

## Review Comment Table

<b>Board:</b>	SLWB
<b>Review Item:</b>	S01L1-003 - 2017 Annual Water Licence Report - Nogha C-49 and M-17
<b>File(s):</b>	<a href="#">S01L1-003</a>
<b>Proponent:</b>	MGM Energy
<b>Document(s):</b>	<a href="#">2017 Annual Report - Nogha C-49 Wellsite and C-49/M-17 Sump</a> (6.6 MB) <a href="#">2017 Annual Report - Nogha M-17 Wellsite</a> (4.4 MB)
<b>Item For Review Distributed On:</b>	Feb 13 at 14:14 <a href="#">Distribution List</a>
<b>Reviewer Comments Due By:</b>	Mar 13, 2018
<b>Proponent Responses Due By:</b>	Apr 16, 2018
<b>Item Description:</b>	<p>MGM Energy has submitted the 2017 Annual Water Licence Reports in accordance with the requirements of Water Licence <a href="#">S01L1-003</a>, Part B, condition 2. Although formal Board approval is not required under the Licence, the Board must be satisfied that the Licensee has met the requirements of the Licence. The purpose of this review is also to consider the progress made on reclamation of the Project Site (Nogha C-19 Wellsite, Nogha C-49/M-17 Sumps, and Nogha M-17 Wellsite) as well as whether the results and conclusions have been appropriately and accurately reported and support the recommended further reclamation activities.</p> <p>This Type B Water Licence was issued on December 19, 2001 for a period of five years, with a renewal of 2 yrs granted September 8, 2006, and expired December 18, 2008 but is not closed. The Licence was for winter exploratory oil and gas drilling of up to three wells south of Colville Lake, between Lac Belot and Lac des Bois. The associated Land Use Permit is <a href="#">S01A-007</a> which also has expired but not closed.</p> <p><b>*NOTE*</b> The Proponent response deadline has been extended to April 16, 2018</p>
<b>General Reviewer Information:</b>	<b>Reviewers are invited to submit questions, comments, and recommendations on these submissions by the review comment deadline specified.</b> All documents that have been uploaded to this review are also available on our public registry. If you have any questions or comments about the ORS or this review, please contact Board staff identified.
<b>Contact Information:</b>	Sabrina Sturman 867-598-2413

## Comment Summary

GNWT - ENR: Central Email GNWT				
ID	Topic	Reviewer Comment/Recommendation	Proponent Response	Board Staff Response
2	General File	<b>Comment</b> ( <a href="#">doc</a> ) ENR Letter with Comments and Recommendations <b>Recommendation</b>		
1	Topic 1: Proposed 2018 Monitoring Plans	<b>Comment</b> None. <b>Recommendation</b> 1) ENR supports the proposed 2018 Monitoring Plan presented in the 2017 Annual Environmental Inspection Reports.	<b>Apr 16:</b> No response required.	
GNWT- OROGO: Ed Hardy				
ID	Topic	Reviewer Comment/Recommendation	Proponent Response	Board Staff Response
1	General File	<b>Comment</b> ( <a href="#">doc</a> ) General - 2018-03-12 Letter SLWB S01L-003 WID 1934 and 1970 <b>Recommendation</b>		
Sahtu Renewable Resource Board: Colin Macdonald				
ID	Topic	Reviewer Comment/Recommendation	Proponent Response	Board Staff Response
1	General Report	<b>Comment</b> The report does a good job of evaluating the physical condition of the site and documenting the revegetation, but the chemical and statistical analysis of the soil chemistry in the report is a major problem. High SAR and elemental concentrations in areas, such as the area at the sumps, could indicate significant contamination issues. The structure of the sampling program and data tables makes it very difficult to track the results of any	<b>Apr 16:</b> Acknowledged. In future monitoring programs the reference samples will be grouped based on type (i.e., organic soils vs mineral soils). Soil type will be determined based on field observations, saturation percentage, organic matter and/or total organic carbon analysis. Statistics (i.e., reference concentrations) will be calculated using median values and 95% upper confidence limits of the	Response acceptable

		<p>sample, and the conclusions. Specific examples are given below.</p> <p><b>Recommendation</b> The poor statistical analysis and grouping of soil samples (examples below) makes it difficult to determine spatial trends in soil chemistry. There should be no conclusions regarding the suitability of soil for reclamation until the sampling program and analysis are revised. The observations of revegetation and the physical condition of the site are good.</p>	<p>mean (UCLM). Samples collected deeper than 0.5 m below ground surface will be excluded from the statistical calculations. References: Protocol 4 for Contaminated Sites: Establishing Background Concentrations in Soil (BC Ministry of Environment and Climate Change Strategy [MOECCS], Nov. 2017); Technical Guidance 2 (Statistical Criteria for Characterizing a Volume of Contaminated Material (BC MOECCS, Jan. 2009).</p>	
2	Pg ii Bare Area:	<p><b>Comment</b> “The elevated SAR values observed in 2017 are is (sic) likely attributed to an relatively higher concentration of sodium and relatively lower concentrations of magnesium and calcium”. SAR is calculated as the ratio of Na to Ca+Mg, so the explanation provided isn’t helpful. The high ratio indicates a change in the physical and chemical characteristics of soil that make growth by vegetation difficult.</p> <p><b>Recommendation</b> The question remains if this is a random sample with high SAR or if it is representative of the area sampled. More samples should be collected in the area.</p>	<p><b>Apr 16:</b> Acknowledged. Additional sampling in this area will be taken into consideration when planning future soil monitoring programs at the Site.</p>	Response acceptable
3	Pg iii Sump Area:	<p><b>Comment</b> “The ground settlement does not appear to have affected the integrity of the sump and the sump</p>	<p><b>Apr 16:</b> Changes in the shape of the sump cap are believed to be related to settlement of the sump</p>	Response acceptable

		<p>appears stable in its current configuration”. Is there any way to confirm this observation? The changes in the shape of the cap could indicate changes in the integrity of the base of the sump.</p> <p><b>Recommendation</b> Given the crack in the surface of the sump and soil chemistry of the Bare Area (high conductivity and SAR), tests should be conducted to ensure the integrity of the sump, possibly by sampling boreholes just outside the margin of the sump. Surface soil samples were collected at the boreholes but samples need to be collected at depth, and borehole water was not collected for analysis. Surface soil sampling might not pick up the extent of contamination if the sump is leaking.</p>	<p>cap rather than from changes at the base of the sump. Differential settlement is often observed following winter earthwork activities (e.g., excavation and backfilling). Subsidence problems related to the melting of ice-rich permafrost are not expected at the site since soils consists of mineral soils (coarse grained till) in which no permafrost was observed. As stated in the Recommendations Table (Page ii), additional soil sampling to further assess the sump for salinity, barium and petroleum hydrocarbons is planned during the next monitoring event. Consideration will be given to collecting samples at depth. However, lots of stones, will prevent hand auger below 0.5 m and won't help assess sump integrity.</p>	
4	Section 2.2 Reference Data	<p><b>Comment</b> The method of using the 95th percentile for comparison to site samples is a problem. The small number of samples inflates the range of the upper and lower limits. Also, the incorrect grouping of surface and subsurface samples (described below) invalidates the calculation of the average values and confidence limits. This approach is not generally</p>	<p><b>Apr 16:</b> Acknowledged. In clarification, although percentiles were calculated for all parameters, they were used only for comparison purposes for parameters that do not have applicable guideline values, and to determine the salinity and sodicity rating categories for the use of Alberta Salt</p>	Response acceptable

		<p>used in determining the level of contamination at a site.</p> <p><b>Recommendation</b> MGM needs to redesign its soil sampling program using appropriate statistics. Comparison of individual sites to CCME, NWT or Alberta standards is fine, but grouping samples inappropriately or using small sample sizes to calculate very large bounds (5% and 95%) makes comparisons invalid.</p>	<p>Remediation &amp; Contamination Assessment Guidelines. For the monitoring program, percentiles, rather than minimum, maximum or median values, were calculated for reported concentrations of soluble parameters (e.g., calcium, chloride, potassium, magnesium, sodium and sulphate) to aid in determining approximate ranges at sample locations considered to represent background conditions. For pH only, the 5th percentile was calculated to provide a range of pH values observed in background locations. It is agreed that the use of percentiles over the entire reference data population may have inflated the range since they may have been obtained from different populations, although the overall use of the 95th percentile ranges did not alter the findings in the report. In future monitoring programs, the reference samples will be grouped based on type (i.e., organic soils vs mineral soils) based on field observations, saturation percentage, organic matter and/or total organic carbon analysis. Reference concentrations will be</p>	
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			calculated using medians and 95% upper confidence limits of the mean (UCLM). Samples collected deeper than 0.5 m below ground surface will be excluded from the statistical calculations.	
5	Table F-1	<p><b>Comment</b> MGM grouped the surface (0.05 to 0.11 m and 0.11 to 1.2 m) samples from 2012, with the 0-0.25 m and 0.25-0.5 m samples from 2015, 2016 and 2017 to give a reference value (e.g., calcium, mg/kg). These samples are not independent (surface and subsurface samples are highly correlated) and should not be grouped. The data show that the surface samples are 10-20x higher than the subsurface samples. Grouping them together gives a very high 95% CI, which means that just about any value observed on the wellsite will fit into the range of “reference” values.</p> <p><b>Recommendation</b> These data tables are rife with errors in sample design and statistics, and the whole approach needs to be redone. This has been pointed out in a number of previous reports conducted by this group and has not been improved. Because of the errors, it isn’t possible to make conclusions about the degree of contamination, except in cases where individual samples can be compared to</p>	<p><b>Apr 16:</b> Agree that samples from different depth ranges should not be grouped together. As stated above, the 95th percentiles were calculated for all parameters but were used for comparison purposes only where there is no applicable guideline value, or where a anomalous analytical result above the guideline value may be representative of natural soil conditions. Not all concentrations of samples on the sump were below the calculated 95th percentile values (e.g., soil samples from the South Sump Bare Area) and the discussion of these soil samples did not suggest that they are representative of background conditions; rather, that additional soil sampling is required. In future monitoring programs the reference samples will be grouped based on type (e.g. organic soils vs mineral soils) based on field observations, saturation percentage, organic</p>	Response acceptable

		CCME, GNWT or Alberta standards.	matter and/or total organic carbon analysis. Background concentrations will be estimated using medians and 95% UCLMs. Soil samples collected deeper than 0.5 m below ground surface will be excluded from the statistical calculations.	
6	Table F-1	<p><b>Comment</b> Another example of incorrect grouping. The 2012 report of calcium (meq/L from 2012). The only 2 data point used to calculate 5% and 95% are from the same sample site (different depths). These samples are not independent and should be treated as separate samples. Also, using 2 samples for 5% and 95% estimates inflates the range unacceptably.</p> <p><b>Recommendation</b> Statistics can be used on independent samples of similar depth and chemical analysis.</p>	<p><b>Apr 16:</b> Acknowledged. As stated above, the 95th percentile ranges were calculated for all parameters but were used for comparison purposes only where there is no applicable guideline value, or where a anomalous analytical result above the guideline value may be representative of natural soil conditions. The concentrations in meq/L are used by the laboratory to calculate other parameters (e.g., sodium adsorption ratio) but are not used to in the discussion of results or form a basis of conclusion. For clarity, these will be omitted from future tables. We acknowledge that the 0.11 to 1.2 sample should have been omitted from the statistical calculation. Future monitoring reports will segregate reference data between organic and mineral soils, and the medians and 95% UCLMs will be used.</p>	Response acceptable

7	Table F-1	<p><b>Comment</b> No data are provided for the lab replicates. Is there a problem with the analysis or the data? No recent data are presented for metals and the mean is calculated from the 2012 data set of surface and subsurface samples, which is not appropriate.</p> <p><b>Recommendation</b> Duplicate samples should be analysed in the same way as the test samples to ensure that the test sample data are correct. Full data sets should be included for all duplicates.</p>	<p><b>Apr 16:</b> The replicate analysis was conducted by the laboratory for their QA/QC program to determine precision. The analytical laboratory runs laboratory replicates at a predetermined frequency per sample batch. If the sample batch analyzed by the laboratory included samples from other projects, laboratory replicates are only reported if they are run on one of the samples from this project. There is no obligation, or technical basis, for running laboratory replicates on samples from every project included in a sample batch. Consequently, we are not able to select which samples undergo laboratory replicate analysis, nor are we able to select which parameters the replicates are analyzed for. The results are tabulated based solely on the data provided by the laboratory. Discussion of the laboratory replicates is provided in Section 4.5. Blind field duplicate samples were used to qualify the reproducibility of the laboratory analysis for the parameters analyzed and the same analysis was requested on the primary and duplicate samples.</p>	Response acceptable
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			<p>The field duplicates met the acceptable relative percent difference (RPD) of 60%. The QA/QC program included 16% field soil duplicates at the wellsite and 14% for soil samples collected from the sump, which is within the typical recommendation of 10% to 20%. With respect to metals analysis, no soil samples have been analyzed since 2012 for metals since all metals parameters met the applicable guidelines. It has been determined that they are no longer a potential contaminant of concern, and additional sampling for metals is not required. In 2017, Kālo Stantec did not tabulate historical laboratory data collected by other consultants, with the exception of soil samples that were determined to represent reference sample locations. The tabulation of metals analytical results from reference samples in Table F-1 should have been omitted from the report, since it was not required for the discussion or the objective of the sampling program.</p>	
8	Table F-1	<p><b>Comment</b> The surface sample at C49_Wellsite_SS5 shows high F2, F3 and F4. It looks like the value was used</p>	<p><b>Apr 16:</b> There is no problem with the reference site. Organic soils are known to</p>	Response acceptable

		<p>to calculate a reference range. Is this accurate?</p> <p><b>Recommendation</b> Is there a problem with the reference site? If so, then the sample should be removed from the calculation of the reference site values.</p>	<p>include biogenic organic compounds that yield false positive petroleum hydrocarbons results, especially in the fractions 3 and 4 ranges. Silica gel treatments are unable to remove all these biogenic compounds. Based on the saturation percentage, the sample C49_Wellsite_SS5 is characteristic of organic soils. With respect to organic compounds, there were no comparisons made using the 95th percentile values in this report.</p>	
9	Table F-4	<p><b>Comment</b> There is clear contamination in the bare area of the sumps but data are not reported for the C49_sump lab replicate. The column should be removed if the analysis was only conducted for one set of parameters.</p> <p><b>Recommendation</b> There is no indication of where the contamination between the sumps came from. Is this historic contamination, from before the sumps were closed, or recent contamination?</p>	<p><b>Apr 16:</b> As discussed in our response to comment 7, the replicate analysis was conducted by the laboratory for their QA/QC program to evaluate precision for parameters it selects. It is acknowledged that the formatting of the table is such that it is difficult to distinguish between bare areas on the Sump.</p>	Response acceptable
10	Table F-5	<p><b>Comment</b> This table of field duplicates and lab replicates is not useful. All the missing data indicates that QA was conducted on some parameters in some samples, but QA/QC performance was not evaluated over the whole program.</p> <p><b>Recommendation</b></p>	<p><b>Apr 16:</b> As stated previously, laboratory replicate analyses are conducted by the laboratory for their QA/QC program and the parameters analyzed are selected by the laboratory; thus single parameters only are</p>	Response acceptable

		<p>Duplicates and replicates need to be built into the sample design to check analytical performance and not have chemical parameters individually selected.&amp;nbsp;</p>	<p>shown in some cases. The purpose of the table was to display the RPD calculations between the primary and field duplicate sample. Field duplicates are submitted for analysis based on the area assessed and the potential contaminants of concern. In this case, the field duplicate sample was analyzed for salinity parameters, providing a check on statistical variance and sampling technique, as well as laboratory analytical variability. In 2017 sampling, soil analytical results generally met the QA/QC RPD target of 60%.</p>	
11	Pg v Recommendations	<p><b>Comment</b> It is recommended that the sump area vegetation be monitored in 2019 or 2020.</p> <p><b>Recommendation</b> Given the condition of the soil in the bare area between the sumps, and the physical condition of the sumps, an evaluation of the integrity of the sumps is warranted before 2019. A long-term plan for the sumps, given warmer climate and decaying permafrost, should also be presented by MGM and the SLWB.</p>	<p><b>Apr 16:</b> The reviewer's comment appears to be more oriented to sump integrity rather than vegetation monitoring recommendations. Regarding vegetation monitoring: the North Sump Bare Area and the South South Bare Area underwent reclamation treatments in 2017 to increase vegetation cover and potentially decrease elevated soil salinity levels by uptaking into plant roots and foliage. Reconnaissance level monitoring is being recommended for 2018 to assess vegetation establishment and growth after 1 growing season.</p>	Response acceptable.

			<p>This will be followed up with more detailed monitoring of vegetation in 2019 or 2020 in conjunction with soil sampling to assess vegetation establishment and growth in the treated areas and EC and SAR levels. The results of detailed monitoring will then be used to determine if electrical conductivity (EC) and sodium adsorption ration (SAR) levels are decreasing and if the vegetation cover meets land use permit requirements or if additional treatments are needed. Regarding sump integrity: Refer to response above in ID3--</p> <p>Subsidence problems related to the melting of ice-rich permafrost are not expected at the site since soils consists of mineral soils (coarse grained till) in which no permafrost was observed. In addition, the conclusions regarding terrain conditions indicated that the area now appears stable, with no further settlement observed since the beginning of Kālo Stantec's site visits in 2015 and under current site conditions, the structural integrity of the sump appears intact</p> <p>Based on these details, a long-term plan does not</p>	
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			seem warranted for these sumps.	
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March 13, 2018

Sabrina Sturman  
Regulatory Specialist  
Sahtu Land and Water Board  
Box 1,  
Fort Good Hope, NT X0E 0H0

Dear Ms. Sturman,

**Re: Paramount Resources Ltd.  
Water Licences – S01L1-003, S03L1-015, S04L1-011, S04L1-012,  
S03L1-016, S12L1-001  
2017 Water Licence Annual Reports  
Request for Comment**

The Department of Environment and Natural Resources (ENR), Government of the Northwest Territories has reviewed the plan 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.

**2017 Annual Water Licence Report – S01L1-003 - Nogha C-49 Wellsite and Sump and Nogha M-17 Wellsite**

**Topic 1: Proposed 2018 Monitoring Plans**

**Comment(s):**

None.

**Recommendation(s):**

- 1) ENR supports the proposed 2018 Monitoring Plan presented in the 2017 Annual Environmental Inspection Reports.

## **2017 Annual Water Licence Report - S03L1-016 - Nogha B-23 and Nogha K-14**

### **Topic 1: Proposed 2018 Monitoring Plans**

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

None.

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

- 1) ENR supports the proposed 2018 Monitoring Plans presented in the 2017 Annual Environmental Inspection Reports

## **2018 Annual Water Licence Report - S03L1-015 - Maunoir C-34 & L-80**

### **Topic 1: Proposed 2018 Monitoring Plans**

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

In the previously submitted Inspection Report, (2015 – no report was submitted in 2016 by Paramount), ENR recommended surface water samples should also be conducted with ground investigations in 2016 to delineate potential zones of contamination due to the potential for contaminated soil at these two well sites. Paramount responded stating that water samples will be taken from areas within the vicinity of the bare areas. However, due to the omission of the 2016 report and the lack of mention in the 2017 report on surface water sampling, GNWT carries forward this recommendation unless Paramount can provide the sampling results from 2016 (and 2017 if collected).

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

- 1) ENR recommends Paramount provide the water sampling results from 2016 (and 2017 if collected) that was committed to by Paramount.
- 2) If no surface water samples have been collected to date as requested, or if the analytical results indicated further testing is warranted, ENR recommends adding water sampling analysis in 2018 to delineate potential zones of contamination for both areas. This should include testing for petroleum hydrocarbons regardless of whether the surface waters pass the “stick test”.

## **2017 Annual Water Licence Report - S04L1-011 - Maunoir E-35 Sump**

### **Topic 1: Proposed 2018 Monitoring Plans**

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

In 2016, slumping along the northern corner of Sump 2 was identified and Stantec recommended a mitigation plan be developed. In the 2017 Annual Environmental Inspection Report it is explained that a mitigation plan has not yet been developed as more information is required for proper development.

In 2017, further slumping and tension cracks were observed and soluble parameters in standing water were higher than background levels for a second consecutive year. Under current conditions Paramount suggests that the sump's side slope will further collapse, however this will not impact the drilling wastes that are contained at lower depths.

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

- 1) ENR supports the proposed 2018 Monitoring Plans presented in the 2017 Annual Environmental Inspection Report.
- 2) ENR supports the recommendation made by Stantec that a remediation plan be developed to address the unstable slopes and depressions present along the perimeter of Sump 2. Further, ENR recommends additional detail is provided as to when a mitigation plan will be developed.

## **2017 Annual Water Licence Report - S04L1-011 - Maunoir A-67 Wellsite**

### **Topic 1: Proposed 2018 Monitoring Plan**

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

None.

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

- 1) ENR supports the proposed 2018 Monitoring Plan presented in the 2017 Annual Environmental Inspection Report.

## **2017 Annual Water Licence Report - S04L1-012 - Turton G-47 Wellsite and Sump**

### **Topic 1: Proposed 2018 Monitoring Plan**

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

None.

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

- 1) ENR supports the proposed 2018 Monitoring Plan presented in the 2017 Annual Environmental Inspection Report.

## **2017 Annual Water Licence Report - S12L1-001 - East Mackay I-78 Wellsite and Staging Area**

### **Topic 1: Proposed 2018 Monitoring Plan**

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

Section 3.2.1 states that evidence that would trigger the collection of a soil and standing water samples includes the presence of a hydrocarbon-like sheen on the surface of standing water.

In 2017, standing water as observed at the wellhead with a slight sheen. However, water samples were not collected and Paramount identified that the delineation of the impacts surrounding the wellhead will be addressed when the wellhead is cut, capped and abandoned.

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

- 1) ENR supports the proposed 2018 Monitoring Plan presented in the 2017 Annual Environmental Inspection Report.
- 2) ENR recommends surface water samples be conducted in 2018 should a sheen be observed on the standing water at the wellhead.

Comments and recommendations were provided by ENR technical experts in the Water Resources Division and the Sahtu Region and were coordinated and collated by the Environmental Assessment and Monitoring Section (EAM), 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](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 Assessment and Monitoring Section  
Conservation, Assessment and Monitoring Division  
Department of Environment and Natural Resources  
Government of the Northwest Territories



NWT OFFICE OF THE REGULATOR OF OIL AND GAS OPERATIONS

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Sahtu Land and Water Board  
PO BOX 1  
FORT GOOD HOPE NT XOE OHO

MAR 12 2018

Dear Board Members:

**Comments S01L1-003 2017 Annual Water Licence Report NOGHA C-49 WID 1934 and M-17 WID 1970**

This letter is in respect to the Sahtu Land and Water Board request for reviewer comments on the above captioned matter, dated March 12<sup>th</sup> 2018. Wells NOGHA C-49 WID 1934 and M-17 WID 1970 operated by Paramount Resources Ltd. are regulated by the Office of the Regulator of Oil and Gas Operations (OROGO) under the *Oil and Gas Operations Act*.

Section 56 of the *Oil and Gas Drilling and Production Regulations* requires that all wells be permanently plugged and decommissioned in order to isolate all oil and gas bearing, pressure and potable water zones and to prevent any formation fluid from flowing through or escaping from the well-bore, a process known as abandonment. This well is currently classified as suspended and still requires abandoned.

Reviewers should note that abandonment of a well may require intensive, short duration activity and heavy machinery access (e.g. service rig) to a well site, to complete well abandonment or suspension operations. All well operations require authorization from OROGO. Compliance with the terms of an authorization and other legal requirements is monitored and enforced by OROGO's compliance team.

OROGO's *Suspension and Abandonment Guidelines and Interpretation Notes* (the Guidelines), issued under section 18 of the *Oil and Gas Operations Act* describe the technical requirements for well suspension and abandonment and compliance with section 56. To promote safety and environmental protection, they also impose a deadline for a company to abandon a well if it will not be used for the production of oil or gas. The Guidelines came into effect on February 1, 2017 and can be accessed on OROGO's website at:

[www.oroogo.gov.nt.ca/en/well-suspension-and-abandonment-guidelines-and-interpretation-notes](http://www.oroogo.gov.nt.ca/en/well-suspension-and-abandonment-guidelines-and-interpretation-notes)

If you have any questions about this letter and OROGO's role, please contact us at [OROGO@gov.nt.ca](mailto:OROGO@gov.nt.ca)

Regards,

Ed Hardy  
Technical Specialist