Review Comment Table

Board:	SLWB
Review Item:	ConocoPhillips - S14J-002 - S14L3-001 - Additional Multi-Season Camp
File(s):	S14J-002 S14L3-001
Proponent:	Conoco Phillips
Document(s):	Land Use Permit and Water Licence Application (2mb) Additional Information - Requested by SLWB (2mb)
Item For Review Distributed On:	Feb 7 at 10:36 Distribution List
Reviewer Comments Due By:	Feb 28, 2014
Proponent Responses Due By:	Mar 7, 2014
Item Description:	Dear Sir/Madam: **Re: Land Use Permit (Type A) and Water Licence (Type B) Applications** **ConocoPhillips Canada** **Additional Multi-season Camp and Storage Area Expansion** **Request for Comments** Attached for your review and comment is a Land Use Permit and Water Licence Application from ConocoPhillips Canada. The requested program from ConocoPhillips includes; • Expand the existing Storage Area at kilometer 7 of ConocoPhillips access road to accommodate a multi-season camp. This new camp will be capable of accommodating up to 325 people. • Relocate camp equipment from existing winter Loon Creek camp, reducing that camp from being able to accommodate 150 people to 100 people. ConocoPhillips intends to still use this winter only camp licensed and permitted under S12A-005/S12L1-005 and S13A-001/S13L1-004. • ConocoPhillips is requesting additional water usage in the amount of 9,000m3 solely from the Mackenzie River.

	• ConocoPhillips is requesting up to 8 (61,000L) tanks (1 spare) plus 6 (61,000L) tanks at the Loon Creek Camp in additional fuel storage. Please submit your comments or concerns in writing to our office through the **online review system**, no later than **Friday February 28, 2014**. **Comments shall be uploaded directly to the online review system**. If you are unsure of how to do this please contact the Sahtu Land and Water Board office. Should you need additional time, please contact us prior to the above noted date. Thank you for your time and effort on this matter. Tony Morris Regulatory Specialist
Contact Information:	Tony Morris 867-598-2413 ext 223

Comment Summary

Conoco Phillips (Proponent)			
ID	**Topic**	**Reviewer Comment/Recommendation**	**Proponent Response**
1	General File	**Comment** (doc) (Submitted after Due Date) Transmittal Letter **Recommendation**	
AANDC: Jan Davies			
ID	**Topic**	**Reviewer Comment/Recommendation**	**Proponent Response**
1	AANDC Comments	**Comment** (doc) See Attached **Recommendation** See Attached	**Mar 10:** (doc) ConocoPhillips has reviewed the conditions proposed by AANDC in terms of appropriateness and relevancy to this application in the SSA. Reference to "the Board" is considered to be the SLWB. ConocoPhillips has the following comments and caveats: 3. "The Permittee shall use an existing campsite, as described in the complete application". ConocoPhillips seeks clarification on proposed condition since its contradictory as this application is for a new campsite. 10. "The Permittee shall remove all wire from the land as the land-use operation progresses". ConocoPhillips seeks clarification on proposed

			condition since it does not seem applicable to a non-seismic application. 17. "The Permittee shall not conduct off-road vehicle travel in areas without snow-covered surfaces". ConocoPhillips requests that this condition be removed and replaced with a condition similar to LUP S13A-001 section 26(1) (D) D.1 which limits use of vehicles to a ground pressure under 35kpa for any vehicles on the land during periods of non-snow cover. 31. "The Permittee shall: (a) examine all Fuel Storage Tanks and containers for leaks a minimum once per day; and (b) repair leaks immediately". ConocoPhillips requests that this condition be modified for non-operational periods. During periods of non-operation when personnel are not on-site fuel storage tanks will be remotely monitored. ConocoPhillips plans to install a remote fuel monitoring system fuel tanks. This system will provide real- time monitoring of fluid levels as well as customizable alarms for notification of any fluid removal. 38. "The Permittee shall seal all outlets of Fuel Storage Containers and store the containers on their sides with the outlets located at 3 and 9 o'clock, except for containers currently in use". ConocoPhillips seeks clarification on proposed condition specifically since nature of container may not always allow for orientations as required. 45. "The Permittee shall not clear any vegetation". ConocoPhillips seeks clarification on proposed condition 45 since it conflicts with proposed conditions 43 and 44. Vegetation will be required to be cleared.
2	AANDC WL S14L3-001 Comments	**Comment** (doc) See attached **Recommendation** See attached	**Mar 10:** (doc) AANDC IR Response table **Mar 10:** (doc) See attached response table
3	S14L3-001 - RECLAIM - Security Estimate	**Comment** (doc) See attached. **Recommendation** See attached.	**Mar 10:** (doc) ConocoPhillips is committed to meeting all applicable regulatory requirements for site reclamation associated with ConocoPhillips activity on EL470. ConocoPhillips is obligated to reclaim the land used during its operations to the satisfaction of the ANNDC land Use inspector under AANDC requirements and through its Access Agreement with the Tulita District Land Corporation. ConocoPhillips also acknowledges the need to protect the public from

			potential liabilities resulting from industrial activities. However, for this specific workscope, ConocoPhillips disagrees with the AANDC recommendation to the SLWB for additional security posting (both for Land Use and for Water Licence). ConocoPhillips notes that there are various security deposits (in the form of Letters of Credit) already in place with AANDC and NEB for water licences, land use permits and drilling activities. The scopes of these deposits overlap with the scope of this application which only covers the potential camp expansion and the plan to set the camp up in a single location (which arguably could reduce liability exposure). Additionally, ConocoPhillips notes that the calculation sheet includes scopes not requested in the application (e.g. cost for all season road scarifying). ConocoPhillips recommends that AANDC consider the overlap in scope and only recommend further security postings at this time if real gaps in security posting coverage are identified. In addition, as noted above, potential camp expansion depends on further operations approvals which themselves will be considered for security posting if and when future approvals are granted.
Environment Canada: Loretta Ransom			
ID	**Topic**	**Reviewer Comment/Recommendation**	**Proponent Response**
1	General File	**Comment** (doc) EC No Comment Letter **Recommendation**	
Fisheries and Oceans Canada: Triage Group Fisheries Protection Program			
ID	**Topic**	**Reviewer Comment/Recommendation**	**Proponent Response**
1	Fisheries and Oceans-Triage and Planning Comments	**Comment** **Subject: ConocoPhillips- S14J-002 - S14L3-001- Additional Multi-Season Camp. Serious harm to fish can be avoided or mitigated** The Fisheries Protection Program (the Program) of Fisheries and Oceans Canada received your proposal on February 7, 2014. Based on the information provided, your proposal has been	**Mar 10:** ConocoPhillips will follow DFO's guidance tools which can be found at the following website (http://www.dfo-mpo.gc.ca/pnw-ppe/measures-mesures/index-eng.html). ShouldConocoPhillips plans change or some information have been omitted in the proposal such that the proposal meets the criteria for a site specific review, as described on DFO's website (http://www.dfo-mpo.gc.ca/pnw-ppe/index-eng.html), ConocoPhillips may complete and submit the request for review form.

		identified as a project where a *Fisheries Act* authorization is not required given that serious harm to fish can be avoided by following standard measures. Proposals in this category are not considered to need an authorization from the Program under the *Fisheries Act* in order to proceed. In order to comply with the Act, it is recommended that you follow our guidance tools which can be found at the following website (http://www.dfo-mpo.gc.ca/pnw-ppe/measures-mesures/index-eng.html). Please view sections on Water Taking. It remains your responsibility to meet the other requirements of federal, provincial and municipal agencies. Should your plans change or if you have omitted some information in your proposal such that your proposal meets the criteria for a site specific review, as described on our website (http://www.dfo-mpo.gc.ca/pnw-ppe/index-eng.html), you should complete and submit the request for review form that is also available on the website. Should you have any questions or concerns about the compliance of your proposal with the *Fisheries Act*, you may wish to engage an environmental professional familiar with measures to avoid impacts to fish and fish habitat (http://www.dfo-mpo.gc.ca/pnw-ppe/env-pro-eng.html). **Recommendation** Fisheries and Oceans Canada has no concerns with the proposal provided water taking criteria posted on the DFO website and measures to avoid harm can be followed.	
GNWT - Environment and Natural Resources: Central Email GNWT			
ID	**Topic**	**Reviewer Comment/Recommendation**	**Proponent Response**

7	General File	**Comment** (doc) ENR Comments and Recommendations **Recommendation**	
1	Topic 1: Waste Management	**Comment** Comment(s): ENR understands that ConocoPhillips is currently authorized to operate a 150-person, winter-only base camp and storage facility, located at approximately km 32 along its access road, a multi-season storage facility located at approximately km 7 along its access road (also the newly proposed expanded Mackenzie River Camp and Storage Area), and a 20-person winter-only construction camp. ConocoPhillips proposes to relocate the base camp, expand camp and storage areas and increase fuel storage within EL470. The purpose of the changes is to accommodate current and potential future exploration needs and to eliminate yearly camp set-up and tear-down. This includes to construct a multi-season camp facility and storage area (the Mackenzie River Camp and Storage Area), to be used as the main camp for the duration of the exploration period and able to accommodate 325 persons. And it plans to continue to operate a winter-only camp at the current base camp at a reduced capacity of approximately 100-persons. The proponent states that waste disposal will continue to be handled in accordance with ConocoPhillips' revised Waste Management Plan (WMP) approved under LUPs S12A-005 and S13A-001 (Section 3.4 of the include Environmental Protection Plan - EPP). The current application also supplies Appendix 4, Waste Management Plan (WMP), a two page document that refers the reader to a previous waste WMP is on file with the Sahtu Land and	**Mar 10:** 1. As stated in previous submissions for earlier permit applications, ConocoPhillips does not use "air tight" animal proof containers. All domestic solids will continue to be stored in wildlife proof containers. As an additional safety measure ConocoPhillips also plans to install an electric fence around the perimeter of the camp to deter wildlife from investigating waste storage units and as a measure to deter wildlife human interactions. 2. ConocoPhillips acknowledges that mode of transport and storage length will differ between operating seasons. Currently the Waste Management Plan is updated and submitted for approval prior to the winter operating season as that has been the season of activity. In future - if and when - summer operations are confirmed, ConocoPhillips will submit an updated Waste Management Plan to address any significantly different approaches planned. 3. ConocoPhillips acknowledges that an updated Fire Protection Plan that considers incineration during the forest fire season would be required. ConocoPhillips would also like to update ENR that a dual chambered incinerator is not in use on the project at this time.

		Water Board (SLWB), recently submitted with Land Use Permit S13A-001 and Water Licence S13L1-004. Appendix 4 WMP does propose that food waste handling will be stored securely and disposed of frequently, however it is not described how food contaminated waste will be managed over the non-winter all season periods. The previously submitted WMP was for a winter only camp; this application is for an all season facility and storage area (the Mackenzie River Camp and Storage Area), to be used as the main camp for the duration of the exploration period. Under current winter operations, ENR understand food contaminated wastes are stored and segregated in airtight, animal proof containers and then trucked out by the proponent. This will not be an option when the ice roads are not available during all season operation. Further detail is required. Other camp waste streams may also have different considerations for all-season versus winter operations as well. The segregation of food contaminated wastes, in airtight and animal proof containers, and for as short of duration possible is critical during warmer seasons as increased wildlife activity in the region requires increased mitigation efforts to thwart wildlife attraction and interaction. **Recommendation** Recommendation(s): 1) Please provide specific details on what food contaminated waste management practices are proposed during non-winter operations to ensure the mitigation of wildlife attraction and interaction. 2) For the overall camp Waste Management Plan (WMP), ENR recommends that it would be wise to separate waste	

		management strategies into two different sections, each for winter and non-winter operations, since segregation, storage, and transport logistics and options will differ for the ice-road versus non-ice road accessible durations. 3) Also, if incineration is proposed during non-winter operations (as ENR is aware the Proponent has a duel chamber incineration device on site), please be advised the Fire Protection Plan is required to be updated to consider this option during forest fire season.	
2	Topic 2: Management and other Types of Plans	**Comment** Comment(s): ENR expects all management and other types of plans to be project specific and submitted to regulators for review during the Board review process. ENR does not approve of any project plans that are not project specific and have not been forwarded to regulators and reviewers during the Board review process. If plans are used from other active permits or licences, they must be modified to be specific to the project and submitted to regulators and reviewers for review and comment during the Board application review process. Applications forwarded for review without project specific plans are considered by ENR to be incomplete applications, and therefore cannot be properly reviewed. **Recommendation** Recommendation(s): 1) If plans of any type are to be used from other active permits or licences, they must be modified to make them specific to the project application being reviewed. 2) That all plans are project specific and are forwarded to regulators and reviewers with the application being reviewed and commented upon during the Board Land Use	**Mar 10:** ConocoPhillips understands and agrees with the need for annual updates to the Waste Management Plan as exploration activities differ from year to year. To date the WMP has been updated three times. Exploration activity in EL470 requiring camp support is currently ocurring under the approved WMP dated September 2013. ConocoPhillips anticipates submission of an updated WMP in March 2014 in support of activities planned in the next operational season December 2014-April 2015. This WMP will contain updated information on anticipated waste volumes, reduction strategies, handling and disposal plans. ConocoPhillips continues to submit updated management plans in advance of the operational season for Sahtu Land and Water Board approval. An updated waste management plan has not accompanied this particular application because it would result in multiple plans that would later need to be consolidated in order to address/include all plans for the 2014-2015 operational season. ConocoPhillips notes that all revisions must be submitted to the Sahtu Land and Water Board for approval.

		Permit or Water Licence review process in order to ensure the completeness of the application and a rigorous regulatory review. 3) If the plans are not included in the application, there should be a condition in the permit or licence requiring all plans to be submitted to the Board prior to the onset of project activities. The submitted plans would then be forwarded to reviewers for comment prior to the Board approving the plans and prior to the project activities. 4) All plans relating to a Land Use Permit or Water Licence review should be included in that specific file number in the public registry.	
3	Topic 3: Fuel Storage	**Comment** Comment(s): The Environmental Protection Plan, Section 3.5, Fuel (page 7), states that ConocoPhillips anticipates that up to eight additional double-walled, 61,000L fuel tanks and one spare 61,000L tank will be used at the Mackenzie River Camp during multi-season operations. In addition, up to six additional double-walled, 61,000L fuel tanks will be used at the Loon Creek Camp during winter operations only. The proposed locations of Staging and Storage for ConocoPhillips' Mackenzie River Camp are located on Commissioner's Lands. ENR's Spill Contingency Planning and Reporting Regulations (the Regulations) are enforced on Commissioner's Land. The proponent currently has a spill contingency plan filed with the Chief Environmental Protection Officer (EPO) for the existing fuel storage at this location. The increase in fuel storage will require an updated plan provided to the Chief (EPO), and it reviewed and proven to meet the requirements of the Regulations prior to additional fuel stored at this	**Mar 10:** ConocoPhillips' Spill Contingency Plan will be updated to reflect the increased product volumes. The updated Spill Contingency Plan will be submitted to the ENR for its review.

		site. The Regulations are not intended to require a person who is already required to submit a Spill Contingency to another regulatory authority (i.e. Federal Land and Water Board, National Energy Board) to also submit their plan to the Chief EPO, if it is demonstrated the plan also meets requirements of the Regulations. Whether or not ConocoPhillips wishes to include the updated information required by the Regulations in a plan to another regulator, or supply a stand-alone updated plan to ENR is for the proponent to decide. **Recommendation** Recommendation(s): 1) ENR requires that it review either updated plan to ensure it is filed and demonstrates it meets the requirements of the Regulations.	
4	Wildlife Division Comments Topic 4: Management of Wildlife Attractants	**Comment** Comment(s): The following recommendations are to help ensure the protection of project staff or clients and also to protect wildlife within their natural habitat by reducing or preventing human/wildlife conflicts that could lead to the destruction of nuisance wildlife, especially bears. Construction of a semi-permanent, multi-season camp will increase the total capacity of ConocoPhillips camps to 425 people and will allow summer operations. This will increase both the amount of domestic waste generated by camp operations and the potential for negative human-wildlife interactions by extending operations to the period during which bears are active. Section 3.4 of the Environmental Protection Plan (EPP) indicates that a revised waste management plan that considers camp expansion, and presumably summer operations, will be submitted to the SLWB at a future date.	**Mar 10:** ConocoPhillips understands and agrees with the need for annual updates to the Waste Management Plan as exploration activities differ from year to year and between seasons. Exploration activity in EL470 requiring camp support is currently ocurring under the approved WMP dated September 2013. ConocoPhillips anticipates submission of an updated WMP in March 2014 in support of activities planned in the next operational season December 2014-April 2015. This WMP will contain updated information on anticipated waste volumes, reduction strategies, handling and disposal plans. The plan will consider seasonal needs. ConocoPhillips continues to submit updated management plans in advance of the operational season for Sahtu Land and Water Board approval. An updated waste management plan has not accompanied this particular application because it would result in multiple plans that would later need to be consolidated in order to address/include all plans for the 2014-2015 operational season. ConocoPhillips notes that all revisions must be submitted to the Sahtu Land and Water Board for approval.

		The revised plan should provide details about how waste management practices will be adapted to summer operations and increased waste volume to ensure that wastes are properly segregated and stored to limit wildlife attraction and risks to human safety. It would be helpful it the revised plan included a more detailed description and photos of wildlife-proof storage containers that are currently used at site. **Recommendation** Recommendation(s): 1) ConocoPhillips updated Waste Management Plan should include a description of how waste segregation and storage procedures will be adapted to summer operations and increased camp capacity in order to minimize attraction of wildlife. 2) ENR should be provided with a copy of the updated Waste Management Plan for review prior to the onset of project activities.	
5	Topic 5: Wildlife Mitigation and Monitoring Plans	**Comment** Comment(s): Section 7.3.5.7 of the EPP states that ConocoPhillips is working on a Wildlife and Wildlife Habitat Protection Plan (WWHPP) for submission to the SLWB at a later date. ENR looks forward to reviewing the WWHPP and encourages the proponent to engage with the Wildlife Division of ENR and the Sahtu regional ENR office during the development of this plan. **Recommendation** Recommendation(s): 1) ENR recommends that submission of the WWHPP be included as a condition of the LUP and be subject to approval of ENR and the Board.	**Mar 10:** ConocoPhillips is currently preparing a comprehensive Wildlife and Wildlife Habitat Protection Plan (WWHPP) that is intended to be a 'living document' and applicable to existing and future applications.Â The purpose of an overarching WWHPP is to avoid confusing and duplicative permit conditions on different iterations of similar or related Plans.Â ConocoPhillips is preparing a single WWHPP that encompasses existing Project activities and is updated as needed to include provisions for future activities and commitments.Â ConocoPhillips will seek input from ENR on the WWHPP and the plan will subject approval of the Board.
6	Topic 6: Cumulative	**Comment** Comment(s): Section 8.3.1.1 of the EPP states the project will require 1.3 ha of new disturbance Although this is a relatively small	**Mar 10:** A portion of Explor's seismic exploration program (S11B-004) from Table 8-2 was omitted, and has now been included. The SLWB public registry was again consulted to ensure the assessment

	Effects on Wildlife	area of new disturbance, the contribution of activities described within this LUP application to cumulative effects should be provided in the context of the total footprint of ConocoPhillips past, ongoing and proposed activities within EL470. The extent of ConocoPhillips current footprint was not provided in the cumulative effects assessment. The Regional Study Area map (page 10 of Appendix 1B in S14S-001 LUP application) does not appear to capture the full suite of ongoing and future projects considered in the cumulative effects assessment (Table 8-2 of the EPP). For example, the map does not appear to include the proposed footprint of Explor's seismic exploration (S11B-004, included in Table 8-2 of the EPP). ENR notes that shapefiles for that project are available on the SLWB public registry. Without a more detailed breakdown of the regional disturbance footprint referred to in sections 8.3.1.1 and 8.3.2.4.2 of the EPP it is difficult to assess the accuracy of the cumulative effects assessment. Up-to-date records of existing and proposed disturbance footprints from projects in the region are required to support the assessment and management of cumulative effects on wildlife and wildlife habitat. As EL470 overlaps with the range of boreal woodland caribou (a federally and territorially listed species at risk), GNWT also requires this information to track the condition of the boreal caribou range with respect to the 35% habitat disturbance threshold set out in the national Recovery Strategy, and to inform development of range plans for this species. **Recommendation** Recommendation(s): 1) ENR	contains a complete list of past, ongoing, or proposed development within the RSA. No further updates were required. However, as the GIS shapefiles of many past projects and activities in the RSA are not available on the SLWB public registry, the cumulative effects assessment was not limited to just these shapefiles and activities listed on the SLWB public registry. Thus, in addition to GIS data available in the SLWB public registry for the projects listed in Table 8-1 and Tables 8-2, the assessment included further GIS data of disturbances within the RSA obtained from additional sources as part of the overall disturbance footprint. This additional regional disturbance footprint data includes: digitized cut lines and disturbances from aerial imagery; the GNWT winter road; NWT communities; the Canol Trail; the Enbridge pipeline; and quarries. This information was included to more accurately reflect the past impacts within the RSA in an effort to produce the most current estimate of the level of existing disturbance and cumulative effects possible. 1) ConocoPhillips agrees to provide SLWB with shapefiles indicating the size and location of areas of new disturbance created by the geotechnical assessment program, to post on the SLWB public registry once the project is complete. 2) ConocoPhillips is not able to provide a more detailed breakdown of the footprint of their existing and proposed activity components associated with the proposed geotechnical program, since the exact locations are yet to be determined and each drilling location will be informed by the results of previous locations - it will be an iterative approach. However, as the program unfolds, ConocoPhillips proposes that it will consult with ENR as to the location and timing of new drill holes and related access, as they are identified, for ENR review and comment. Consultation with ENR would be scheduled to review the shapefiles being submitted, and to consider the upcoming acess and drill locations, and field program schedules and activities. **Mar 10:** ENR 6 Response - updated tables

		recommends that ConocoPhillips continue to provide the SLWB with updated shapefiles of their proposed and existing project footprint to post on the SLWB Public Registry. 2) ENR recommends that ConocoPhillips include a more detailed breakdown of the footprint of existing and proposed components of their activities within EL470 in cumulative effects assessments associated with future LUP or WL applications.	
SLWB: Tony Morris			
ID	**Topic**	**Reviewer Comment/Recommendation**	**Proponent Response**
1	Comments from Canoe North Adventures	**Comment** (doc) See attached. **Recommendation** See attached.	**Mar 10:** (doc) Given the uncertainties inherent in exploration activities, ConocoPhillips strives to be as transparent as possible about its plans with the communities, regulators and other stakeholders. ConocoPhillips disagrees with several comments made in the letter by Canoe North regarding its intentions and socio-environmental impacts. ConocoPhillips encourages all interested stakeholders to review the engagement record on file with the SLWB to investigate ConocoPhillps record of transparency since engageing with the community regarding EL470. Although all stakeholders cannot be present during ConocoPhillips many engagements and public sessions, ConocoPhillips encourages reaching out for information from the company or the Land Corporations to remain informed of ConcoPhillips plans. ConocoPhillips followed up and spoke with Lynne Pace of Canoe North on March 6, 2014 regarding their letter of concern. During the conversation Lynne elaborated on the concerns expressed by Canoe North regarding oil and gas development in the Sahtu Region, particularly in areas where they have been operating their business for the past 23 years. They expressed a desire to be informed and consulted as plans proceed and would like to be included in the process of Oil and Gas development planning, in order to provide a perspective from a business that has been providing long-term eco-tourism in the region. ConocoPhillips understands these concerns and recognizes that oil and gas development in the region may result in changes to the area over

			time. Both ConocoPhillips and Canoe North Adventures have agreed to have further discussions and to meet in Norman Wells in the near future to discuss opportunities for enhanced understanding, knowledge sharing and improved communication going forward.

Aboriginal Affairs and Northern Development Canada
http://www.aandc-aadnc.gc.ca

Affaires autochtones et Développement du Nord Canada
http://www.aadnc-aandc.gc.ca

North Mackenzie District
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Inuvik, NT, X0E 0T0

Telephone: 867-777-8900
Fax: 867-777-2090

February 25, 2014

Sahtu Land and Water Board
Box 1, Fort Good Hope, NT
X0E 0H0

To whom it may concern:

RE: Land Use Permit Application: - S14J-002 ConocoPhillips Canada
Additional Multi-season Camp and Storage Area Expansion

Aboriginal Affairs and Northern Development Canada (AANDC) recently reviewed the above mentioned application and AANDC submits the following comments for review by the Sahtu Land and Water Board (SLWB).

AANDC has no immediate concerns with this application and AANDC is in the opinion that this operation can proceed with minimal negative environmental impacts and the mitigation measures that are proposed are sufficient.

With the additional land use and fuel storage amounts proposed, AANDC also recommends that a security deposit of $ 109,176.37 be attached to this proposed activity.

Please find attached land use conditions that AANDC would like attached to this permit if issued.

If you have any questions please contact me at 867-777-8900.

Respectfully yours,

Jozef Carnogursky
Resource Management Officer
AANDC

Aboriginal Affairs and Northern Development Canada
http://www.aandc-aadnc.gc.ca

Affaires autochtones et Développement du Nord Canada
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February 25, 2014

Land Use Permit Application: - S14J-002 ConocoPhillips Canada
Additional Multi-season Camp and Storage Area Expansion
AANDC Proposed conditions to Sahtu Land and Water Board

	Condition	Category
	26(1)(*a*) Location and Area	
1.	The Permittee shall not conduct any part of the land-use operation within ___ metres of any privately owned or leased land or structure, unless otherwise authorized in writing by the Board.	**Private Property**
2.	The Permittee shall locate all camps on Durable Land or previously cleared areas.	**Camp Location**
3.	The Permittee shall use an existing campsite, as described in the complete application.	**Existing Camp**
4.	The Permittee shall not conduct this land-use operation on any lands not designated in the complete application.	**Location of Activities**
5.	Prior to the commencement of the land-use operation, the Permittee shall accompany an Inspector during an inspection of the proposed land use area.	**Inspect Locations**
	26(1)(*b*) Time	
6.	At least 48 hours prior to the commencement of this land-use operation, the Permittee's Field Supervisor shall contact an Inspector at (867) 587-2011.	**Contact Inspector**
7.	At least 48 hours prior to commencement of this land-use operation, the Permittee shall provide the following information, in writing, to the Board and an Inspector: (a) the name(s) of the person(s) in charge of the field operation; (b) alternates; and (c) all methods for contacting the above person(s).	**Identify Agent**
8.	At least ten days prior to the completion of the land-use operation, the Permittee shall advise an Inspector of: (a) the plan for removal or storage of equipment and materials; and (b) when final cleanup and reclamation of the land used will be completed.	**Reports Before Removal**
	26(1)(*c*) Type and Size of Equipment	
9.	The Permittee shall not use any equipment except of a similar type, size, and number to that listed in the complete application.	**Only Approved Equipment**
	26(1)(*d*) Methods and Techniques	
10.	The Permittee shall remove all wire from the land as the land-use operation progresses.	**Remove Wire**
11.	The Permittee shall construct and maintain the overland portion of winter roads with a minimum of 10 cm of packed snow and/or ice at all times during this land-use operation.	**Winter Roads**

12.	The Permittee shall not erect camps or store material, other than that required for immediate use, on the ice surface of a Watercourse.	**Storage on Ice**
	26(1)(*e*) Type, Location, Capacity, and Operation of All Facilities	
13.	The Permittee shall ensure that the land use area is kept clean at all times.	**Clean Work Area**
	26(1)(*f*) Control or Prevention of Ponding of Water, Flooding, Erosion, Slides, and Subsidence of Land	
14.	The Permittee shall insulate the ground surface beneath all structures associated with this land-use operation to prevent: (a) any vegetation present from being removed; (b) the melting of Permafrost; and (c) the ground settling and/or eroding.	**Permafrost Protection**
15.	The land-use operation shall not cause obstruction to any natural drainage.	**Natural Drainage**
16.	The Permittee shall minimize erosion by installing erosion control structures as the land-use operation progresses.	**Progressive Erosion Control**
17.	The Permittee shall not conduct off-road vehicle travel in areas without snow-covered surfaces.	**Off-road Vehicle Travel**
18.	The Permittee shall prepare the site in such a manner as to prevent rutting of the ground surface.	**Prevention of Rutting**
19.	The Permittee shall suspend overland travel of equipment or vehicles at the first sign of rutting.	**Suspend Overland Travel**
20.	The Permittee shall not move any equipment or vehicles unless the ground surface is in a state capable of fully supporting the equipment or vehicles without rutting or gouging.	**Vehicle Movement Freeze-up**
21.	The Permittee shall maintain a record of all spills. For all reportable spills, in accordance with the GNWT *Spill Contingency Planning and Reporting Regulations*, the Permittee shall: (a) immediately report each spill to the 24-hour Spill Report Line (867) 920-8130; (b) report each spill to an Inspector within 24 hours; and (c) submit, to the Board and an Inspector, a detailed report on each spill within 30 days.	**Report Spills**
22.	The Permittee shall dispose of all combustible waste petroleum products by removal to an approved disposal facility.	**Waste Petroleum Disposal**
	26(1)(*h*) Wildlife and Fish Habitat	
23.	The Permittee shall take all reasonable measures to prevent damage to wildlife and fish Habitat during this land-use operation.	**Habitat Damage**
	26(1)(*i*) Storage, Handling, and Disposal of Refuse or Sewage	
24.	The Permittee shall adhere to the approved Waste Management Plan and shall annually review the plan and make any necessary revisions to reflect changes in operations, technology, chemicals, or fuels, or as directed by the Board. Revisions to the plan shall be submitted to the Board for approval.	**Waste Management**
25.	The Permittee shall keep all garbage and debris in a secure container until disposal.	**Garbage Container**

26.	The Permittee shall dispose of all garbage, waste, and debris as described in the approved Waste Management Plan, unless otherwise authorized in writing by an Inspector.	**Remove Garbage**
	26(1)(*j*) Protection of Historical, Archaeological, and Burial Sites	
27.	The Permittee shall not operate any vehicle or equipment within 150 metres of a known or suspected historical or archaeological site or burial ground.	**Archaeological Buffer**
28.	The Permittee shall not knowingly remove, disturb, or displace any archaeological specimen or site.	**Site Disturbance**
	26(1)(*k*) Objects and Places of Recreational, Scenic, and Ecological Value	
	26(1)(*l*) Security Deposit	
29.	Prior to commencement of the land-use operation, the Permittee shall deposit with the Minister a security deposit in the amount of $109,176.37.	**Security Deposit**
30.	All costs to remediate the area under this Permit are the responsibility of the Permittee.	**Responsibility for Remediation Costs**
	26(1)(*m*) Fuel Storage	
31.	The Permittee shall: (a) examine all Fuel Storage Tanks and containers for leaks a minimum once per day; and (b) repair all leaks immediately.	**Check for Leaks**
32.	The Permittee shall not place any Fuel Storage Containers or Tanks within 100 metres of the Ordinary High Water Mark of any Watercourse, unless otherwise authorized in writing by an Inspector.	**Fuel Near Water**
33.	The Permittee shall ensure that all fuel caches have adequate Secondary Containment.	**Fuel Cache Secondary Containment**
34.	The Permittee shall set up all refueling points with Secondary Containment.	**Secondary Containment - Refueling**
35.	The Permittee shall not allow petroleum products to spread to surrounding lands or Watercourses.	**Fuel Containment**
36.	The Permittee shall mark all stationary fuel caches and fuel storage facilities with flags, posts, or similar devices so that they are at all times plainly visible to local vehicle travel.	**Mark Fuel Location**
37.	Within ten days of the establishment of any fuel cache, the Permittee shall report the location and quantity of the cache in writing to an Inspector and the Board.	**Report Fuel Location**
38.	The Permittee shall seal all outlets of Fuel Storage Containers and store the containers on their sides with the outlets located at 3 and 9 o'clock, except for containers currently in use.	**Seal Outlet**
39.	The Permittee shall adhere to the approved Spill Contingency Plan and shall annually review the plan and make any necessary revisions to reflect changes in operations, technology, chemicals, or fuels, or as directed by the Board. Revisions to the plan shall be submitted to the Board for approval.	**Spill Contingency Plan**
40.	Prior to commencement of operations, the Permittee shall ensure that spill-response equipment is in place to respond to any potential spills.	**Spill Response**
41.	All equipment that may be parked for two hours or more, should have a haz-mat/drip tray under it or be sufficiently diapered. (Leaky equipment should be repaired immediately.)	**Drip Trays**

42.	The Permittee shall clean up all leaks, spills, and contaminated material.	**Clean Up Spills**
	26(1)(*n*) Methods and Techniques for Debris and Brush Disposal	
43.	The Permittee shall progressively dispose of all brush and trees and shall complete all brush disposal; all disposal shall be completed prior to the expiry date of this Permit.	**Brush Disposal/ Time**
44.	The Permittee shall not clear areas larger than identified in the complete application.	**Minimize Area Cleared**
45.	The Permittee shall not clear any vegetation.	**No Clearing**
	26(1)(*o*) Restoration of the Lands	
46.	All areas affected by construction or removal activities shall be stabilized and landscaped to their pre-construction profiles, unless otherwise authorized in writing by an Inspector.	**Pre-construction Profiles**
47.	The Permittee shall dispose of all overburden as instructed by an Inspector.	**Disposal of Overburden**
48.	Prior to the expiry date of this Permit, the Permittee shall complete all cleanup and restoration of the lands used.	**Final Cleanup and Restoration**
49.	The Permittee shall carry out progressive reclamation of disturbed areas as soon as it is practical to do so.	**Progressive Reclamation**

Land Use Permit Security Worksheet

Application Number: S14J-002

	Input Amount	Multiplier	
Camp (C1)			
Temporary Structures			
Input number of tent frames or weatherhaven (3.5m x 4.2m)	0	$200.00	$0.00
Input number of trailers (3.5m x 15.2m)	0	$300.00	$0.00
Input total square metres of other temporary structures (i.e. core shacks)	0	$2.50	$0.00
Fixed Structures			
Input total square metres of fixed structures	0	$25.00	$0.00
Solid Waste			
For non-burnable material, input # of person days per season	0	$1.00	$0.00
For burnable material, input # of person days per season	0	$0.50	$0.00
Total C1			$0.00
Regulated / Hazardous Materials (R1)			
Based upon on site volume			
Explosives; up to 500 kg (~pallet) dry explosives input 1, if none, input 0	0	$500.00	$0.00
Additional Explosives; Input total kg >500	0	$0.50	$0.00
Drilling Muds (oil based); enter number of 63 m^3 (or equivalent) containers	0	$1,000.00	$0.00
Used Oil, Lubes and Antifreeze: enter number of pieces of heavy equipment	0	$500.00	$0.00
Other;			
Total R1			$0.00
Hydrocarbon Storage and Transfer (H1)			
Based upon on site volume			
Gasoline and Diesel			
Enter total volume of gasoline&diesel <25,000 L		$0.50	$0.00
Enter total volume of gasoline&fuel > 25,000 L	915000	$0.25	$228,750.00
Total Gasoline and Diesel	0		$228,750.00
When fuel is within bermed site or has other safety feature, enter 1, otherwise enter 0	0	25%	$0.00
Aviation Fuel			
Enter total volume of aviation fuel < 25,000 L	0	$0.50	$0.00
Enter total volume of aviation fuel > 25,000 L	0	$0.25	$0.00
Total Aviation Fuel			$0.00
When fuel is within bermed site or has other safety feature, enter 1, otherwise enter 0	0	25%	$0.00
Total H1			$228,750.00
Land Disturbance (L1)			
Disturbed Surface Area			
(Developed surface area that may require restoration through the use of scarification, reseeding, fertilizing or other similar techniques)			
Enter number of hectares disturbed	1.3	$1,000.00	$1,300.00
Other Land Disturbances			
Creek Crossings; enter number of creek crossings	0	$500.00	$0.00
Off-Road Activities; if any activities are likely, enter 1	0	$500.00	$0.00
Sump Factor; enter total area occupied by sumps in m^2	0	$10.00	$0.00
Well Factor; enter number of wells.	0	$25,000.00	$0.00
Total L1			$1,300.00

Land Use Permit Security Worksheet (continued)

Application Number:	Input Amount	Multiplier	
Equipment (E1)			
Based upon type of equipment			
Enter number of pieces of heavy equipment (i.e. dozer, forklift, large gensets)	0	$1,000.00	$0.00
Enter number of drills	0	$1,000.00	$0.00
Enter number of light vehicles (trucks, atvs, snowmobiles, boats)	0	$250.00	$0.00
Enter number of small generators or pumps	0	$100.00	$0.00
Enter number of empty fuel storage tanks	0	$500.00	$0.00
Total E1			$0.00

Security Calculation		
Preliminary Calculation		
Enter amount from C1		$0.00
Enter amount from R1		$0.00
Enter amount from H1		$228,750.00
Enter amount from L1		$1,300.00
Enter amount from E1		$0.00
Preliminary Calculation, total of above	A	$230,050.00
Multipliers		
Site Access Multiplier. If the project has all weather road access enter 1, if ice road access enter 1.5, if air access enter 2	B	1.5
Performance Multiplier. If applicant has successfully completed the terms of a LUP enter 0.85, otherwise enter 1	C	0.85
Environmental Risk Factor. If location has high environmental value or unusual environmental risk enter 2. If location is previously disturbed enter 0.75. Otherwise enter 1.	D	2
Calculated Security		
Multiply preliminary calculation (A) by performance multipliers (B, C and D)	E	$586,627.50
Existing Securities		
List existing associated permits and amount of overlapping security		
Permit:		$477,451.13
Permit:		$0.00
Permit:		$0.00
Permit:		$0.00
Overlapping Securities, total of above	F	$477,451.13
Final Security Determination		
Subtract overlapping securities (F) from calculated security (E)		$109,176.37

Comments based on additional 15, 61000 liter fuel tanks on site and 1.3 ha. of new land disturbance.

Aboriginal Affairs and Northern Development Canada
www.inac.gc.ca

North Mackenzie District
P.O. Box 2100
Inuvik, NT X0E 0T0

Affaires autochtones et Développement du Nord Canada
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File S14L3-001

February 28, 2014

Tony Morris
Regulatory Specialist
SAHTU Land & Water Board
P.O. Box 1
Fort Good Hope, NT X0E 0H0

Email: tony.morris@slwb.com

Re: Water Licence Application – S14L3-001
Conoco Phillips EL470 Chinook in the Tulita District, Additional Multi-season Camp and Storage Area Expansion

Aboriginal Affairs and Northern Development Canada (AANDC) has reviewed the above mentioned application and submits our comments for review by the Sahtu Land and Water Board (SLWB). These comments are inclusive of the North Mackenzie District as well as those of the Water Resources Division in Yellowknife.

Please find attached your completed spreadsheet articulating AANDC concerns related to the Water Licence application. A security estimate for the water based component of $456,119.00 is recommended to be sought from the proponent prior to commencement of operations (calculation attached).

Thank you for providing AANDC with the opportunity to comment on the above program. If you have any questions or concerns, please feel free to contact me at 867-777-8901 or Conrad.Baetz@aandc-aadnc.gc.ca or Mr. Nathen Richea, Water Resources Division at 867-669-2657 or Nathen.Richea@aandc-aadnc.gc.ca.

Regards,

Conrad Baetz
Manager,
North Mackenzie District Office - Inuvik

Enclosure: Water Licence Security Estimate and Comment Table

GENERAL INSTRUCTIONS FOR EXCEL TEMPLATE: 1. Do not leave blank rows above or between comments. 2. Do not modify or delete the instructions or the column headings (*i.e.* the grey areas). 3. Each comment must have an associated topic and recommendation. 4. All formatting (*i.e.* bullets) will be lost when this file is uploaded to the Online Comment Table. 5. If necessary, adjust the cell width and height in order to view all text. 6. Cutting and pasting comments from WORD documents cannot include hard returns (spaces between paragraphs). 7. If you would like to create paragraphs within a single cell, please use a proper carriage return (ALT & ENTER).		**App #: S14L3-001** **Review of: Additional Multi-Season Camp - Conoco Phillips Canada** **Reviewing Agency: Aboriginal Affairs and Northern Development Canada (AANDC)** **Date: February 28th, 2014**
TOPIC *Be as specific as you think is appropriate; for example a section or page of the document, a recommendation #, general comment, etc.*	**COMMENT** *Comments should contain all the information needed for the proponent and the Board to understand the rationale for the accompanying recommendation.*	**RECOMMENDATION** *Recommendations can be for the proponent or for the Board. Recommendations should be as specific as possible, relating the issues raised in the "comment" column to an action that you believe is necessary.*
Waste Management Plans Water Licence Conditions D.2	There are 2 companies that are active in the Canol Shale, Conoco Phillips and Husky. However, there are inconsistencies between the licences that authorize these projects. In Water Licence S13L1-005 (Husky), Part D, Item 2 states: "*the Licensee to adhere to the approved WMP*" and that "*Revisions from WMP shall be submitted to the Sahtu Land and Water Board for approval*". AANDC notes that this specific condition is missing from both Conoco Phillips S12L1-005 and S13L1-004 water licences. This presents a risk as the WMP for the Conoco Phillips operations could in fact be outdated or out of context with respect to the specific operations or operational modifications specific to its exploration projects.	AANDC recommends that S14L3-001 require that Conoco Phillips provide a plan, adhere to the approval plan and revise the plan as appropriate if there are shifts to the operations at any of its sites (camp, staging, drilling, access, etc.). To be consistent, the terms and conditions should say: "*The Licensee shall adhere to the approved Waste Management Plan and shall annually review the Plan and make any necessary revision to reflect changes in operations, technology, chemicals or fuels, or as directed by the Sahtu Land and Water Boards. Revisions to the Plan shall be submitted to the Sahtu Land and Water Board for approval*." YELLOWKN#626328 - v2

Waste Management Plan Modifications to Conoco Phillips current WMP requested	Considering the types and volumes of wastes/chemicals being used with the currently permitted hydraulic fracturing exploration, AANDC would like to stress to the Proponent the importance of conducting adequate Waste Management practices - through Waste Management Plans. In the current application, EPP, Conoco Phillips suggests that for this water licence, "Waste Management will continue to be handled in accordance with CPC revised WMP approved under S12A-005 and S13A-001".	AANDC recommends that references be made to a WMP in any Conoco Phillips' water licences. Further, AANDC recommends that the existing WMP be updated to include the new activities and tankage proposed under this Water Licence (S14L3-001) and Land Use Permit (S14J002) applications. As there is only one WMP which is to be used for S12L1-005 and S13L1-004, AANDC recommends for the content of the current WMP to be revised to reflect appropriate wastewater handling, storage and disposal criteria. Note, AANDC has further recommendations on the disposal criteria below.
Waste Management Plans Previous WMP versions DELETED	It was noted that 3 different Waste Management Plans were submitted by Conoco Phillips: o WMP #1 dated September 2012 o WMP #2 dated March 2013 o WMP #3 dated September 2013 However, the 2 previous versions of the WMP (WMP #1 and WMP #2) were Deleted from the SLWB Public Registry (see water licence applications - Appendices). No information or rationale is provided for these deletions.	AANDC recommends that all versions of the Waste Management Plans remain available on the Sahtu Land and Water Board website, as well as any updates to these plans for each authorization as appropriate. The Public Record should also show the comments provided by parties on the various versions of the plans to provide context and tracking of changes and improvements to the plans over time. This is a standard practice used by all other Land and Water Board's in the Mackenzie Valley.

SNP S12L1-005 (1) faulty linked to Condition D.6 SNP section no. 2 - To refer to Condition D.7 (not D.6)	Surveillance sampling stations are required to ensure camp greywater and sewage wastewater are monitored for compliance. It was noted that while Condition D.7 of the S12L1-005 amended licence refers to the SNP station S12L1-005 (1) no. 2, the SNP station S12L1-005 (1) refers back to Condition D.6 (instead of Condition D.7). It is assumed that this adjustment was overlooked during amendment of the licence when Condition D.6 was added to the licence, and that the previous Condition D.6 became Condition D.7. This mistake/inconsistency should be avoided when drafting the water licence terms and conditions for S14L3-001.	AANDC recommends the appropriate linkages be made among conditions of the new water licence with respect to disposal of wastewater.

Disposal of Greywater, Sewage Wastewater and Produced Water Produced water being considered as "Greywater" The current WMP, Conoco Phillips also included under that category "Water from any work completed in relation to groundwater investigation will also be field tested for electrical conductivity, pH, chloride (sodium ions removed from WMP #1), and visually inspected for the presence of naturally occurring hydrocarbons before discharging the water to the surface. Well water will be deemed safe for discharge to the surface if it has total dissolved solids less than 4,000 mg/L (i.e., non-saline), has an acceptable pH level of 6.0 to 8.5, and is free from visible hydrocarbon sheen.	In accordance with existing water licences, Greywater "means all liquid Wastes from showers, baths, sinks, kitchens, and domestic washing facilities but does not include Toilet Wastes", while Sewage "means all toilet wastes and greywater." These are typical definitions. AANDC notes that "Produced Water" is currently defined separately. AANDC also notes that produced water can be generated from deeper groundwater wells and or during geotechnical investigations. AANDC notes that groundwater having TDS concentrations of nearly 4,000 mg/L is not potable water and would be considered waste under the act. AANDC would prefer if groundwater is to be disposed to land, that the EQC be lowered to 1,500 mg/L. Groundwater with higher concentrations should be disposed of with drilling fluids and or produced water from oil and gas wells.	AANDC recommends that the licence and revised WMP include the proposed definition of "Produced Water". AANDC believes that the definition of "Produced Water" in all Conoco Phillips licences should be define as the following: "any waters produced during gas and oil extraction, groundwater investigation and geotechnical assessment that cannot normally be disposed of at the surface of the earth because such water can contain high levels of salts and trace levels of hydrocarbons and other pollutants." AANDC recommends that if groundwater is to be disposed to land, that the EQC be lowered to 1,500 mg/L.
Waste Management Plan Produced Water vs. Sewage and Domestic Wastewater	In Section 3.6 of the current WMP, Conoco Phillips includes "Water from any work completed in relation to groundwater investigation ..." under Sewage and Domestic Wastewater. Note this is not consistent with the definitions in the water licence for Sewage and Greywater.	AANDC recommends that the necessary revision is made to Conoco Phillips WMP in order to properly classify "Produced Water" under its own specific category and management procedures, as very distinct from regular camp greywater and sewage water.

Sewage effluent - Untreated & Partially treated Usage of storage tanks stated in WMP #1, but removed in subsequent WMP versions	It was noted that effluent disposal criteria of the base camp are to be relocated as part of the current water licence application. Under the previous SNP conditions, treated effluent was to be disposed at SNP S12L1-005 (1) and comply with effluent quality standards enumerated in *Part D, Condition 7:* *"All sewage effluent discharged from the Sewage Disposal Facilities at "Surveillance Network Program" Station Number S12L1-005 (1) shall meet the following effluent standards: pH (6 to 9), Suspended Solids or SS (100 mg/L), Oil & Grease (5 mg/L), BOD5 (100 mg/L) and Fecal Coliforms (1 x 10^6 CFU/100 ml)."* It was noted that the WMP #1 submitted in September 2012 (S12L1-005 water licence application) included storage tanks that would be used for partially treated effluent "until it can be treated to meet discharge guidelines or transported to the nearest suitable treatment facility" (section 5.3.5.3). These contingency containment details appear to have been removed from subsequent WMP versions. However, AANDC notes in Conoco Phillips Sept 2013 Annual Report, treated effluent quality exceedences were reported at Pod 1 and Pod 2 (Table 6) for the following parameters: Oil & Grease (Jan 26, Jan 25, March 11); BOD (Jan 26, Feb 25, March 4), Fecal Coliforms (Jan 25, March 11, March 18) and SS)Feb 18 and 25).	AANDC requires further information from Conoco Phillips as it is unclear if this treated sewage that did not meet EQC was stored and removed or discharged to the environment. AANDC recommends that contingency containment be put in place for the times that treated effluent does not meet effluent quality standards. AANDC recommends the Waste Management Plan include details on contingency containment storage for untreated or partially treated effluent.

Untreated or Partially treated sewage effluent SNP S12L1-005 (1) disposal location coordinates	Under the amended S12L1-005 water licence, treated camp effluent disposal occurred in 2013 at SNP S12L1-005 (1) location. As the current application requests relocation of the base camp, co-ordinates representing the area for the new SNP disposal location for the water licence S14L3-001 should be provided in the water licence.	AANDC recommends that co-ordinates for past and future locations for treated effluent disposal under SNP station(s) be provided within the new water licence SNP section, where appropriate. As well, AANDC recommends that all past and current SNP locations be provided within next Annual Report.
Surface and Groundwater Monitoring Plan New water licence application S14L3-001	In its Reasons for Decision for Conoco Phillips water licence that was to cover horizontal hydraulic fracturing operations, the Sahtu Land and Water Board stated, under "Use and Monitoring of Water": "Conoco Phillips has a Surface and Groundwater Monitoring Plan (SGWMP), approved by the Board under Water Licence S12L1-005, which will be reviewed annually by the Sahtu Land and Water Board and reviewers, including government authorities responsible for fish and water protection. This comprehensive monitoring program will identify any changes to groundwater and surface water quality caused by land activities associated with Conoco Phillips program. In the future, changes to Conoco Phillips operations are required to protect these lakes, they will be addressed adaptively through the Land Use Permit and Water Licence in due course". AANDC notes that under this new application, additional work is proposed for an all-season camp and access road that will require surface and potentially shallow groundwater monitoring.	AANDC is unaware of any SGWMP revisions to date. AANDC recommends that water licence S14L3-001 require surface water monitoring to assess the potential for sedimentation from the soil cover and access road construction, as well as near the area where the all-season camp will be located.

Surface and Groundwater Monitoring Plan ".. will be reviewed annually..", SGWMP as a "Living Document"	The SGWMP was approved as submitted on February 8th, 2013. The SLWB SGWMP approval letter states that it is understood that the Plan is a "Living Document" that will evolve over time as more data is collected and dependant on Conoco Phillips Canada's future plans in the area. AANDC note that operations in the EL 470 area have changed since the first SCWMP was submitted and approved by the Board. AANDC notes that the SGWMP has not yet been circulated for review, although existing as a "Living Document". It is currently unclear if the SGWMP is adequately covering all of Conoco Phillips operations within the EL 470.	AANDC recommends that when changes exist to the operations or expansions to the operations occur in the EL470 area, the SGWMP be amended appropriately.
S14L3-001 Security	AANDC-WRD prepared a security estimate for the water related portion of the liability associated with the new camp and access road. Note AANDC has already provided the increase to security for the Land Use Permit, that estimate was prepared and submitted on February 25, 2014.	AANDC recommends that the Board set the security for S14L3-001 at $ 456,119.

1 **Oil & Gas Reclamation *ConocoPhillips - All Sea* Activity # *1***

DATE 27-Feb-14

ACTIVITY/MATERIAL	UNITS	QUANTITY	COST CODE	UNIT COST	COST
DRILL SITE AREA					
grout top 200 m of hole, cement	m3		#N/A	0	$0
grout top 200 m of hole, labour	hrs		#N/A	0	$0
decant water from sump - N/A	m3		#N/A	0	$0
place geotextile over cuttings - N/A	m2		#N/A	0	$0
doze soil over cuttings - N/A	m3		#N/A	0	$0
other			#N/A	0	$0
remove refuse & waste, bury in sump - N/A	m3		#N/A	0	$0
collect & ship hazardous waste	km		#N/A	0	$0
collect & ship oil based - drill fluids and cuttin	allocation				$0
excavate and treat contaminated soil	m3	0	CSRH	129.6	$0
contour drill pad and perimeter	m3		#N/A	0	$0
re-establish drainage patterns	m3		#N/A	0	$0
rip rap in drainage channels	m3		#N/A	0	$0
spread organic soil from stockpile	m3		#N/A	0	$0
vegetate drill pad area	ha		#N/A	0	$0
Water monitoring & reporting - alllocation	yrs	5		10,000	$50,000
other			#N/A	0	$0
other			#N/A	0	$0
remove wooden buildings	m2		#N/A	0	$0
access road, scarify and remove culverts	m2		#N/A	0	$0
remove pipeline, transmission, etc.	km		#N/A	0	$0
remove access road matts	each	645	#N/A	7.5	$4,838
Scarify all-season access road - soil	m3	33000	DSI	0.71	$23,430
CAMP AREA					
remove refuse & waste, bury in landfill - N/A	m3		#N/A	0	$0
collect & ship hazardous waste - N/A	allowance		#N/A	0	$0
remove fuel tanks - 19 total	km	950	MHERh	9.09	$8,636
excavate and treat contaminated soil - N/A	m3		#N/A	0	$0
contour camp area and perimeter - new all-se	m3	20000	DSI	0.71	$14,200
re-establish drainage patterns	m3		#N/A	0	$0
rip rap in drainage channels	m3		#N/A	0	$0
spread organic soil from stockpile	m3		#N/A	0	$0
vegetate camp area	ha	2	VHFI	1450	$2,900
vegetate camp access	ha	3.3	VHFI	1450	$4,785
vegetate staging area	ha	1	VHFI	1450	$1,450
other			#N/A	0	$0
MOB/DEMOB/ACCESS					
access by air - 2 /yr for 2 years	each	4	Vih	6400	$25,600
access by road/River corssing	km	1	WRh	2830	$2,830
demobilize tanks	km		#N/A	0	$0
mobilize/demobilize camp trailers - 70 atco	km	14100	MHERH	9.09	$128,169
mobilize/demobilize equipment - 9 pc	km	900	MHERh	7.65	$6,885
mobilize misc. supplies	each		#N/A	0	$0
demob rig, well testing unit and comm equipment					

1 **Oil & Gas Reclamation *ConocoPhillips - All Sea* Activity # *1***

DATE 27-Feb-14

ACTIVITY/MATERIAL	UNITS	QUANTITY	COST CODE	UNIT COST	COST
mobilize workers	each	20	mm<h	1069.2	$21,384
accommodation	man per month	20	accmh	2138	$42,760
	SUB-TOTAL				$337,866
	Engineering/Project Management	10.00%			$33,787
	Contingency	25.00%			$84,467
	TOTAL				$456,119

COMMENTS:

1 **Oil & Gas Reclamation *ConocoPhillips - All Sea* Activity # *1***

DATE 27-Feb-14

ACTIVITY/MATERIAL	UNITS	QUANTITY	COST CODE	UNIT COST	COST
DRILL SITE AREA					
grout top 200 m of hole, cement	m3		#N/A	0	$0
grout top 200 m of hole, labour	hrs		#N/A	0	$0
decant water from sump - N/A	m3		#N/A	0	$0
place geotextile over cuttings - N/A	m2		#N/A	0	$0
doze soil over cuttings - N/A	m3		#N/A	0	$0
other			#N/A	0	$0
remove refuse & waste, bury in sump - N/A	m3		#N/A	0	$0
collect & ship hazardous waste	km		#N/A	0	$0
collect & ship oil based - drill fluids and cuttin	allocation				$0
excavate and treat contaminated soil	m3	0	CSRH	129.6	$0
contour drill pad and perimeter	m3		#N/A	0	$0
re-establish drainage patterns	m3		#N/A	0	$0
rip rap in drainage channels	m3		#N/A	0	$0
spread organic soil from stockpile	m3		#N/A	0	$0
vegetate drill pad area	ha		#N/A	0	$0
Water monitoring & reporting - alllocation	yrs	5		10,000	$50,000
other			#N/A	0	$0
other			#N/A	0	$0
remove wooden buildings	m2		#N/A	0	$0
access road, scarify and remove culverts	m2		#N/A	0	$0
remove pipeline, transmission, etc.	km		#N/A	0	$0
remove access road matts	each	645	#N/A	7.5	$4,838
Scarify all-season access road - soil	m3	0	DSI	0.71	$0
CAMP AREA					
remove refuse & waste, bury in landfill - N/A	m3		#N/A	0	$0
collect & ship hazardous waste - N/A	allowance		#N/A	0	$0
remove fuel tanks - 19 total	km	950	MHERh	9.09	$8,636
excavate and treat contaminated soil - N/A	m3		#N/A	0	$0
contour camp area and perimeter - new all-se	m3	20000	DSI	0.71	$14,200
re-establish drainage patterns	m3		#N/A	0	$0
rip rap in drainage channels	m3		#N/A	0	$0
spread organic soil from stockpile	m3		#N/A	0	$0
vegetate camp area	ha	1.3	VHFI	1450	$1,885
vegetate camp access	ha	1.3	VHFI	1450	$1,885
vegetate staging area	ha	1.3	VHFI	1450	$1,885
other			#N/A	0	$0
MOB/DEMOB/ACCESS					
access by air - 2 /yr for 2 years	each	4	Vih	6400	$25,600
access by road/River corssing	km	1	WRh	2830	$2,830
demobilize tanks	km		#N/A	0	$0
mobilize/demobilize camp trailers - 70 atco	km	14100	MHERH	9.09	$128,169
mobilize/demobilize equipment - 9 pc	km	900	MHERh	7.65	$6,885
mobilize misc. supplies	each		#N/A	0	$0
demob rig, well testing unit and comm equipment					

1 **Oil & Gas Reclamation *ConocoPhillips - All Sea* Activity # *1***

DATE 27-Feb-14

ACTIVITY/MATERIAL	UNITS	QUANTITY	COST CODE	UNIT COST	COST
mobilize workers	each	20	mm<h	1069.2	$21,384
accommodation	man per month	20	accmh	2138	$42,760
	SUB-TOTAL				$310,956
	Engineering/Project Management	10.00%			$31,096
	Contingency	25.00%			$77,739
	TOTAL				$419,791

COMMENTS:

Environment Canada | Environnement Canada

Prairie and Northern Region
Environmental Protection Operations Directorate
5019 52nd Street, 4th Floor
Yellowknife, NT X1A 2P7

February 28, 2014

EC File No.: 5410 000 032/002 and 5410 000 032/003
SLWB File No.: S14J-002 and S14L3-001

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

Via Online Submission

Attention: Mr. Morris,

RE: S14J-002 and S14L3-001 – ConocoPhillips Canada Resources Corp. – Additional Multi-Season Camp Land Use Permit and Water Licence

Environment Canada (EC) has reviewed the information submitted by ConocoPillips Canada Resources Corp. for the above mentioned application, in consideration of EC's mandated responsibilities arising from the *Canadian Environmental Protection Act 1999* (CEPA), the pollution prevention provisions of the *Fisheries Act*, the *Migratory Birds Convention Act* (MBCA) and the *Species at Risk Act* (SARA).

EC does not have any comments at this time.

Please do not hesitate to contact me at (867) 669-4744 or loretta.ransom@ec.gc.ca if you have any questions.

Sincerely,

Loretta Ransom

Loretta Ransom
Senior Environmental Assessment Coordinator, EPO

cc: Carey Ogilvie (Head, Environmental Assessment North, EPO)

Canoe North Adventures
Exploring Canada's Arctic
Let the adventure begin ...

Sahtu Land & Water Board
Box 1 Fort Good Hope, NT
X0E 0H0

February 28, 2014

To The SLWB,

Today I heard about the request from Conoco Phillips to dramatically expand their fracking operations camp near Tulita. On behalf of my River Guide Staff and co-owner Lin Ward, we strongly oppose this request prior to the full Environmental Assessment Review. Conoco Phillips was applauded for the thorough and comprehensive application they made to the SLWB for test fracking operations near Tulita which are currently underway. It appears that perhaps Conoco Phillips has had a hidden agenda right from the start. They have successfully cracked the door open to the idea of fracking in the Sahtu. Now it appears before proper and due process, they want to throw the doors to fracking wide open.

Canoe North Adventures is a seasonal Adventure Tourism Company offering pristine wilderness canoe and hiking expeditions throughout the Sahtu Region. The Canoe North Lodge and Outfitting Centre is located in Norman Wells and has been delivering world-class adventure experiences to Canadians for twenty-one years. On January 23, 2014, Canoe North Adventures was honoured to receive two Frozen Globe Business Awards as both the NWT Entrepreneur of the Year and the Pan-Territorial Entrepreneur of the Year. With this National recognition comes increased responsible for Canoe North to position itself as a leader in environmental protection and preservation. We are concerned at the accelerated rate of resource development in the Sahtu and we challenge the SLWB to demand a cautious, responsible and sustainable path forward.

Canoe North's ability to deliver on its promise of world-class, pristine wilderness adventures will be greatly compromised if Sahtu water quality and fish and game habitat is negatively affected by yet unproven fracking methods employed by Conoco Phillips. The fact that there have already been accident and spill incidents at the Tulita Camp in 2014 reinforces the importance of proceeding with extreme caution when considering the Conoco Phillips Application to triple the scale of the Tulita operation. We are deeply concerned also with how this enormous industrial footprint will affect the residents of Tulita. We have already witnessed the negative socio-economic impact of heightened camp activity in and around Tulita in 2013 and are doubly concerned now over potential environmental degradation.

Thank you for the opportunity to express the concerns of Canoe North Adventures with regards to the recent application by Conoco Phillips to triple the size of its Tulita fracking operation. We trust that the SLWB will approve only responsible and transparent proposals which strike a harmonious balance between economic growth, environmental sustainability and social impact.

Yours truly, Allan Pace

Owner/Operator, Canoe North Adventures

307114 Hockley Road, Mono, ON L9W 6N6 519-941-6654
www.canoenorthadventures.com info@canoenorthadventures.com

ConocoPhillips Canada

Cyril Jenkins
Regulatory, Environment and
Stakeholder Engagement
401 – 9th Avenue SW
Calgary, AB T2P 2H7
Phone: (403) 233-3326

March 10, 2014

Sahtu Land and Water Board
PO Box 1
Fort Good Hope, NWT
X0E 0H0

Attention: **Larry Wallace, Chair of the Sahtu Land and Water Board**

Dear Mr. Wallace:

Re: ConocoPhillips Canada Resources Corp. – Camp Relocation and Storage Area Expansion – S14J-002 and S14L3-001 – Responses to Information Requests

ConocoPhillips Canada Resources Corp. (ConocoPhillips) has reviewed the comments from various stakeholders regarding the Camp Relocation and Storage Area Expansion Land Use Plan (LUP) and Water Licence (WL) application via the Sahtu Land and Water Board (SLWB) online review system.

ConocoPhillips submits the following responses and attached supporting documentation via the online review system to the SLWB in response to the comments and concerns raised.

Please direct any questions or concerns in regards to these responses to my attention at (403) 233-3326, or Cyril.H.Jenkins@conocophillips.com, or contact Alana Smith at (403) 233-4548 or. Alana.M.Smith@conocophillips.com

Sincerely,

ConocoPhillips Canada Resources Corporation

Cyril Jenkins, P.Geol. (AB)
Team Lead - Regulatory, Environment and Stakeholder Engagement

Enclosures

ConocoPhillips EL 470 S14L3-001 WL Camp Relocation and Storage Area Expansion - AANDC Information Request Responses - March 10, 2014			
ID	**Topic**	**Reviewer Comment/Recommendation**	**Proponent Response**
AANDC: Jan Davies			
	AANDC WL S14L3-001 Comments	Comment See attached	
	Waste Management Plans Water Licence Conditions D.2	**Comment:** There are 2 companies that are active in the Canol Shale, ConocoPhillips and Husky. However, there are inconsistencies between the licences that authorize these projects. In Water Licence S13L1-005 (Husky), Part D, Item 2 states: "the Licensee to adhere to the approved WMP " and that "Revisions from WMP shall be submitted to the Sahtu Land and Water Board for approval ". AANDC notes that this specific condition is missing from both ConocoPhillips S12L1-005 and S13L1-004 water licences. This presents a risk as the WMP for the Conoco Phillips operations could in fact be outdated or out of context with respect to the specific operations or operational modifications specific to its exploration projects. **Recommendation:** AANDC recommends that S14L3-001 require that ConocoPhillips provide a plan, adhere to the approval plan and revise the plan as appropriate if there are shifts to the operations at any of its sites (camp, staging, drilling, access, etc.). To be consistent, the terms and conditions should say: "The Licensee shall adhere to the approved Waste Management Plan and shall annually review the Plan and make any necessary revision to reflect changes in operations, technology, chemicals or fuels, or as directed by the Sahtu Land and Water Boards. Revisions to the Plan shall be submitted to the Sahtu Land and Water Board for approval ."	ConocoPhillips understands and agrees with the need for annual updates to the Waste Management Plan (WMP) as exploration and operational activities may differ from year to year. ConocoPhillips notes that all revisions must be submitted to the Sahtu Land and Water Board for approval.
	Waste Management Plan Modifications to Conoco Phillips current WMP requested	Comment: Considering the types and volumes of wastes/chemicals being used with the currently permitted hydraulic fracturing exploration, AANDC would like to stress to the Proponent the importance of conducting adequate Waste Management practices - through Waste Management Plans. In the current application, EPP, Conoco Phillips suggests that for this water licence, "Waste Management will continue to be handled in accordance with CPC revised WMP approved under S12A-005 and S13A-001". Recommendation. AANDC recommends that references be made to a WMP in any Conoco Phillips' water licences. Further, AANDC recommends that the existing WMP be updated to include the new activities and tankage proposed under this Water Licence (S14L3-001) and Land Use Permit (S14J002) applications. As there is only one WMP which is to be used for S12L1- 005 and S13L1-004, AANDC recommends for the content of the current WMP to be revised to reflect appropriate wastewater handling, storage and disposal criteria. Note, AANDC has further recommendations on the disposal criteria below.	ConocoPhillips understands and agrees with the need for annual updates to the Waste Management Plan (WMP) as exploration and operational activities may differ from year to year. To date the WMP has been updated three (3) times to incorporate changes in activity. Exploration activity in EL470 requiring camp support is currently ocurring under the approved WMP dated September 2013. ConocoPhillips anticipates submission of an updated WMP in March 2014 in support of activities planned in the next operational season December 2014-April 2015. This WMP will contain updated information on anticipated waste volumes, reduction strategies, handling and disposal plans. ConocoPhillips continues to submit updated management plans in advance of the operational season for Sahtu Land and Water Board approval. An updated waste management plan has not accompanied this particular application because it would result in multiple plans that would later need to be consolidated in order to address/include all plans for the 2014-2015 operational season. ConocoPhillips notes that all revisions must be submitted to the Sahtu Land and Water Board for approval.

ConocoPhillips EL 470 S14L3-001 WL Camp Relocation and Storage Area Expansion - AANDC Information Request Responses - March 10, 2014			
ID	**Topic**	**Reviewer Comment/Recommendation**	**Proponent Response**
	Waste Management Plans Previous WMP versions DELETED	Comment: It was noted that 3 different Waste Management Plans were submitted by ConocoPhillips: o WMP #1 dated September 2012 o WMP #2 dated March 2013 o WMP #3 dated September 2013 However, the 2 previous versions of the WMP (WMP #1 and WMP #2) were Deleted from the SLWB Public Registry (see water licence applications - Appendices). No information or rationale is provided for these deletions. Recommendation: AANDC recommends that all versions of the Waste Management Plans remain available on the Sahtu Land and Water Board website, as well as any updates to these plans for each authorization as appropriate. The Public Record should also show the comments provided by parties on the various versions of the plans to provide context and tracking of changes and improvements to the plans over time. This is a standard practice used by all other Land and Water Board's in the Mackenzie Valley.	ConocoPhillips recognizes the value of good document control and management practices.This process should include a means to assure that documents and records are accessible and can be identified, retained, and controlled. While it is necessary for documents and records to be periodically reviewed and revised as necessary, current versions must made available and readily distinguishable from obsolete documents. If obsolete documents are to be retained, these records should be clearly identified as being retained for records management purposes but not as active documents.
	SNP S12L1-005 (1) faulty linked to Condition D.6 SNP section no. 2 - To refer to Condition D.7 (not D.6)	Comment: Surveillance sampling stations are required to ensure camp greywater and sewage wastewater are monitored for compliance. It was noted that while Condition D.7 of the S12L1-005 amended licence refers to the SNP station S12L1-005 (1) no. 2, the SNP station S12L1-005 (1) refers back to Condition D.6 (instead of Condition D.7). It is assumed that this adjustment was overlooked during amendment of the licence when Condition D.6 was added to the licence, and that the previous Condition D.6 became Condition D.7. This mistake/inconsistency should be avoided when drafting the water licence terms and conditions for S14L3-001. Recommendation: AANDC recommends the appropriate linkages be made among conditions of the new water licence with respect to disposal of wastewater.	No response necessary
	Disposal of Greywater, Sewage Wastewater and Produced Water **Produced water being considered as "Greywater"** The current WMP, ConocoPhillips also included under that category "Water rom any work completed in relation to groundwater investigation will also be field tested for electrical conductivity, pH, chloride (sodium ions removed from WMP #1), and visually inspected for the presence of naturally occurring hydrocarbons before discharging the water	Comment: In accordance with existing water licences, Greywater "means all liquid Wastes from showers, baths, sinks, kitchens, and domestic washing facilities but does not include Toilet Wastes", while Sewage "means all toilet wastes and greywater." These are typical definitions. AANDC notes that "Produced Water" is currently defined separately. AANDC also notes that produced water can be generated from deeper groundwater wells and or during geotechnical investigations. AANDC notes that groundwater having TDS concentrations of nearly 4,000 mg/L is not potable water and would be considered waste under the act. AANDC would prefer if groundwater is to be disposed to land, that the EQC be lowered to 1,500 mg/L. Groundwater with higher concentrations should be disposed of with drilling fluids and or produced water from oil and gas wells. Recommendation: AANDC recommends that the licence and revised WMP include the proposed definition of "Produced Water". AANDC believes that the definition of "Produced Water" in all Conoco Phillips licences should be define as the following: "any waters produced during gas and oil extraction, groundwater investigation and geotechnical assessment that cannot normally be disposed of at the surface of the earth because such water can contain high levels of salts and trace levels of hydrocarbons and other pollutants." AANDC recommends that if groundwater is to be disposed to land, that the EQC be lowered to 1,500 mg/L.	ConocoPhillips understands the need to appropriately address disposal of naturally affected groundwater from some groundwater wells. ConocoPhillips has updated the forthcoming WMP to discuss cases where groundwater does not meeting previously established permit parameters. ConocoPhillips strongly opposes the proposed defintion of "produced water" to include water that can be generated from deeper groundwater wells because "produced water" is a widely used term in oil and gas that has a meaning related to production of water associated with oil and gas production from the hydrocarbon bearing units. This water is often salt affected and can have hydrocarbons - but the key is that it is produced with oil and gas production - NOT with groundwater or other shallower sources. It would be misleading and result in unintended confusion for industry and waste management processes to combine the two. Additionally it will not align with existing oil and gas regulatory defintions. Produced water is a term that has a typical and specifc meaning in the oil and gas industry and by regulators for oil and gas activity. The current definition as provided by the SLWB in S13L1-004 and S13A-001 is consistent and aligns with oil and gas industry practice. The current SLWB definition is, "Produced Water" - water naturally present in the reservoir or injected into the reservoir to enhance production, produced as a co-product when gas or oil is produced. ConocoPhillips does not agree that it is necessary to change the permitted TDS concentration of 4000mg/L .

ConocoPhillips EL 470 S14L3-001 WL Camp Relocation and Storage Area Expansion - AANDC Information Request Responses - March 10, 2014			
ID	**Topic**	**Reviewer Comment/Recommendation**	**Proponent Response**
	Waste Management Plan Produced Water vs. Sewage and Domestic Wastewater	Comment: In Section 3.6 of the current WMP, Conoco Phillips includes "Water from any work completed in relation to groundwater investigation ..." under Sewage and Domestic Wastewater. Note this is not consistent with the definitions in the water licence for Sewage and Greywater. Recommendation: AANDC recommends that the necessary revision is made to Conoco Phillips WMP in order to properly classify "Produced Water" under its own specific category and management procedures, as very distinct from regular camp greywater and sewage water.	Please refer to response above
	Sewage effluent - Untreated & Partially treated Usage of storage tanks stated in WMP #1, but removed in subsequent WMP versions	Comment: It was noted that effluent disposal criteria of the base camp are to be relocated as part of the current water licence application. Under the previous SNP conditions, treated effluent was to be disposed at SNP S12L1-005 (1) and comply with effluent quality standards enumerated in Part D, Condition 7: "All sewage effluent discharged from the Sewage Disposal Facilities at "Surveillance Network Program" Station Number S12L1-005 (1) shall meet the following effluent standards: pH (6 to 9), Suspended Solids or SS (100 mg/L), Oil & Grease (5 mg/L), BOD5 (100 mg/L) and Fecal Coliforms (1 x 10 6 CFU/100 ml)." It was noted that the WMP #1 submitted in September 2012 (S12L1-005 water licence application) included storage tanks that would be used for partially treated effluent "until it can be treated to meet discharge guidelines or transported to the nearest suitable treatment facility" (section 5.3.5.3). These contingency containment details appear to have been removed from subsequent WMP versions. However, AANDC notes in Conoco Phillips Sept 2013 Annual Report, treated effluent quality exceedences were reported at Pod 1 and Pod 2 (Table 6) for the following parameters: Oil & Grease (Jan 26, Jan 25, March 11); BOD (Jan 26, Feb 25, March 4), Fecal Coliforms (Jan 25, March 11, March 18) and SS)Feb 18 and 25). Recommendation: AANDC requires further information from ConocoPhillips as it is unclear if this treated sewage that did not meet EQC was stored and removed or discharged to the environment.	*In accordance with SLWB reporting processs ConocoPhillips notified the SLWB of treated effluent that exceeded the permitted effluent quality standards was discharged to the environment in the 2012-2013 season. The exceedences were communicated to the SLWB and a commitment was made to complete a summer site inspection of the effluent discharge area to ensure the discharges had not caused a negative impact to the landscape. The results section of the third party summer inspection, completed August 29th, are provided below and the full report is available on the SLWB public registry. ConocoPhillips concluded that an increased level of treatment would be required to provide consistent effluent quality and implemented a MBR system for the 2013-2014 season. The effluent results have been consistent and within all specified parameters this year except for one (1) exceedence that was associated with plant upset and has since been rectified.* *'Based on the laboratory anolysis of the soil samples collected from the sampling completed on August 29, 2013, no petroleum hydrocarbons were detected in any of the samples. Due to high moisture content, detection limits were elevated in three of the 16 samples submitted. Laboratory chromatograph review of similar samples from nearby CPC sites indicated that the hydrocarbons detected in the samples may be from a naturally occurring phytogenic source. Based on this previous experience with other soil sampling programs conducted in this area, as well as the fact that soil vapours were not elevated in any of the samples collected, the presence of petroleum hydrocarbons is not suspected.Soil pH was also measured below the guideline in eight of 16 samples submitted. These results are assumed to relate to the naturally-occurring peat found in the area. The vegetative communities in the area were healthy and indicative of species that thrive in low pH soils. E. coli was not detected in any of the soil samples; however total coliforms exceeded the background concentration in two of the samples. The low levels of total coliforms and absence of E. coli in the other samples indicate the low likelihood that the treated effluent from the camp area has impacted the soils in the discharge area. As the highest concentration measured during the sampling program is less than the composting guideline, these results are not expected to impact human health or the environment and will degrade over time.* *It is recommended that further assessment of nutrient loading in and around the discharge site take place in addition to the parameters that formed part of this initial assessment. The release of nutrient-rich effluent has the potential to impact the vegetative and aquatic communities near the release site. Therefore an assessment of detailed salinity, total Kjeldhal nitrogen and basic nutrients (nitrogen, phasphorous and potassium) will assist in determining if impacts are occurring in and around the release site.'*
		AANDC recommends that contingency containment be put in place for the times that treated effluent does not meet effluent quality standards. AANDC recommends the Waste Management Plan include details on contingency containment storage for untreated or partially treated effluent.	Based upon the results of the current technology employed, it is the opinion of ConocoPhillips that contingency containment is unnecessary. If there was an emergency situation that required it, a 400 barrel (bbl) tank could be employed on short notice as contingency containment.
	Untreated or Partially treated sewage effluent SNP S12L1-005 (1) disposal location coordinates	Comment: Under the amended S12L1-005 water licence, treated camp effluent disposal occurred in 2013 at SNP S12L1-005 (1) location. As the current application requests relocation of the base camp, coordinates representing the area for the new SNP disposal location for the water licence S14L3-001 should be provided in the water licence. Recommendation: AANDC recommends that co-ordinates for past and future locations for treated effluent disposal under SNP station(s) be provided within the new water licence SNP section, where appropriate. As well, AANDC recommends that all past and current SNP locations be provided within next Annual Report.	ConocoPhillips has provided coordinates of the effluent discharge areas as part of the forthcoming WMP.

ConocoPhillips EL 470 S14L3-001 WL Camp Relocation and Storage Area Expansion - AANDC Information Request Responses - March 10, 2014			
ID	**Topic**	**Reviewer Comment/Recommendation**	**Proponent Response**
	Surface and Groundwater Monitoring Plan New water licence application S14L3-001	Comment: In its Reasons for Decision for Conoco Phillips water licence that was to cover horizontal hydraulic fracturing operations, the Sahtu Land and Water Board stated, under "Use and Monitoring of Water": "ConocoPhillips has a Surface and Groundwater Monitoring Plan (SGWMP), approved by the Board under Water Licence S12L1-005, which will be reviewed annually by the Sahtu Land and Water Board and reviewers, including government authorities responsible for fish and water protection. This comprehensive monitoring program will identify any changes to groundwater and surface water quality caused by land activities associated with Conoco Phillips program. In the future, changes to Conoco Phillips operations are required to protect these lakes, they will be addressed adaptively through the Land Use Permit and Water Licence in due course". AANDC notes that under this new application, additional work is proposed for an all-season camp and access road that will require surface and potentially shallow groundwater monitoring. Recommendation: AANDC is unaware of any SGWMP revisions to date. AANDC recommends that water licence S14L3-001 require surface water monitoring to assess the potential for sedimentation from the soil cover and access road construction, as well as near the area where the all-season camp will be located.	The SGWMP will be updated where required to address SLWB recommendations as well as incorporate on-going field investigation findings. ConocoPhillips will conduct inspections of the access road for erosion. If erosion issues are identified then potential sedimentation will be investigated as part of the surface water monitoring program.
	Surface and Groundwater Monitoring Plan ".. will be reviewed annually..", SGWMP as a "Living Document"	Comment: The SGWMP was approved as submitted on February 8th, 2013. The SLWB SGWMP approval letter states that it is understood that the Plan is a "Living Document" that will evolve over time as more data is collected and dependant on Conoco Phillips Canada's future plans in the area. AANDC note that operations in the EL 470 area have changed since the first SCWMP was submitted and approved by the Board. AANDC notes that the SGWMP has not yet been circulated for review, although existing as a "Living Document". It is currently unclear if the SGWMP is adequately covering all of Conoco Phillips operations within the EL 470. Recommendation: AANDC recommends that when changes exist to the operations or expansions to the operations occur in the EL470 area, the SGWMP be amended appropriately.	The SGWMP will be updated where required to address SLWB recommendations as well as incorporate on-going field investigation findings.

Table 8-1: Recent Past Developments in the RSA

Operator	Regulatory Program Number	Program Type	Start Date	End Date	Description	GIS Data Available (Y/N)
Imperial Oil	S04L1-016	Industrial	April 6, 2005	April 9, 2007	Water use for winter road maintenance for Geotechnical Investigation.	N
GNWT DOT	S02E-001	Highways	March 21, 2003	March 20, 2008	Road construction and maintenance operations on Mackenzie Valley winter road from Km 800 to 1,172, Tulita to Norman Wells to Fort Good Hope and Km 0-107 of the Deline access road.	N
GNWT DOT	S03L8-004	Highways	December 1, 2003	November 30, 2008	Construction of a permanent bridge over Nota Creek (Km 982)	N
GNWT DOT	S03E-004, S03L8-003	Highways	December 1, 2003	November 30, 2008	Construction of a permanent bridge over Jungle Creek (Km 978.5)	N
Imperial Oil	S03S-009, S03L1-017	Soil Testing	January 8, 2004	January 11, 2009	Geotechnical investigation in K'asho Got'ine District.	N
Husky	S04A-006, S04L1-006	Oil and Gas	September 12, 2004	September 9, 2009	Exploratory drilling program west of Stewart Lake and East of Summit Creek.	N
Husky	S05B-003, S05L3-002	Seismic	July 15, 2005	July 14, 2010	Seismic acquisition in the Summit Creek/Keele River area approx. 60km SW of Tulita.	N
Husky	S02A-004, S02L1-003	Oil and Gas	October 13, 2003	October 12, 2010	Exploratory drilling program west of Stewart Lake and East of Summit Creek.	N
Husky	S05A-007, S05A-004	Oil and Gas	November 4, 2005	November 3, 2010	Exploratory drilling program approx. 60km SW of Tulita.	N
Explor Geoph.	S05B-11	Seismic	December 19, 2005	December 18, 2010	Seismic exploration program northwest of Deline.	N
Imperial Oil	S04S-013	Soil Testing	April 6, 2005	April 9, 2011	Winter Geotechnical Investigation.	N
Husky	S06B-005	Seismic	July 4, 2006	July 3, 2011	450km of 2D heli-portable seismic acquisition in the Summit Creek and Redstone River area approx. 60km SW Tulita.	N
Kaska Minerals Corporation	S06C-006	Mining	August 1, 2006	July 31, 2011	Mining operations in Keele River and Fortress Mountain area, Tulita District.	N
Husky	S06B-007	Seismic	August 11, 2006	August 10, 2011	Seismic program around Stewart and Tate lakes approx. 50 km SW of Tulita.	N
Husky	S07T-014, S07L3-003	Staging Area	September 27, 2007	September 26, 2012	Construction of Birch Island Barge Landing/Staging Site.	N
Husky	S07A-015, S07L1-004	Oil and Gas	November 13, 2007	November 12, 2012	Exploratory oil and gas drilling approximately 120km SSE of Norman Wells.	N

Table 8-2: Ongoing and Future Programs in the RSA

Operator	Regulatory Program Number	Program Type	Start Date	Anticipated End Date	Description	GIS Data Available (Y/N)
GNWT DOT	S08Q-009	Highways	April 3, 2009	April 2, 2014	GNWT quarry and gravel hauling SW of Tulita approx. 3km south of Mackenzie River on Little Bear River.	N
Imperial Oil	S03L1-001	Industrial	August 30, 2004	August 25, 2014	Withdrawal of 3,500,000m^3 of water annually from the Mackenzie River.	N
Imperial Oil	S11L8-001	Misc.	March 15, 2011	March 14, 2016	Excavation along the Mackenzie River shoreline to repair a freshwater pipe.	N
Explor Geoph.	S11B-004	Seismic	December 5, 2011	December 4, 2016	Seismic exploration program located in the area west of Tulita, on the west side of the Mackenzie River.	Y
Husky	S11T-002, S11L3-002	Staging Area	December 5, 2011	December 4, 2016	Staging area including camp accommodations and access for Husky Oil Operations.	N
Husky	S11A-003, S11L1-003	Oil and Gas	December 5, 2011	December 4, 2016	Exploratory oil and gas drilling approximately 40km SSE of Norman Wells.	N
Husky	S11B005, S11L1-005	Seismic	January 12, 2012	January 11, 2017	220km^2 of 3D seismic acquisition between 20km and 35km SSE of Norman Wells.	Y
Imperial Oil	S11L1-004	Industrial	January 12, 2012	January 11, 2017	Installation of new freshwater pipeline between Bear Island and Frenchy's Island requiring the excavation of approx. 300m of the bank of the Mackenzie River.	N
Imperial Oil	S11L8-006	Misc.	February 24, 2011	February 23, 2017	Placing Class E riprap around two bunkers located on Goose Island to prevent further damage during spring break-up.	N
Husky	S12X-006	Ground Water	December 5, 2012	April 12, 2017	Groundwater investigation program to drill 20 shallow wells (max 30m) into top of bedrock to assess baseline water quality and potential aquifers as water sources.	Y
Husky	S12S-002	Geotech	September 13, 2012	September 12, 2017	Drilling boreholes along cleared access for permafrost and gravel aggregate survey.	N
ConocoPhillips	S12A-005, S12L1-005	Oil and Gas	October 26, 2012	October 25, 2017	Drilling of two vertical exploratory wells and preparation for a third well, and to conduct groundwater investigations.	Y
Imperial Oil	S12Q-004, S12L8-004	Quarrying	October 26, 2012	October 25, 2017	Removing sand from the sandbars downstream of islands 4, 5 and 6 near Norman Wells.	N
GNWT DOT	S12L8-008	Highways	January 14, 2013	January 13, 2018	Bridge replacement at Prohibition Creek, 30km ESE of Norman Wells.	N

Operator	Regulatory Program Number	Program Type	Start Date	Anticipated End Date	Description	GIS Data Available (Y/N)
Husky	S12F-007	Road	January 14, 2013	January 13, 2018	Construction of all-weather access road and associated facilities. 200m x 305m storage site, 1400m x 60m airstrip and 40km x 20m access road.	Y
Husky	S12L8-007	Bridge	January 14, 2013	January 13, 2018	Construction of clear span bridges over Bogg Creek and Slater River, and culverts to deflect drainage under the road ROW.	Y
GNWT DOT	S12-E-009	Highways	February 8, 2013	February 7, 2018	Bridge replacement at Four Mile Creek, 5km out of Tulita.	N
Mackenzie Valley Environmental Contractors Ltd.	S13L8-003	Industrial	March 18, 2013	March 17, 2018	Deposition of wastes, including the acceptance of hydrocarbon contaminated soils and treatment of water runoff from the Hydrocarbon Land Treatment Facility.	N
Town of Norman Wells	S07L3-002	Municipal	August 2, 2008	August 1, 2018	Municipal water use and waste deposit renewal.	N
GNWT DOT	S13L8-002, S04L8-0014	Highways	February 20, 2013	February 19, 2018	Installation of a clear span bridge across Belot Creek.	N
ConocoPhillips	S13A-001, S13L1-004	Oil and Gas	June 11, 2013	October 25, 2018	Drilling of two horizontal exploratory wells to be hydraulically fractured and tested. Other infrastructure and water sources will remain the same as those approved under S12A-005 and S12L1-005.	Y
Husky	S13A-002, S13L1-005	Oil and Gas	July 19, 2013	July 18, 2018	Drilling and completion of two vertical exploratory wells. Includes construction of all-weather well pads and access.	Y
Husky	S13L1-006, S13X-003	Oil and Gas	October 24, 2013	October 23, 2018	Consolidate S11T-002, S12F-007, S11L3-002 and S12L8-007, increase camp size and accommodations, install a 25, communications tower, increase fuel storage, construct an all-weather pad at MW-06 for use as a helipad, construct all-weather pad at MW-09, install pumping facilities for the camp, extend airstrip, install runway lighting, convert O-41 well site to storage site, construct all-weather pad at barge landing, licence MW-09 to supply camp water and licence Vermillion Creek for water supply.	N
HRN Contracting	S13L8-008, S13Q-004	Quarrying	December 3, 2013	-	Development of a quarry 35km southeast of Norman Wells and 4km north of Vermillion Creek. The quarry encompasses 16 hectares and requires an 8km access road.	Y
ConocoPhillips	-	Oil and Gas	Q1 2014	2019	Exploratory geotechnical program. A total of approximately 100 drill sites per year for 5 years via heli-portable track drill rig.	Y