

## Briefing Note

# Developing an environmental monitoring system for Alberta

by Marc Huot and Jennifer Grant

### At a Glance

The Pembina Institute submits the following overarching recommendations for consideration by the Advisory Panel on developing a world-class monitoring system for the oilsands in Alberta. The institute also provides some specific recommendations around the adequacy of current monitoring programs related to water, air, biodiversity and reclamation.

### Background

The Pembina Institute is encouraged by the terms of reference of the recently announced Advisory Panel on developing a world-class monitoring system for the oilsands. We look forward to the results of this essential work.

Substantial work has already been done to address the gaps in the current monitoring system. We encourage the panel to review a publication developed by the Oil Sands Research and Information Network (OSRIN) dedicated to the topic of world class public information and reporting for the oilsands region.<sup>1</sup> Pembina was part of the organizing

committee for this project. The National Research Council review of the U.S. Environmental Protection Agency Environmental Monitoring and Assessment Program<sup>2</sup> also makes many relevant recommendations for the development of rigorous and complex monitoring programs.

### Overarching recommendations

The Pembina Institute submits the following overarching recommendations for consideration by the Panel, and then provides some specific recommendations around the adequacy of current monitoring programs related to water, air, biodiversity and reclamation:

**Design:** All environmental monitoring programs should be developed through a consensus-based approach with meaningful stakeholder input. It is essential that the programs are designed to meet scientific monitoring requirements as established by independent, academic scientists who are not affiliated with the oil and gas industry.

**Governance:** Final decisions regarding the design of environmental monitoring programs and budget should be made by the government. To avoid any potential conflict of interest, the government body that makes these final decisions should not have a dual

mandate of promoting economic development while protecting the public interest.

**Meaningful stakeholder representation:** To ensure that the monitoring system addresses stakeholder needs, recommendations should be provided to the government through a consensus-based multi-stakeholder approach. This process should ensure all sectors are represented (industry/government/ENGO/First Nations) and have equal access to information. Representation should be sector based and the representatives of each sector should be self-selected.

**Resourcing:** The total level of funding available for environmental monitoring in Alberta should be significantly increased and match the scope and scale of current and anticipated development in Alberta. Investments in environmental monitoring have not kept pace with development in Alberta. A sustainable long term funding mechanism should be put in place to support a long-term commitment to environmental monitoring.

**Transparency:** All monitoring data, environmental monitoring design recommendations, and the views of stakeholders about the environmental monitoring system should be transparent and publicly available in readily accessible format(s).

**Rigour:** The collection and analysis of monitoring data should use state-of-the-art technology and be analytically rigorous and subjected to regular scientific peer review.

**Comprehensiveness of system design:** Monitoring should consider both the impacts of mining and in situ development as well as other

development types. It should also address different receptors.

**Monitoring to inform development decision-making:** Monitoring information should be used to inform oilsands decision-making.

## Existing monitoring systems

We would also like to make a number of specific comments on the adequacy of existing monitoring and reporting bodies and processes — specifically water monitoring conducted by the Regional Aquatics Monitoring Program, air monitoring conducted by the Wood Buffalo Environmental Association, and biodiversity monitoring by the Alberta Biodiversity Monitoring Institute, in addition to government and industry reporting on oilsands reclamation and liabilities.

## Water monitoring

The Regional Aquatics Monitoring Program (RAMP) lacks many of the elements of a rigorous environmental monitoring program. The recent peer review of RAMP highlights many of the gaps.<sup>3</sup> Many of these same gaps were in place in 2004.<sup>4</sup> We note that other independent commentators have expressed a lack of trust in RAMP.<sup>5</sup> According to these sources, RAMP lacks independent oversight, transparency, an ability to detect effects, and scientific leadership. The Federal Oilsands Advisory Panel recently noted that there is often no consistency or coordination amongst the monitoring activities of RAMP, Alberta Environment and Environment Canada, which limits the application of monitoring information in decision-making.<sup>6</sup>

## Recommendation

- Given its track record and lack of stakeholder trust, we recommend that

RAMP be completely disbanded and replaced. The Institute endorses the set of recommendations for overhauling water monitoring developed by the Water Matters Society of Alberta.<sup>7</sup>

### Air monitoring

The Wood Buffalo Environmental Association (WBEA) monitors ambient air quality for industry compliance and community air quality; terrestrial ecosystem effects from air emissions; and human exposure to air emissions.

WBEA has many of the necessary aspects of an effective air-monitoring program. WBEA data collection is transparent, is conducted by qualified technicians, uses appropriate equipment, and undergoes quality control verifications. The majority of WBEA data is publically accessible online — downloadable in raw data formats by monitoring station or summarized in annual reports. Some of the passive sampler data is not easily accessible to the public. New monitoring projects are designed by qualified scientists and reviewed by an external third party.

WBEA data is limited by the size of the air quality monitoring network and the sub-optimal placement of monitoring stations. However, the WBEA monitoring program has insufficient funding to improve the network in a meaningful way. Currently, the majority of the funding for WBEA is provided directly by industry. This itself is not a concern; however, industry members have direct control on budget and other key decisions which are made through a multi-stakeholder consensus-based approach. WBEA membership is currently organization-based (not sector-based). Each company may have their own representative on the WBEA Board and therefore industry

members significantly outnumber other stakeholder members.<sup>8</sup>

### Recommendations

- Air monitoring should be expanded to meet scientific needs. Monitoring design should be developed through a consensus-based approach with full stakeholder input, and with government implementing final decisions.
- To prevent a direct conflict of interest, the associated budget and funding mechanism should be developed by the Government of Alberta utilizing a 'polluter pay' approach. Provision of fees should be mandatory.

### Biodiversity monitoring

The Alberta Biodiversity Monitoring Institute (ABMI) has the potential to be a world-class monitoring system for biodiversity. Unlike other environmental media, where substantial changes to governance and rigour of monitoring programs are required, the major limitation of ABMI is currently a lack of funding that would enable it to deliver its mandate to provide effective biodiversity monitoring information for Alberta.

The ABMI includes many of the elements of a rigorous monitoring program:

- a rigorous, University-led scientific design
- value neutral, arm's-length and publically accessible data and knowledge products

However, ABMI only receives funds to cover about one-quarter of its full operating costs. The Government of Alberta has provided significant initial start-up resources to the ABMI, but funding has not been adequate for full delivery of the program.

Part of the shortfall should be covered by the federal government. Although 11% of Alberta's land base is under federal management, the Government of Canada currently does not adequately support the ABMI. The federal government should commit to a proportional amount of funding for the ABMI., which could be used to meet its obligations for biodiversity monitoring on federal lands in Alberta, and monitoring of species at risk and migratory birds. We are aware that government and industry are in discussions to use ABMI protocols to meet project-specific requirements for biodiversity monitoring and to develop a regional monitoring framework that addresses other monitoring and research needs without stakeholder oversight. Taking advantage of ABMI expertise in this regard is in principle valuable, but there are concerns about the governance, decision-making and absence of stakeholder oversight of this body.<sup>9</sup>

#### Recommendation

- Fully fund the ABMI either directly via the governments of Alberta and Canada and/or through an equitable funding model that requires all natural resource developers who impact biodiversity to contribute as a mandatory component of the regulatory approval process.

#### Reclamation monitoring

The Pembina Institute encourages the panel to examine the state (including rate and quality) of monitoring of oilsands reclamation performance and reclamation liabilities. Existing Alberta Environment policy only requires companies to submit paper copies of their annual conservation and reclamation reports. These reports are only available in the Government of Alberta library in Edmonton. These reports should

be submitted in an electronic format that is comparable from report to report and publicly accessible.

Currently, the methodology used by Alberta Environment and oilsands mine operators to estimate their reclamation security is considered to be confidential; only the total value of the letters of credit submitted are disclosed publicly. The effectiveness and sufficiency of reclamation liability funding must be open and transparent. The methodology used to calculate a mine's reclamation security should be publicly accessible. Transparency will allow stakeholders to monitor the effectiveness and sufficiency of reclamation liability funding and increase the credibility of Alberta Environment as the environmental regulator.

#### Recommendation

- Make oilsands reclamation progress information and liability calculations public and provide online access to annual conservation and reclamation reports.

## Endnotes

<sup>1</sup> D.R. James and T. Vold, 2010. *Establishing a World Class Public Information and Reporting System for Ecosystems in the Oil Sands Region – Report and Appendices*. Oil Sands Research and Information Network, University of Alberta, School of Energy and the Environment, Edmonton, Alberta. OSRIN Report No. TR-5.

<https://era.library.ualberta.ca/public/view/item/uuid:51257d6-b795-476e-b1ba-6859fa4a4eb6>

<sup>2</sup> *Review of EPA's Environmental Monitoring and Assessment Program: Overall Evaluation*, National Research Council. Academies Press at:

<http://www.nap.edu/catalog/4931.html>

<sup>3</sup> Burn et al., 2010 *Regional Aquatics Monitoring Program (RAMP) Scientific Review*.

<http://www.ramp-alberta.org/ramp/results/ramp+2010+scientific+peer+review.aspx>

<sup>4</sup> Ayles, G.B., M. Dubé, and D. Rosenberg, *Oil Sands Regional Aquatic Monitoring Program (RAMP) Scientific Peer Review of the Five Year Report (1997-2001)*. 2004.

<sup>5</sup> Kelly, Erin N., Jeffrey W. Short, David W. Schindler, Peter V. Hodson, Mingsheng Ma, Alvin K. Kwan, and Barbra L. Fortin. "Oil Sands Development Contributes Polycyclic Aromatic Compounds to the Athabasca River and Its Tributaries." *Proceedings of the National Academy of Sciences* (2009), and Timoney, Kevin P., and Peter Lee. "Does the Alberta Tar Sands Industry Pollute? The Scientific Evidence." *The Open Conservation Biology Journal* 3, no. 65-81 (2009).

<sup>6</sup> Dowdeswell, Liz, Peter Dillon, Subhasis Ghoshal, Andrew Miall, Joseph Rasmussen, and John P. Smol. *A Foundation for the Future: Building an Environmental Monitoring System for the Oil Sands*. A report submitted to the Minister of Environment, 2010.

<sup>7</sup> The Water Matters report, *Replacing the Oil Sands' Regional Aquatic Monitoring Program (RAMP) with Effective Environmental Monitoring Solutions* will soon be available at <http://www.water-matters.org/pubs>.

<sup>8</sup> WBEA General Member Status as at Sept 9, 2010 included 2 First Nations representatives, 2 ENGO representatives, 4 government representatives and 12 industry representatives.

<sup>9</sup> Ted Nason and Calvin Duane, RTM Joint Working Group, *Regional Terrestrial Monitoring Program for the Lower Athabasca Region*, presentation November 16, 2010 <http://www.ptac.org/env/dl/envf1004p10.pdf>