

## Review Comment Table

<b>Board:</b>	WLWB
<b>Review Item:</b>	Behchoko - DRAFT Water Licence (W2014L3-0002)
<b>File(s):</b>	
<b>Proponent:</b>	Community Government of Behchoko
<b>Document(s):</b>	<a href="#">Community Government of Behchoko - Draft Water Licence</a> (500KB) <a href="#">Community Information Session - CGB Presentation</a> (3 MB) <a href="#">Community Information Session - WLWB Presentation</a> (1 MB) <a href="#">Community Information Session - Summary</a> (1 MB) <a href="#">Community of Behchoko Work Plan</a> (1 MB)
<b>Item For Review Distributed On:</b>	Sep 25 at 18:01 <a href="#">Distribution List</a>
<b>Reviewer Comments Due By:</b>	Oct 2, 2014
<b>Proponent Responses Due By:</b>	Oct 9, 2014
<b>Item Description:</b>	<p>The purpose of this draft Licence is to allow parties to comment on Board staff's suggested conditions. Please note that the Board is not bound by the contents of the draft Licence and will make its decision at the end of the proceeding based on all of the evidence.</p> <p>Board staff are recommending a term of 15 years and request that reviewers provide comments and recommendation on this, as well as the conditions of the draft Licence, via the the Review Comment Table here on our Online Review System. Supplementary information such as the application documents and technical session information requests (with proposed SNP location maps, etc.) may be accessed on the WLWB's online registry here: <a href="http://www.mvlwb.ca/Boards/WLWB/SitePages/search.aspx?app=W2014L3-0002">http://www.mvlwb.ca/Boards/WLWB/SitePages/search.aspx?app=W2014L3-0002</a></p> <p>Board staff have also provided links to the presentations and summary meeting notes from the Community Information Session held in Behchoko on September 10. Reviewers and the Applicant may comment on these materials, or submit any other final comments to the Board regarding the Behchoko Water Licence Application, by the deadlines noted below.</p> <p>Please contact Board staff at (867) 765-4592 if you have any questions or comments.</p>

<b>Contact Information:</b>	Jessica Pacunayen Ryan Fequet 867-765-4589 Sarah Elsasser 867-765-4583
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## Comment Summary

<b>Environment Canada: Bradley Summerfield</b>				
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ID	Topic	Reviewer Comment/Recommendation	Proponent Response	Board Staff Response
2	General File	<b>Comment</b> ( <a href="#">doc</a> ) EC cover letter <b>Recommendation</b>		
1	Operations and Management Plan (O&M) requirements under Draft Licence Part D: Conditions Applying to Waste Disposal and Part H: Conditions Applying to Operation and Maintenance	<b>Comment</b> EC notes that in the O&M Plan it is only recommended that sludge be removed from the lagoons every 5 years and that the proponent should but is not required to check the levels of sludge each year when completing annual inspections. <b>Recommendation</b> EC recommends that in Part D of the Licence there be a requirement of the Community Government of Behchoko to check the depth of sludge in the lagoons each year when doing annual reports. EC also recommends that the updated O&M Plan required to be submitted to the Wek'èèt'èzh'èi Land and Water Board for approval under Part H of the Licence contain provisions for sludge management.	<b>Oct 9: Given the likely deposition rate and size of the lagoons, sludge depth measurements on an annual basis in our opinion is excessive. This will result in an unnecessary compliance cost to the community with no net environmental benefit. Suggest that the frequency of every three years is more reasonable and will still identify any depth concerns should they exist.</b>	

<b>GNWT - Environment and Natural Resources: Central Email GNWT</b>				
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ID	Topic	Reviewer Comment/Recommendation	Proponent Response	Board Staff Response
7	General File	<b>Comment</b> ( <a href="#">doc</a> ) ENR letter with Comments and		

		Recommendations <b>Recommendation</b>		
1	Topic 1: SNP 0041-E8 Sampling Location "Before Entering Great Slave Lake"	<p><b>Comment</b> Comment(s): SNP station 0041-E8 was added to the Edzo Surveillance Network Program in order "to monitor water quality in the receiving environment." ENR however believes that monitoring should occur immediately before entering the receiving water body, to determine the quality of treated effluent before it mixes with the receiving environment. ENR's suggested sampling location would also correspond to the "point of discharge", defined in the Wastewater System Effluent Regulations (WSER) as "the point, other than an overflow point, of a wastewater system beyond which its owner or operator no longer exercises control over the quality of the wastewater before it is deposited as effluent in water or a place." As Behchoko is amongst the NWT communities to which the WSER will apply in the future, ENR recommends that SNP 0041-E8 sampling location be revised accordingly. At a minimum, the following parameters covered under WSER regulations should be analyzed: a) Suspended Solids (SS), b) Carbonaceous Biological Oxygen Demand (CBOD); and, c) Un-ionized ammonia (NH3). However, the community of Behchoko can monitor the water quality of this receiving water</p>	<p><b>Oct 9: This would appear to be a reasonable and logical recommendation. However provide that there is in fact a location at the Edzo outflow where a sample can be accessed and safely taken.</b></p>	

		<p>environment on their own terms and as they feel necessary in the future without having this sampling location become a fixture of their Surveillance Network Program to which the community would have to comply with for the duration of the Water Licence.</p> <p><b>Recommendation</b>  Recommendation(s): 1) ENR recommends for SNP 0041-E8 location to be moved from the receiving water body to the "point of discharge" (as above described) located just before the wastewater effluent is deposited into the receiving water body.</p>		
2	<p>Topic 2: Conditions for Land farm Remediation, Not Operation</p>	<p><b>Comment</b> Comment(s): Several comments were made during the review process questioning the actual state and operating practices of the Behchoko land farm facility. Behchoko's previous Water Licence was also amended in 2011 to include what appears to be EQC for treated water and standards for treated soil to be used for closure of the land farm. ENR notes that no requirements for the land farm O&amp;M plan or SNP monitoring were included within the draft Water Licence. As such, the conditions included within the current draft Water Licence appear to be for remediation of the current facility rather than operation, i.e. the given "land farm" definition does not include an operating facility but rather an area containing</p>	<p><b>Oct 9: It is recommended that the corrective actions in the WESA 2013 land farm assessment report be implemented. The community does not agree that no further soils should be accepted if the facility is operated in the manner which was recommended in the report. There is no justification for closure if the operational recommendations are implemented.</b></p>	

		<p>contaminated soils located at the landfill, and from condition Part I:1 requesting that a closure and reclamation plan for the land farm (including details of the current state of the facility, liner, etc.) be submitted by January 31, 2015.</p> <p><b>Recommendation</b>  Recommendation(s): 1) ENR agrees with the conditions of the draft Water Licence which suggest that no further contaminated soils and water will be accepted at the land farm facility under the current Water Licence's conditions.</p>		
3	None	<p><b>Comment</b> None</p> <p><b>Recommendation</b> 2) ENR notes that if the community of Behchoko wishes to operate a land farm at any time in the future, a proper amendment request process should be followed to ensure that adequate land farm designs are planned and adopted, and that land farming operation and maintenance practices are described in an approved Land Farm O&amp;M plan.</p>	<p><b>Oct 9: Agree, this is a compliance issue that should be met should the situation arise where effluent is required to be discharged from the land farm. However given the annual precipitation received at the location and the requirement to have a minimum moisture content for the petroleum hydrocarbon bio-degradation process to function properly the requirement for discharge is unlikely. Oct 9:</b></p> <p>Proponent response to ENR recommendation " ENR notes that if the community of Behchoko wishes to operate a land farm at any time in the future, a proper amendment request process should be followed to ensure that adequate land farm designs are planned and</p>	

			<p><i>adopted, and that land farming operation and maintenance practices are described in an approved Land Farm O&amp;M plan" should be as follows:</i></p> <p><b>Recommend the land farm operations recommendations outlined in 2013 WESA land farm assessment report be adopted as the operational guidelines and approved by the water licence.</b> Ignore previously posted proponent response to ENR recommendation (copy and paste error).</p>	
4	<p>Topic 3: Effluent Quality Criteria “Protection of Aquatic Life (Water Licence Part D:19)</p>	<p><b>Comment</b> Comment(s): Any/all treated effluent that results from the land farm facility treatment process - and that is planned to be discharged to the environment (including discharge at any landfill or back on the land farm facility) - should meet CCME Protection of Aquatic Life Effluent Quality Criteria (EQCs) standards. This level of effluent treatment is consistent with most recent Water Licence issuances for contaminated water/soil treatment operations. Furthermore, threshold limits provided in CCME Protection of Aquatic Life (CCME PAL) are consistent and correspond to EQCs limits provided in Alberta Tier 1 Groundwater Remediation Guidelines. Certain EQCs suggested in the current draft Water Licence should therefore be revised. For example, here is a list of</p>	<p><b>Oct 9: Oct 9: Agree, this is a compliance issue that should be met should the situation arise where effluent is required to be discharged from the land farm. However given the annual precipitation received at the location and the requirement to have a minimum moisture content for the petroleum hydrocarbon bio-degradation process to function properly the requirement for discharge is unlikely.</b></p>	

	<p>the currently suggested limits in Part D:19, followed by the revised numbers</p> <p>recommended: a) Benzene: 370 µg/L revised to 0.005 mg/L (or 5 µg/L) b) Ethylbenzene: 90 µg/L revised to 0.0024 mg/L (or 2.4 µg/L) c) Toluene: 2 µg/L revised to 0.024 mg/L (24 µg/L) d) pH: 6.5 to 9 revised to 6.5 to 8.5 Please note that in most recent issuances of Water Licence for treatment of contaminated soil and water, discharge limits for the following parameters (and associated CCME PAL standards allowing discharge) were also included: Antimony, Arsenic, Barium, Boron, Iron, Manganese, Selenium, Uranium, Zinc, Styrene, Acenaphthene, Acenaphthylene, Anthracene, Fluoranthene, Fluorene, Naphthalene, Phenanthrene, Pyrene, Carcinogenic PAHs (as B(a)P TPE), Benz[a]anthracene, Benzo[b+j]fluoranthene, Benzo[k]fluoranthene, Benzo[g,h,i]perylene, Benzo[a]pyrene, Chrysene, Dibenz[a,h]anthracene, Indeno[1,2,3-c,d]pyrene, Phenol and Polychlorinated biphenyls.</p> <p><b>Recommendation</b></p> <p>Recommendation(s): 1) ENR recommends that treated effluent resulting from the land farming treatment process discharged to the environment (including at landfill and land farm) be treated to standards that are consistent with other</p>		
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		treatment facilities in the NWT.		
5	Topic 4: Soil Treatment Quality Criteria “GNWT Guidelines for Contaminated Site Remediation (Water Licence Part D:20)	<p><b>Comment</b> Comment(s): Maximum grab sample limits provided in the draft Water Licence correspond to Industrial end use criteria, as per the GNWT "Guideline for Contaminated Site Remediation". Note that in most recent issuances of Water Licence for treatment of contaminated soil and water, discharge limits for the following parameters (to GNWT Guidelines for Contaminated Site Remediation) were also included: Antimony, Arsenic (inorganic), Barium, Beryllium, Cadmium, Total Chromium, Hexavalent Chromium (VI), Cobalt, Copper, Cyanide (free), Fluoride (total), Lead, Mercury (inorganic), Molybdenum, Nickel, Selenium, Silver, Thallium, Tin, Vanadium, Zinc, Phenol and Polychlorinated biphenyls. ENR also notes that the current treatment standards are established for industrial land use, as it is currently understood that treated soil will be used as filler/cover material at the landfill. If the proposed end use plans for the treated soils were to change, then the treatment standards might also change.</p> <p><b>Recommendation</b> Recommendation(s): 1) ENR recommends that any/all treated soil resulting from the land farming be treated to</p>	<b>Oct 9: Agreed</b>	

		<p>“ or surpass “ standards as described in the GNWT Guidelines for Contaminated Site Remediation.</p>		
6	None	<p><b>Comment</b> None  <b>Recommendation</b>  1) ENR recommends that the current industrial end use location (filler at the landfill) be specified within Behchoko Water Licence under Part D. 20, with specification that if a different location was to be selected, approval from the Board would be requested.</p>	<p><b>Oct 9: No concerns with recommendation, however request clarification that the “landfill” refers to both the existing site that will be subject to closure and the new adjacent facility which is to be developed.</b></p>	



Environment  
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Environmental Protection Operations Directorate (EPOD)  
Prairie & Northern Region (PNR)  
5019 52<sup>nd</sup> Street, 4<sup>th</sup> Floor  
P.O. Box 2310  
Yellowknife, NT X1A 2P7

October 2, 2014

EC File: 5200 000 006/003  
WLWB File: W2014L3-0002

Ryan Fequet  
Regulatory Manager  
Wek'èezhii Land and Water Board  
#1-4905 48<sup>th</sup> St.  
Yellowknife, NT X1A 3S3

Submitted via online submission

Attention: Ryan Fequet

**RE: W2014L3-0002 – Draft Type A Water Licence – Behchoko Municipal Water Licence – Tlicho Community Government of Behchoko**

Environment Canada (EC) has reviewed the information submitted to the Wek'èezhii Land and Water Board (WLWB) regarding the above-mentioned Water Licence draft and is submitting comments on mitigation measures as well as other matters of importance to the project proposal via the online review system as requested by the WLWB. EC's specialist advice is provided pursuant to the *Canadian Environmental Protection Act 1999*, the pollution prevention provisions of the *Fisheries Act*, the *Migratory Birds Convention Act*, and the *Species at Risk Act*.

Should you require further information, please do not hesitate to contact me at (867) 669-4707 or [Bradley.Summerfield@ec.gc.ca](mailto:Bradley.Summerfield@ec.gc.ca).

Sincerely,

Bradley Summerfield  
Environmental Assessment Coordinator

Attachment – (EC comments Excel Sheet)

cc: Loretta Ransom, A/Head, Environmental Assessment North (NT and NU), PNR-EPOD

Canada

[www.ec.gc.ca](http://www.ec.gc.ca)

October 2, 2014

Ryan Fequet  
Regulatory Specialist  
Wekeezhii Land and Water Board  
#1-4905 48<sup>th</sup> Street  
Yellowknife, NT  
X1A 3S3

Dear Mr. Fequet,

Re: **Community of Behchoko  
Water Licence – W2014L3-0002  
Draft Water Licence Review  
Request for Review and Comments**

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

### **Topic 1: SNP 0041-E8 Sampling Location – Before Entering Great Slave Lake**

#### **Comment(s):**

SNP station 0041-E8 was added to the Edzo Surveillance Network Program in order “to monitor water quality in the receiving environment.” ENR however believes that monitoring should occur immediately before entering the receiving water body, to determine the quality of treated effluent before it mixes with the receiving environment.

ENR’s suggested sampling location would also correspond to the “point of discharge”, defined in the Wastewater System Effluent Regulations (WSER) as “the point, other than an overflow point, of a wastewater system beyond which its owner or operator no longer exercises control over the quality of the wastewater *before* it is deposited as effluent in water or a place.” As Behchoko is amongst the NWT communities to which the WSER will apply in the future, ENR recommends that SNP 0041-E8 sampling location be revised accordingly. At a minimum, the following parameters covered under WSER regulations should be analyzed:

- a) Suspended Solids (SS),
- b) Carbonaceous Biological Oxygen Demand (CBOD); and,

- c) Un-ionized ammonia (NH<sub>3</sub>).

However, the community of Behchoko can monitor the water quality of this receiving water environment on their own terms and as they feel necessary in the future without having this sampling location become a fixture of their Surveillance Network Program to which the community would have to comply with for the duration of the Water Licence.

**Recommendation(s):**

- 1) ENR recommends for SNP 0041-E8 location to be moved from the receiving water body to the “point of discharge” (as above described) located just before the wastewater effluent is deposited into the receiving water body.

**Topic 2: Conditions for Land farm Remediation, Not Operation**

**Comment(s):**

Several comments were made during the review process questioning the actual state and operating practices of the Behchoko land farm facility. Behchoko’s previous Water Licence was also amended in 2011 to include what appears to be EQC for treated water and standards for treated soil to be used for closure of the land farm.

ENR notes that no requirements for the land farm O&M plan or SNP monitoring were included within the draft Water Licence. As such, the conditions included within the current draft Water Licence appear to be for remediation of the current facility rather than operation, i.e. the given “land farm” definition does not include an operating facility but rather an area containing contaminated soils located at the landfill, and from condition Part I:1 requesting that a closure and reclamation plan for the land farm (including details of the current state of the facility, liner, etc.) be submitted by January 31, 2015.

**Recommendation(s):**

- 1) ENR agrees with the conditions of the draft Water Licence which suggest that no further contaminated soils and water will be accepted at the land farm facility under the current Water Licence’s conditions.
- 2) ENR notes that if the community of Behchoko wishes to operate a land farm at any time in the future, a proper amendment request process should be followed to ensure that adequate land farm designs are planned and adopted, and that land farming operation and maintenance practices are described in an approved Land Farm O&M plan.

### **Topic 3: Effluent Quality Criteria – Protection of Aquatic Life (Water Licence Part D:19)**

#### **Comment(s):**

Any/all treated effluent that results from the land farm facility treatment process – and that is planned to be discharged to the environment (including discharge at any landfill or back on the land farm facility) – should meet CCME Protection of Aquatic Life Effluent Quality Criteria (EQCs) standards. This level of effluent treatment is consistent with most recent Water Licence issuances for contaminated water/soil treatment operations. Furthermore, threshold limits provided in CCME Protection of Aquatic Life (CCME PAL) are consistent and correspond to EQCs limits provided in Alberta Tier 1 Groundwater Remediation Guidelines.

Certain EQCs suggested in the current draft Water Licence should therefore be revised. For example, here is a list of the currently suggested limits in Part D:19, followed by the revised numbers recommended:

- a) Benzene: 370 µg/L revised to 0.005 mg/L (or 5 µg/L)
- b) Ethylbenzene: 90 µg/L revised to 0.0024 mg/L (or 2.4 µg/L)
- c) Toluene: 2 µg/L revised to 0.024 mg/L (24 µg/L)
- d) pH: 6.5 to 9 revised to 6.5 to 8.5

Please note that in most recent issuances of Water Licence for treatment of contaminated soil and water, discharge limits for the following parameters (and associated CCME PAL standards allowing discharge) were also included: Antimony, Arsenic, Barium, Boron, Iron, Manganese, Selenium, Uranium, Zinc, Styrene, Acenaphthene, Acenaphthylene, Anthracene, Fluoranthene, Fluorene, Naphthalene, Phenanthrene, Pyrene, Carcinogenic PAHs (as B(a)P TPE), Benz[a]anthracene, Benzo[b+]fluoranthene, Benzo[k]fluoranthene, Benzo[g,h,i]perylene, Benzo[a]pyrene, Chrysene, Dibenz[a,h]anthracene, Indeno[1,2,3-c,d]pyrene, Phenol and Polychlorinated biphenyls.

#### **Recommendation(s):**

- 1) ENR recommends that treated effluent resulting from the land farming treatment process discharged to the environment (including at landfill and land farm) be treated to standards that are consistent with other treatment facilities in the NWT.

### **Topic 4: Soil Treatment Quality Criteria – GNWT Guidelines for Contaminated Site Remediation (Water Licence Part D:20)**

**Comment(s):**

Maximum grab sample limits provided in the draft Water Licence correspond to Industrial end use criteria, as per the GNWT “Guideline for Contaminated Site Remediation”.

Note that in most recent issuances of Water Licence for treatment of contaminated soil and water, discharge limits for the following parameters (to GNWT Guidelines for Contaminated Site Remediation) were also included: Antimony, Arsenic (inorganic), Barium, Beryllium, Cadmium, Total Chromium, Hexavalent Chromium (VI), Cobalt, Copper, Cyanide (free), Fluoride (total), Lead, Mercury (inorganic), Molybdenum, Nickel, Selenium, Silver, Thallium, Tin, Vanadium, Zinc, Phenol and Polychlorinated biphenyls.

ENR also notes that the current treatment standards are established for industrial land use, as it is currently understood that treated soil will be used as filler/cover material at the landfill. If the proposed end use plans for the treated soils were to change, then the treatment standards might also change.

**Recommendation(s):**

- 1) ENR recommends that any/all treated soil resulting from the land farming be treated to – or surpass – standards as described in the GNWT Guidelines for Contaminated Site Remediation.
- 2) ENR recommends that the current industrial end use location (filler at the landfill) be specified within Behchoko Water Licence under Part D. 20, with specification that if a different location was to be selected, approval from the Board would be requested.

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

If you have any questions or concerns, please do not hesitate to contact me at 920-6118 or [patrick.clancy@gov.nt.ca](mailto: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  
Conservation, Assessment and Monitoring Division  
Department of Environment and Natural Resources  
Government of the Northwest Territories