

KILLALOE WATER TREATMENT FACILITY 2008 ANNUAL REPORTS

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**Ontario Clean Water Agency
Agence Ontarienne Des Eaux**

Foreword

This document contains three different annual reports required for the Killaloe Water Treatment Facility;

- Section 11 Annual Report, as per Section 11 of Ontario Regulation 170/03
- Summary Report as per Schedule 22 of the Ontario Regulation 170/03
- Summary of the raw water values that were submitted to the Ministry of the Environment under the Ontario Regulation 387/04 (Water Taking and Transfer).

Section 12 of O.Reg 170/03, requires both the Summary Report and the Annual Report be made available for inspection by any member of the public during normal business hours, without charge. These reports are to be made available for inspection at the office of the municipality.

Summary Report 2008

**KILLALOE WATER TREATMENT FACILITY
2008 SUMMARY REPORTS FOR MUNICIPALITIES**

Report

This report is a summary of water quality information for the Killaloe Water Treatment Facility, published in accordance with Schedule 22 of Ontario's Drinking-Water Systems Regulation for the reporting period of January 1, 2008 to December 31, 2008. The Killaloe Water Treatment Facility is categorized as a Large Municipal Residential Drinking Water System.

This report was prepared by the Ontario Clean Water Agency on behalf of the Township of Killaloe, Hagarty and Richards.

Who gets a copy of the Report:

- in the case of a drinking-water system owned by a municipality, the members of the municipal council;

What must the Report contain?

The report must,

- (a) list the requirements of the Act, the regulations, the system's approval and any order that the system **failed to meet** at any time during the period covered by the report and specify the duration of the failure; and
- (b) for each failure referred to in clause (a), describe the measures that were taken to correct the failure.

The following table lists the requirements that the system failed to meet and the measures taken to correct the failure:

Drinking Water Legislation	List the requirement(s) the system failed to meet	Specify the duration of the failure (i.e. date(s))	Describe the measures taken to correct the failure	Status (complete or outstanding)
170/03	Treated Water Sodium	January 10, 2008	Resample and test. No further action required by Health Unit	Completed

The Ministry of Environment 2008 inspection report noted the following:

Item #	Item	Action Taken to Address Item	Current Status (Complete, In progress)
1	Broad and non-specific source protection requirements were prescribed in Certificate of Approval Number 8497-79SRVZ issued December 19, 2007. Conditions 6.5 (vii), 6.5 (viii) and 6.5 (ix) of Certificate of Approval Number 8497-79SRVZ prescribes that the operations manual shall include at a minimum, an inspection schedule for all wells associated with the water	Update the schedule in Hansen to include the monitoring well. Develop inspection and maintenance procedures. Confirm in writing when procedures are completed	Complete

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	<p>treatment system(s), including all production wells, standby wells, test wells and monitoring wells; defined well inspection and maintenance procedures for the entire well structure of each well, including all above and below grade well components; and remedial action plans for situations where an inspection indicates non-compliance with respect to regulatory requirements and/or risk to raw well water quality. It was noted that the monitoring well is not included in the inspection schedule. OCWA reported that a private well owned by a resident of the Village of Killaloe is also used as a monitoring well. This private well is also not included in the inspection schedule. OCWA advised that the inspection schedule for the production well involves an annual inspection followed by 5-year and 10-year inspection frequency. OCWA also advised that Dave Boyd, who is an OCWA employee, is a licensed Well Technician and performs the well inspections and maintenance procedures. The owner and operating authority shall ensure that the monitoring wells are included in the inspection schedule and are routinely inspected and maintained as stipulated by Condition No. 6.5 (vii) of Certificate of Approval Number 8497-79SRVZ.</p> <p>Action(s) Required: By no later than May 26, 2008, provide to the undersigned Provincial Officer, for her review and acceptance, the following:</p> <p>(a) a written inspection schedule for all wells associated with the water treatment system, including the production well and the monitoring wells;</p> <p>(b) written defined well inspection and maintenance procedures for the entire well structure of each well (production well and monitoring wells), including all above and below grade well components; and,</p> <p>(c) written confirmation that the above procedures have been included in the operations manual in accordance with Condition No. 6.5 of Certificate of Approval Number 8497-79SRVZ.</p>		
2	<p>The owner did not ensure that equipment was installed in accordance with the Certificate of Approval.</p> <p>During the course of the physical inspection, the water treatment plant was toured and the installed equipment was noted. The equipment observed appeared to agree with the equipment described in Certificate of Approval Number 8497-79SRVZ, except for the following:</p>	<p>Draft a letter to the Approvals branch outlining the listed equipment as requested.</p>	<p>Complete</p>

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	<p>- the C of A does not include the two (2) 200 L storage tanks labeled sodium carbonate (which were empty at the time of the inspection as it is currently not in use);</p> <p>- the potassium permanganate chemical feed system consists of only one (1) - 100 L storage tank (not 2) that is not equipped with a mixer and one (1) chemical metering pump rated at 13.2 Upr; and,</p> <p>- the C of A does not include the citric acid which is used to clean the UV reactors once every 3 months.</p> <p>As previously identified, Certificate of Approval Number 8497-79SRVZ only described the treated water flow measuring device and not the raw water flow measuring device.</p> <p>Action(s) Required: By no later than May 26, 2008, provide to the undersigned Provincial Officer, for her review and acceptance, a copy of a letter prepared by the owner and/or operating authority informing the Ministry's Approvals and Licensing Section of the Safe Drinking Water Branch of the discrepancies in the description of the existing works in Certificate of Approval Number 8497 -79SRVZ; and requesting that the Ministry's Approvals and Licensing Section maintain this information on file and make the necessary changes the next time that the owner and/or operating authority submits an application for approval for modifications to the drinking-water system.</p>		
3	<p>The owner did not have up-to-date plans for the drinking-water system in accordance with the Certificate of Approval. Conditions 6.7,6.8 and 6.9 of Certificate of Approval Number 8497-79SRVZ relate to Drawings and stipulate that up-to-date process flow diagrams (PFD) and process and instrumentation diagrams (P&ID) for the treatment system shall be kept on site at the drinking-water system; all drawings and diagrams in the possession of the owner or operating authority that shows the treatment system as constructed shall be retained; and an alteration to the treatment system shall be incorporated into PFD, P&ID, and record drawings and diagrams within one year of the substantial completion of the alteration and shall be retained and shall be made readily available for inspection by ministry staff.</p> <p>It was reported that the as-built plans for the recent upgrades to the treatment system are not available at the Killaloe WTP, as they have not been received from TSH Associates. It has been over a year since completion of the most recent upgrades to the treatment system; therefore, the owner or</p>	Track down Process flow diagrams. If unavailable draw detailed drawing of the facility.	Complete

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	<p>operating authority should have possession of up-to-date drawings and diagrams of the treatment process. Action(s) Required: By no later than May 26, 2008, provide to the undersigned Provincial Officer, for her review and acceptance, a timeline for when the as-built plans / up-to-date PFD and P&ID for the most recent upgrades to the treatment system will be completed and made available at the Killaloe WTP.</p>		
4	<p>The operations and maintenance manuals did not meet the requirements of the Certificate of Approval. Certificate of Approval Number 8497-79SRVZ defines minimum requirements for the drinking-water system's Operations Manual that are in addition to those contained within Ontario Regulation 128/04. According to the Certificate of Approval for the system, the Operations Manual shall include at a minimum the following components:</p> <ul style="list-style-type: none"> i. the requirements of this approval and associated procedures; ii. the operation and maintenance recommendations from the most recent engineers' report; iii. procedures for the monitoring and recording of in-process parameters necessary for the control of the treatment system and assessing the performance of the drinking-water system; iv. procedures for the operation and maintenance of monitoring equipment; v. contingency plans and procedures for the provision of adequate equipment and material to deal with emergencies, upset and equipment breakdown; vi. procedures for the dealing with complaints related to the drinking-water system, including the recording nature of the complaint and any investigation and corrective action taken in respect of the complaint; vii. an inspection schedule for all wells associated with the water treatment system, including all production wells, standby wells, test wells and monitoring wells; viii. defined well inspection and maintenance procedures for the entire well structure of each well, including all above and below grade well components; ix. remedial action plans for situations where an inspection indicates non-compliance with respect to regulatory requirements and/or risk to raw well water quality. <p>A review of the Operations Manual for the</p>	Refer to item #1	Refer to item #1

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	<p>Killaloe WTP found that the manual did contain all of the components required by the Certificate of Approval; except that the inspection schedule for the production well did not include the monitoring wells.</p>		
5	<p>Continuous water quality analyzers and indicators with alarm systems were not calibrated, maintained and operated in accordance with the manufacturer's instructions or the regulation. It was reported that the continuous water quality analyzers are checked every few days by certified operators as part of their rounds. The results of the continuous analyzers are compared against the results of grab samples using a portable analyzer, and the continuous analyzer is adjusted and/or calibrated by the certified operator if necessary. It was documented that all the analyzers are typically cleaned and calibrated once a month. Work Orders are generated by OCWA's WMMS system, on which operators record all preventative maintenance activities, including the cleaning and calibrating of continuous water quality analyzers. A review of the "Analyzer Verification/Calibration Summary" was conducted from January 1, 2007 to January 21, 2008. The continuous water quality analyzers were most recently checked, cleaned and/or calibrated in December 2007. However, it was noted that this did not include the UV disinfection units. All sensors that constitute part of the UV monitoring system must be calibrated at a frequency that maintains their necessary sensitivity and reliability in ensuring that the design UV dose is being achieved in accordance with Section 6.1.4 of the Procedure for Disinfection of Drinking Water in Ontario and Section 6-5 of Schedule 6 to Ontario Regulation 170/03. Calibration frequencies are to be determined by the manufacturer's instructions.</p> <p>Action(s) Required: By no later than May 26, 2008, provide to the undersigned Provincial Officer, for her review and acceptance, a copy of a calibration/verification certificate documenting that all the sensors that constitute part of the UV monitoring system have been calibrated/verified at a frequency determined by the manufacturer's instructions, ensuring that the design UV dose is being achieved.</p>	<p>Calibrate the UV intensity meters on both UV systems</p> <p>Must be completed by the manufacturer and has been submitted for capital as the manufacturers instructions state annually.</p>	Complete
6	<p>The following instances of non-compliances were also noted during the inspection: The low level alarm setting on the chlorine residual analyzer monitoring the treated water does not meet the requirements of Schedule 6 to O. Reg. 170/03. The general SOP identifies that a CT value of 133.5 mg/L.min is calculated under</p>	<p>Review and improve CT SOP and then assess the alarm set-points.</p>	Complete

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<p>limiting conditions (based on a maximum pH of 7.6, minimum temperature of 5 degrees Celsius, design maximum flow rate 418 Umin, minimum clearwell operating level and a free chlorine residual of 0.9 mg/L). The SOP identifies that a free chlorine residual of 0.9 mg/L is required to achieve the calculated CT value under limiting conditions. It was reported that the low level alarm setpoint of 0.4 mg/L is based on the worst case scenario. However, a review of the Daily PDC Reports during the inspection period showed a minimum free chlorine residual of 0.22 mg/L was recorded in the treated water. Therefore, the low level (minimum) alarm set point should be 0.1 mg/L less than the free chlorine residual that is required to achieve primary disinfection using chlorination in the reservoir.</p> <p>Action(s) Required: By no later than May 26, 2008, provide to the undersigned Provincial Officer, for her review and acceptance, a written procedure documenting that the low level alarm setting on the continuous free chlorine residual analyzer monitoring the treated water meets the requirements of Schedule 6 to Ontario Regulation 170/03.</p>	
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What else must the Report contain?

The report must also include the following information for the purpose of enabling the owner of the system to assess the capability of the system to meet existing and planned uses of the system:

1. A summary of the quantities and flow rates of the water supplied during the period covered by the report, including monthly average and maximum daily flows and daily instantaneous peak flow rates.
2. A comparison of the summary referred to in paragraph 1 to the rated capacity and flow rates approved in the system's approval.

Attached please find a copy of the Annual Record of Water Taking for the Killaloe Water Treatment Facility. This document contains all required flow information.

When Does the Report Get Submitted?

If a report is prepared for a system that supplies water to a municipality under the terms of a contract, the owner of the system shall give a copy of the report to the municipality by March 31.

End

Personal information contained on this form is collected under the authority of the Ontario Water Resources Act, Section 20. The Purpose of the form is to record details and information about the taking of water annually. Questions should be directed to the respective hub office in your area.

Les renseignements personnels qui figurent dans le présent formulaire sont recueillis en vertu de l'article 20 de la Loi sur les ressources en eau de l'Ontario. Ce formulaire sert à dossiers les détails et les renseignements concernant la prise d'eau annuelle. Prière d'adresser toutes questions au personnel du bureau régional de votre secteur.

Year(Année): 2008 Permit No.(N° de permis): 6713-62X4ER Source: Well Water
 Location: RW - Raw Water

Name of Permittee: Mailing Address:
Nom du titulaire du permis Adresse postale

Location Of Taking: Twp. or Municipality: Concession: Lot:
Lieu de la prise d'eau Canton ou municipalité
 Township of Killaloe Hagarty and Richards

Rated Capacity(m3/day) Peak Daily Rate Of Taking(L/sec) Peak Daily Rate of Taking (L/min)
capacité nominale Debit de pointe journalier Debit de pointe journalier
 601.92 0 636.0

	Jan/2008	Feb/2008	Mar/2008	Apr/2008	May/2008	Jun/2008	Jul/2008	Aug/2008	Sep/2008	Oct/2008	Nov/2008	Dec/2008	<-- Total -->	<-- Avg. -->	<-- Max. -->	<-- Criteria-->
Total Hrs of Taking	139.3	138.5	176.5	206.0	175.3	203.1	221.0	207.4	135.5	116.6	119.5	132.1	1,970.8	164.23	221.0	
Total Amt of Taking(m3)	2,764.0	2,879.0	3,482.0	4,169.0	3,356.0	3,596.0	4,058.0	4,198.0	2,785.0	2,352.0	2,382.0	2,589.0	38,610.0	3,217.5	4,198.0	
Avg Daily Taking(m3)	89.16	99.28	112.32	138.97	108.26	119.87	130.9	135.42	92.83	75.87	79.4	83.52		105.48		601.92
%Rated Capacity(Avg. Daily Taking)	14.81	16.49	18.66	23.09	17.99	19.91	21.75	22.5	15.42	12.6	13.19	13.87				
Max Daily Flow(m3)	191.0	148.0	142.0	191.0	176.0	157.0	177.0	204.0	213.0	147.0	164.0	159.0			213.0	601.92
%Rated Capacity(Max Daily Flow)	31.73	24.59	23.59	31.73	29.24	26.08	29.41	33.89	35.39	24.42	27.25	26.42				
Avg Daily Rate of Taking(L/sec)	5.56	5.75	5.53	5.58	5.3	4.95	5.11	5.64	5.7	5.56	5.54	5.41		5.47		
Peak Daily Rate of Taking(L/sec)				6.7	6.8	6.9	6.8	6.9	6.8	6.0	5.7	5.7			6.9	0
Peak Daily Rate of Taking(L/min)	361.11	366.67	383.33	402.0	408.0	414.0	408.0	414.0	408.0	360.0	342.0	342.0			414.0	636.0
%Peak Daily Rate of Taking(L/min)	56.78	57.65	60.27	63.21	64.15	65.09	64.15	65.09	64.15	56.6	53.77	53.77				

Section 11 Annual Report
2008

Drinking-Water Systems Regulation O.Reg. 170/03

Section 11 Annual Report

System Information

Drinking Water System Name:	Killaloe Water Treatment Plant
Drinking Water System Number:	220006026
System Owner:	Township of Killaloe, Hagarty and Richards
Operating Authority:	Ontario Clean Water Agency
Drinking Water System Category:	Large Municipal Residential
Reporting Period:	January 1, 2008 – December 31, 2008

Summary Report (170/03 Schedule 22) will be available for inspection at:

Township of Killaloe, Hagarty and Richards 1 John Street Killaloe, ON K0J 2A0
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List all Drinking Water Systems which receive all of their drinking water from your system:

Name	Drinking Water System Number
No other systems receive water from this system	

Provide a brief description of the system:

Killaloe Water Treatment Plant is a single well, groundwater system equipped with greensand contactors that provide iron and manganese removal. Pre disinfection is provided using Ultraviolet light and post disinfection is provided by sodium hypochlorite. pH adjustment equipment is installed but not required.

What Treatment Chemicals were used during the reporting year:

Chemical Name	Use	Supplier
Potassium Permanganate	Contactor	Cariox
Sodium Hypochlorite	Disinfection	D.H Jutzi

Summary of any reports made to the Ministry under subsection 18 (1) of the Act or section 16-4 of Schedule 16:

DATE	AWQI #	Cause			Corrective Action Taken
		Parameter	Result	Exceedance of	
January 7, 2008	77288	Distribution Sodium	27 mg/L	Nothing	Not reportable because sample was collected in the Distribution system
January 10, 2008	77342	Treated Sodium	28 mg/L	170/03	Resample and test. No further action required by Health Unit.

Does your Drinking-Water System serve more that 10 000 people?

YES

NO

If yes, is your annual report available to the public at no charge on a web site on the internet?

YES

NO

Indicate how you notified system users that your annual report is available, and is free of charge?

- Via Township of Killaloe, Hagarty and Richards internet website

Regulatory Sample Results Summary

Microbiological Testing (170/03, Sch.10, Sch.11 or Sch.12):

	# of E-coli Samples Taken	E-Coli Results (min-max)	# of Total Coliform Samples Taken	Total Coliform Results (min-max)	# of HPC Samples Taken	HPC Results (min-max)
Raw	53	0-0	53	0-0	N/A	N/A
Treated	53	0-0	53	0-0	52*	0-65
Distribution	108	0-0	108	0-0	106*	0-31

*March 11 - Laboratory error, treated water and distribution samples tested for Background instead of HPC

Treated Bkg result = 0 cfu/100mL

Distribution Bkg results = 0-1 cfu/100mL

Operational Testing (170/03, Sch.7, Sch.8 or Sch.9):

NOTE: 8760 samples indicates an on-line analyzer

On-Line

	Range of Results (min # - max #)
Treated Turbidity	0 – 2.15 NTU
Treated Free Chlorine	0.4 – 2.17 mg/L
Fluoride	Not added at this facility

In-House

Parameter	# of grab samples taken	Range of Results (min # - max #)
Treated Free Chlorine	250	0.67 – 1.47 mg/L
Treated Turbidity	250	0.08 – 0.13 NTU
Treated Colour	104	0-0 TCU
Treated pH	104	7.49 – 7.65
Iron	104	0.002 – 0.01 mg/L
Manganese	104	0.017 – 0.044
Potassium	104	0.07 – 0.088 mg/L
Distribution Free Chlorine	108	0.28 – 1.25 mg/L

Laboratory

Parameter	# of grab samples taken	Range of Results (min # - max #)
Fluoride	Fluoride is not used at this facility	
Treated Alkalinity	12	237 – 249 mg/L

Treated Colour	12	<2.0 – 2.0 TCU
Treated Conductivity	12	701 – 762 uS/cm
Treated pH	12	7.83 – 8.21
Treated Total Dissolved Solids	12	456 – 495 mg/L
Treated Hardness	12	300 – 356 mg/L
Distribution Alkalinity	12	238 – 249 mg/L
Distribution Colour	12	<2.0 – 2.0 TCU
Distribution Conductivity	12	703 – 758 uS/cm
Distribution pH	12	7.88 – 8.23
Distribution Total Solids	12	457 – 493 mg/L
Distribution Hardness	12	298 – 347 mg/L
Test Well Benzene	1	<0.5 ug/L
Test Well Ethylbenzene	1	<0.5 ug/L
Test Well m/p-xylene	1	<1.0 ug/L
Test Well o-xylene	1	<0.5 ug/L
Test Well Toluene	1	<0.5 ug/L

Summary of additional samples:

Legal Document	Date of Issuance	Parameter	Date Sampled	Result	Unit of measure
Certificate of Approval #8497-79SRVZ	19-Dec-07	Backwash Suspended Solids	Jan 15/08	<2.0	mg/L
			Feb 20/08	<2.0	mg/L
			Mar 18/08	<2.0	mg/L
			Apr 15/08	<2.0	mg/L
			May 21/08	<2.0	mg/L
			Jun 16/08	<2.0	mg/L
			Jul 22/08	<2.0	mg/L
			Aug 19/08	<2.0	mg/L
			Sep 16/08	<2.0	mg/L
			Oct 21/08	<2.0	mg/L
			Nov 18/08	<2.0	mg/L
			Dec 16/08	<2.0	mg/L
		Backwash pH	Jan 15/08	8.1	no units
			Feb 20/08	7.99	no units
			Mar 18/08	7.97	no units
			Apr 15/08	8.05	no units
			May 21/08	8.19	no units
			Jun 16/08	7.9	no units
			Jul 22/08	8.04	no units
			Aug 19/08	7.99	no units
			Sep 16/08	7.84	no units
			Oct 21/08	8.23	no units
Nov 18/08	8.14	no units			
Dec 16/08	8.0	no units			

Summary of inorganic parameters tested or most recent sample result:

MAC = Maximum Allowable Concentration as per O.Reg 169/03

Parameter	Sample Date	Result	Unit of Measure	Exceedence of MAC	Exceedence of ½ MAC
Antimony	Feb 26/08	<0.1	ug/L	No	No
Arsenic	Feb 26/08	<0.1	ug/L	No	No
Barium	Feb 26/08	160	ug/L	No	No
Boron	Feb 26/08	130	ug/L	No	No

Cadmium	Feb 26/08	<0.1	ug/L	No	No
Chromium	Feb 26/08	3	ug/L	No	No
Mercury	Feb 26/08	<0.1	ug/L	No	No
Selenium	Feb 26/08	<1.0	ug/L	No	No
Sodium	Jan 15/08	28	mg/L	Yes	Yes
Uranium	Feb 26/08	2.0	ug/L	No	No
Fluoride	Jan 15/08	0.28	mg/L	No	No
1 st Quarter Nitrite	Jan 2/08	<0.1	mg/L	No	No
2 nd Quarter Nitrite	Apr 1/08	<0.1	mg/L	No	No
3 rd Quarter Nitrite	Jul 2/08	<0.1	mg/L	No	No
4 th Quarter Nitrite	Oct 7/08	<0.1	mg/L	No	No
1 st Quarter Nitrate	Jan 2/08	<0.1	mg/L	No	No
2 nd Quarter Nitrate	Apr 1/08	<0.1	mg/L	No	No
3 rd Quarter Nitrate	Jul 2/08	<0.1	mg/L	No	No
4 th Quarter Nitrate	Oct 7/08	<0.1	mg/L	No	No

Summary of Lead Sampling:

Round #1 – December 15 to April 15

Residential Samples

# of Samples	# Adverse (>0.01)	# Exceed 1/2 MAC (0.005)	Lead Sample #1		Lead Sample #2		pH	
			Max Result	Min Result	Max Result	Min Result	Max Result	Min Result
2	0	0	0.003	<0.001	0.001	<0.001	7.74	7.71

Non Residential Samples

# of Samples	# Adverse (>0.01)	# Exceed 1/2 MAC (0.005)	Lead Sample #1		Lead Sample #2		pH	
			Max Result	Min Result	Max Result	Min Result	Max Result	Min Result
1	0	0	0.001	0.001	<0.001	<0.001	7.66	7.66

Distribution Samples

# of Samples	# Adverse (>0.01)	# Exceed 1/2 MAC (0.005)	Lead Sample #1		pH		Alkalinity	
			Max Result	Min Result	Max Result	Min Result	Max Result	Min Result
2	0	0	<0.001	<0.001	7.88	7.68	243	424

Round #2 – June 15 to October 15

Relief from sampling requirements granted as per CofA #PB220006026RR-01

Residential Samples

# of Samples	# Adverse (>0.01)	# Exceed 1/2 MAC (0.005)	Lead Sample #1		Lead Sample #2		pH	
			Max Result	Min Result	Max Result	Min Result	Max Result	Min Result
4	0	0	<0.001	<0.001	0.001	<0.001	7.81	7.6

Non Residential Samples

# of Samples	# Adverse (>0.01)	# Exceed 1/2 MAC (0.005)	Lead Sample #1		Lead Sample #2		pH	
			Max Result	Min Result	Max Result	Min Result	Max Result	Min Result

2	0	0	0.002	<0.001	0.001	<0.001	7.15	7.14
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Distribution Samples

# of Samples	# Adverse (>0.01)	# Exceed 1/2 MAC (0.005)	Lead Sample #1		pH		Alkalinity	
			Max Result	Min Result	Max Result	Min Result	Max Result	Min Result
4	0	0	<0.001	<0.001	7.31	7.2	241	238

Summary of Organic parameters tested or most recent result

MAC = Maximum Allowable Concentration as per O.Reg 169/03

BDL = Below the laboratory detection level

Parameter	Sample Date	Result	Unit of measure	Exceedence of MAC	Exceedence of 1/2 MAC
Alachlor	Feb19/08	<0.5	ug/L	No	No
Aldicarb	Feb19/08	<9.0	ug/L	No	BDL
Aldrin + Dieldrin	Feb19/08	<0.012	ug/L	No	No
Atrazine + N-Dealkylated metabolites	Feb19/08	<2.0	ug/L	No	No
Azinphos-methyl	Feb19/08	<2.0	ug/L	No	No
Bendiocarb	Feb19/08	<2.0	ug/L	No	No
Benzene	Feb19/08	<0.5	ug/L	No	No
Benzo<a>pyrene	Feb19/08	<0.01	ug/L	No	BDL
Bromoxynil	Feb19/08	<0.5	ug/L	No	No
Carbaryl	Feb19/08	<5.0	ug/L	No	No
Carbofuran	Feb19/08	<5.0	ug/L	No	No
Carbon Tetrachloride	Feb19/08	<0.5	ug/L	No	No
Chlordane (Total)	Feb19/08	<0.018	ug/L	No	No
Chlorpyrifos	Feb19/08	<1.0	ug/L	No	No
Cyanazine	Feb19/08	<1.0	ug/L	No	No
Diazinon	Feb19/08	<1.0	ug/L	No	No
Dicamba	Feb19/08	<1.0	ug/L	No	No
1,2-Dichlorobenzene	Feb19/08	<0.4	ug/L	No	No
1,4-Dichlorobenzene	Feb19/08	<0.4	ug/L	No	No
Dichlorodiphenyltrichloroethane (DDT) + metabolites	Feb19/08	<0.024	ug/L	No	No
1,2-Dichloroethane	Feb19/08	<0.5	ug/L	No	No
1,1-Dichloroethylene (vinylidene chloride)	Feb19/08	<0.5	ug/L	No	No
Dichloromethane	Feb19/08	<4.0	ug/L	No	No
2,4-Dichlorophenol	Feb19/08	<0.5	ug/L	No	No
2,4-Dichlorophenoxy acetic acid (2,4-D)	Feb19/08	<1.0	ug/L	No	No
Diclofop-methyl	Feb19/08	<0.9	ug/L	No	No
Dimethoate	Feb19/08	<2.5	ug/L	No	No
Dinoseb	Feb19/08	<1.0	ug/L	No	No
Diquat	Feb19/08	<7.0	ug/L	No	No
Diuron	Feb19/08	<10.0	ug/L	No	No
Glyphosate	Feb19/08	<10.0	ug/L	No	No
Heptachlor + Heptachlor Epoxide	Feb19/08	<0.012	ug/L	No	No
Lindane (Total)	Feb19/08	<0.005	ug/L	No	No
Malathion	Feb19/08	<5.0	ug/L	No	No
Methoxychlor	Feb19/08	0.024	ug/L	No	No
Metolachlor	Feb19/08	<0.5	ug/L	No	No
Metribuzin	Feb19/08	<5.0	ug/L	No	No

Monochlorobenzene	Feb19/08	<0.2	ug/L	No	No
Paraquat	Feb19/08	<1.0	ug/L	No	No
Parathion	Feb19/08	<1.0	ug/L	No	No
Pentachlorophenol	Feb19/08	<0.5	ug/L	No	No
Phorate	Feb19/08	<0.5	ug/L	No	No
Picloram	Feb19/08	<0.5	ug/L	No	No
Polychlorinated Biphenyls (PCB)	Feb19/08	<0.1	ug/L	No	No
Prometryne	Feb19/08	<0.25	ug/L	No	No
Simazine	Feb19/08	<1.0	ug/L	No	No
THM (Treated) (NOTE: show latest annual average)	2008	81.1	ug/L	No	N/A
THM (Distribution) (NOTE: show latest annual average)	2008	97.52	ug/L	No	N/A
Temephos	Feb19/08	<10.0	ug/L	No	No
Terbufos	Feb19/08	<0.4	ug/L	No	No
Tetrachloroethylene	Feb19/08	<0.3	ug/L	No	No
2,3,4,6-Tetrachlorophenol	Feb19/08	<0.5	ug/L	No	No
Triallate	Feb19/08	<1.0	ug/L	No	No
Trichloroethylene	Feb19/08	<0.3	ug/L	No	No
2,4,6-Trichlorophenol	Feb19/08	<0.5	ug/L	No	No
2,4,5-Trichlorophenoxy acetic acid (2,4,5-T)	Feb19/08	<0.1	ug/L	No	No
Trifluralin	Feb19/08	<0.4	ug/L	No	No
Vinyl Chloride	Feb19/08	<0.2	ug/L	No	No

Maintenance Summary

Summary of expenses incurred for install, repair or replace

Brief Description
Replacement board for raw water flow meter
Replace Chlorine pocket analyzer
Chlorine analyzer repairs
Replaced regulator on pilot valve Killaloe WTP
Annual UV system maintenance and calibration
Repairs to proximity sensor switch on the UV system
Repair raw flow control valve
Repairs to the DR 2500

Water Taking and Transfer
Submitted Data
2008

Location: **WTRS / WT DATA / Input WT Record**

WTRS-WT-008

Water Taking Data submitted successfully.**Confirmation:**

Thank you for submitting your water taking data online.

Permit Number: 6713-62X4ER

Permit Holder: TOWNSHIP OF KILLALOE, HAGARTY, RICHARDS.

Received on: Jan 26, 2009 4:49 PM

This confirmation indicates that your data has been received by the Ministry, but should not be construed as acceptance of this data if it differs from that specified on the Permit Number, assigned to the Permit Holder stated above.

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TOWNSHIP2 KILLALOE2 | 2009/01/26

version: v3.0.1

Last modified: 2008/10/31



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Annual Water Taking and Transfer Report

For the Year 2008
Raw Flow: Sum (m3/d)

Municipality: Village of Killaloe
Facility: [6069] - Killaloe Water Treatment Plant
Works: [220006026] - Killaloe Water Treatment Plant
Classification: Class 2 Water Treatment

Year: 2008
Water Source: Well Water
Total Design Capacity (m3/day): 602.00
Population Served: 656

Max. Vol.	January	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
RW - Raw Water																
601.920		84.000	64.000	64.000	84.000	84.000	84.000	191.000	65.000	65.000	65.000	81.000	81.000	81.000	155.000	73.000
Max. Vol.	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
RW - Raw Water																
601.920	73.000	73.000	81.000	81.000	81.000	183.000	74.000	74.000	74.000	97.000	97.000	97.000	121.000	79.000	79.000	79.000
Max. Vol.	February	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
RW - Raw Water																
601.920		91.000	91.000	91.000	148.000	95.000	95.000	95.000	101.000	101.000	101.000	80.000	107.000	107.000	107.000	109.000
Max. Vol.	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
RW - Raw Water																
601.920	109.000	109.000	109.000	40.000	108.000	108.000	108.000	108.000	108.000	74.000	88.000	88.000	88.000	115.000		
Max. Vol.	March	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
RW - Raw Water																
601.920		115.000	115.000	92.000	89.000	89.000	89.000	123.000	123.000	123.000	62.000	97.000	97.000	97.000	136.000	136.000
Max. Vol.	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
RW - Raw Water																
601.920	136.000	98.000	99.000	99.000	131.000	131.000	131.000	131.000	131.000	70.000	115.000	115.000	142.000	142.000	142.000	86.000

Annual Water Taking and Transfer Report

For the Year 2008
 Raw Flow: Sum (m3/d)

Municipality: Village of Killaloe
 Facility: [6069] - Killaloe Water Treatment Plant
 Works: [220006026] - Killaloe Water Treatment Plant
 Classification: Class 2 Water Treatment

Year: 2008
 Water Source: Well Water
 Total Design Capacity (m3/day): 602.00
 Population Served: 656

Max. Vol.	April	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
RW - Raw Water																
601.920		132.000	132.000	132.000	143.000	143.000	143.000	170.000	191.000	191.000	191.000	128.000	128.000	128.000	161.000	124.000
Max. Vol.	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
RW - Raw Water																
601.920	124.000	124.000	149.000	149.000	149.000	148.000	132.000	132.000	132.000	144.000	144.000	144.000	81.000	90.000	90.000	
Max. Vol.	May	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
RW - Raw Water																
601.920		90.000	76.000	76.000	76.000	176.000	77.000	77.000	77.000	112.000	112.000	112.000	137.000	108.000	108.000	108.000
Max. Vol.	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
RW - Raw Water																
601.920	135.000	135.000	135.000	135.000	133.000	89.000	89.000	130.000	130.000	130.000	100.000	83.000	83.000	83.000	122.000	122.000
Max. Vol.	June	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
RW - Raw Water																
601.920		122.000	95.000	112.000	112.000	112.000	117.000	117.000	117.000	125.000	119.000	119.000	119.000	130.000	130.000	130.000
Max. Vol.	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
RW - Raw Water																
601.920	90.000	119.000	119.000	119.000	157.000	157.000	157.000	97.000	134.000	134.000	134.000	96.000	96.000	96.000	115.000	

Annual Water Taking and Transfer Report

For the Year 2008
 Raw Flow: Sum (m3/d)

Municipality: Village of Killaloe
 Facility: [6069] - Killaloe Water Treatment Plant
 Works: [220006026] - Killaloe Water Treatment Plant
 Classification: Class 2 Water Treatment

Year: 2008
 Water Source: Well Water
 Total Design Capacity (m3/day): 602.00
 Population Served: 656

Max. Vol.	July	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
RW - Raw Water																
601.920		115.000	92.000	92.000	110.000	110.000	110.000	95.000	99.000	99.000	99.000	138.000	138.000	138.000	86.000	154.000
Max. Vol.	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
RW - Raw Water																
601.920	154.000	154.000	151.000	151.000	151.000	164.000	114.000	114.000	114.000	150.000	150.000	150.000	135.000	177.000	177.000	177.000
Max. Vol.	August	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
RW - Raw Water																
601.920		154.000	154.000	154.000	154.000	199.000	114.000	114.000	90.000	90.000	90.000	138.000	114.000	114.000	114.000	128.000
Max. Vol.	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
RW - Raw Water																
601.920	128.000	128.000	138.000	114.000	114.000	204.000	133.000	133.000	133.000	80.000	159.000	159.000	159.000	165.000	165.000	165.000
Max. Vol.	September	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
RW - Raw Water																
601.920		165.000	213.000	95.000	95.000	76.000	76.000	76.000	113.000	76.000	76.000	76.000	74.000	74.000	74.000	139.000
Max. Vol.	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
RW - Raw Water																
601.920	63.000	63.000	63.000	76.000	76.000	76.000	145.000	95.000	95.000	95.000	71.000	71.000	71.000	161.000	66.000	

Annual Water Taking and Transfer Report
For the Year 2008
Raw Flow: Sum (m3/d)

Municipality: Village of Killaloe
Facility: [6069] - Killaloe Water Treatment Plant
Works: [220006026] - Killaloe Water Treatment Plant
Classification: Class 2 Water Treatment

Year: 2008
Water Source: Well Water
Total Design Capacity (m3/day): 602.00
Population Served: 656

Max. Vol.	October	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
RW - Raw Water																
601.920		66.000	66.000	77.000	77.000	77.000	147.000	66.000	66.000	66.000	82.000	82.000	82.000	82.000	68.000	64.000
Max. Vol.	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
RW - Raw Water																
601.920	64.000	72.000	72.000	72.000	130.000	63.000	63.000	63.000	74.000	74.000	74.000	96.000	67.000	67.000	67.000	66.000
Max. Vol.	November	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
RW - Raw Water																
601.920		66.000	66.000	164.000	75.000	75.000	75.000	115.000	115.000	115.000	55.000	55.000	74.000	74.000	73.000	73.000
Max. Vol.	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
RW - Raw Water																
601.920	73.000	97.000	61.000	61.000	61.000	79.000	79.000	79.000	102.000	67.000	67.000	67.000	73.000	73.000	73.000	
Max. Vol.	December	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
RW - Raw Water																
601.920		99.000	71.000	71.000	71.000	77.000	77.000	77.000	107.000	61.000	61.000	61.000	77.000	77.000	77.000	110.000
Max. Vol.	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
RW - Raw Water																
601.920	67.000	67.000	67.000	87.000	87.000	87.000	159.000	61.000	96.000	96.000	96.000	96.000	96.000	73.000	90.000	90.000