

February 12, 2015

Mr. Ron Lutz
Wintergreen Woods Water Utility Ltd
PO Box 666
Bragg Creek, Alberta T0L 0K0

Dear Mr. Lutz:

Reference: Compliance Inspection of the Wintergreen Woods Waterworks System

Alberta Environment and Sustainable Resource Development (ESRD) conducted an inspection of the above noted waterworks system on February 10, 2015. The purpose of the inspection was to assess compliance with the terms and conditions of the Wintergreen Woods Waterworks System Approval # 17543-02-00 and amendments as issued under the Environmental Protection and Enhancement Act (EPEA) and to identify additional potential risks to the waterworks.

Attached for your information and attention is a copy of the inspection report prepared by ESRD as documentation of the inspection. This inspection was conducted with operator Jay-Lynn Faul, H2O Pro. A risk based assessment was completed by ESRD and the Wintergreen Woods Waterworks passed the assessment and achieved an overall rating of 88.10%. A copy of the inspection assessment as well as the guidelines utilized is enclosed for your records.

Although the Waterworks system did pass the primary risk assessment I would like to bring to your attention some sections of the operations program that were incomplete and/or require more information.

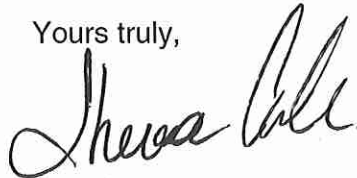
Please review Schedule 1-Operations Program in your approval and ensure that the following items are completed as soon as possible:

- All of section 1 requires reviewing and additional information
- Section 2(c), proper sampling techniques for collecting bacteriological samples
- Section 3(l) list of contacts
- Section 4(m), date the operations program was last updated (operator annual review and sign off once operator completes annual review).

All necessary steps must be immediately taken by the approval holder to comply with the approval and Potable Water Regulation requirements.

If you have any questions regarding this letter or would like any additional information, please contact the undersigned at 403-297-8298 or at theresa.cole@gov.ab.ca.

Yours truly,

A handwritten signature in black ink, appearing to read "Theresa Cole". The signature is written in a cursive style with a large initial "T".

Theresa Cole, B.T.Envh, CPHI(C)
Environmental Protection Officer

Enclosure

cc: Craig Reich, Approval Writer (ESRD)
Craig Knaus, Compliance Manager (ESRD)
Eric Faul, h2opro@icloud.com

ALBERTA ENVIRONMENT WATERWORKS

INSPECTION REPORT

| | | |
|--|--|--------------------------------|
| Waterworks System Name: | Approval Registration #: | Plant classification (Type): |
| Wintergreen Woods | 17543-02-00 | Surface Water |
| Approval Holder: | Approval Expiry Date: | Plant classification (Level): |
| Wintergreen Woods Water Utility Ltd | 7/1/2019 | WT Level 2 |
| Facility Address: | Facility Location GPS: | WD Level 1 |
| Street: Box 666 | Latitude: (e.g. 51.1235) | Diversion Location GPS: |
| Province: AB Town: Bragg Creek Postal Code: T0L0K0 | Longitude: (e.g. -114.2168) | Latitude: (e.g. 51.1235) |
| Facility Contact Number: 403 - 860 - 3821 | Water Diversion Licence No.: | Longitude: (e.g. -114.2168) |
| Facility Emergency Contact Number: 403 - 561 - 2285 | 08644/0205141 | Municipal/Industrial Facility: |
| Operator's Name: (Interviewed only) | Source: | Municipal |
| Jay-Lynn Faul-H2O Pro | Elbow River | Daily Peak Flows (m3): |
| Operator's Certification Level: (Interviewed only) | Population served: | 265m3(July 2014) |
| WT Level 2 | 85 Homes plus clubhouse | Plant Design Flow (m3): |
| Inspector's Name: | Sample Number: | Daily Average Flows (m3): |
| Theresa.Cole | N/A | 70.77m3(2014) |
| EMS Inspection Number: | Date and Time of Inspection: | Date of previous Inspection: |
| February 10, 2015 | 2/10/2015 | 3/27/2014 |
| | 10:00 | MM/DD/YYYY |
| | <input checked="" type="radio"/> am <input type="radio"/> pm | |
| Short Term Approval Conditions | | |
| A. Are there any Short-Term Approval Conditions? | | |
| <input checked="" type="radio"/> NO <input type="radio"/> YES (If YES, answer B & C) | | |
| B. What are the required due dates? | | |
| C. Have these Conditions been achieved? | | |
| Comments: | | |

| PRIMARY RISK ASSESSMENT QUESTIONS | ASSESSMENT | COMMENTS |
|--|----------------------|---|
| 1 Is the operator certification (including back-up operators) appropriate for this facility? | 4 - <u>Excellent</u> | Plant is run by H2O Pro. Main operator is Jay-Lynn Faul, WT level 2/WD level 2. Other operators are Eric Faul, WT level 3/WD level 2, Colby Faul, WT level 2/WD level 2. Other operators include Doug Haase, WT level 4/WD level 2, and Adam Doyle, small systems operator. |
| 2 Have Approval/Code of Practice/Potable Water Regulation contraventions been properly reported? | 4 - <u>Excellent</u> | No contraventions reported since 2012. No contraventions throughout 2014. |
| 3 Is monitoring equipment properly maintained and calibrated? | 3 - <u>Good</u> | Weekly calibration standards done on continuous monitoring and handheld chlorine, turbidity and pH probe. Verification checks done with standards and documented on calibration form. |
| 4 Were emergency situations dealt with, as required by the Approval, Code of Practice or legislation? | 4 - <u>Excellent</u> | DWSP has been completed and is with the engineer for final formatting (Urban Systems). No emergencies throughout 2014. |
| 5 Are treated water turbidity (prior to entering clear well reservoir) limits met? | 4 - <u>Excellent</u> | Max turbidity for 2014 was 0.30 NTU's (this is a spike of turbidity before the valve closes and goes into backwash cycle). System shuts down and goes into a backwash cycle rinse to waste at 0.26NTU's and is alarmed at 0.24NTU's. Meets 2006 AENV standards and guidelines with continuous monitoring and data capture in place. |
| 6 Are chlorine residual and Contact Time (CT) disinfection (entering the distribution system at point of CT) requirements met? | 4 - <u>Excellent</u> | Minimum CT ratio was 4.84 (Feb 2014). Free chlorine range from 0.46mg/L (March 2014) to 1.35mg/L (July 2015). Meets best practice for free chlorine of 0.2-2.20mg/L and all CT ratio's above 1. |
| 7 Are UV disinfection approval requirements met? | N/A | |
| 8 Are chlorine residuals (in the distribution system) limits met? | 4 - <u>Excellent</u> | Range from 0.49mg/L (Sept 2014) to 1.30mg/L (Nov 2014). Meets best practice of 0.1mg/L to 1.50mg/L at all times. |
| 9 Is monitoring frequency for treated water bacteriological sampling in the distribution system being met? | 4 - <u>Excellent</u> | Meets approval with additional bacteriological samples taken per month, taken twice per week. |
| PRIMARY RISK ASSESSMENT TOTAL: | 31 | Sum of ratings |
| PRIMARY RISK ASSESSMENT RATING: | 97 | Average rating of Applicable questions (in %) |

PRIMARY RISK ASSESSMENT: PASS PASS requires a 3 or 4 Rating for all applicable questions

| SECONDARY RISK ASSESSMENT QUESTIONS | ASSESSMENT | COMMENTS |
|--|----------------------|---|
| Is the Approval/Code of Practice holder diligent in ensuring that all bacteriological sampling is done properly? | 4 - <u>Excellent</u> | All bacteriological samples collected with no reject/repeat samples for 2014. A bacteriological monitoring program is in place. |
| Are operators familiar with the current signed Approval, Code of Practice (COP) and related legislation for the waterworks system? | 4 - <u>Excellent</u> | Approval available at the time of the inspection. The supervising operator is aware of the requirements of the approval. |
| Are raw water wells located, protected and maintained in a sanitary manner? | N/A | |
| What raw surface water protection measures are in place to optimize water quality entering the Water Treatment Plant? | 3 - <u>Good</u> | There is a raw water and treated water reservoir located inside the treatment plant. Intakes are inspected and both reservoirs were inspected in 2014. The facility has the basic ability to control the raw water. No additional microcystin LR testing being done above what is required in the approval. |
| Are water treatment chemicals used at the facility listed and used as specified? | 3 - <u>Good</u> | CTI 4900 and Sodium Hypochlorite used at this plant. MSDS sheets available on site and up to date. No secondary containment at this plant. Maximum dosage of Sodium Hypochlorite in 2014 was 4.18mg/L(May 2014). Maximum dosage of CTI 4900 in 2014 was 47.88mg/L(June 2014). Influent, effluent and backwash/waste streams are metered. |
| Are system water volumes metered? | 3 - <u>Good</u> | The homes in the new section are metered but there is no meters in the original development which accounts for most of the homes. This is still being reviewed and may be installed sometime in the future. |
| Have preventative maintenance measures been established in the distribution system and treated water reservoir(s) to minimize adverse effects to water quality? | 3 - <u>Good</u> | Hydrants are flushed twice per year. Uni-directional flushing and water balancing done with records kept but no valve exercising. The reservoir was inspected January 2014. |
| Were treated water sample(s) taken as required, for all listed parameters and analyzed by an independent Lab that is accredited for all the parameters analyzed? | 3 - <u>Good</u> | Chemical analysis done Feb 27/14 and Aug 27/14. TTHM's done Feb 27, May 23, Aug 18 and Nov 19, 2014. Independent laboratory is WSH Labs and Maxxam Labs. |

| SECONDARY RISK ASSESSMENT QUESTIONS | ASSESSMENT | COMMENTS |
|---|----------------------|---|
| 18 Does treated water meet the Guidelines for the Canadian Drinking Water Quality (GCDWQ) parameters based on the sampling required for the facility? | <u>3 - Good</u> | All MAC's met for the Canadian Drinking Water Guidelines. One AO exceedence for Aluminum, 200mg/L and 173mg/L, AO is 100mg/L. |
| 19 Were reports (monthly and annual) properly compiled and submitted on time? | <u>3 - Good</u> | Facility is electronically reporting. Annual report not due to be submitted to AESRD until Feb 28/15. An electronic copy was emailed to EPO, Theresa Cole, on Feb 6/15. Missing from the data was: -maximum dosages for chemicals added into the treatment plant. Copy of this information was emailed to EPO on Feb 10/15. -treated water pH, copy of this information was emailed to EPO on Feb 10/15. -a description of any problems experienced and corrective actions taken at the waterworks system during the year, section 6.3.2(d), a copy of this information was emailed to EPO on Feb 10/15. -any changes to operations program, section 6.3.2(e) copy of this information was emailed to EPO on Feb 10/15. |
| 20 Are treated water fluoride concentration monitoring requirements and limits met? | <u>N/A</u> | |
| 21 Are treated water turbidity (entering distribution system) requirements met? | <u>N/A</u> | Not a requirement of the approval. |
| 22 Are filter(s) effluent turbidity monitoring (entering clear well reservoir) requirements met? | <u>4 - Excellent</u> | Continuous monitoring in place with limit alarms and shutdowns. Shut down at 0.26NTU's and alarms at 0.24NTU's. |
| 23 Are treated water turbidity monitoring (entering the distribution system) requirements met? | <u>N/A</u> | Not a requirement of the approval. |
| 24 Are treated water turbidity monitoring (in the distribution system) approval requirements met? | <u>N/A</u> | Not a requirement of the approval. |

25 Are treated water chlorine residual monitoring (entering distribution system) approval/Code of Practice requirements met?

3 - Good

Continuous monitoring with limit alarms and operator call outs but does not include alarms for CT's.
Low limit alarm is set at 0.5mg/L.

| SECONDARY RISK ASSESSMENT QUESTIONS | ASSESSMENT | COMMENTS |
|--|----------------------|---|
| 26 Are treated water chlorine residual monitoring (in the distribution system) requirements met? | 4 - <u>Excellent</u> | Taken twice per week when collecting bacteriological samples. |
| 27 Is the Operations Program completed as per the Approval/Code of Practice? | 3 - <u>Good</u> | <p>Operations program was due to be complete by June 1/2011. Reviewed parts of the operations program during the inspection. Mostly complete but needs some additional information:</p> <ul style="list-style-type: none"> • Schedule 1, all section 1 needs review and updating if not complete • section 2(c), proper sampling techniques for collecting bacteriological samples • section 3(L) list of contacts • section 4(m)-date the operations program was last updated (operator annual review and sign off once complete). |
| SECONDARY RISK ASSESSMENT TOTAL: | 43 | Sum of Ratings |
| SECONDARY RISK ASSESSMENT RATING: | 83 | Average rating of applicable questions (in %) |
| SECONDARY RISK ASSESSMENT: | PASS | PASS requires 70% minimum for all applicable questions |
| Overall Waterworks System Risk Assessment: | | PASS requires PASS of both Primary and Secondary Assessments |

INSPECTION SUMMARY:

Overall Score: 74/84 x 100%=88.10%

Operations Program:

See question #27 for information needed in operations program.

Any rating of 1 or 2 may indicate a contravention of the Environmental Protection and Enhancement Act and /or applicable Regulations. You should immediately take all necessary steps to comply with the above. Within thirty (30) days of this audit, you are requested to provide a written response as to how the above noted contraventions were remedied.

Inspector's Name: Theresa Cole
Inspector's Signature: 
Operator's Signature (at time of inspection):
Date: 2/10/2015

Other Approval Holder Representative Signature:
Date:

INSPECTION SUMMARY:

Put in annual report (2014)
 - Treated water pH ✓
 - Section 6.3.2(d) & (e) ✓
 - Maximum dosages for chemicals ✓
 1. Operations program:
 Continue updating, based on sec question #27.
 FAC (AESRD) - ~~0.0~~ 1.07 mg/L
 (operator) - 1.07 mg/L

Any rating of 1 or 2 may indicate a contravention of the Environmental Protection and Enhancement Act and /or applicable Regulations. You should immediately take all necessary steps to comply with the above. Within thirty (30) days of this audit, you are requested to provide a written response as to how the above noted contraventions were remedied.

| | | |
|--|--|---|
| Inspector's Signature: <i>Theresa Cole</i> | Operator's Signature (at time of inspection): <i>A. Fowl</i> | Other Approval Holder Representative Signature: |
| Date: Feb 10 / 2015 | Date: Feb. 10 / 2015. | Date: |