

12.0 BUILDING 3122: BEAVER CREEK SWIMMING POOL

12.1 Description of Existing Water Supply System

Building 3122, the Beaver Creek Swimming Pool, is currently served by a water supply system that delivers water from a 19.2 m deep well. The well is located in an underground enclosure directly adjacent to the nearby Beaver Creek Community Club building, which is served by the same well. The well location and other details about the surrounding area are provided in Figure 3122-A in Appendix A12. The coordinates of the wellhead, as measured by a handheld GPS device, were recorded as:

- UTM ZONE 7
- Northing: 6916774
- Easting: 506150

There is no treatment or disinfection system for the water supplying this system. A schematic detailing the well supply system is provided as Figure 3122-B in Appendix A12.

12.2 Description of Existing Wastewater Systems

The septic tank that serves the community club is located south of the building approximately 20 m from the well and the effluent field is located to the south of the tank approximately 22 m from the well. The septic tank that serves the swimming pool is located to the east of the building and effluent is discharged in a septic field to the south of the tank. The swimming pool septic system is approximately 50 m from and likely downgradient from the well, but the community club septic system is likely up or cross gradient from the well. A site plan showing the septic systems is given by Figure 3122-A in Appendix A12.

12.3 Water Quality Results

12.3.1 Water Quality Results from Previous Sampling

Bacteriological

One sample was collected from the Beaver Creek Swimming Pool water system in June 2005 and was tested for total coliform and *E. coli* by Yukon Environmental Health Services using the presence/absence test method. Results are tabulated in Table 3122-1 in Appendix A12. Coliform bacteria and *E. coli* were reported as absent in the sample.

Potability

Water samples were previously collected from the Beaver Creek Swimming Pool water system on June 15, 2005. The samples were submitted to ALS Environmental in Vancouver, BC for analyses included in their drinking water package. The results of these analyses are summarized in Table 3122-2 in Appendix A12. EBA reviewed the analytical results to compare them with the Canadian Drinking Water Quality Guidelines (CDWQG) to observe general water quality, identify and recommend additional sampling and analytical, and to identify indicators of potential contamination.

- The water quality results indicated that all health based and aesthetic objectives were met for the parameters analyzed;
- At 0.432 mg/L, the copper concentration is elevated above the normal copper concentrations in groundwater for the Beaver Creek area;
- The water quality results indicated that the groundwater from which this system receives its water supply is a calcium bicarbonate type water; and,
- The hardness (as CaCO₃) was 194 mg/L, and is considered very hard.

12.3.2 Identification of Additional Analytical Testing Required

Additional analytical for the Beaver Creek Pool that was identified to be included during the water system assessments is detailed below:

- A sample was taken to retest for turbidity;
- UV absorbance and UV transmissivity, as well as tannins and lignin, to determine potential for UV treatment as a disinfection option for this water system;
- Total organic carbon (TOC); and,
- Measurements in the field for total dissolved solids, conductivity, pH, and temperature.

Additional Analytical Results

A water sample was obtained during the water system assessment on July 27, 2005, and was submitted to ALS Environmental in Vancouver, BC for analysis. These results are summarized in Table 3122-2 in Appendix A12 and the laboratory reports are included in Appendix B. The water quality results from additional analytical sampling indicated that all health based and aesthetic objectives were met for the parameters analyzed.

12.3.3 Indicators of Potential Contamination

Chloride, nitrate and nitrite concentrations can indicate impacts from surfacewater sources or septic waste. Chloride concentrations were reported to be low and are considered to be within the normal background ranges for groundwater in the Beaver Creek area. Nitrate and nitrite concentrations for this sample were also low and within the normal background range for this area. These water quality results do not suggest that the aquifer from which the groundwater is obtained for the Beaver Creek Swimming Pool is under the influence of surfacewater sources or septic wastes.

12.4 Conceptual Hydrogeology

The log for this well indicates that the well is completed at a depth of 19.2 m within a gravel aquifer. The lithology indicates mostly gravel with some interbedded fine grained material from 2.4 to 5.4 m. This is consistent with most well logs in the area, which indicate that discontinuous lenses of finer-grained sediments persist throughout the area, but in general the sediments are dominated by coarse alluvium. Some discontinuous permafrost is also interpreted to persist throughout the Beaver Creek area. The limited presence of fine grained material indicates that this well is most likely completed within a unconfined or semi- confined aquifer with limited protection from surficial sources of contamination. A study previously completed in the Beaver Creek area by EBA determined that the direction of groundwater flow in the vicinity of the site is north to northeasterly.

12.5 Potential Contaminant Sources

Potential contaminant sources from observations made during the water system assessment are compiled in field notes in Appendix A12. Photos of potential contaminant sources are also provided in Appendix A12.

Potential contaminant sources within 30 m of the wellhead are:

- An above ground fuel storage tank (AST) at 20 m; and
- A septic field located at 22 m.

12.5.1 Spills Records and Contaminated Sites Search Results

The Government of Yukon Environmental Programs Branch and Environment Canada Environmental Protection Branch did not identify any recorded spill events or contaminated sites issues for this site or neighbouring sites.

12.6 Identified Water System Deficiencies and Associated Risk

12.6.1 High and Medium Risk Deficiencies

- Poor surface completion of the wellhead (located in a pit below grade);
- There is no surface sanitary seal (grout or bentonite seal) as required by the Canadian Groundwater Association's Guidelines for Water Well Construction;
- By definition of the Draft Yukon GUDI Assessment Guideline, the well is potentially under the direct influence of surface water because it does not meet the requirements of the Guidelines for Water Well Construction.
- The well is located within 30 m of potential sources of contamination, including an above ground fuel storage tank at 20 m and a septic discharge field at 22 m, both of which are upgradient from the well; and,
- There is no treatment or disinfection system present.

12.6.2 Low Risk Deficiencies

- The copper concentration is elevated above normal background concentrations for the Beaver Creek area, and may signify leaching from copper pipes; and,
- It was observed during the water system assessment that two of the pressure tanks are leaking slightly.

12.7 Mitigative Options for Deficiencies

Mitigative options were developed to address the deficiencies identified in the previous section. Deficiencies are categorized by recommended level of priority (with Priority 1 being most critical).

12.7.1 Priority 1

The following recommendations are provided in order to mitigate deficiencies that are of immediate concern for the Beaver Creek Pool and Community Hall. Priority 1 remedial recommendations include:

- The casing should be extended to at least 500 mm above the base of the well pit, and a localized near surface bentonite seal installed immediately around the wellhead, while leaving the remainder of the base of the well pit for drainage.
- The well and water system should be superchlorinated.
- Disinfection treatment consisting of filtration to 1 micron absolute, and a proportional feed chlorination system with retention tanks and necessary appurtenances should be installed. These are conceptual design recommendations based on the information available for planning and budgeting purposes. Engineering input will be required for final system specifications.

12.7.2 Priority 2

Priority 2 upgrade options to mitigate long-term risk and meet the proposed regulation are presented below:

Option 1: New Well Construction to Serve Community Hall and Pool

- For this option, it is recommended that a new well should be drilled and the current well be properly decommissioned. There is no potential well location on the site that complies with recommended setback distances, therefore, it makes sense to drill to the west of the community centre to obtain a water supply for both buildings. The existing plumbing between the Community Centre and Pool could be utilized. It is recommended that the new well be installed to meet the following conditions:
 - The well should be equipped with a surface seal to at least 6 m and the casing should be extended above grade (500 mm) within a lockable enclosure that is inaccessible to animals and unauthorized personnel;
 - The well must be located at a distance greater than 30 m from any potential source of contamination, including the AST and all parts of the septic system; and
 - The water from the new well must meet all CDWQG health based guidelines. If there are any exceedences in the CDWQG health-based guidelines then a treatment system must be designed and installed as necessary.

Option 2: New Cluster Well Construction

- Option 2 presents the option of a cluster well installation to provide water supply to the School, Community Hall and Pool. The advantages would include combined savings on capital costs, reduced life cycle costs, added control and system security, and reduced maintenance requirements.

12.7.3 Priority 3

- Copper concentrations should be monitored as part of routine operation and maintenance.
- The pressure tanks should be replaced with an adequately sized bladder pressure tank during Phase 2 upgrades.

12.8 Cost Estimates for Mitigative Options

Engineering costs for mitigative options are estimated to be 20% of construction costs, and would include inspection and completion reporting. The costs for materials and labour (not including engineering) are provided in the sections below. An additional contingency allowance of 20% is suggested for budgetary purposes.

12.8.1 Priority 1

The estimated costs for the recommended Priority 1 upgrades are detailed below:

- Casing extension and well cap installation - **\$700**;
- Well and water system superchlorination - **\$200**; and,
- Filtration to 1 micron absolute and a proportional chlorine system with retention tanks- **\$8,500**.

The estimate total cost for Priority 1 recommended upgrades are estimated at **\$9,400** including materials and labour.

12.8.2 Priority 2

Option 1: New Well Construction

- The estimated cost for the Option 1 which includes the construction of a new well to serve the Pool and Community Centre is approximately **\$32,400** for drilling, testing and hook-up, assuming that the well would be approximately 30 m deep and constructed as described above.

It is recommended that the existing well be kept plumbed in to the fire storage tanks for back-up water supply.

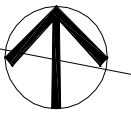
Option 2: New Cluster Well Construction

- The cost for construction of a cluster well that would serve the recreational hall and pool, assuming that the well would be constructed to meet the proposed regulations,

and would be 30 m deep, and including 80 m of distribution piping would cost approximately **\$17,400** including half of the drilling costs and the costs for distribution to the Community Centre. The existing water line between the Community Centre and the pool would be utilized.

12.8.3 Priority 3

- The cost for routine monitoring of copper concentrations should be included under operation and maintenance costs; and
- Upgrades to the plumbing system, pressure tank and pump controls are covered with Priority 2 costs.



WELL 3121
 N 6 916 774
 E 506 150
 DRILLERS REPORT
 NO.: 11070025

ROAD

BEAVER CREEK
 COMMUNITY
 CLUB

SWIMMING
 POOL
 BLDG. # 3122

SEPTIC
 TANK

AST 1

SEPTIC FIELD
 (SIZE AND LOCATION
 APPROXIMATE)


SEPTIC FIELD
 (SIZE AND LOCATION
 APPROXIMATE)

LOT 1025



SCALE 1:300


NOTES:
 1. UTM COORDINATES OBTAINED WITH A HAND HELD GPS USING NAD83 SYSTEM AND ARE CONSIDERED TO BE ACCURATE TO 10.0 m, APPROXIMATELY.

 30 m RADIUS FROM WATER WELL FOR CONSIDERATION OF PROXIMITY TO POTENTIAL CONTAMINANT SOURCES.
 BUILDING STRUCTURES RELATIVE TO PROPERTY LINES ARE APPROXIMATE ONLY.

No.	DESCRIPTION	DATE	APPROVED
0	ISSUED FOR CLIENT REVIEW		
REVISION			

EBA Engineering Consultants Ltd.

DESIGNED BY: R. MARTIN
 DRAWN BY: J. BUYCK
 DATE: AUG. 2005
 SCALE: AS SHOWN
 PROJECT No.: 1260002.003
 ACAD FILENAME: 003--WESTERN REGION

CLIENT:

 Highways and Public Works
 Property Management Branch

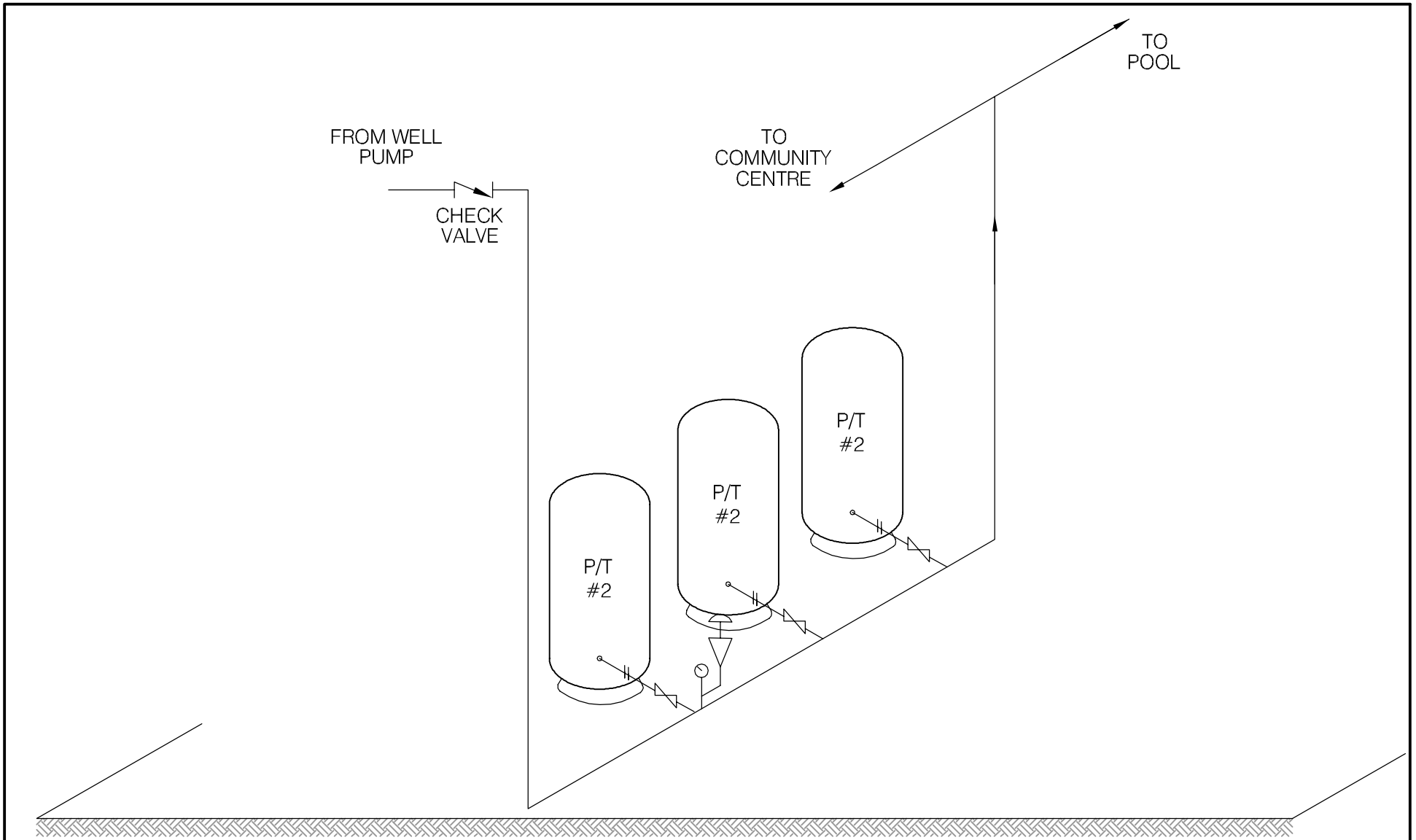
SMALL PUBLIC WATER SYSTEMS ASSESSMENT
 WESTERN REGION

GOVERNMENT OF YUKON
 HIGHWAYS & PUBLIC WORKS



BEAVER CREEK SWIMMING POOL
 BUILDING # 3122
 SITE LOCATION DIAGRAM
 WELL ID: 3122

REVISION ISSUE
 0

FIGURE No.
 FIGURE 3122-A



SCHEMATIC PRODUCED BY BERT ALBISSER OF AQUA TECH SUPPLIES AND SERVICES LTD.

 EBA Engineering Consultants Ltd.		PROJECT SMALL PUBLIC WATER SYSTEMS ASSESSMENT WESTERN REGION							
CLIENT 		TITLE WATER SYSTEM DISTRIBUTION/TREATMENT SCHEMATIC SYSTEM ID.: 3122 BEAVER CREEK SWIMMING POOL							
DATE	SEPT. 2005	DWN.	JSB	CHKD.	RMM	FILE NO.	1260002.003	DWG.:	FIGURE 3122-B

Western Region – Swimming Pool
Building # 3122

DISTRIBUTION & TREATMENT SYSTEM DATA

Item	Description	Manufacturer	Model	Part No.	Serial No.	Size
1	Sub Pump	N/A				4" - 3/4 HP
2	PRESSURE TANKS	WELL X TROL	WX-350 X 3			
3	PRESSURE SWITCH	SQARE D	GSG-2			5HP - 1/4" NPT
4	PRESSURE GAUGE	MARSH	2" - 0.200 PSI			2" - 1/4" NPT
5						
6						
7						
8						
9						
10						

TABLE 3122- 1: SUMMARY OF BACTERIOLOGICAL RESULTS

Building #	Building Name	Number of Sampling Events	Time Period over which Sampling was Done	Any Positive Total Coliform Results? (yes or no)	Fraction of Positive Total Coliform Results vs. Total Sampling Events	Any positive E.Coli results? (yes or no)	Most Recent Sampling Event Available for EBA Review	Is Most Recent Result Positive?
3122	Beaver Creek Swimming Pool	1	Jun-05	no	0/1	no	16-Jun-05	no



Table 3122-2: Water Quality Results

SOURCE:		Building 3122 - Beaver Creek Swimming Pool		GCDWQ Criteria		
Location/ Resident		Beaver Creek				
Address						
Treatment		None				
Disinfection		None				
Source of Water		On-site well				
Purpose of Sampling		Base Line	Additional Analytical			
Sample Location			changing room tap			
Date Sampled		15-Jun-05	27-Jul-05	Lower	Upper Limit	
Physical Tests (ALS)				AO	MAC	AO
Colour (CU)	<5.0	-				15
Conductivity (uS/cm)	404	-				
Total Dissolved Solids	231	-				500
Hardness CaCO ₃	194	-	AO >200 = poor, > 500 unacceptable ^A			
pH	8.13	-	6.5		8.5	
Turbidity (NTU)	0.26	0.72		1	5	
UV Absorbance		0.0110				
% UV Transmittance		97.5				
Dissolved Anions (ALS)						
Alkalinity-Total CaCO ₃	183	-				
Chloride Cl	2.68	-			250	
Fluoride F	0.052	-		1.5		
Silicate SiO ₄		-				
Sulphate SO ₄	33.0	-			500	
Nitrate Nitrogen N	0.71	-		10		
Nitrite Nitrogen N	<0.10	-		3.2		
Ammonia Nitrogen N		-				
Total Phosphate PO ₄		-				
Total Metals (ALS)						
Aluminum T-Al	<0.010	-				
Antimony T-Sb	<0.00050	-		0.006		
Arsenic T-As	0.00048	-		0.025		
Barium T-Ba	0.041	-		1		
Boron T-B	<0.10	-		5		
Cadmium T-Cd	<0.00020	-		0.005		
Calcium T-Ca	63.8	-				
Chromium T-Cr	<0.0020	-		0.05		
Copper T-Cu	0.432	-		1		
Iron T-Fe	<0.030	-			0.3	
Lead T-Pb	0.0014	-		0.01		
Magnesium T-Mg	8.50	-				
Manganese T-Mn	<0.0020	-			0.05	
Mercury T-Hg	<0.00020	-		0.001		
Potassium T-K	1.17	-				
Selenium T-Se	<0.0010	-		0.01		
Sodium T-Na	3.7	-			200	
Uranium T-U	0.00035	-		0.02		
Vanadium T-V		-				
Zinc T-Zn	<0.050	-			5	
Organic Parameters						
Tannin and Lignin		0.21				
Total Organic Carbon C		1.17				
Field Chemistry (EBA)						
pH		8.05	6.5		8.5	
TDS (ppm)		203			500	
EC (uS/cm)		403				
Temperature (°C)		6.9				
Free Available Chlorine						

Notes:

A. Guidelines indicated for hardness are not CDWQG, rather they are general aesthetic guidelines - exceedences are indicated in yellow highlighting.

Italics and underline indicates exceedence of proposed MAC (ie. arsenic)

Bold with Yellow highlighting indicates exceedence of CDWQG Aesthetic Objective (AO)

Bold Underline with Yellow highlighting indicates exceedence of CDWQG MAC

Results are expressed as milligrams per litre except for pH and Colour (CU)

Conductivity (umhos/cm), Temperature (°C) and Turbidity (NTU)

< = Less than the detection limit indicated.

AO = Aesthetic Objective

MAC = Maximum Acceptable Concentration (Health Based)



EBA Engineering Consultants Ltd.

Creating and Delivering Better Solutions

SMALL PUBLIC WATER SYSTEM ASSESSMENT

PART A: EBA Site Inspection

Inspector: Ryan Martin, Luke Lebel

Date July 27, 2005

WELL ID #	Owner	Location Description
3122	YTG	Beaver Creek Swimming Pool

1. Well Location and Potential Contaminant Sources

a. General location of well: (Community, Subdivision, etc.)

Beaver Creek

b. Specific location: (Road or street, Building number, name of owner and/, legal description,

Beaver Creek Community Club building

c. GPS location: N 6916774 E 506150 elev 670m ± 9m

d. Is there electric power? Yes No

e. Is there outside water access? Yes No

f. Does the well system have:

15 or more service connections to a piped distribution system? If so how many _____

Community Club and Swimming Pool

5 or more delivery sites on a trucked distribution system? If so how many _____

g. Nearest building, specify Located in an enclosure off from the

Community Club building

h. Distance from well to building _____

i. If there is an effluent disposal field, is its location known? Yes No

j. Distance from well to nearest point of known field: ~22m (~20m to tank)

k. Well location relative to field: upslope downslope lateral

EBA Engineering Consultants Ltd.

Creating and Delivering Better Solutions

l. Is there any part of a sewage disposal system(s) or other potential sources of pollution that may pose a health and safety risk within 30 m? Yes No

There is also a septic tank and field ~ 50m from the well

m. Is the well located within 300 m from a sewage lagoon or pit? Yes No unlikely

n. Is the well located within 120 m from a solid waste site or dump, cemetery? Yes No unlikely

o. Is the infrastructure protecting the wellhead, pumphouse, storage tank and/or water treatment plant designed and secured to prevent:

Unauthorized access by humans? Yes No Entrance by animals? Yes No
Unlocked enclosure Access possible

p. Is well site subject to flooding? Yes No

q. Is the well site well drained? Yes No Ground around well is flat - no apparent drainage

r. Is there a buried fuel tank on the property? Yes No unknown but unlikely

If yes, is it in use abandoned

Is the location known? Yes No

Distance from the well to known buried tank _____

s. Are there any other known contaminant sources on the property?

Yes No Describe _____

If yes, specify the source: dump sewage lagoon cemetery other

Potential Source 1: AST; Distance from well to Potential Source 1: ~ 20m

Potential Source 2: _____; Distance from well to Potential Source 2: _____

Potential Source 3: _____; Distance from well to Potential Source 3: _____

Potential Source 4: _____; Distance from well to Potential Source 4: _____

t. Are there other wells on this property? Yes No

How many? _____ in use abandoned require proper sealing

EBA Engineering Consultants Ltd.

Creating and Delivering Better Solutions

2. Well and Wellhead information:

- a. When was well installed? Year 1979 Month October
- b. Type: drilled dug sand point other _____
- c. Is there a drillers log for the well: Yes No
- d. Is there a surface seal to 6 m Yes No unknown unlikely
- e. Surface casing: Yes Diameter _____ No
- f. Well casing: Diameter 15cm Material: steel plastic concrete
likely
- g. Depth of well: 63 ft measured (if possible) reported from log
- h. Static water level below ground: unknown
 measured (if possible) reported from log flowing
- i. (If granular) Is the well completed: open end casing with a well screen
 with slotted pipe unknown other _____
- j. (If bedrock) Does the well have a liner? yes No steel plastic
- k. If there is a well screen: length 3.5 ft slot size(s) 20 slot
Location of screen: from 59 ft to 62.5 ft from log reported
- l. Is there a sump below the screen? Yes No
- m. Is the well head: in pumphouse in pit pitless adaptor in a building
Concrete pit with puf plywood lid
 in a wooden enclosure other, describe _____
- n. If the well head is located in a wooden enclosure,

EBA Engineering Consultants Ltd.

Creating and Delivering Better Solutions

- i. Is the well head below grade? describe in detail ~1.4 m below grade
- ii. Are there signs of ponding on the enclosure(e.g. water stains, etc.)? Yes No
- iii. Is the wellhead enclosed by fiberglass insulations? Yes No
- iv. Any evidence of rodents? Specify Access possible
- v. Does the well casing have a proper seal cap? Yes No

If no, describe condition _____

3. Water Supplying This Well:

- a. By definition is the water from a surface water source or under the direct influence of surface water?
 Yes No farther investigation required.

If yes is there treatment or disinfection Yes No

Explain (filtration, disinfection etc...) _____

4. Aquifer Supplying This Well:

- a. The aquifer is: bedrock granular sediment unknown
- b. Does water level and/or well capacity show seasonal fluctuation? Yes No
unlikely

5. Pump Installation:

- a. Is the well equipped with a pump? yes No
- b. Type of pump: hand electric submersible jet
 shallow well centrifugal other, _____
- c. Description: Manufacturer _____ Model _____
horsepower _____ capacity _____ voltage _____

EBA Engineering Consultants Ltd.

Creating and Delivering Better Solutions

d. Date installed: _____ By: _____

e. For submersible pump, depth of setting below surface _____

f. Drop pipe for submersible pump: steel plastic *unknown, likely plastic*

g. Pump delivers water to: pressure tank elevated tank other

h. Are there automatic pump controls: Yes No

i. Is there provision for taking water samples before water reaches storage? Yes No

j. Is there a water meter on the system? Yes No

k. Is the pump and piping protected from freezing? Yes No

If yes, describe: heat trace and insulation

l. Comments on pump installation: _____

6. Conclusions

a. Comments on overall installation:

b. Recommendations: _____

EBA Engineering Consultants Ltd.

Creating and Delivering Better Solutions

PART B: EBA Site Inspection

Inspector: BELT ALBISSE

Date July 27/09

WELL ID #	Owner	Location Description
3122	YTG	BEAVER CREEK SWIMMING POOL

6. Water Treatment

- a. Is well water treated? Yes No; Type of treatment:
- chlorination iron and or manganese removal other _____
- b. Is water entering plumbing or piped distribution system treated with chlorine or another treatment that is as effective as chlorine used to achieve disinfection throughout the system?
- Yes No If so how _____
- c. If treated with chlorine, is the free residual chlorine concentration less than 0.2 mg/L
- Yes No _____ reading.
- Tested at _____ (location)
- d. Is testing for chlorine residual concentration done at the tap (eg. Kitchen faucet) or from representative points in a piped distribution system, including a point from tap at the end line
- Yes No If yes how often? _____
- e. If the drinking water is being transported by water delivery truck does it have a minimum chlorine free residual of 0.4 mg/L at the time of fill. Yes No

7. Water Quality (observations):

- a. Does the water stain plumbing? yes No slight severe
- Type of stain: brown red black
- b. Does the water contain sediment? Yes No occasional constant
- c. Is there an unpleasant odour? Yes No H₂S Other _____

EBA Engineering Consultants Ltd.

Creating and Delivering Better Solutions

- d. Is there an unpleasant taste? Yes No brackish Other _____
- e. Is there a history of bad bacterial analyses? Yes No ?
- f. Is there a chemical analysis? ? Yes No adequate incomplete
- g. Is there analysis of trihalomethanes (THMs) where the water source is a surface water supply or a well under the direct influence of surface water? Yes No
- h. Is the drinking water tested daily with an accurate reading chlorine test kit capable of reading in the range 0 to 3.5 mg/L of free chlorine residual in increments of 0.1mg/L? Yes No unknown
- i. If yes is the test performed in accordance with manufactures directions? Yes No unknown
- j. Is a record of the date, time, name of person performing the test and results of the drinking water sample kept? Yes No

TANK AND PIPING DETAILS

Tank Room

Is there a water tank? Yes No Details: PRESSURE TANKS (3)

Where is it located?

Comments: FURNACE ROOM

Is the room in which the water tank is located heated to maintain an optimum temperature of 4°C for stored water?

YES NO

Comments: _____

Are there windows in the add-on that may allow direct sunlight onto the water holding tank? YES

NO

Comments: _____

Are there other heat sources near the tank? YES NO

Comments: _____

Is there waterproof flooring with a sealed base to contain spills? YES NO

Comments: _____

Overall Tank

What are the tank size and dimensions?

What material is the tank constructed of? _____

Is tank and associated piping constructed of safe materials (i.e. CSA approved and material that does not affect the taste of the water)? YES NO

Comments: _____

Tank Inlet, Outlet and Lid

Is there adequate access on the tank for cleaning (i.e. min 15" access lid)? YES NO

Does the lid have a tight seal and is it watertight when closed? YES NO

Does the tank have an overflow or high level whistle? YES NO

Is the water tank drain accessible? YES NO

WATER TANK AND WATER QUALITY CONDITION

Are there signs of staining or biofouling? YES NO

Comments: _____

Is there any sediment or scum in bottom of tank? YES NO

Comments: _____

Is there any odour associated with the water or tank? YES NO

Have there been any bacteriological analyses conducted previously? YES NO

Does the tank appear that it has been cleaned recently? YES NO

Are the tanks easily assessed for the purpose of cleaning and disinfection? YES NO

8. Conclusions

a. Comments on overall installation:

THIS IS A PROFESSIONAL BUT OLD INSTALLATIONS. 2 OF THE TANKS HAVE SLIGHT LEAKS. THE PUMP IS VERY NOISY AND RUNS FOR A LONG TIME. IT IS WORTH NOTING THAT THIS SYSTEM HAD EARLIER BEEN SERVED BY A 2 HP SUB. PUMP. IT NOW HAS ONLY A 3/4 HP PUMP.

b. Recommendations:

REPAIR THE LEAKS. BRING INSTALLATION BACK UP TO CODE IE INSULATE THE COPPER LINES AS THEY ARE SWEATING ~~HEAVY~~ HEAVY AT THIS POINT. INSTALL TREATMENT AS DETERMINED BY THE WATER ANALYSIS TO SUIT UV TREATMENT. INSTALL APPROPRIATE UV FOR FLOW REQUIREMENT. INSTITUTE AN ANNUAL WELL MAINTENANCE PROGRAM.



FIELD REPORT

111670025

Started Oct 6 1979

Completed 19....

P.O. Box 4391

NAME AND ADDRESS OF CLIENT	DESCRIPTION OF WORK	LOCATION OF WORK
FAR WEST HOLDINGS LTD (W/W) Mine 1202 Braemar Camp		Community Hall

FORMATION LOG			DESCRIPTION OF WORK	TIME			
FROM	TO	FORMATION		DATE	FROM	TO	HOURS
			MOVE				
0'	2'	Gr	moving on setting up	Oct 6	3:00	3:30	.5
2'	18'	Till		"	3:30	6:00	2.5
18'	36'	Gr. cobbles					
16'	54'	Gr. silt	2 1/4 HA				
54'	63'	Gr.					
			setting screen	"	6:00	6:30	.5
			developing	"	6:30	7:30	1
			moving off	"	7:30	8:00	.5
			Traveling	Oct 7	8:00	3:30	7.5

Rcd. of Casing & Pipe				Remarks:
Size	Type	Size	Type	
Feet	Inch	Feet	Inch	Bottom of screen 62' 6"
59'				20 slot
				lead packer
				4 3/4 bit pin
				developed at 20 gals/min.
STATIC LEVEL				Total Rig Time 12.5 hrs.
Ground level				Total Standby hrs.
Top of casing				Drilling Mud sacks

SIGNATURES

MIDNIGHT SUN.....
TITLE.....

CLIENT.....
TITLE.....



Photo 0538: 3122 Beaver Creek Swimming Pool (left), Beaver Creek Community Club (right)



Photo 0537: 3122 Wellhead enclosure under wheelchair ramp



Photo 0535: 3122 Wellhead in pit



Photo 0539: 3122 Above ground fuel storage tank



Photo 0540: 3122 Community Club septic field



Photo 0542: 3122 Swimming pool septic field



Photo 0083: 3122 Point of entry to Community Club



Photo 0087: 3122 Pressure tanks in crawl space of Community Club