

Newsletter of the Land and Water Boards of the Mackenzie Valley

DECEMBER 2013 VOLUME III ISSUE II



MVLWB Issues Water Licence for Canadian Zinc's Prairie Creek Mine

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“Sharing responsibility by working together to make the best decisions for the land, water, and people.”

On September 24 of this year, the MVLWB issued Water Licence MV2012L1-0005 to Canadian Zinc Corporation for its Prairie Creek mine. The Nahanni National Park borders the mine site on all four sides, therefore licensing the project faced unique challenges because of the location of the mine.

The crafting of the Licence involved multi-stakeholder input at every stage of the Board's process. In technical sessions and at public hearings, Canadian Zinc, the federal, territorial, and Aboriginal governments, and other parties provided insights that were central to the writing of draft licences and permits.

After many months of review and study, the Board determined that a

new approach (variable load-based effluent quality criteria) would be the best way to control effluent discharge into Prairie Creek.

Mines usually discharge effluent into watercourses with large dilution capacities. However, Prairie Creek is a small watercourse with restricted ability to minimize the effects of industrial discharge, and the amount of water that flows through the creek varies with the seasons. Because of this, the Board created a water licence whose provisions accommodate the creek's changing flow rates. The effluent quality criteria set for the mine will vary based on the flow of the creek at any one time, which allows Canadian Zinc to operate

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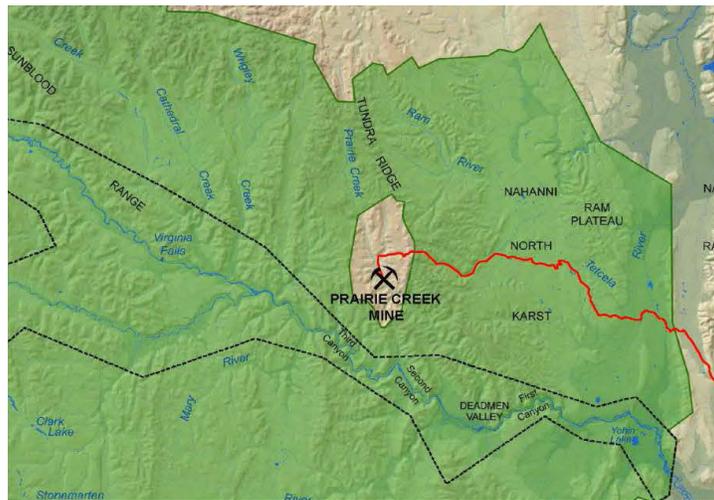
throughout the year, while ensuring environmental protection of the creek and downstream waterbodies.

The company must post an initial security deposit and additional security in a phased approach that corresponds with the expected project development.

For more information about the issuance of Water Licence MV2012L1-0005, contact MVLWB Executive Director Zabey Nevitt at zabey@mvlwb.com and 867-766-7457.



Canadian Zinc Corporation's Prairie Creek mine site.



Prairie Creek mine site and a portion of Nahanni National Park. (Images courtesy of Canadian Zinc Corporation.)

Land and Water Boards Release New Valley-Wide Policies and Guidelines

The Mackenzie Valley Land and Water Board has released the following six new policies and guidelines for application throughout the Mackenzie Valley:

- *Engagement and Consultation Policy*
- *Engagement Guidelines for Applicants and Holders of Water Licences and Land Use Permits*
- *Standard Land Use Permit Conditions Template*
- *Standard Process for New Conditions*
- *Guide to the Land Use Permitting Process*
- *Water Use Fee Policy*

Previously authorized policies and guidelines include the *Water and Effluent Quality Management Policy* and the *Guidelines for Developing a Waste Management Plan*.

The Board approved and implemented these documents under section 106 of the *Mackenzie Valley Resource Management Act* (MVRMA), and they are applicable throughout the Mackenzie Valley. The MVLWB, as well as the Gwich'in, Sahtu and Wek'èezhii Land and Water Boards, will implement these policies and guidelines. The documents are on the Board's website at www.mvlwb.com.

Whether you apply to the MVLWB or one of the Regional Panels, our goal is for consistency in process and transparency in decision making. These products will help us ensure that outcome, and they are a part of our ongoing contribution to improving the northern regulatory system. The products will benefit everyone involved.

- MVLWB Chair and CEO, Willard Hagen

The new *Engagement and Consultation Policy* and supporting *Engagement Guidelines for Applicants and Holders of Water Licences and Land Use Permits* provide direction to proponents of projects in the Mackenzie Valley. They outline the Board's expectations regarding whom they should engage with and how they should engage, both prior to applying to the Board and during the life

cycle of a land use permit or water licence. The engagement guidelines reflect current industry best practices, as well as the expectations of Mackenzie Valley communities and Aboriginal organizations/governments with whom the Board consulted during the development of the guidelines. The policy outlines the Board's consultation activities and how they fit into the bigger picture of Crown consultation.

The *Guide to the Land Use Permitting Process* describes the steps a proponent must take from pre-application to post-issuance. This comprehensive guidance document is, for the first time, applicable in all regions of the Mackenzie Valley.

The *Standard Land Use Permit Conditions Template* is a list of standard conditions for land use permits. The Board will use the list of conditions in the template as the basis for new permits. This will provide certainty and consistency for the conditions applied to projects in all regions of the Mackenzie Valley. This list of conditions is available on the Board's website, which proponents and reviewers may use to suggest which conditions will best suit their intended project.

The *Standard Process for New Conditions* lays out the process the Board will follow if a new condition is required that is not currently listed in the conditions template. This systematic approach to land use permitting ensures that the Boards handle all applications consistently and transparently, which will streamline the process for all parties.

The *Water Use Fee Policy* clarifies how the Boards calculate water use fees required by the *Northwest Territories Waters Regulations*.

The Boards emphasize that by implementing these products under section 106 of the MVRMA, they apply to all projects throughout the Mackenzie Valley. The policies and guidelines allow enough flexibility to recognize regional differences, while ensuring that the Boards avoid unnecessary inconsistencies.

For more information about any of the policies and guidelines, contact MVLWB Executive Director Zabey Nevitt at zabey@mvlwb.com and 867-766-7457.

ConocoPhillips Canada Receives Land Use Permit and Water Licence for Horizontal Hydraulic Fracturing

On June 11, 2013, the Sahtu Land and Water Board (SLWB/the Board) approved ConocoPhillips Canada's applications for two horizontal wells with hydraulic fracturing south of Norman Wells. Land Use Permit S13A-001 and Water Licence S13L1-004 allow the company to conduct necessary work over the next three winters. After the initial review period and after considering extensive comments from local organizations, individuals, and government agencies, the SLWB decided to invoke paragraph 22(2)(b) of the *Mackenzie Valley Land Use Regulations*, which allows

it to request more information. The Board decided to give reviewers and the proponent an opportunity to comment on potential terms and conditions associated with hydraulic fracturing and to send information requests to the National Energy Board. After this second review phase, the Board met on June 11 and approved the Land Use Permit and the Water Licence. The SLWB placed several conditions on ConocoPhillips to address concerns regarding the practice of hydraulic fracturing. See below.

Land Use Permit - the Relevant Conditions

G.1 - Chemicals

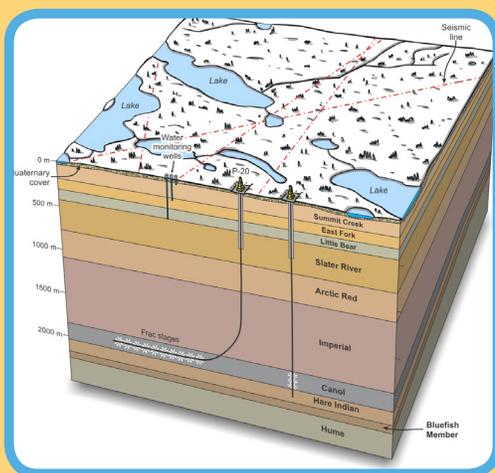
The condition: At least seven days prior to the use of any chemicals that were not identified in the accepted application, the MSDS [material safety data sheets] must be provided to an Inspector and the Sahtu Land and Water Board.

Rationale: ConocoPhillips included all potential fracture fluid additive MSDS sheets with their applications. This condition ensures any changes are still submitted to the appropriate authority.

G.21 - Waste Containment

The condition: The Permittee shall ensure that all drilling fluids, flowback, and produced water wastes are contained in storage tanks located within a bermed area with leak detection and a synthetic liner that is considered impermeable and is capable of containing 110 percent of the total volume of the largest storage tank(s) employed within the bermed area.

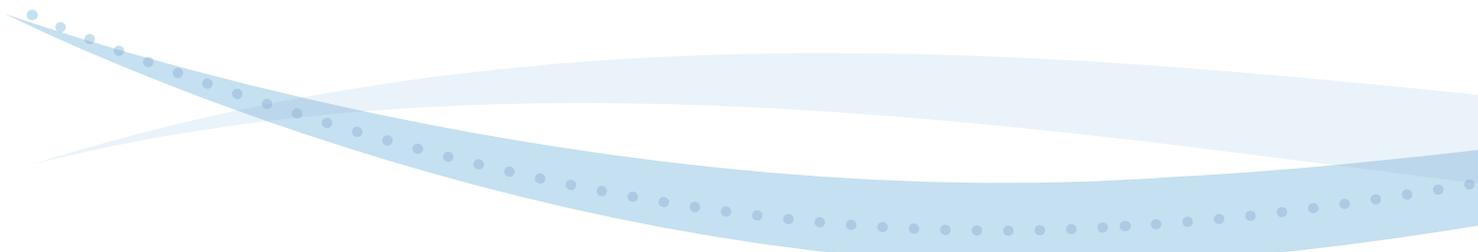
Rationale: This condition ensures wastes associated with the hydraulic fracturing process are properly managed to prevent surface spills. Learn more about the permit conditions in the Board's Reasons for Decision.



Fracturing is a process which opens and widens breaks in rocks below the earth's surface by the injection of chemicals and liquids at high pressure. This allows for the extraction of natural gas and oil.

Hydraulic fracturing diagram courtesy of ConocoPhillips, created by Derek Brown.

For relevant water licence conditions, see next page.



Water Licence - The Relevant Conditions

B.4

The condition: The Licensee shall submit to the Sahtu Land and Water Board, within 60 days before the commencement of operations, the complete risk assessment of potential fracture additives based on their potential health and environmental risks.

Rationale: ConocoPhillips must present a rationale for its choice of fracture fluid additives and strive, wherever possible, to use low risk alternatives.

B.5

The condition: The Licensee shall submit to the Sahtu Land and Water Board, within 30 days after the completion of hydraulic fracturing on each well, a fracturing fluid additive disclosure that includes the following:

- The trade name of each additive and a brief description of the intended use or function of each additive that is used in the fracturing fluid such as acid, biocide, breaker, corrosion inhibitor, crosslinker, etc.;
- The type and volume of base fluid(s) used in the hydraulic fracturing treatment, expressed in cubic metres;
- The name of each chemical ingredient listed on the Material Safety Data Sheet (MSDS) for each additive, and the Chemical Abstracts Service registry number (CAS number) for each chemical ingredient. Where the specific identity of a chemical ingredient is considered a trade secret, a more general identification is to be used consistent with the MSDS;
- The concentration of each chemical ingredient within the additive, expressed as a percent of the total mass of the additive; and
- The concentration of each chemical ingredient, expressed as a percent of the total mass of the fracturing fluid including base fluid and additives.

Rationale: ConocoPhillips is required to disclose all chemicals used, total volumes of water, as well as concentrations to the Sahtu Land and Water Board. Once submitted, this information will be publicly available on the Sahtu Land and Water Board Registry. All potential MSDSs were already included in the application. The final combination of chemicals is captured by this disclosure requirement.

C.4

The condition: The Licensee shall not exceed 9,950 m³ of water use for the purpose of hydraulic fracturing on each well.

Rationale: This condition ensures a maximum allowable volume on water use specific to the process of hydraulic fracturing.

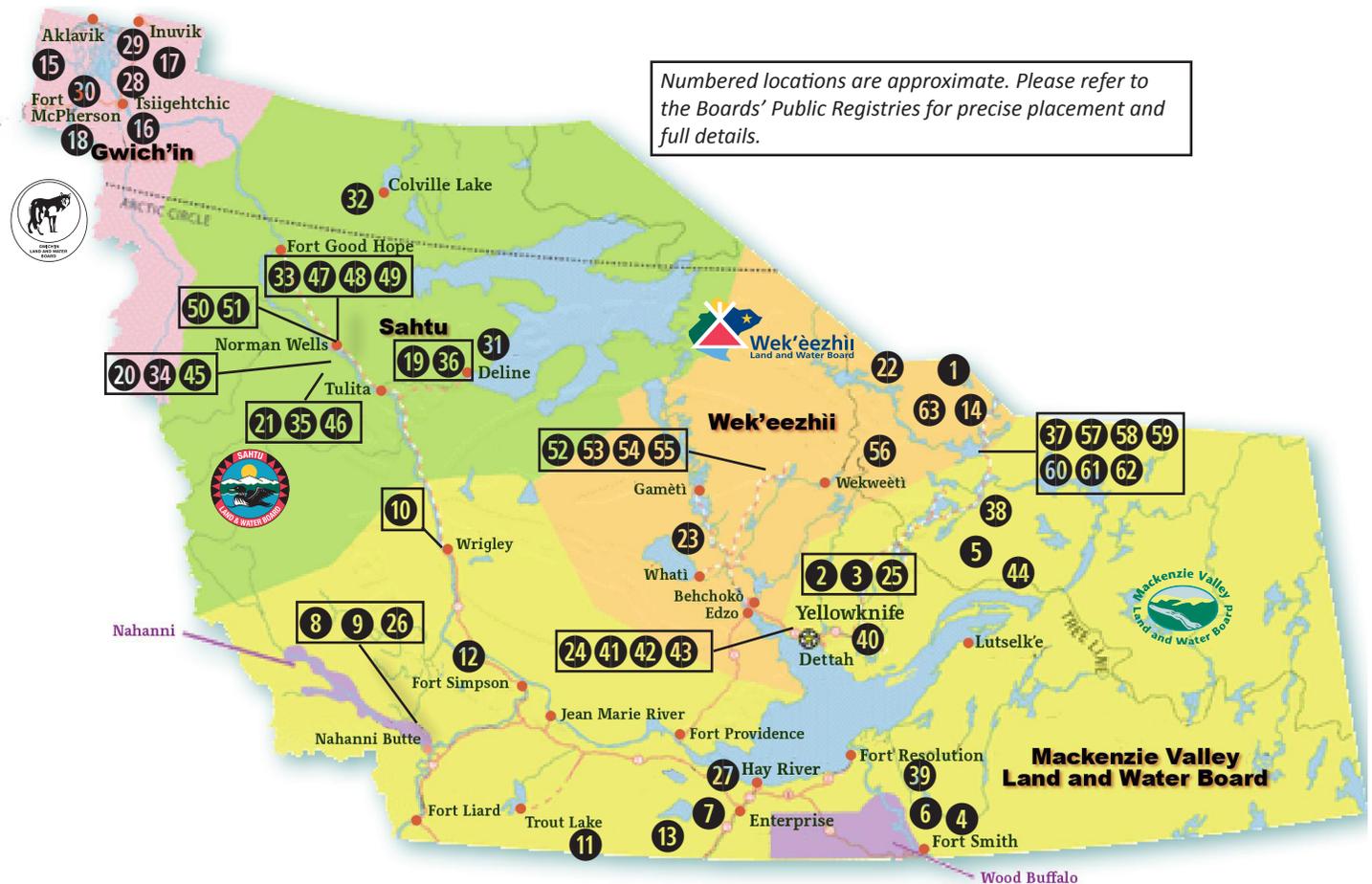
These are some of the new conditions drafted specifically for this drill program that relate to hydraulic fracturing. Many of the other Land and Water Board standard conditions relating to waste management, spill contingency, security, and closure and reclamation are also included in the ConocoPhillips Land Use Permit and Water Licence.

Learn more about these issuances by reading the Board's Reasons for Decision.

For further information, contact SLWB Executive Director Paul Dixon at paul.dixon@slwb.com

Approved Land Use Permits, Water Licences, Plans, and Reports

February 1, 2013 - October 1, 2013



Key	LW Board	Land Use Permit	Company	Project
1	MVLWB	MV2013C0016	HTX Minerals	Mining exploration
2	MVLWB	MV2013T0014	Paul Brothers	Staging areas
3	MVLWB	MV2013T0007	King Manufacturing	Staging areas
4	MVLWB	MV2012Q0020	Ken Hudson	Quarrying
5	MVLWB	MV2013X0003	Aurora College, Yellowknife	Miscellaneous
6	MVLWB	MV2013Q0009	Borderline	Quarrying
7	MVLWB	MV2013Q0008	Rowes Construction	Quarrying
8	MVLWB	MV2008D0014	Canadian Zinc Corporation	Mining
9	MVLWB	MV2008T0012	Canadian Zinc Corporation	Staging areas
10	MVLWB	MV2013S0005	GNWT - Public Works	Soil testing (geotechnical)
11	MVLWB	MV2013P0011	Enbridge Corporation	Pipelines
12	MVLWB	MV2012Q0023	Nogha Enterprises Ltd.	Quarrying
13	MVLWB	MV2013A-0010	Strategic Oil and Gas	Oil and gas drilling

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14	MVLWB	MV2012C-0009	Dominion Holdings Company Ltd.	Mining exploration
15	GLWB	G13Q001	Black Mountain Realty Inc.	Quarrying
16	GLWB	G13Q002	Dinjii Zhuh Trucking Ltd.	Quarrying
17	GLWB	G13X003	Northwind Industries Ltd.	Miscellaneous
17	GLWB	G13H004	GNWT-DOT	Fuel storage
19	SLWB	S12E-009	GNWT-DOT	Bridge installation
20	SLWB	S13A-001	ConocoPhillips	Oil and gas drilling
21	SLWB	S13A-002	Husky Oil Operations	Oil and gas drilling
22	WLWB	W2013C0001	Arctic Star	Mining exploration
23	WLWB	W2013C0002	BFR Copper and Gold	Mining exploration
	LW Board	Water Licence	Company	Project
24	MVLWB	MV2012L8-0010	AANDC	Miscellaneous
25	MVLWB	MV2013L2-0001	Tyhee Development Corporation	Mining and milling undertaking
26	MVLWB	MV2008L2-0002	Canadian Zinc Corporation	Mining and milling undertaking
27	MVLWB	MV2013L8-0004	Imperial Oil Ltd.	Miscellaneous
28	GLWB	G13L3-001	Gwich'in Tribal Council	Municipal undertaking
29	GLWB	G13L1-002	Imperial Oil Ltd.	Industrial undertaking
30	GLWB	G03L3-001	Hamlet of Fort McPherson	Municipal undertaking
31	SLWB	S13L8-001	GNWT-DOT	Miscellaneous
32	SLWB	S13L8-002	GNWT-DOT	Miscellaneous
33	SLWB	S13L8-003	Mackenzie Valley Environmental	Miscellaneous
34	SLWB	S13L1-004	ConocoPhillips	Industrial undertaking
35	SLWB	S13L1-005	Husky Oil Operations	Industrial undertaking
36	SLWB	S12L3-009	GNWT-DOT	Municipal undertaking
37	WLWB	W2012L2-0001	Dominion Diamond Ekati Corp.	Mining and milling undertaking
	LW Board	Licence or Permit	Company	Major Plan or Report
38	MVLWB	MV2011L2-0004	De Beers Canada	Aquatic Monitoring Plan
39	MVLWB	MV2011L4-0002	NWT Power Corporation	Final Aquatic Monitoring Plan
40	MVLWB	MV2009L3-0007	City of Yellowknife	Stormwater Management Plan
41	MVLWB	MV2012L8-0010	AANDC-CARD	Roaster Complex Deconstruction
42	MVLWB	MV2003L2-0005	AANDC-CARD	Field Paste Test Plan
43	MVLWB	MV2012L8-0010	AANDC-CARD	Underground Stabilization Plan
44	MVLWB	MV2003L2-0005	De Beers Canada	Abandonment/Reclamation Plan
45	SLWB	S12L1-005	ConocoPhillips	Water Monitoring Plan
46	SLWB	S12X-006	Husky Oil Operations	Water Monitoring Plan
47	SLWB	S13L8-003	Mackenzie Valley Environmental	Operations/Maintenance Management Plan
48	SLWB	S13L8-003	Mackenzie Valley Environmental	Groundwater Monitoring Plan
49	SLWB	S13L8-003	Mackenzie Valley Environmental	Spill Contingency Plan
50	SLWB	S03L1-001	Imperial Oil Resources Ltd.	Annual Water Use Report
51	SLWB	S03L1-001	Imperial Oil Resources Ltd.	Abandonment/Restoration Report

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52	WLWB	W2009L8-0003	AANDC	Hydrocarbon Monitoring
53	WLWB	W2012L1-0002	Nighthawk	Closure/Reclamation (Damoti)
54	WLWB	W2012L1-0002	Nighthawk	Closure/Reclamation Plan (Spider)
55	WLWB	W2012X0002	Nighthawk	Closure/Reclamation Plan (Spider)
56	WLWB	W2007C0004	Mantle Diamonds	Water Management Plan
57	WLWB	W2007L2-0003	Diavik Diamond Mines	North Inlet Status Report
58	WLWB	W2007L2-0003	Diavik Diamond Mines	Environmental Management Plan
59	WLWB	W2007L2-0003	Diavik Diamond Mines	Quality Assurance Project Plan
60	WLWB	W2007L2-0003	Diavik Diamond Mines	Closure/Reclamation Report
61	WLWB	W2009L2-0001	Dominion Diamond Ekati Corp.	Annual 2012 ICRP Progress Report
62	WLWB	W2009L2-0001	Dominion Diamond Ekati Corp.	2012 AEMP Annual Report
63	WLWB	W2012Q0004	NWT Power Corporation	Waste Management Plan

Other Land and Water Board Licence and Permit Activities February 1 - October 1, 2013.

	MVLWB	GLWB	SLWB	WLWB
New applications received	22	5	12	3
Referrals to environmental assessment	1	0	0	0
Extensions*	5	4	0	2
Amendments*	12	0	2	0
All plans and reports*	9	22	7	12
Final clearances*	7	10	1	2

*Approved

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