanitary; and,
- Back check valve on distribution line.

Follow-up:

J. Pogson to establish ownership and provide well inspection documentation to the well owner.

Well Inspection 3 (Figure 12)

[REDACTED]

Well I.D. Plate No. 25852

Observations:

- Outside irrigation well;
- Appropriate grading around wellhead;
- Appears sanitary; and,
- Back check valve on distribution line.

Follow-up:

J. Pogson to provide well inspection documentation to the well owner.

Well Inspection 4

[REDACTED]

Well Tag Number 31548

Observations:

- 4.5 inch domestic well in a locked, concrete floored well house;
- No foreign matter found in the well house; and,
- Good drainage around the well house.

Follow-up:

J. Pogson to provide well inspection documentation to the well owner.

Well Inspection 5 (Figure 13)

[REDACTED]

No Well Identification Plate

Observations:

- Outside irrigation well;
- Appropriate grading around wellhead;
- Appears sanitary; and,
- Pressure value on well read "0" at time of visit.

Follow-up:

J. Pogson to provide a Well Identification Plate and well inspection documentation to the well owner.

Well Inspection 6 (Figure 14)

Domestic well

No Well Identification Plate

Observations:

- Outside with appropriate stickup and grading at ground surface;
- Within two metres of a fenced horse pen; and,
- No manure observed immediately adjacent to the well.

Follow-up:

J. Pogson to provide a Well Identification Plate and well inspection documentation to the well owner as well as recommend further separation between the wellhead and the horse enclosure.

Discussion

There were no notable changes (i.e. natural or man-made holes, surface channeling from ground surface manipulation or concentrated storm runoff, recent building/paving/ground surface adjustments, etc.) observed along the ground surface upgradient of the Steele Springs intake that would indicate a recent change in conditions was responsible for the high E.Coli count observed in the Steele Springs system.

Wells inspected during the site visit did not appear to create unsanitary conditions to support entry of contaminants into the surficial aquifer.

The Steele Springs intake itself is located in the bottom of a re-entrant (draw), reportedly drawing water from a depth of 1.5 m (five feet) below the ground surface. There is a potential for this intake to be receiving percolating surface water as well as water from the surficial aquifer. There are also locations along the supply line (e.g. open over-flows and pipe joints) that may allow surface contaminants to enter the system.

It should be noted that manure was observed on the ground surface within a 0.5 km linear distance of the Steele Springs water intake. The age of the manure is unknown. Given available information, provincial staff find it likely that the elevated E. coli counts could be directly from the surficial aquifer or from the interception of percolating surface water by the intake point.

Next steps

Groundwater staff will follow up on any compliance or reporting requirements associated with the well inspections.

This memorandum will be distributed to members of the Hullcar Inter-Ministry Working Group for their consideration and applicability to the management of this file in their subject matter areas.

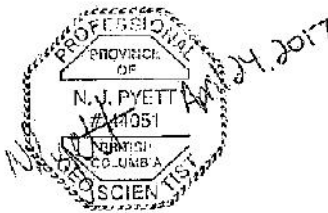
Closure

Please send any questions or comments regarding the contents of this report to Nicole.Pyett@gov.bc.ca.

Kind regards,



Nicole Pyett, M.Sc., P.Geo.
Regional Hydrogeologist, Groundwater Science, South Area
Ministry of Forests, Lands and Natural Resource Operations



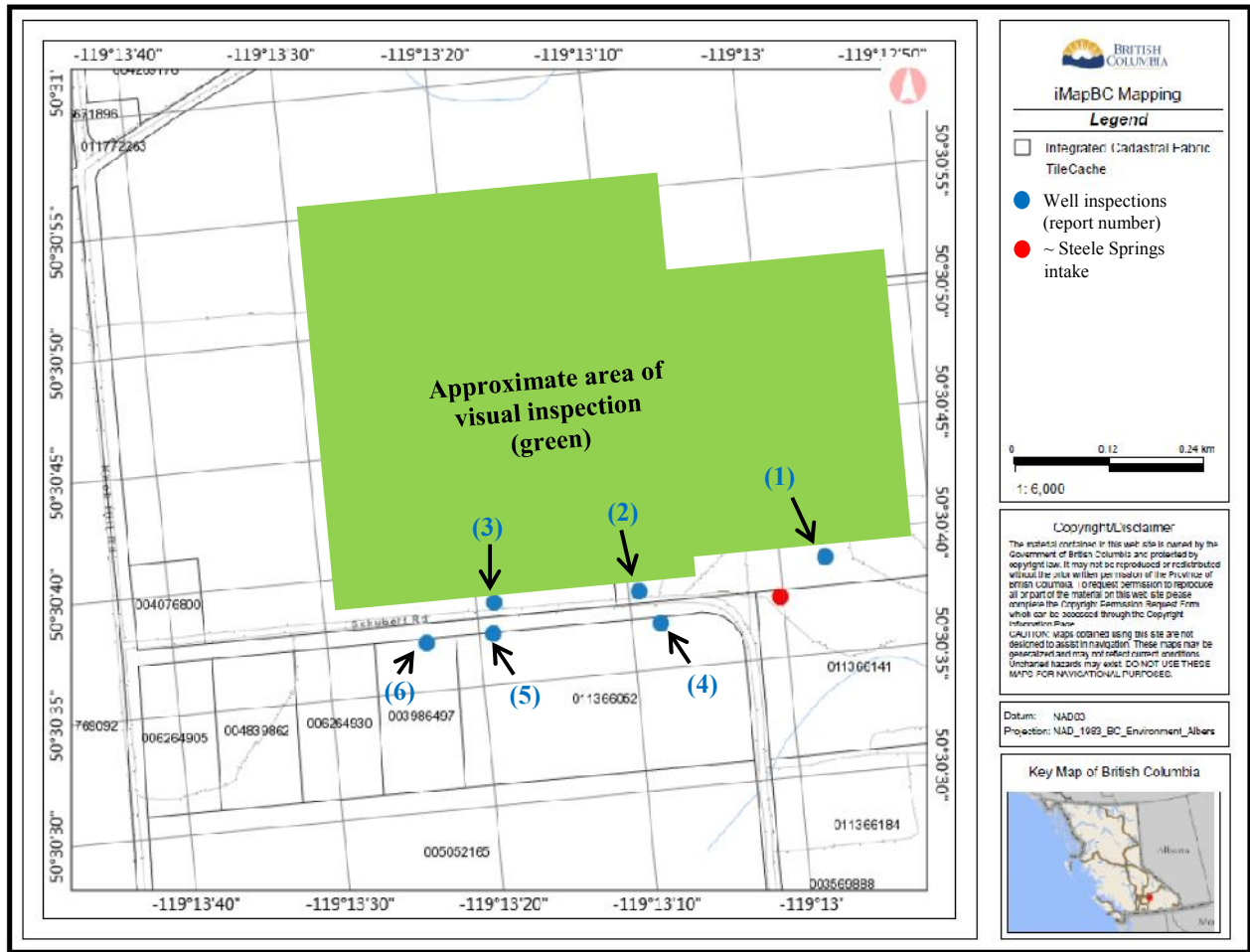




Figure 2: Supply line from the Steele Springs intake to the pump house. The photo direction is up the re-entrant (draw) to the North-West. Photo taken on April 11, 2017.



Figure 3: Supply line above the bed of the re-entrant (draw). Spaces in jointing may allow surface contaminants to enter the supply line in some circumstances. Photo taken on April 11, 2017.



Figure 4: Jointed supply line positioned into the hillside on approach to the Steele Springs collection point. Photo taken on April 11, 2017.



Figure 5: Supply line from the Steele Springs intake to the pump house (blue) and a secondary line (overflow?). The downgradient overflow port (open to air) installed into the supply line is indicated with an arrow. The photo direction is up the re-entrant (draw) to the North-West. Photo taken on April 11, 2017.



Figure 6: Connection between the supply line from the Steele Springs intake to the pump house (blue) and a secondary line (overflow?). The cross connection was shut at the time of the photo taken on April 11, 2017.



Figure 7: The Steele Springs collection point. Board member Brian Upper indicated the screen intake and the building footings are approximately five feet and two feet into the sediments, respectively. Photo taken on April 11, 2017.



Figure 8: The upgradient side of the protective building over the intake point. The ground surface was observed to be damp during the April 11, 2017 site visit.



Figure 9: Irrigation system (?) infrastructure beyond area of interest. Photo taken on April 11, 2017.



Figure 10: Well inspection 1. Photo taken on April 11, 2017.



Figure 11: Well inspection 2. Photo taken on April 11, 2017.



Figure 12: Well inspection 3. Photo taken on April 11, 2017.



Figure 13: Well inspection 5. Photo taken on April 11, 2017.



Figure 14: Well inspection 6. Photo taken on April 11, 2017.

Appendix A: Well inspection reports



MINISTRY OF FORESTS,
LANDS AND NATURAL
RESOURCE OPERATIONS

38000-25 / Water Precinct VERNON

Inspection Date (YYYY/MM/DD) / Time (hh:mm): 2017/04/11 Inspector: NICOLE PIATT / DANNY JONES

Site or water system name: PRIVATE WELL

Well owner: [REDACTED]

Phone No.: [REDACTED]

Mailing address: [REDACTED] ARMSTRONG, BC

Site contact: [REDACTED] Phone No.: [REDACTED]

Site coordinates (NAD 83, Zone & UTM or Lat/Long ddd.ddddd): 11U 342893E 5597775N

Location address: AS ABOVE - SECONDARY HOUSE

Legal property description (e.g. PID, lot): RD 025318 667

Well location description: JUST SOUTH OF FENCE LINE AROUND 2° PROPERTY YARD. PIT COVERED WITH FRAMED METAL ROOFING.

Well Tag Number¹ NOT REGISTERED?

Well ID Plate No. [REDACTED]

ID plate location ☐ Attached to casing
☐ Other [REDACTED]

Construction date [REDACTED]

Construction method [REDACTED]

Class of well [REDACTED]

Subclass of well [REDACTED]

Driller name [REDACTED]

Driller company [REDACTED]

Driller registered ☐ Yes ☐ No ☐ Supervised²

Driller class ☐ Water well ☐ Geoexchange
☐ Geotechnical/Environmental

Pump installer name [REDACTED]

Pump installer company [REDACTED]

Pump installer registered ☐ Yes ☐ No ☐ Supervised²

Well status ☐ Active ☐ Deactivated ☐ Decommissioned
☐ Not in Use (see comments) UNKNOWN

Well head location ☐ Outside ☐ Pump house ☒ Well pit ☐ Other See comments

Well pit drained ☒ Yes ☐ No ☒ See comments

Estimated distance to nearest water well [REDACTED] m ☒ Unknown ☐ NA

Secure well cap/cover ☐ Yes ☐ No ☒ See comments

Type of cap ☐ Sanitary seal ☐ Bolted (pitless adapter style) ☐ Other (e.g. hand pump) See comments

Well depth (below ground surface) [REDACTED] m [REDACTED] ft ☒ Unknown

Well diameter [REDACTED] cm 6 inches?

Casing stick-up [REDACTED] cm > 48 inches

Pumping rate (if known) [REDACTED] USgpm Igpm L/s L/min m³/d
Other [REDACTED] (circle correct units)

Surface seal ☐ Yes ☐ No ☒ Unknown ☐ See comments

Well maintenance ☐ Clear access to well
☐ No foreign matter stored within 3 m
☐ Grading promotes drainage away from wellhead

Flowing well ☐ Yes ☐ No ☒ See comments

¹Attach well construction record (if available) ²If work supervised by a registered person, provide name of supervisor

PHOTOGRAPHS TAKEN: ☒ YES ☐ NO

ISSUES IDENTIFIED FOR FOLLOW UP BASED ON WATER SUSTAINABILITY ACT & GROUNDWATER PROTECTION REGULATION REQUIREMENTS:

☒ YES ☐ NO

COMMENTS & RECOMMENDED ACTIONS: WELL WAS LOCATED IN AN APPROXIMATELY SIX FOOT DEEP WELL PIT SO INSPECTION WAS VISUALLY COMPLETED FROM SURFACE. WELL IS NOT REGISTERED & MAY NOT CURRENTLY BE IN USE. WELL PIPING APPEARED TO BE LEAKING. COULD NOT VISUALIZE CAP. FLOOR OF WELL PIT IS COARSE SEDIMENTS & POOLING WATER.

JOHN POWSON (GWPO) TO FOLLOW UP RE: IN USE? IN COMPLIANCE? & TO SUBMIT A COPY OF THE WELL INSPECTION REPORT TO THE WELL OWNER.

FLNRO Regional Office contact info:

N. Hyatt

Inspector Signature

Government of British Columbia Water Website: www.gov.bc.ca/water

Diagram/Site pictures:

Original to File / Copy to – circle all that apply:

Copy Hand Delivered to Well Owner / Site Contact / Contractor / Environmental Health Officer: ☐ YES ☐ NO
Copy Mailed/Emailed to Well Owner / Site Contact / Contractor / Environmental Health Officer: ☐ YES ☐ NO



MINISTRY OF FORESTS,
LANDS AND NATURAL
RESOURCE OPERATIONS

38000-25 / Water Precinct VERNON

Inspection Date (YYYY/MM/DD) / Time (hh:mm): 2017/04/11 Inspector: NICOLE PATT / DON LEMP

Site or water system name: PRIVATE WELL

Well owner:

Phone No.:

Mailing address: ARMSTRONG BC

Site contact:

Phone No.:

Site coordinates (NAD 83, Zone & UTM or Lat/Long ddd.ddddd): 11U 342649E 5597761N

Location address: AS ABOVE

Legal property description (e.g. PID, lot): PID 025 318 667

Well location description: SW CORNER OF PROPERTY APPROXIMATELY 10 M (W) OF DRIVEWAY

Well Tag Number¹

Well ID Plate No.

25853

ID plate location

☐ Attached to casing
☐ Other

Construction date

Construction method

Class of well

Subclass of well

Driller name

Driller company

Driller registered

☐ Yes ☐ No ☐ Supervised²

Driller class

☐ Water well ☐ Geoexchange
☐ Geotechnical/Environmental

Pump installer name

Pump installer
company

Pump installer
registered

☐ Yes ☐ No ☐ Supervised²

Well
status

☒ Active ☐ Deactivated ☐ Decommissioned
☐ Not in Use (see comments)

Well head location

☒ Outside ☐ Pump house ☐ Well pit ☐ Other
See comments

Well pit drained

☐ Yes ☐ No ☐ See comments N/A

Estimated distance to
nearest water well

>15 m ☐ Unknown ☐ NA

Secure well cap/cover

☒ Yes ☐ No ☐ See comments

Type of
cap

☐ Sanitary seal ☐ Bolted (pitless adapter style) ☒ Other (e.g. hand pump) See comments

Well depth (below
ground surface)

_____ m _____ ft ☐ Unknown

Well diameter

_____ cm 10 inches

Casing stick-up

60 cm _____ inches

Pumping rate
(if known)

USgpm Igpm L/s L/min m³/d
Other _____ (circle correct units)

Surface seal

☒ Yes ☐ No ☐ Unknown ☐ See comments

Well
maintenance

☒ Clear access to well
☒ No foreign matter stored within 3 m
☒ Grading promotes drainage away from wellhead

Flowing well

☐ Yes ☒ No ☐ See comments

¹ Attach well construction record (if available) ² If work supervised by a registered person, provide name of supervisor

PHOTOGRAPHS TAKEN: ☒ YES ☐ NO

ISSUES IDENTIFIED FOR FOLLOW UP BASED ON WATER SUSTAINABILITY ACT
& GROUNDWATER PROTECTION REGULATION REQUIREMENTS:

☐ YES ☒ NO

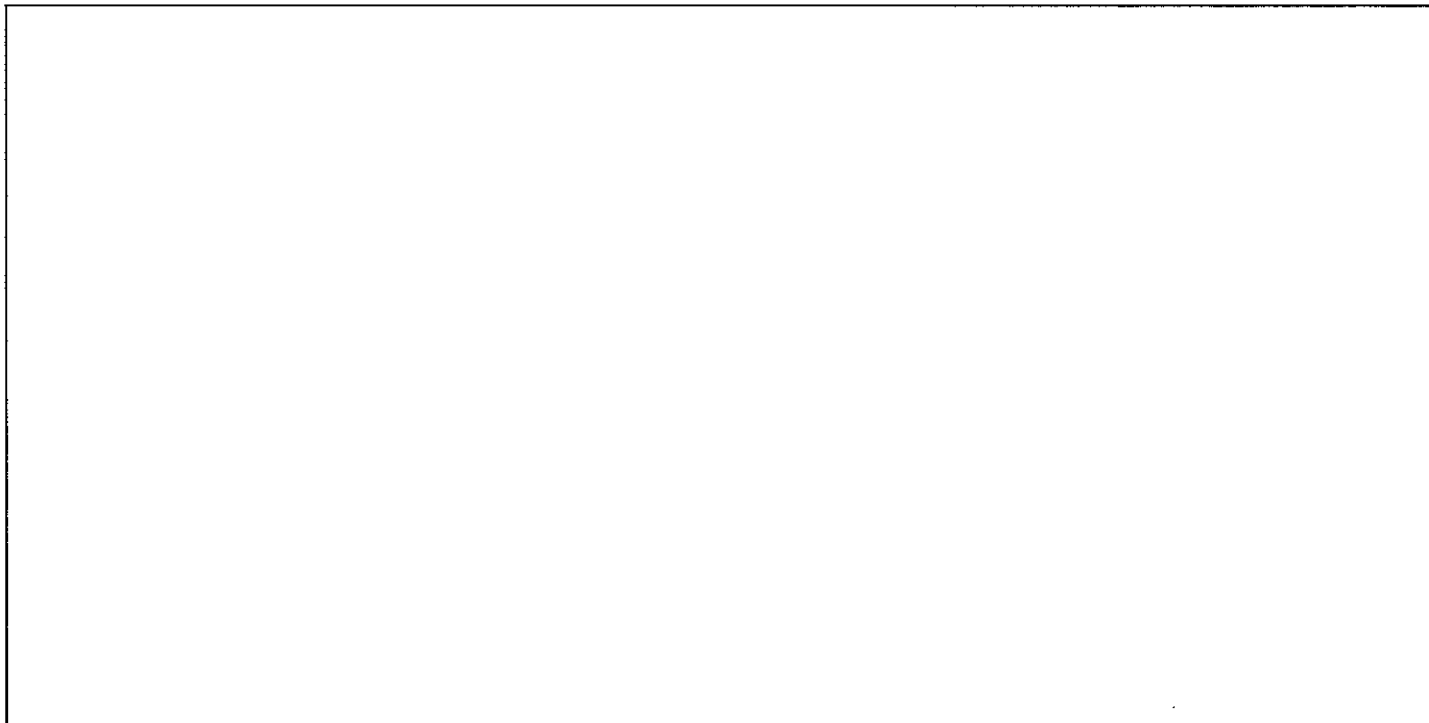
COMMENTS & RECOMMENDED ACTIONS: WELDED WELL CAP
BACK CHECK VALVE IN PLACE

FLNRO Regional Office contact info:

NPrett
Inspector Signature

Government of British Columbia Water Website: www.gov.bc.ca/water

Diagram/Site pictures:



Original to File / Copy to – circle all that apply:
Copy Hand Delivered to Well Owner / Site Contact / Contractor / Environmental Health Officer: ☐ YES ☐ NO
Copy Mailed/Emailed to Well Owner / Site Contact / Contractor / Environmental Health Officer: ☐ YES ☐ NO



MINISTRY OF FORESTS,
LANDS AND NATURAL
RESOURCE OPERATIONS

38000-25 / Water Precinct VERNON

Inspection Date (YYYY/MM/DD) / Time (hh:mm): 2017/04/11 12⁰⁰ Inspector: DEVAN O'DFIELD/NICOLE RYAN

Site or water system name: PRIVATE WELL

Well owner: [REDACTED] Phone No.: [REDACTED]

Mailing address: [REDACTED] ARMSTRONG BC V0E 1B4

Site contact: [REDACTED] Phone No.: [REDACTED]

Site coordinates (NAD 83, Zone & UTM or Lat/Long ddd.ddddd): 11U 342403E 5597771N

Location address: AGRICULTURAL PROPERTY BETWEEN [REDACTED]

Legal property description (e.g. PID, lot): 025 318 730

Well location description: SOUTH END OF PROPERTY ALONG SCHUBERT ROAD

Well Tag Number ¹	_____	Well status	☐ Active	☐ Deactivated	☐ Decommissioned
Well ID Plate No.	<u>25852</u>		☐ Not in Use (see comments)		
ID plate location	☐ Attached to casing ☐ Other _____	Well head location	☒ Outside	☐ Pump house	☐ Well pit See comments
Construction date	_____	Well pit drained	☐ Yes	☐ No	☐ See comments <u>N/A</u>
Construction method	_____	Estimated distance to nearest water well	_____ m	☐ Unknown	☐ NA
Class of well	_____	Secure well cap/cover	☒ Yes	☐ No	☐ See comments
Subclass of well	_____	Type of cap	☐ Sanitary seal	☒ Bolted (pitless adapter style)	☐ Other (e.g. hand pump) See comments
Driller name	_____	Well depth (below ground surface)	_____ m	_____ ft	☐ Unknown
Driller company	_____	Well diameter	<u>22</u> cm	_____ inches	
Driller registered	☐ Yes ☐ No ☐ Supervised ²	Casing stick-up	<u>64</u> cm	_____ inches	
Driller class	☐ Water well ☐ Geoexchange ☐ Geotechnical/Environmental	Pumping rate (if known)	_____	USgpm Igpm L/s L/min m ³ /d Other _____	(circle correct units)
Pump installer name	_____	Surface seal	☐ Yes ☐ No ☒ Unknown	☐ See comments	
Pump installer company	_____	Well maintenance	☒ Clear access to well ☒ No foreign matter stored within 3 m ☒ Grading promotes drainage away from wellhead		
Pump installer registered	☐ Yes ☐ No ☐ Supervised ²	Flowing well	☐ Yes ☒ No	☐ See comments	

¹ Attach well construction record (if available) ² If work supervised by a registered person, provide name of supervisor

PHOTOGRAPHS TAKEN: ☐ YES ☐ NO

ISSUES IDENTIFIED FOR FOLLOW UP BASED ON WATER SUSTAINABILITY ACT
& GROUNDWATER PROTECTION REGULATION REQUIREMENTS:

☐ YES ☒ NO

COMMENTS & RECOMMENDED ACTIONS:

FLNRO Regional Office contact info:

Inspector Signature

Government of British Columbia Water Website: www.gov.bc.ca/water

Diagram/Site pictures:



Original to File / Copy to – circle all that apply:
 Copy Hand Delivered to Well Owner / Site Contact / Contractor / Environmental Health Officer: ☐ YES ☐ NO
 Copy Mailed/Emailed to Well Owner / Site Contact / Contractor / Environmental Health Officer: ☐ YES ☐ NO



MINISTRY OF FORESTS,
LANDS AND NATURAL
RESOURCE OPERATIONS

38000-25 / Water Precinct VERNON

Inspection Date (YYYY/MM/DD) / Time (hh:mm): 2017-04-11 Inspector: DAN KRYWONOS / nicola pier

Site or water system name: PRIVATE WELL

Well owner: [REDACTED] Phone No.: [REDACTED]

Mailing address: [REDACTED]

Site contact: AS ABOVE Phone No.:

Site coordinates (NAD 83, Zone & UTM or Lat/Long ddd.ddddd): 11U 342 458E 5597747N

Location address: [REDACTED]

Legal property description (e.g. PID, lot): P.O. 011 364 052

Well location description: NORTH/WEST SIDE OF PROPERTY ALONG SCHUBERT RD.

Well Tag Number¹

Well ID Plate No. 2

ID plate location ☐ Attached to casing
☐ Other

Construction date

Construction method

Class of well

Subclass of well

Driller name

Driller company

Driller registered ☐ Yes ☐ No ☐ Supervised²

Driller class ☐ Water well ☐ Geoexchange
☐ Geotechnical/Environmental

Pump installer name

Pump installer company

Pump installer registered ☐ Yes ☐ No ☐ Supervised²

Well status ☐ Active ☐ Deactivated ☐ Decommissioned
☐ Not in Use (see comments)

Well head location ☒ Outside ☐ Pump house ☐ Well pit ☐ Other
See comments

Well pit drained ☐ Yes ☒ No ☐ See comments

Estimated distance to nearest water well >15 m ☐ Unknown ☐ NA

Secure well cap/cover ☒ Yes ☐ No ☒ See comments

Type of cap ☐ Sanitary seal ☐ Bolted (pitless adapter style) ☒ Other (e.g. hand pump) See comments

Well depth (below ground surface) m ft ☐ Unknown

Well diameter cm 6.0 inches

Casing stick-up 27.0 cm inches

Pumping rate (if known) USgpm Igpm L/s L/min m³/d
Other (circle correct units)

Surface seal ☐ Yes ☐ No ☒ Unknown ☐ See comments

Well maintenance ☒ Clear access to well
☒ No foreign matter stored within 3 m
☒ Grading promotes drainage away from wellhead

Flowing well ☐ Yes ☒ No ☐ See comments

¹ Attach well construction record (if available) ² If work supervised by a registered person, provide name of supervisor

PHOTOGRAPHS TAKEN: ☒ YES ☐ NO

ISSUES IDENTIFIED FOR FOLLOW UP BASED ON WATER SUSTAINABILITY ACT
& GROUNDWATER PROTECTION REGULATION REQUIREMENTS:

☐ YES ☐ NO

COMMENTS & RECOMMENDED ACTIONS: _____

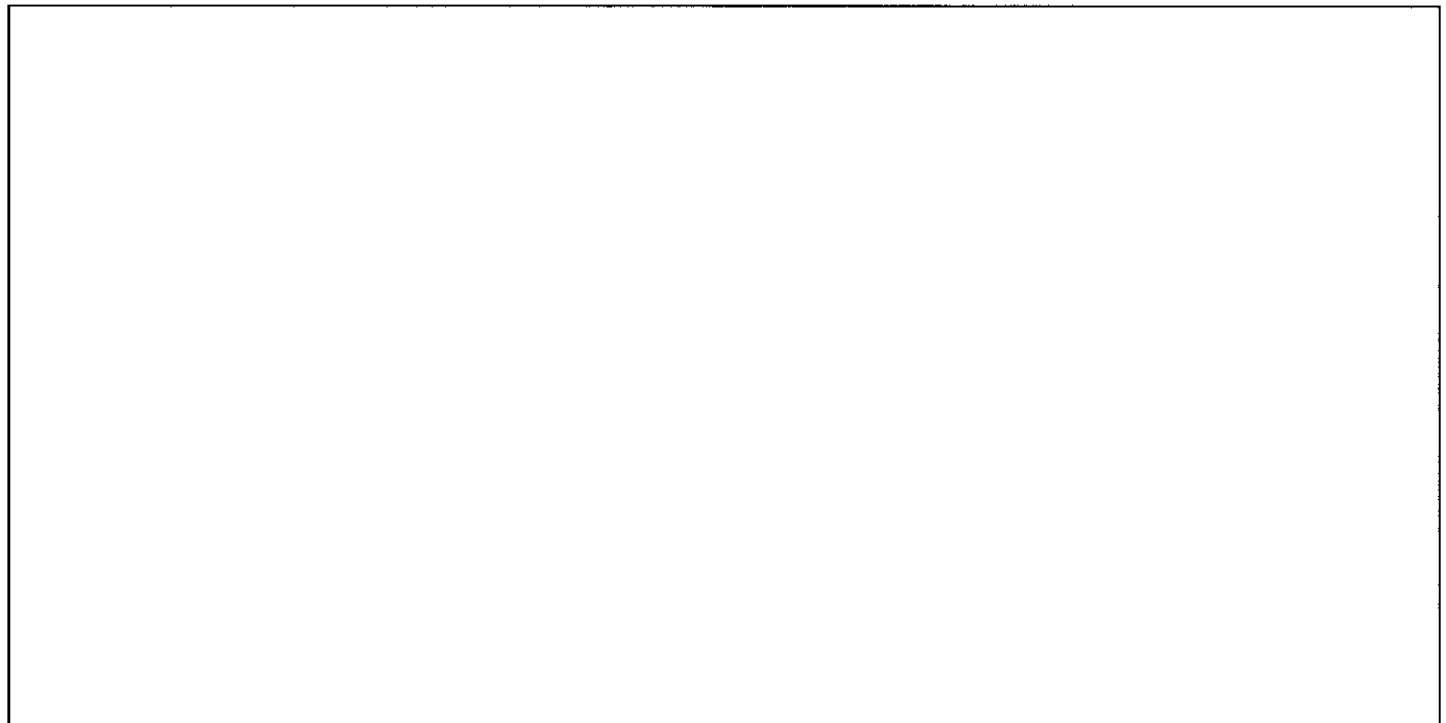
- WELDED CAP

FLNRO Regional Office contact info:

NP Jett
Inspector Signature

Government of British Columbia Water Website: www.gov.bc.ca/water

Diagram/Site pictures:



Original to File / Copy to – circle all that apply:
Copy Hand Delivered to Well Owner / Site Contact / Contractor / Environmental Health Officer: ☐ YES ☐ NO
Copy Mailed/Emailed to Well Owner / Site Contact / Contractor / Environmental Health Officer: ☐ YES ☐ NO



MINISTRY OF FORESTS,
LANDS AND NATURAL
RESOURCE OPERATIONS

38000-25 / Water Precinct VERNON

Inspection Date (YYYY/MM/DD) / Time (hh:mm): 2017/04/11 - 1207hrs. Inspector: Pogson / JONES

Site or water system name:

Well owner: [REDACTED]

Phone No.: [REDACTED]

Mailing address: [REDACTED]

Site contact: [REDACTED] Phone No.: [REDACTED]

Site coordinates (NAD 83, Zone & UTM or Lat/Long ddd.ddddd): 50.51030 x -119.21880

Location address: [REDACTED]

Legal property description (e.g. PID, lot): [REDACTED]

Well location description: beige/red trim - 12x12 barn style - right side of driveway at entrance

Well Tag Number¹ 31548

Well ID Plate No. None

ID plate location ☐ Attached to casing ☐ Other [REDACTED]

Construction date ? 1974-10-29

Construction method Drilled

Class of well - water supply

Subclass of well - private/domestic

Driller name [REDACTED]

Driller company Okanagan Water Well Drilling

Driller registered ☐ Yes ☐ No ☐ Supervised²

Driller class ☐ Water well ☐ Geoexchange ☐ Geotechnical/Environmental

Pump installer name [REDACTED]

Pump installer company [REDACTED]

Pump installer registered ☐ Yes ☐ No ☐ Supervised²

Well status ☒ Active ☐ Deactivated ☐ Decommissioned ☐ Not in Use (see comments)

Well head location ☐ Outside ☒ Pump house ☐ Well pit ☐ Other See comments

Well pit drained ☐ Yes ☒ No ☒ See comments

Estimated distance to nearest water well approx 50 m ☐ Unknown ☐ NA

Secure well cap/cover ☒ Yes ☐ No ☐ See comments

Type of cap ☒ Sanitary seal ☐ Bolted (pitless adapter style) ☐ Other (e.g. hand pump) See comments

Well depth (below ground surface) [REDACTED] m [REDACTED] ft ☐ Unknown

Well diameter [REDACTED] cm 4.5 inches outside

Casing stick-up [REDACTED] cm 2.25 inches above floor

Pumping rate (if known) unknown USgpm Igpm L/s L/min m³/d Other [REDACTED] (circle correct units)

Surface seal ☐ Yes ☐ No ☒ Unknown ☐ See comments

☐ Clear access to well can't see concrete floor

Well maintenance ☒ No foreign matter stored within 3 m ☐ Grading promotes drainage away from wellhead

Flowing well ☐ Yes ☒ No ☐ See comments

¹ Attach well construction record (if available) ² If work supervised by a registered person, provide name of supervisor

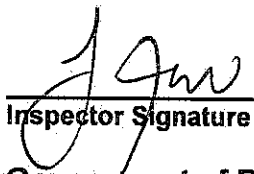
PHOTOGRAPHS TAKEN: ☒ YES ☐ NO

ISSUES IDENTIFIED FOR FOLLOW UP BASED ON WATER SUSTAINABILITY ACT & GROUNDWATER PROTECTION REGULATION REQUIREMENTS:

☐ YES ☐ NO

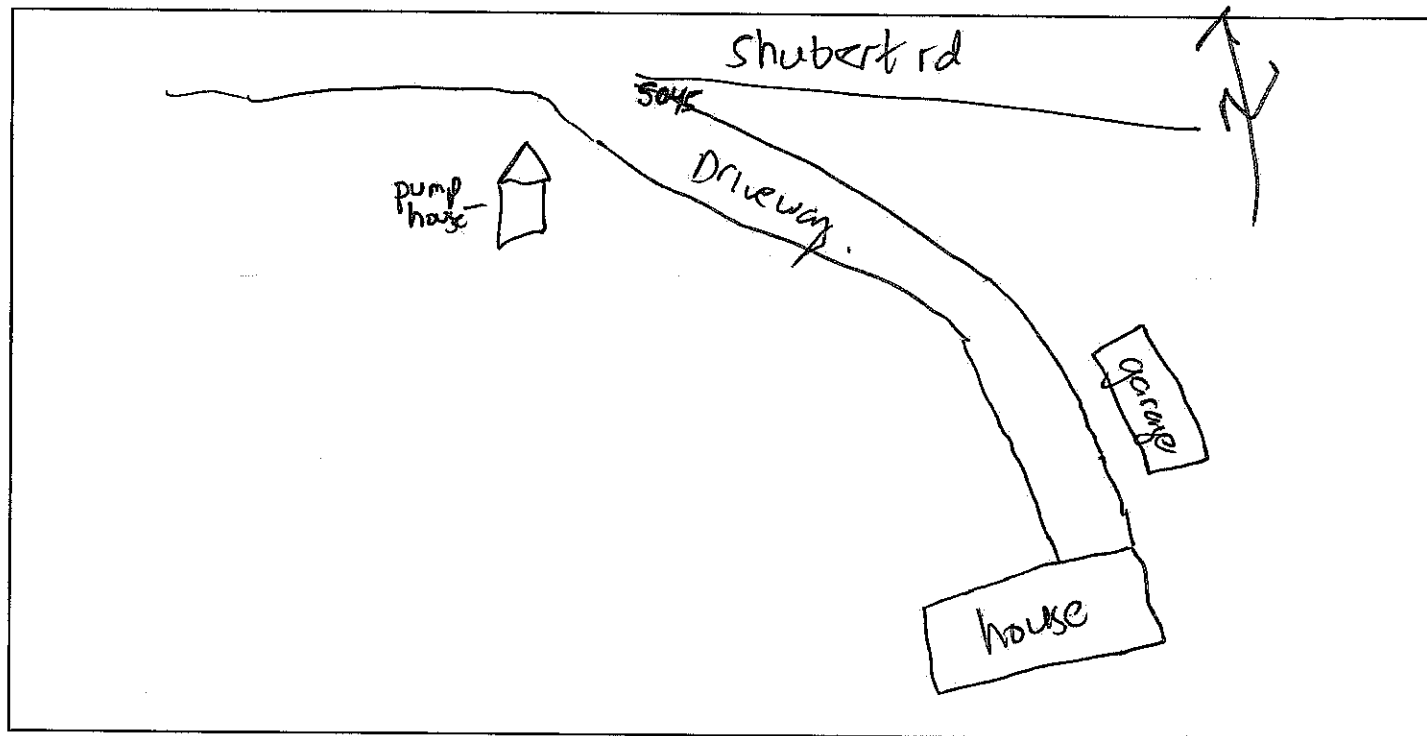
COMMENTS & RECOMMENDED ACTIONS: - owner moved here 6 years ago. - well here
- well house is typically locked - call first before inspection.
- well pit ~~pit~~ drained - dry inside.
- bare ground pump house flat; appears good drainage on outside around pump house.

FLNRO Regional Office contact info:


Inspector Signature

Government of British Columbia Water Website: www.gov.bc.ca/water

Diagram/Site pictures:



Original to File / Copy to – circle all that apply:
Copy Hand Delivered to Well Owner / Site Contact / Contractor / Environmental Health Officer: ☐ YES ☐ NO
Copy Mailed/Emailed to Well Owner / Site Contact / Contractor / Environmental Health Officer: ☐ YES ☐ NO



MINISTRY OF FORESTS,
LANDS AND NATURAL
RESOURCE OPERATIONS

38000-25 / Water Precinct Vernon

Inspection Date (YYYY/MM/DD) / Time (hh:mm): April 11 2017 Inspector: D. KYWONOS

Site or water system name: PRIVATE WELL

Well owner: PULL FROM LTSA Phone No.: _____

Mailing address: _____

Site contact: _____ Phone No.: _____

Site coordinates (NAD 83, Zone & UTM or Lat/Long ddd.ddddd): WP #101 114 342370 E
53 97729 N

Location address: _____

Legal property description (e.g. PID, lot): PID 003 986 497

Well location description: RIGHT SIDE OF DRIVEWAY NEAR MAIN HOUSE

Well Tag Number¹ NONE

Well ID Plate No. _____

ID plate location ☐ Attached to casing
☐ Other NONE

Construction date ± 8 years

Construction method _____

Class of well _____

Subclass of well _____

Driller name _____

Driller company _____

Driller registered ☐ Yes ☐ No ☐ Supervised²

Driller class ☐ Water well ☐ Geoeexchange
☐ Geotechnical/Environmental

Pump installer name _____

Pump installer company _____

Pump installer registered ☐ Yes ☐ No ☐ Supervised²

Well status ☒ Active ☐ Deactivated ☐ Decommissioned
☐ Not in Use (see comments)

Well head location ☒ Outside ☐ Pump house ☐ Well pit ☐ Other See comments

Well pit drained ☐ Yes ☐ No ☐ See comments

Estimated distance to nearest water well N/A m ☐ Unknown ☐ NA

Secure well cap/cover ☒ Yes ☐ No ☐ See comments

Type of cap ☒ Sanitary seal ☐ Bolted (pitless adapter style) ☐ Other (e.g. hand pump) See comments

Well depth (below ground surface) 160 ft m 160 ft ☐ Unknown

Well diameter 15 cm 6 inches

Casing stick-up _____ cm 29 inches

Pumping rate (if known) _____ USgpm Igpm L/s L/min m³/d
Other _____ (circle correct units)

Surface seal ☒ Yes ☐ No ☐ Unknown ☐ See comments

☒ Clear access to well
Well maintenance ☐ No foreign matter stored within 3 m HOSE SKW IN FROM WELL
☒ Grading promotes drainage away from wellhead

Flowing well ☐ Yes ☒ No ☐ See comments

¹ Attach well construction record (if available) ² If work supervised by a registered person, provide name of supervisor

PHOTOGRAPHS TAKEN ☒ YES ☐ NO

ISSUES IDENTIFIED FOR FOLLOW UP BASED ON WATER SUSTAINABILITY ACT & GROUNDWATER PROTECTION REGULATION REQUIREMENTS:

☐ YES ☒ NO

[illegible]

Inspector Signature

Diagram/Site pictures:

[illegible]

Well Inspection Form V 3.1 June 2016