

17.0 BUILDING 3204: BURWASH LANDING FIRE HALL

17.1 Description of Existing Water Supply System

Building 3204, the Burwash Landing Fire Hall, is currently served by a water supply system that delivers water from an approximately 39.2 m deep well. The well is located in an enclosure off from the fire hall. The well location and other details about the surrounding area are provided in Figure 3204-A in Appendix A17. The coordinates of the wellhead, as measured by a handheld GPS device, were recorded as:

- UTM ZONE 7
- Northing: 6804037
- Easting: 607068

There is no treatment or disinfection system for the water supplying this system. The water system splits to serve the domestic system and the fire truck fill. There are two approximately 5000 L water storage tanks to store water used for fire fighting. A schematic detailing the water supply system is provided as Figure 3204-B in Appendix A17.

17.2 Description of Existing Wastewater Systems

The building is equipped with a sewage education tank located to the east of the fire hall. The education tank is approximately 15 m east and likely downgradient from the well. A site plan showing the septic system is given by Figure 3204-A in Appendix A17.

17.3 Water Quality Results

17.3.1 Water Quality Results from Previous Sampling

Bacteriological

Nine samples were collected from the Burwash Landing Fire Hall water system between September 2004 and June 2005 and were tested for total coliform and *E. coli* by Yukon Environmental Health Services using the presence/absence test method. Results are tabulated in Table 3204-1 in Appendix A17. Coliform bacteria and *E. coli* were reported as absent in each of the nine samples for which results are provided.

Potability

Water samples were previously collected from the Burwash Landing Fire Hall water system on September 21, 2004 and June 15, 2005. The samples were submitted to Northwest Labs in Surrey, BC and ALS Environmental in Vancouver, BC for detailed potability analyses. The results of these analyses are summarized in Table 3204-2 in Appendix A17. 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 potential indicators of contamination.

- Previous sampling reported the turbidity to be 11.1 NTU, which is in exceedence of both the CDWQG aesthetic objective of 5.0 NTU and MAC of 1.0 NTU;
- The first sampling event reported the arsenic concentration to be 0.0055 mg/L, which although is not in exceedence of the current CDWQG MAC, is in exceedence of the proposed new MAC of 0.005 mg/L. The second sampling event, however, reported the arsenic concentration to be 0.00432 mg/L, which is below the proposed MAC;
- The first sampling event reported the iron concentration to be 0.45 mg/L, which is above the CDWQG aesthetic objective of 0.3 mg/L. Supplementary sampling, however, reported the iron concentration to be 0.154 mg/L, below the CDWQG aesthetic objective;
- The first sampling event reported the manganese concentration to be 0.059 mg/L, which is above the CDWQG aesthetic objective of 0.05 mg/L. The second sampling event, however, reported the manganese concentration to be 0.0467 mg/L, below the CDWQG aesthetic objective;
- The water quality results indicated that all other health based and aesthetic objectives were met for the parameters analyzed;
- The water quality results indicated that the groundwater from which this system receives its water supply is a sodium bicarbonate type water; and,
- The hardness (as CaCO₃) was 115 mg/L during the first sampling event and 117 mg/L during the second sampling event, and is considered moderately hard.

17.3.2 Identification of Additional Analytical Testing Required

Additional analytical for the Burwash Landing Fire Hall that was identified to be included during the water system assessments is detailed below:

- As turbidity had been in exceedence of the CDWQG MAC, a sample was taken to re-test 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 29, 2005, and was submitted to ALS Environmental in Vancouver, BC for analysis. These results are summarized in Table 3204-2 in Appendix A17 and the laboratory reports are included in Appendix B.

- At 4.01 NTU, the turbidity was in exceedence of the CDWQG MAC of 1.0 NTU; and,
- The water quality results indicated that all other health based and aesthetic objectives were met for the parameters analyzed.

At the time of the water system assessment, the water was very turbulent and a strong odour was noticed due to sulphide off-gasing.

17.3.3 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 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 Burwash Landing Fire Hall is under the influence of surfacewater sources or septic wastes.

17.4 Conceptual Hydrogeology

There was no log available for review for this well. Well logs for the nearby community wells (500 m away) indicate that the wells are drawing water from a deep confined intrapermafrost aquifer overlain by 42 m to 47 m of frozen clay and silt. Recharge to this aquifer is likely melting snow and glaciers, and precipitation on the eastern flank of the Kluane Range. At a depth of 39 m, the fire hall well is most likely completed within the

same aquifer. The inferred presence of a significant confining layer provides protection of the aquifer from surface sources of contamination. Groundwater flow direction in this area is expected to be north to northeast towards Kluane Lake.

17.5 Potential Contaminant Sources

Potential contaminant sources from observations during the water system assessment are compiled in field notes in Appendix A17. Photos of potential contaminant sources are also provided in Appendix A17.

Potential contaminant sources within 30 m of the wellhead include:

- One above ground fuel storage tank (AST).
- A sewage education tank is located 15 m away from the well.

17.5.1 Spills Records and Contaminated Sites Search Results

It was reported that on November 10, 1998, a spill occurred at a gas station in Burwash Landing near this site. Approximately 3800 L of diesel fuel spilled from Burwash Fuels when a valve was left on and the fuel ran down approximately 400 m towards Kluane Lake likely within 100 m of the fire hall well.

Due to the proximity of the spill to the site, and the inferred confined and protected nature of the aquifer (based on an understanding of the lithology from other well logs for the area), it is not anticipated that this is a cause of concern to the water quality delivered from this well.

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

17.6 Identified Water System Deficiencies and Associated Risk

17.6.1 High and Medium Risk Deficiencies

- Poor surface completion of the wellhead (located in an enclosure 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 the well depth is unknown, and the well construction does not meet the requirements of the Guidelines for Water Well Construction;
- The well is located within 30 m of potential contaminant sources, including an above ground fuel storage tank at 4 m;
- The turbidity has been reported to be in exceedence of the CDWQG MAC. Turbidity has been reported to be as high as 11.1 NTU; and,
- There is no treatment or disinfection system.

17.6.2 Low Risk Deficiencies

- It has been reported that a spill had occurred at Burwash Fuel with discharge possibly coming within 100 m of the well;
- There is a sewage education tank located 15 m from the well; and,
- The heat trace installation is not up to standards.

17.7 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).

17.7.1 Priority 1

An attempt should be made to locate the well log for this well to verify well construction and aquifer vulnerability.

The following recommendations are provided in order to mitigate deficiencies that are of immediate concern for the Burwash Landing Fire Hall. Priority 1 remedial recommendations include:

- The casing should be extended to at least 500 mm above the base of the well pit.
- The well and water system should be superchlorinated, and a chlorination tap installed at the wellhead to facilitate future superchlorination.
- Disinfection treatment consisting of filtration to 1 micron absolute, and a UV system that is NSF/ANSI certified should be installed. Alternatively, a proportional feed chlorination system with retention tanks and appurtenances could 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.

17.7.2 Priority 2

All significant issues addressed through Priority 1 upgrades, and therefore, there are no Priority 2 upgrades required.

17.7.3 Priority 3

Priority 3 upgrades would include replacing the heat trace to meet the electrical code. A certified electrician should complete this work.

17.8 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.

17.8.1 Priority 1

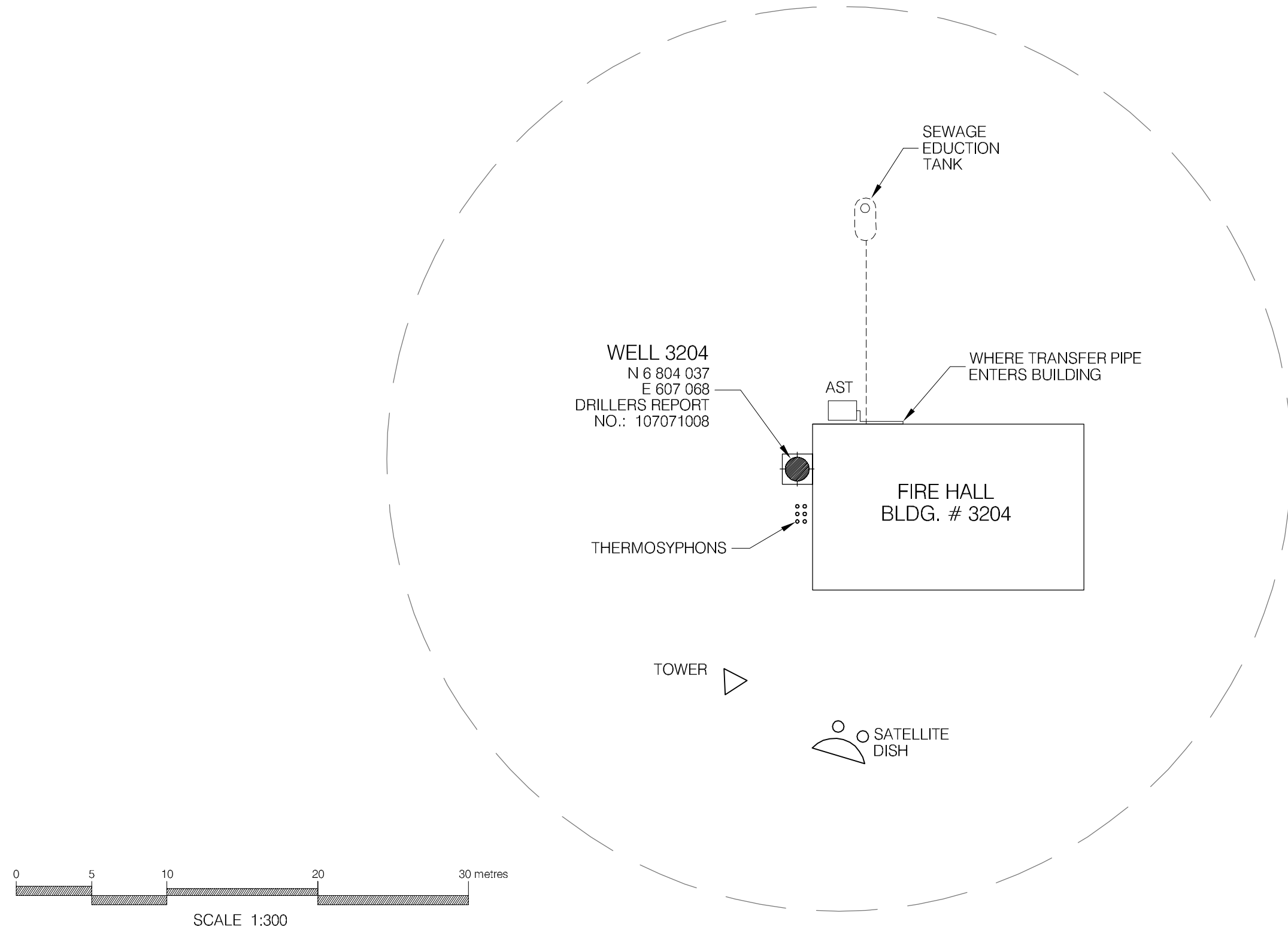
The estimated costs for the recommended Priority 1 upgrades are detailed below:

- Casing extension - **\$500**;
- Well and water system superchlorination and installation of chlorination tap- **\$400**; and,
- UV system installation with filtration to 1 micron absolute would cost approximately **\$3,000** including materials and labour. It is not anticipated that pre-treatment (i.e. softening) would be required for optimum UV performance.


Consideration should be given to completing a camera investigation and well cleaning and re-development at the time of the upgrades. The sulphur odour and off gassing could be a result of biological activity (biofouling) within the well screen and aquifer formation.

17.8.2 Priority 3

The estimated cost for an electrician to rewire and install the heat trace to code is approximately **\$500**.




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.

0	ISSUED FOR CLIENT REVIEW	DD/MM/YY	XXX	
No.	DESCRIPTION	DATE	APPROVED	
	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:

**Yukon**
Highways and Public Works
Property Management Branch

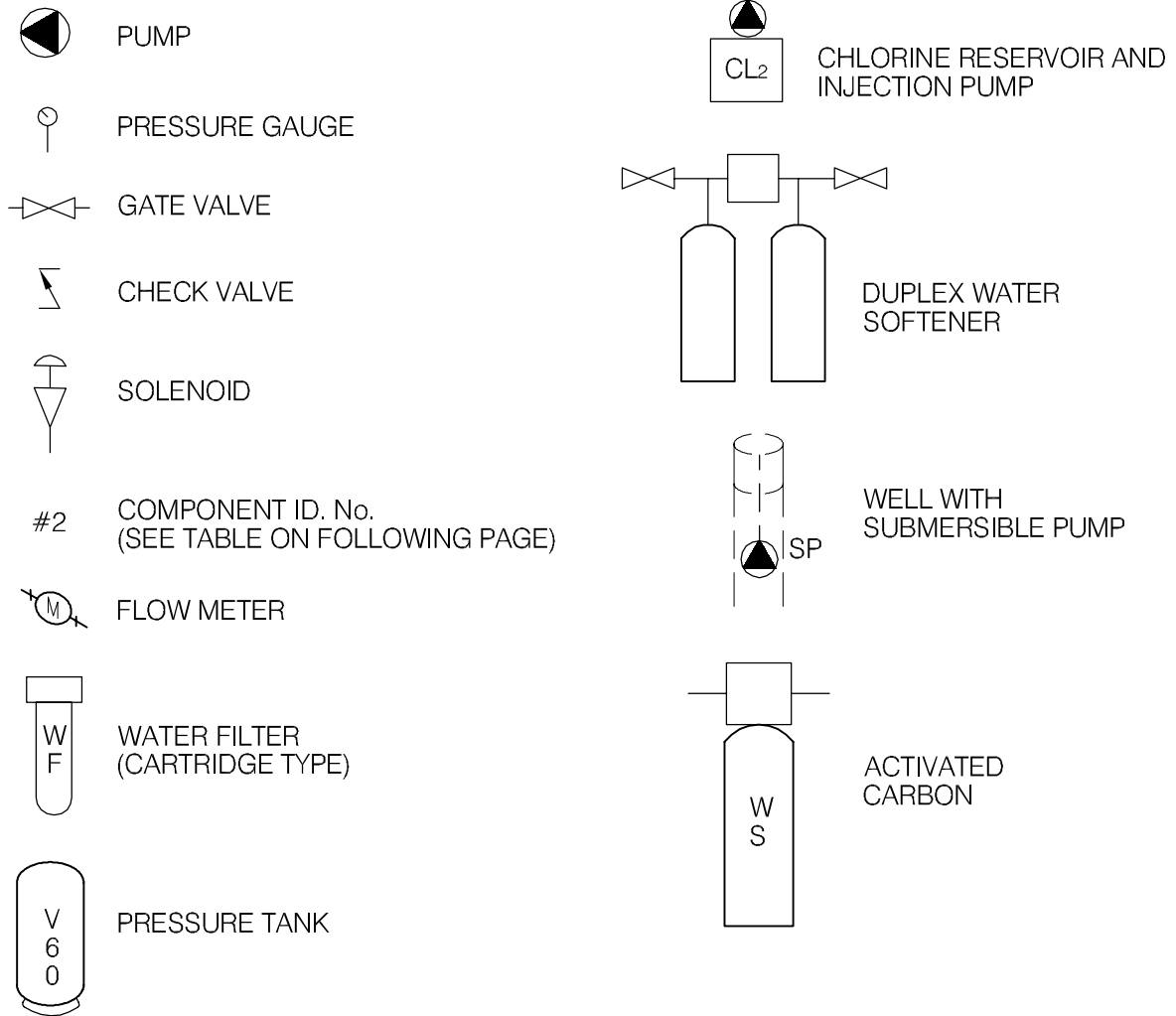
SMALL PUBLIC WATER SYSTEMS ASSESSMENT
WESTERN REGION

GOVERNMENT OF YUKON
HIGHWAYS & PUBLIC WORKS

BURWASH LANDING FIRE HALL
BUILDING # 3204
SITE LOCATION DIAGRAM
WELL ID: 3204

REVISION ISSUE
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FIGURE No.
FIGURE 3204-A

LEGEND



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CLIENT

Yukon
Highways and Public Works
Property Management Branch

PROJECT

SMALL PUBLIC WATER SYSTEMS ASSESSMENT
WESTERN REGION

TITLE

SCHEMATIC SYSTEM
LEGEND

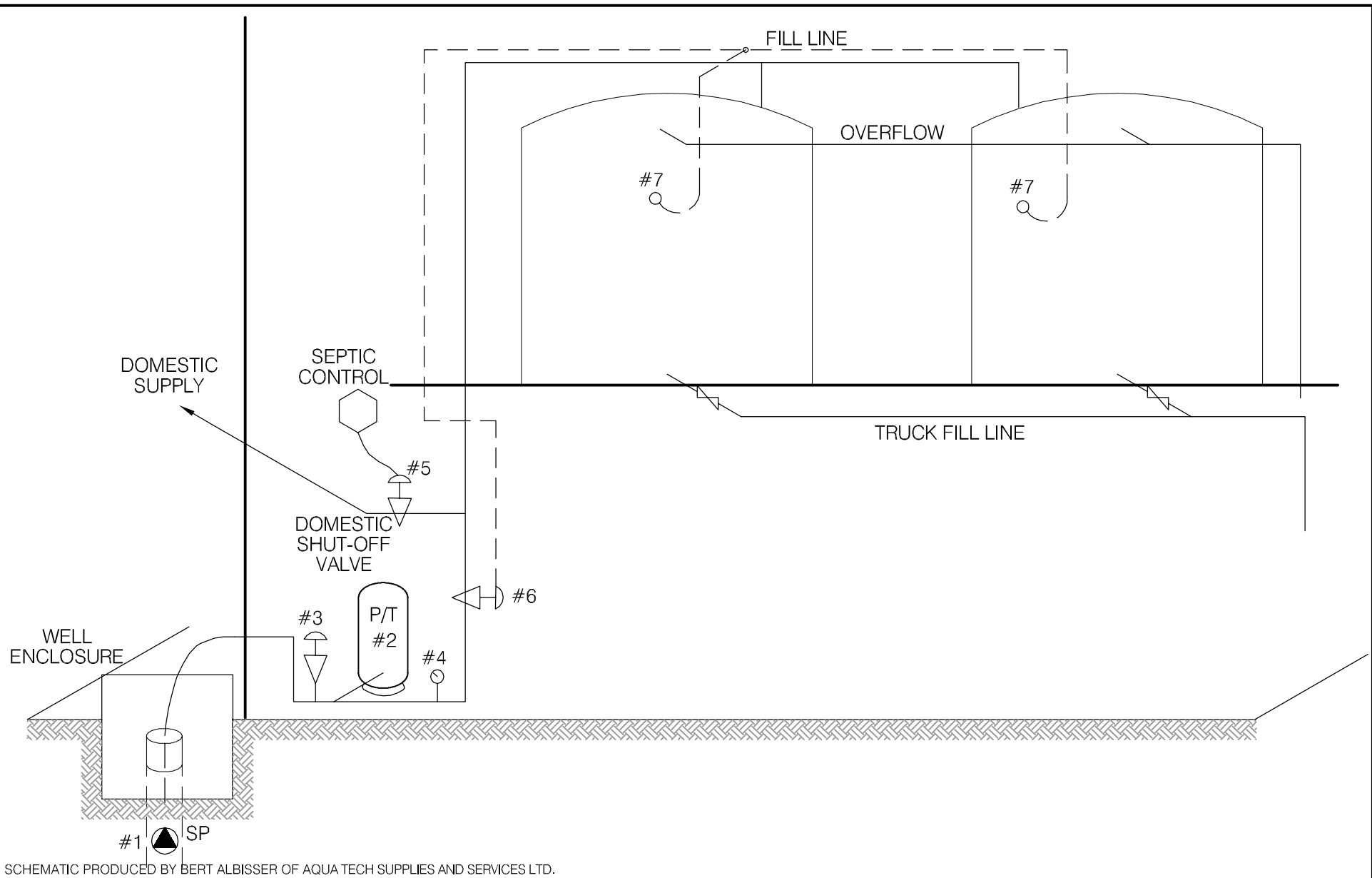
DATE APRIL 2006



DWN. JSB

CHKD. RMM

FILE NO. 1260002

DRWG. LEGEND



 EBA Engineering Consultants Ltd.		PROJECT SMALL PUBLIC WATER SYSTEMS ASSESSMENT WESTERN REGION	
CLIENT  Yukon Highways and Public Works Property Management Branch		TITLE WATER SYSTEM DISTRIBUTION/TREATMENT SCHEMATIC SYSTEM ID.: 3204 BURWASH LANDING FIRE HALL	
DATE	SEPT. 2005	DWN.	JSB
CHKD.	RMM	FILE NO.	1260002.003
		DWG.:	FIGURE 3204-B

**Western Region – Burwash Firehall
Building # 3204**

DISTRIBUTION & TREATMENT SYSTEM DATA

Item	Description	Manufacturer	Model	Part No.	Serial No.	Size
1	SUB PUMP	GRUNDFOS	15SQ07B		P10105	3" - 3/4" AP
2	PRESSURE TANK	CON-AIR	SOA80-P		1188	
3	PRESSURE SWITCH	SQUARE D	FSG-Z			2" - 1/4" NPT
4	PRESSURE GAUGE	MARSH	0-100 PSI			2" - 1/4" NPT
5	PUMP SHUTOFF	JOHN'S SALES	SEPTIC CONTROL		ASCO 1"	SOLENOID
6	TANK FILL CONTROL		S211AFO2N5FG9E			1" S/WALVE
7	FILL FLOAT CONTROL	STL	PUMPMASTER PUMPUP			115/230V
8						
9						
10						

TABLE 3204- 1: SUMMARY OF BACTERIOLOGICAL RESULTS

		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?
Building #	Building Name							
3204	Burwash Landing Fire Hall	9	Sept-04 to Jun-05	no	0/9	no	16-Jun-05	no



Table 3204-2: Water Quality Results

SOURCE:		Building 3204 - Burwash Landing Fire Hall			GCDWQ Criteria		
Location/ Resident		Burwash Landing					
Address							
Treatment		None					
Disinfection		None					
Source of Water		On-site well					
Purpose of Sampling		Base Line	Base Line	Additional Analytical			
Sample Location				Washroom tap			
Date Sampled		21-Sep-04	15-Jun-05	28-Jul-05	Lower	Upper Limit	
Physical Tests (ALS)					AO	MAC	AO
Colour (CU)		10	<5.0	-			15
Conductivity (uS/cm)			365	-			
Total Dissolved Solids		206	218	-			500
Hardness CaCO3		115	117	-	AO >200 = poor, > 500 unacceptable ^A		
pH		8.38	8.26	-	6.5		8.5
Turbidity (NTU)		9.8	11.1	4.01		1	5
UV Absorbance				0.0700			
% UV Transmittance				85.1			
Dissolved Anions (ALS)							
Alkalinity-Total CaCO3		148	165	-			
Chloride Cl		1.2	1.15	-			250
Fluoride F		0.18	0.257	-		1.5	
Silicate SiO4				-			
Sulphate SO4		42.2	39.0	-			500
Nitrate Nitrogen N		0.1	<0.10	-		10	
Nitrite Nitrogen N		<0.05	<0.10	-		3.2	
Ammonia Nitrogen N				-			
Total Phosphate PO4				-			
Total Metals (ALS)							
Aluminum T-Al		0.047	0.017	-			
Antimony T-Sb		<0.0002	<0.00050	-		0.006	
Arsenic T-As		0.0055	0.00432	-		0.025	
Barium T-Ba		0.018	<0.020	-		1	
Boron T-B		0.504	0.41	-		5	
Cadmium T-Cd		<0.00001	<0.00020	-		0.005	
Calcium T-Ca			22.0	-			
Chromium T-Cr		0.0006	<0.0020	-		0.05	
Copper T-Cu		0.017	0.0034	-		1	
Iron T-Fe		0.45	0.154	-			0.3
Lead T-Pb		0.001	<0.0010	-		0.01	
Magnesium T-Mg			15.0	-			
Manganese T-Mn		0.059	0.0467	-			0.05
Mercury T-Hg			<0.00020	-		0.001	
Potassium T-K			2.79	-			
Selenium T-Se			0.0014	-		0.01	
Sodium T-Na		34.4	37.2	-			200
Uranium T-U		<0.0005	0.00015	-		0.02	
Vanadium T-V				-			
Zinc T-Zn		0.011	<0.050	-			5
Organic Parameters							
Tannin and Lignin				0.31			
Total Organic Carbon C				11.6			
Field Chemistry (EBA)							
pH				Undetectable	6.5		8.5
TDS (ppm)				due to			500
EC (uS/cm)				turbulence			
Temperature (°C)							
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)



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SMALL PUBLIC WATER SYSTEM ASSESSMENT

PART A: EBA Site Inspection

Inspector: Ryan Martin, Luke Lebel

Date July 28, 2005

WELL ID #	Owner	Location Description
3204	YTS	Burwash Fire Hall

1. Well Location and Potential Contaminant Sources

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

Burwash Landing

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

c. GPS location: N 68 040 37 E 607068 elev 808m \pm 8m

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 _____

Burwash Landing Fire Hall

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

g. Nearest building, specify Located in enclosure off from basement

h. Distance from well to building 1m - in add-on to building
likely constructed at same time as building

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

j. Distance from well to nearest point of known field: _____

k. Well location relative to field: ☐ upslope ☐ downslope ☐ lateral

WELL IS UPSLOPE OF SEWAGE COLLECTION TANK

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- 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

sewage eduction tank @ 15 m

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

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

- 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

- p. Is well site subject to flooding? ☐ Yes ☒ No

- q. Is the well site well drained? ☒ Yes ☐ No

- r. Is there a buried fuel tank on the property? ☐ Yes ☒ No

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 above ground AST heating oil tank

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

Potential Source 1: _____; Distance from well to Potential Source 1: _____

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

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2. Well and Wellhead information:

a. When was well installed? Year _____ Month _____

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 _____ Material: ☐ steel ☐ plastic ☐ concrete

g. Depth of well: 39.15 ☐ measured (if possible) ☐ reported ☐ from log
↳ MAY BE PUMP

h. Static water level below ground: 6.10m

☒ 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 _____ slot size(s) _____
Location of screen: from _____ to _____ 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

↳ building add-on - put in aluminum siding - put plywood floor
☒ in a wooden enclosure other, describe _____

n. If the well head is located in a wooden enclosure,

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- i. Is the well head below grade? describe in detail _____
- 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 None
- 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

↳ based on hydrogeology of area

- b. Does water level and/or well capacity show seasonal fluctuation? ☐ Yes ☐ No ?

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 _____

see Bert's notes

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d. Date installed: _____ By: _____

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

f. Drop pipe for submersible pump: ☐ steel ☒ 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: insulated add-on beside building

l. Comments on pump installation: _____

6. Conclusions

a. Comments on overall installation:

below grade and taking surface seal,
however; based on lithology → silt & till,
likely tight bond between casing and
formation; otherwise - installation is good.
Note: strong sulphur odour; off gassing of
water, likely SO₂ - perhaps caused
by biofouling

b. Recommendations: _____

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PART B: EBA Site Inspection

Inspector: BERT ALBISSEN

Date _____

WELL ID #	Owner	Location Description
3204	YTG	BUEWASH LANDING FIRE HALL

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 _____

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- 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 TANK.

Where is it located?
Comments: MECHANICAL ROOM. FIRE STORAGE UPSTAIRS

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?

2 x 1250 87 ϕ x 65" H.What material is the tank constructed of? POLYETHYLENEIs 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 LidIs there adequate access on the tank for cleaning (i.e. min 15" access lid)? ☒ YES ☐ NODoes the lid have a tight seal and is it watertight when closed? YES ☒ NODoes the tank have an overflow or high level whistle? ☒ YES ☐ NOIs 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 ☐ NOHave there been any bacteriological analyses conducted previously? YES ☐ NO ☒Does the tank appear that it has been cleaned recently? YES ☒ NOAre the tanks easily assessed for the purpose of cleaning and disinfection? ☒ YES ☐ NO

8. Conclusions

a. Comments on overall installation:

OVERALL INSTALLATION IS ACCEPTABLE WITH THE
FOLLOWING EXCEPTIONS.
FILL PIPING IS LOOSE.
PUMP HEAT TRACE INSTALLATION DOES NOT MEET CODE.

b. Recommendations:

INSTALL WATER TREATMENT AS REQUIRED BY
WATER ANALYSIS FOR UV PRETREATMENT.
INSTALL UV FOR DOMESTIC WATER SUPPLY
AT ONCE. UV MUST MEET (NSF55 CERTIFICATION)
INITIATE BI ANNUAL WWM MAINTENANCE
PROGRAM.
INITIATE REGULAR CLEANING SCHEDULE
FOR FICE STORAGE TANKS.



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Enforcement and Emergencies Section
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Spill Report Information

Spill #	9846
Jurisdiction	Yukon
Community	Burwash Landing
Address	
Highway	
Milepost	
Feature	Burwash Landing
Location and Cause	Burwash Landing Garage - Burwash Fuels - valve left on on 10,000 ga fuel storage tank
Latitude	61.358
Longitude	-139.0065
Incident Date	11/10/1998
Lead Agency	Yukon Government - Fire Marshall
Other Agency	
Company(s)	
Amount	1000
Units	Gallons (US, liquid)
Quantity	Estimate
Release Description	Spilled
Additional Quantit	
Concentration	
Concentration Unit	
Phase	Liquid
Major Contaminant	Diesel
2nd Contaminant	
3rd Contaminant	
4th Contaminant	
Outcome	fuel running down road 1/4 mile towards Lodge - not threatening lake - Ollie to put 'speedy dry' on spill tomorrow - is on frozen ground - YG-FM to investigate further



Photo 0581: 3204 Burwash Landing Fire Hall.
Note: well enclosure on (right), AST (middle), septic (front).



Photo 0585: 3204 Water storage tanks



Photo 0577: 3204 Pressure tank.