

Staff Report

Applicant: Town of Hay River	
Location: Hay River, NT	Application: MV2009L3-0005
Date Prepared: October 24, 2016	Meeting Date: November 3, 2016
Subject: 2015 Annual Water Licence Report	

1. Purpose/Report Summary

The purpose of this Report is to present to the Mackenzie Valley Land and Water Board (MVLWB/the Board) the 2015 Annual Water Licence Report (Annual Report) submitted by the Town of Hay River (Town), as required by Part B, item 3 of municipal Water Licence (Licence) MV2009L3-0005.

2. Background

- May 31, 2010 – Licence issued for a period of 10 years;
- June 1, 2016 – 2015 Annual Report received;
- September 2, 2016 – 2015 Annual Report sent for review;
- September 23, 2016 – Reviewer comments due;
- October 6, 2016 – Town’s responses due;
- **October 20, 2016 – 2015 Annual Report presented to the Board;** and
- May 30, 2020 – Licence expires.

3. Discussion

The 2015 Annual Report was submitted to fulfill Part B, item 3 and Schedule 1, item 1 of Licence MV2009L3-0005 (attached). Although formal approval of Annual Reports is not required under the Licence, the Board must be satisfied that the Town is operating and has reported in accordance with the requirements of their Licence.

Type A Licence MV2009L3-0005 was issued to the Town for the use of water and disposal of waste for municipal purposes. Water is drawn from Great Slave Lake for drinking water; sewage is deposited at the Hay River Sewage Disposal Facilities (lagoon), and solid waste is deposited at the Solid Waste Disposal Facilities (landfill), located south of Hay River off of Highway #5.

The Town currently has several outstanding submissions under their Licence, as well as operational issues at their facilities that have been identified by the Government of the Northwest Territories (GNWT) Inspector. The Town has recently made significant recent progress on Licence submissions, and discussions to

resolve outstanding operational issues are ongoing between the Town, their contractors, the Inspector and Board staff.

4. Comments

The Town has addressed many of the required components of the Annual Report; however, there are several outstanding items, listed below in Section 5: Reviewer Comments.

Board staff note that the Town has not reported on any annual reviews of the Snow Disposal Plan (Part D, items 11 and 12) or Spill Contingency Plan (Part I, item 1 and 2), as required by the Licence.

5. Reviewer Comments

By September 23, 2016 comments and recommendations on the Annual Report were received from the Government of the Northwest Territories – Environment and Natural Resources (GNWT-ENR) and Board staff.

The Town did not respond to reviewer comments. The reviewer comment summary table (attached) presents the concerns identified through the review of the Annual Report.

Raw Water Use (Schedule 1, item 1.a)

Averages of water consumption are provided in the Annual Report for January, June, September and December, as no data was available for these months. An explanation of why intake data is unavailable should be included in future annual reports, including an explanation of any issues with flow metering, and plans to fix the problem (Board staff comment 1).

Record Keeping of Sewage Volume (Schedule 1, item 1.b)

The Town has noted that inaccurate record keeping may be a factor in reporting on sewage volumes. Board staff requested an explanation of the steps the Town will take to improve record keeping (Board staff comment 3). This information should be included in future Annual Reports.

Solid Waste Discharged (Schedule 1, item 1.c)

No information is provided about removal, or plans for removal of solid waste (Board staff comment 2). Detailed information on removal and plans for removal of solid waste from the facility should be included in future Annual Reports.

Comparison of Waste Volumes to remaining storage volume (Schedule 1, item 1.d)

The Annual Report lists the remaining storage volume of the landfill as "approaching capacity/unknown" (Board staff comment 4). Additional details concerning the capacity of the facility, and what plans the Town has to delineate the its remaining capacity and to plan for future landfill expansion to accommodate the need for more capacity are needed.

SNP sampling results (Schedule 1, item 1.m)

GNWT-ENR has raised concerns about Surveillance Network Program (SNP) sampling results being above criteria for Total Suspended Solids (TSS) and Biological Oxygen Demand (BOD) at the lagoon site of compliance (SNP 0053-2)

over multiple years of annual reporting (GNWT-ENR comments 1 and 2). It is important that any exceedances be reported to the Inspector. Also, exceedances, including possible explanations of results and proposed steps to mitigate such results, should be clearly reported on in Annual Reports. Any actions taken to identify the source of the elevated levels, as well as the steps taken to prevent future exceedances and explanations of missed sampling events (Board staff comment 5), should also be included. Due to repeated exceedances of the Licence criteria, additional sampling downstream of the Sewage Disposal Facilities is recommended to ensure the water quality effects to the receiving environment are minimized.

During a recent review of earlier Annual Reports from the Town, GNWT-ENR recommended to the Town that they discuss mitigation strategies to address the TSS and BOD exceedances at the Licence SNP Station 0053-02 with the MVLWB, MACA and ENR, encouraging the Town to meet with the recommended parties to help address the exceedances (GNWT-ENR comment 1).

Groundwater Monitoring (Schedule 1, item 1.o)

Further to SNP sampling at the lagoon, Board staff pointed out that a number of metals parameters were exceeded during both the June and September sampling events at the landfill (Board staff comments 6 and 7). Metals exceedances at the landfill are expected to be addressed in the Groundwater Monitoring Plan, which is expected to be re-submitted November 30, 2016 (addressing GNWT-ENR comment 3). Board staff have inquired with the Town regarding the analyses of dissolved metals in groundwater samples, through the review of proposed changes to the SNP, which is currently underway on the Online Review System.

6. Security

Not applicable.

7. Conclusion

The 2015 Annual Water Licence Report, as submitted, provides an overview of activities that occurred under Licence MV2009L3-0005 during the reporting year of 2015. Annual Reports are not for Board approval; however, the Board may wish to follow up with the Town based on the information provided in the 2015 Annual Report.

8. Recommendation

Board staff recommend the Board accept the 2015 Annual Water Licence Report and have prepared a draft response letter (attached) with the following options for the Board's consideration.

With respect to information that should be included in future annual reports, one or more of these options could be chosen to include in the Board's acceptance letter, to remind the Town to include:

- an explanation of why any water intake data is unavailable, including details on issues with flow metering and planned steps to address those issues (as per Schedule 1, item 1.a);

- details on steps the Town will take to improve record keeping of sewage volumes discharged to the lagoon (as per Schedule 1, item 1.b);
- detailed information on the removal and plans for removal of solid waste from the landfill (as per Schedule 1, item 1.c); and
- details regarding the capacity of the landfill, and what plans the Town has to delineate its remaining capacity and to plan for future landfill expansion to accommodate the need for more capacity (as per Schedule 1, item 1.d).

In addition, Board staff recommend highlighting the importance of adhering to, and reporting on, the sampling requirements of the SNP annexed to Licence MV2009L3-0005. The Board could encourage the Town to include a table summarizing all water quality exceedances at each SNP station in the main body of future Annual Reports. This table should include missed sampling events. A discussion of non-compliant items, referencing relevant letters and previous documents as needed, would promote a better understanding of the results. This information will support the requirements laid out in Schedule 1, item 1 (Annual Report) of the Licence.

Regarding the exceedances of Licence criteria, Board staff recommend that the Board encourage the Town to continue proper operation and maintenance of the Sewage Disposal Facilities, and that any exceedances and possible mitigative measures be immediately reported to the Inspector and be reported to the Board through Annual Reports.

During a recent review of earlier Annual Reports from the Town, GNWT-ENR recommended to the Town that they discuss mitigation strategies to address the TSS and BOD exceedances at the Licence SNP Station 0053-02 with the MVLWB, MACA and ENR, encouraging the Town to meet with the recommended parties to help address the exceedances (GNWT-ENR comment 1). The Board could suggest a meeting of all interested parties (particularly the Town, ENR, MACA, and MVLWB) regarding the exceedances of TSS and BOD, as well as any other non-compliance issues with Licence MV2009L3-0005, including discussion of additional sampling downstream of the Sewage Disposal Facilities.

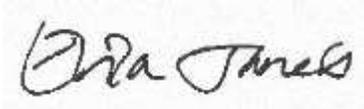
Finally, Board staff recommend including the following additional text in the decision letter:

- The Board acknowledges the Town's recent progress on various submission deadlines, and
- The Board reminds the Town that annual reviews of the Snow Disposal Plan (Part D, items 11 and 12) and Spill Contingency Plan (Part I, item 1 and 2) are required as per MV2009L3-0005, with modifications made as necessary, and Spill Contingency Plan revisions submitted to the Board for approval.

9. Attachments

- Reviewer Comment Summary Table
- [2015 Annual Report, Part 1 of 2](#)
- [2015 Annual Report, Part 2 of 2](#)
- Draft Acceptance Letter from the Board

Respectfully submitted,



Erica Janes
Regulatory Officer



Heather Scott
Technical Advisor

Review Comment Table

Board:	MVLWB
Review Item:	Town of Hay River 2015 Annual Water Licence Report (MV2009L3-0005)
File(s):	MV2009L3-0005
Proponent:	Town of Hay River
Document(s):	MV2009L3-0005 - Town of HR 0 2015 Annual Report - Part 1 of 2 (3MB) MV2009L3-0005 - Town of HR - 2015 Annual Report - Part 2 of 2 (5MB)
Item For Review Distributed On:	Sep 2 at 13:35 Distribution List
Reviewer Comments Due By:	Sep 23, 2016
Item Description:	<p>The Town of Hay River has submitted their 2015 Annual Water Licence Report as per Part B, item 3 and Schedule 1 of their municipal Water Licence MV2009L3-0005. Although formal approval of Annual Reports is not required under the Licence, the Board must be satisfied that the Licensee has reported and performed sampling and analyses in accordance with the requirements of their Licence.</p> <p>Reviewers are invited to submit comments on the 2015 Annual Water Licence Report by September 23, 2016. Recommendations on the results reported, as well as recommendations that may assist the Town in the development and completion of future Annual Reports, are welcome.</p> <p>If you have questions or comments regarding this review or the Online Review System, please contact Erica Janes at (867) 766-7466 or ejanes@mvlwb.com.</p>
General Reviewer Information:	<p>In addition to the email distribution list, the following organizations received review materials by fax:</p> <ul style="list-style-type: none"> • Fort Liard Metis Local #67 - Ernie McLeod, President (867)770-4573; • Fort Simpson Métis Local #52 - Marie Lafferty, President (867)695-2040; • Hay River Metis Council - Trevor Beck, President (867)874-4472; • NWT Metis Nation - Tim Heron, NWTMN IMA Coordinator (867)872-3586.
Contact Information:	<p>Erica Janes 867-766-7466 Heather Scott 867-766-7463 Jen Potten 867-766-7468</p>

Comment Summary

GNWT - ENR: Central Email GNWT				
ID	Topic	Reviewer Comment/Recommendation	Proponent Response	Board Response
4	General File	Comment (doc) ENR Letter with Comments and Recommendations Recommendation	None.	
1	Topic 1: Water Licence Deficiencies	<p>Comment Results for TSS at SNP 0053-2 were repeatedly above the Water Licence (Licence) criteria. It isn't clear if the Town notified the Board or the Inspector of these exceedances; in addition, the Annual Report should include such information. This is of concern to ENR, as notification and follow-up actions should occur as part of the process of rectifying any exceedances. In the recently reviewed Annual Reports for 2012-2014, ENR noted and commented on the several incidents of Licence exceedances for TSS and BOD for all three years. During this previous review, ENR recommended to the Town that they discuss mitigation strategies to address the TSS and BOD exceedances at the Licence SNP Station 0053-02 with the MVLWB, MACA and ENR. ENR encourages the Town to meet with the recommended parties to help address the exceedances.</p> <p>Recommendation 1) Annual Reports should indicate what actions were taken following elevated SNP results, including when they were reported to the Board or the Inspector. Any actions taken to identify the source of the</p>	None.	Noted. The Town shall notify the Inspector upon any Licence criteria exceedance, and work with the Inspector to determine if further action is required to mitigate any effects of the exceedance. Annual Reports shall indicate what actions were taken following elevated SNP results, including when they were reported to the Board or the Inspector (as per Schedule 1, items m, n and s of the Licence). Any actions taken to identify the source of the elevated levels as well as the steps taken to prevent future exceedances shall also be included. The Town shall continue to operate and maintain the Sewage Disposal Facilities (desludging, removing vegetation, ensuring proper operations) in order

		elevated levels as well as the steps taken to prevent future exceedances should also be included.		to achieve the Licence criteria. Also, due to repeated exceedances of the Licence criteria, additional sampling downstream of the Sewage Disposal Facilities is recommended to ensure the water quality effects to the receiving environment are minimized.
2	None	Comment None Recommendation 2) A summary of Licence exceedances should be provided in the main body of the Annual Report (e.g. Section N, Surveillance Network Program Results).	None.	See response to comment 1 above.
3	Topic 2: Groundwater Quality	Comment The 2015 Annual Water Licence Report notes a number of groundwater samples exceeded groundwater guidelines for metal concentrations at all four (4) SNP 0053-7 monitoring wells (MW010-A through D). Exceedances were reported for both the spring and fall sampling events. Of particular concern are the high concentrations of heavy metals; such as lead at 0.07 mg/L and Aluminum at 47.4 mg/L. ENR has also commented previously on the 2014 Groundwater Monitoring Report, expressing concerns with the groundwater exceedances compared to Environment Canada's (2012) Guidance document on Federal Interim Groundwater Quality Guidelines for Federal	None.	Noted. As per the Board's June 4, 2015 letter, the Town was directed to update the Groundwater Monitoring Plan as part of the Landfill Operations and Maintenance Plan. This Plan was submitted September 16, but on September 20, 2016 , Board staff requested that the Town resubmit this Plan, because it was missing critical pieces of information, including a Groundwater Monitoring Plan. The Town has agreed to

		<p>Contaminated Sites and ESRD (2014) Alberta Groundwater Guidelines. ENR notes the close proximity of the Solid Waste Facility to Hay River and that the monitoring wells suggest that the groundwater flow path is towards Hay River from the Facility. ENR reminds the Town, as directed by the Board in its June 4, 2015 letter, to update the Groundwater Monitoring Plan to include testing parameters and water quality criteria; action levels for groundwater quality at which a response plan comes into effect; and a response plan which outlines the mitigative measures should groundwater quality action levels be exceeded.</p> <p>Recommendation 1) The Town should, as directed by the Board in its June 4, 2015 letter, update the Groundwater Monitoring Plan to include testing parameters and water quality criteria, action levels for groundwater quality at which a response plan comes into effect and a response plan which outlines the mitigative measures should groundwater quality action levels be exceeded.</p>		<p>resubmit this plan by November 30, 2016, at which point it will be posted for review.</p>
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MVLWB: Erica Janes

ID	Topic	Reviewer Comment/Recommendation	Proponent Response	Board Response
1	Annual Report Section a) Water Use	<p>Comment Table 1 provides averages for water consumption for January, June, September and December, as no data was available for these months.</p> <p>Recommendation Please provide an explanation as to</p>	None.	This information shall be included in future Annual Reports.

		why raw water intake data is unavailable for the months of January, June, September and December. Please explain any issues with flow metering, and plans to fix the problem.		
2	Annual Report Section b)i) Solid Waste	Comment Table 3 shows that no solid waste was removed from the Solid Waste Disposal Facilities in 2015. Recommendation Please provide additional information about the removal of solid waste from the SWDF: why was no waste removed in 2015? Are there plans to remove solid waste in the future, and if so, according to which criteria?	None.	Detailed information on removal and plans for removal of solid waste shall be included in future Annual Reports.
3	Annual Report Section b)ii) Sewage	Comment This section includes a comment that the decrease in sewage volume may be the result of inaccurate record keeping (ie missing data). Recommendation Please explain the steps that the Town will take to ensure that record keeping is improved and data is recorded and tracked for future years of annual reporting, as per MV2001L3-0005.	None.	This information shall be included in future Annual Reports.
4	Annual Report Section d)	Comment Table 7 lists the remaining storage volume of the SWDF as "approaching capacity/unknown". Recommendation Please provide additional detail concerning the capacity of the SWDF, and what plans the Town has to delineate the Facility's remaining capacity and to plan for future landfill expansion to accommodate the need for more capacity.	None.	This information shall be included in future Annual Reports, as well as in the resubmitted Landfill O&M Plan, due November 30, 2016.

5	Annual Report Section n) SNP Results	<p>Comment SNP results are provided by station, and for the stations sampled, results are provided in Appendix C. However, no samples were collected for 0053-4 or 0053-5.</p> <p>Recommendation Please explain why SNP 0053-4 and 0053-5 were not sampled during 2015, and include an explanation of future plans for sampling these stations in accordance with MV2009L3-0005.</p>	None.	This information shall be included in the 2016 Annual Report, and in future Annual Reports.
6	Annual Report Section o) Groundwater Monitoring	<p>Comment This section indicates that a number of metals parameters were exceeded during both the June and September sampling events, and states that the metals concentrations are 'variable and indicative of sediment in the water samples'.</p> <p>Recommendation Please provide the rationale for the determination that metals exceedences are a result of sediment and not presence of metals in groundwater, and what steps can be taken to solidify this conclusion. Does the Town believe that analyses for dissolved metals would be beneficial for monitoring groundwater quality?</p>	None.	Board staff have inquired with the Town regarding the analyses of dissolved metals in groundwater samples, through the review of proposed changes to the SNP, which is currently underway on the Online Review System.
7	Dillon Consulting 2015 Annual Groundwater Monitoring Report (Appendix B to Annual Report)	<p>Comment The Groundwater Monitoring Report includes sampling results from wells placed around the Biotreatment Pad only. While there were no reported exceedences of BTEX, MTBE or PHC fractions during 2015 sampling events, there were several exceedences of total metals reported during both 2015 sampling events,</p>	None.	See response to ENR comment 3, above.

	<p>including: aluminum, arsenic, cadmium, copper, iron, lead, manganese, mercury, nickel, selenium, silver and zinc. The report states that total metals concentrations are variable and are indicative of sediment in the water samples. It adds that future sampling procedures may consider different sampling methodology to reduce the presence of suspended solids and its influence on total metals concentrations. The Town has noted several groundwater samples that exceeded guideline values for several metals parameters; however, a plan to explore the reason for, or mitigate the exceedances has not been submitted. Board staff note direction given to the Town from the Board (letter dated June 4, 2015) regarding the Landfill Operation and Maintenance Plan and the requirements for a Groundwater Monitoring Plan therein.</p> <p>Recommendation Please indicate if the Town will be drafting and submitting a Groundwater Monitoring Plan that includes, but is not limited to, the requirements indicated by the Board on June 4, 2015.</p>		
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September 23, 2016

Miki Ehrlich
Regulatory Officer
Mackenzie Valley Land and Water Board
7th Floor – 4910 50th Avenue
P.O. Box 2130
Yellowknife, NT
X1A 2P6

Dear Ms. Ehrlich,

**Re: Town of Hay River
Water Licence – MV2009L3-0005
2015 Annual Water Licence Report
Request for Review and Comments**

The Department of Environment and Natural Resources (ENR), Government of the Northwest Territories has reviewed the information at reference based on its mandated responsibilities under the *Environmental Protection Act*, the *Forest Management Act*, the *Forest Protection Act*, the *Species at Risk (NWT) Act*, the *Waters Act* and the *Wildlife Act* and provides the following comments and recommendations for the consideration of the Board.

Topic 1: Water Licence Deficiencies

Comment(s):

Results for TSS at SNP 0053-2 were repeatedly above the Water Licence (Licence) criteria. It isn't clear if the Town notified the Board or the Inspector of these exceedances; in addition, the Annual Report should include such information. This is of concern to ENR, as notification and follow-up actions should occur as part of the process of rectifying any exceedances.

In the recently reviewed Annual Reports for 2012-2014, ENR noted and commented on the several incidents of Licence exceedances for TSS and BOD for all three years. During this previous review, ENR recommended to the Town that they discuss

mitigation strategies to address the TSS and BOD exceedances at the Licence SNP Station 0053-02 with the MVLWB, MACA and ENR. ENR encourages the Town to meet with the recommended parties to help address the exceedances.

Recommendations(s):

- 1) Annual Reports should indicate what actions were taken following elevated SNP results, including when they were reported to the Board or the Inspector. Any actions taken to identify the source of the elevated levels as well as the steps taken to prevent future exceedances should also be included.
- 2) A summary of Licence exceedances should be provided in the main body of the Annual Report (e.g. Section N – Surveillance Network Program Results).

Topic 2: Groundwater Quality

Comment(s):

The 2015 Annual Water Licence Report notes a number of groundwater samples exceeded groundwater guidelines for metal concentrations at all four (4) SNP 0053-7 monitoring wells (MW010-A through D). Exceedances were reported for both the spring and fall sampling events. Of particular concern are the high concentrations of heavy metals; such as lead at 0.07 mg/L and Aluminum at 47.4 mg/L. ENR has also commented previously on the 2014 Groundwater Monitoring Report, expressing concerns with the groundwater exceedances compared to Environment Canada's (2012) Guidance document on Federal Interim Groundwater Quality Guidelines for Federal Contaminated Sites and ESRD (2014) Alberta Groundwater Guidelines.

ENR notes the close proximity of the Solid Waste Facility to Hay River and that the monitoring wells suggest that the groundwater flow path is towards Hay River from the Facility.

ENR reminds the Town, as directed by the Board in its June 4, 2015 letter, to update the Groundwater Monitoring Plan to include testing parameters and water quality criteria; action levels for groundwater quality at which a response plan comes into effect; and a response plan which outlines the mitigative measures should groundwater quality action levels be exceeded.

Recommendation(s):

- 1) The Town should, as directed by the Board in its June 4, 2015 letter, update the Groundwater Monitoring Plan to include testing parameters and water quality criteria, action levels for groundwater quality at which a response plan comes

into effect and a response plan which outlines the mitigative measures should groundwater quality action levels be exceeded.

Comments and recommendations were provided by ENR technical experts in the Water Resources Division and the South Slave Region and were coordinated and collated by the Environmental Impact Assessment Section, Conservation, Assessment and Monitoring Division (CAM).

Should you have any questions or concerns, please do not hesitate to contact Patrick Clancy, Environmental Regulatory Analyst at (867) 767-9233 Ext: 53096 or email patrick.clancy@gov.nt.ca.

Sincerely,

A handwritten signature in black ink, appearing to read 'P. Clancy', written in a cursive style.

Patrick Clancy
Environmental Regulatory Analyst
Environmental Impact Assessment Section
Conservation, Assessment and Monitoring Division
Department of Environment and Natural Resources
Government of the Northwest Territories