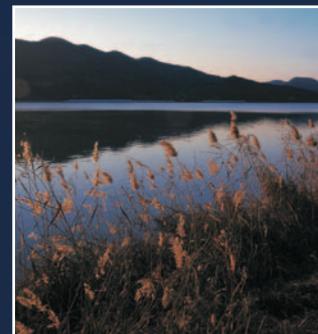


RAMP
Regional Aquatics
Monitoring Program



Joint Community Update 2008

REPORTING OUR ENVIRONMENTAL ACTIVITIES TO THE COMMUNITY





This update was prepared jointly by the Regional Aquatics Monitoring Program,
the Wood Buffalo Environmental Association
and the Cumulative Environmental Management Association.

Table of Contents

1. Overview Of Mandates, Structure, Etc.....	1
2. TEK Section.....	4
3. BUDGET Section	4
4. WBEA Section	5
5. RAMP Section	11
6. CEMA Section	15

1. Overview Of Mandates, Structure, Etc.



Working together to monitor and protect the health of the environment in the Regional Municipality of Wood Buffalo (RMWB)...

The Wood Buffalo Environmental Association (WBEA), Regional Aquatics Monitoring Program (RAMP) and the Cumulative Environmental Management Association (CEMA) were all established separately and independently of one another to examine and address the environmental impacts of oil sands development on our region. The WBEA started as the Air Quality Task Force in 1985 and was established as a society in 1996. RAMP was established in 1997, and CEMA in 2000.

To effectively monitor the environment and make recommendations on how to best protect it, each of our three organizations specializes in a particular area of environmental work within the RMWB:

WBEA: Continuously monitors and reports on air quality on behalf of the residents of the RMWB.

RAMP: Monitors the health of rivers and lakes in the oil sands region.

CEMA: Determines and recommends the best management tools available to protect, sustain and reclaim the environment.

Strong members form our strong structure...

Because of their diverse backgrounds and areas of expertise, our members bring a variety of skills, interests, and experiences to the table.

Each of our organizations are guided by and accountable to our members. Our memberships are truly multi-stakeholder with representation from:

- Governments and agencies that regulate and oversee oil sands development
- Aboriginal communities that ensure traditional lifestyle, culture, and environmental knowledge is respected and upheld
- Industry that is committed to corporate responsibility, the orderly development of the resource, and economic growth and opportunity
- Health agencies that are focused on promoting public wellness and preserving public safety
- Environmental non-government organizations that are concerned with, and promote, environmental sustainability

Because of their diverse backgrounds and areas of expertise, our members bring a variety of skills, interests, and experiences to the table. Despite their many differences, our members come together to form WBEA, RAMP and CEMA based on their common belief in the importance of the environment in our region.

Day to day operations...

Staff, contract environmental consultants and members (i.e. representatives of member organizations and/or companies) plan and carry out environmental studies and research, the collection and interpretation of data and the reporting of results.

WBEA, RAMP and CEMA are run by member governing boards that make decisions related to our work. Each member of our three governing bodies has an equal voice and all must agree to decisions before they're acted upon.

Each of our organizations also has subgroups that carry out work in specific areas. Staff, contract environmental consultants and members (i.e. representatives of member organizations and/or companies) plan and carry out environmental studies and research, the collection and interpretation of data and the reporting of results.

Our results and findings are always shared with regulators, the general public and specific groups of interested stakeholders. WBEA, RAMP and CEMA are committed to being open and transparent and as such, our findings are shared publicly and are available to anyone interested.

Reports and latest monitoring results are posted on our individual websites:

WBEA – www.wbea.org

CEMA – www.cemaonline.ca

RAMP – www.ramp-alberta.org

WBEA, RAMP and CEMA also take a joint approach to community education and awareness. Increasing the understanding of our three groups within the region is especially important due to the fact that about half of our Municipalities residents have been here for less than six years. We work together to familiarize community members with the technical work of our organizations.

We reach out to community members in several ways:

Community Open Houses...In 2007 we held open houses in the communities of Conklin, Fort McKay and Anzac and planning is underway to hold another in Fort Chipewyan in early 2008. Our open houses provide us with an opportunity to talk to community members, share information about what we're doing and how we're trying to help. But more importantly, our open houses provide us with an opportunity to listen to community members; to answer their questions and hear their concerns. More community open houses are planned for 2008 - look for us in your community.

All three of our organizations participate in the Fort McMurray Tourism Trade Shows. This year's fall trade show was an excellent opportunity to talk with community members, answer questions and distribute useful information about our ongoing work.

Special Events...We also participate in special events such as Environment Week and make presentations to various groups by request. During Environment Week 2007 RAMP made a special evening presentation at the Oilsands Discovery Centre and WBEA held an open house and community tours at the Patricia McInnis Air Monitoring Station in Timberlea. CEMA distributed new written materials.

Special Publications...This joint update to our community members is another way in which we share information about our results and findings, latest happenings and future plans. If you have any questions or would like any further information we encourage you to contact us.

Our open houses provide us with an opportunity to talk to community members, share information about what we're doing and how we're trying to help.



Fort McKay Open House

2. TEK Section

Incorporating Traditional Environmental Knowledge...

Another essential part of our work is Traditional Environmental Knowledge (TEK). TEK is a body of local environmental knowledge and beliefs transmitted through oral tradition and first hand observation based upon living in close contact with nature.

TEK includes:

- a system of classification
- a set of empirical observations about the local environment
- long-term knowledge and experience “living on the land”
- a system of self-management that governs sustainable resource use
- an understanding of the relationships between humans, animals, plants and ecological processes

Aboriginal Elders in the Wood Buffalo region provide WBEA, RAMP and CEMA with traditional environmental knowledge to guide our work and help us to ensure that the land, forest, air, water and wildlife in our region is protected, sustained and reclaimed over the long term.

3. Budget Section

Dedicated resources from dedicated members...

WBEA, RAMP and CEMA are all not-for-profit organizations working for the environmental health of our region. Industry contributes more than \$10 million annually to our three groups for environmental monitoring and research. In 2007, for example, industry funds were provided to CEMA, RAMP and the WBEA as follows:

CEMA	\$ 7 million
RAMP	\$ 2 million
WBEA	\$ 4 million
	<hr/>
	\$ 13 million



4. WBEA Section



WBEA Update...

As an independent, community-based, not-for-profit association, the WBEA monitors the air in the Regional Municipality of Wood Buffalo, 24 hours a day, 365 days a year. Ambient air refers to the air we breathe, and our work is supported by the most extensive ambient air monitoring network in Alberta. Data is collected at 14 monitoring stations between Anzac and Fort Chipewyan, with most located at or near oil sands plants. The data we collect can ultimately be used to assess the impact of air emissions on the health of both humans and the environment. The information we collect is openly and continuously shared with stakeholders and the public.



Results from 2005 show that exposure to all pollutants measured was lower, and often times much lower, than existing Alberta Environment guidelines and Canada wide standards.

Air Quality Index: air quality simplified...

The Air Quality Index allows the non-scientist to easily gauge air quality. The measurement is made up of 5 different compounds in the air, including carbon monoxide, particulate matter, oxides of nitrogen, ozone and sulphur dioxide.

We transmit raw data, in real time, to Alberta Environment who then use it to calculate the index value. If there is a problem, Alberta Environment is immediately alerted and has the authority to take action if necessary; this includes notification to the Regional Health Authority. The Air Quality Index is calculated every hour for five key locations in Wood Buffalo: Athabasca Valley, Fort Chipewyan, Fort McKay, Patricia McInnes and Syncrude UE-1 and the AQI values are posted in real-time on our website (www.wbea.org).

All WBEA air monitoring data is sent to the Clean Air Strategic Alliance (CASA) Data Warehouse (<http://www.casadata.org/>), an on-line database for all of Alberta's air monitoring data. This information is both quality controlled and quality assured.

HEMP has a whole new meaning...

The Human Exposure Monitoring Program (HEMP) is an ongoing personal air quality surveillance program delivered by the Wood Buffalo Environmental Association and Alberta Health and Wellness.

This program helps us understand:

- 1) What pollutants we are being exposed to
- 2) How we are exposed to them
- 3) How we can reduce or remove our exposure
- 4) What health effects may experience if we are exposed

The program also helps us detect changes in the air over the longer term, and provides an important foundation for future studies in the region.

HEMP focuses on different areas in the RMWB each year and in 2005 the program was conducted in Fort McMurray and Fort Chipewyan. Results from 2005 show that exposure to all pollutants measured was lower, and often times much lower, than existing Alberta Environment guidelines and Canada wide standards. Indoor sources of air contaminants (i.e. cigarette smoke, aerosol spray cans, gas appliances, etc.) affect a person's personal exposure levels more than outdoor sources of air contaminants do. In order to improve indoor air quality people should:

- Avoid smoking or second hand smoke
- Ensure furnaces, fireplaces and heaters are working properly and change filters regularly
- Reduce the use of air fresheners and scented cleaning products
- Turn on ventilation fans in cooking hoods to remove grease and cooking particles and turn on bathroom fans to remove vapour
- Do not idle vehicles in an attached garage or near cold air returns
- Avoid pressed wood furniture products

For more details from 2005 please see the full report from Alberta Health and Wellness by visiting www.wbea.org and clicking on Human Exposure Monitoring. Interested community members can also contact the WBEA office directly at 780-799-4402 for a printed copy.

In 2006 HEMP focused on the Fort McKay and Fort McMurray First Nations areas. Results are expected from Alberta Health and Wellness shortly. Monitoring also took place in Fort McMurray again in 2007.

All results are posted publicly on the WBEA website as soon as they are made available.

Air monitoring results...

Average concentrations are a good indication of overall air quality because they represent air quality over the longer term. Average concentrations measured by WBEA are low, and much less than annual average guidelines set by Alberta Environment.

Shorter term, 1-hour concentrations measured by WBEA remain well below Alberta Environment guidelines most of the time, but there are instances when some parameter measurements are

elevated and exceed guidelines. This is usually the result of short-term conditions or events at processing facilities/oil sands plants. Alberta Environment is notified every time there is an exceedence in the region and has the authority to take action to correct the problem if necessary. Our industry partners are also notified and, as per protocol, are responsible for immediately investigating and correcting the source and cause of the exceedence.

The following tables show the measurements at six WBEA air monitoring stations for the months of November 2006 through to October 2007. The tables highlight six key parameters (air compounds) and include;

- the average 1-hour readings for the year long period,
- the highest or maximum 1-hour readings, and
- the number of times that readings were above 1-hour guidelines set by Alberta Environment.

Sulphur Dioxide (SO₂)

A colourless gas with a pungent, rotten egg odour.

Natural gas, oil sands and power plants are major sources of sulphur dioxide in Alberta. Other minor sources include gas plant flares, oil refineries, pulp and paper mills and fertilizer plants.

November 2006 – October 2007

Air Monitoring Station (AMS)	Average 1-Hour Readings(ppb)	Maximum 1-Hour Readings (ppb)	Number of 1-hour Guideline Exceedences
AMS 1 - Fort McKay	1.2	184.3	1
AMS 2 - Mildred Lake	2.6	238.5	1
AMS 4 - Buffalo Viewpoint	1.2	250.6	1
AMS 5 - Mannix	2.8	686.7	4
AMS 6 - Patricia McInnes	1.1	115.3	0
AMS 7 - Athabasca Valley	0.9	76.5	0
AMS 8 - Fort Chipewyan	0.4	19.7	0
AMS 10 - Albion Mine Site	1.3	61.7	0
AMS 11 - Lower Camp	2.1	194.5	1
AMS 12 - Millennium Mine	2.1	211.5	2
AMS 13 - Syncrude UE1	1	114.3	0
AMS 14 - Anzac	0.6	35.1	0
Alberta Environment Guidelines	11	172	

Total Reduced Sulphur/Hydrogen Sulphide (TRS/H₂S)

A colourless gas with a rotten egg odour.

Industrial sources include emissions from petroleum refineries, tank farms for unrefined petroleum products, natural gas plants, petrochemical plants, oil sands plants, sewage treatment facilities and some pulp and paper plants. Natural sources include sulphur hot springs, sloughs, swamps and lakes.

November 2006 – October 2007

Air Monitoring Station (AMS)	Average 1-Hour Readings(ppb)	Maximum 1-Hour Readings (ppb)	Number of 1-hour Guideline Exceedences
AMS 1 - Fort McKay	0.8	14.4	1
AMS 2 - Mildred Lake	1.3	81.9	156
AMS 4 - Buffalo Viewpoint	0.3	38.7	19
AMS 5 - Mannix	1.2	53	92
AMS 6 - Patricia McInnes	0.2	4.4	0
AMS 7 - Athabasca Valley	0.6	7.2	0
AMS 9 - Barge Landing	0.5	10.2	0
AMS 11 - Lower Camp	0.9	57.5	46
AMS 12 - Millennium Mine	1	37.8	17
AMS 13 - Syncrude UE1	0.6	9.8	0
AMS 14 - Anzac	0.6	38.4	32
Alberta Environment Guidelines	*	10	

* There is no annual average guideline set by Alberta Environment for hydrogen sulphide

Ozone (O₃)

Unlike other pollutants, ozone is not emitted directly by human activities. Ozone is a naturally occurring gas that can be transported to the ground from the upper atmosphere by natural weather processes. But ozone may also be carried from upwind sources such as urban centres and industrial operations.

November 2006 – October 2007

Air Monitoring Station (AMS)	Average 1-Hour Readings(ppb)	Maximum 1-Hour Readings (ppb)	Number of 1-hour Guideline Exceedences
AMS 1 - Fort McKay	21.7	75.2	0
AMS 6 - Patricia McInnes	20.7	66.4	0
AMS 7 - Athabasca Valley	19.2	85.6	1
AMS 8 - Fort Chipewyan	28.1	56.8	0
AMS 13 - Syncrude UE1	19.9	73.6	0
AMS 14 - Anzac	23.8	58.3	0
Alberta Environment Guidelines	*	82	

* There is no annual average guideline set by Alberta Environment for ozone

Nitrogen Dioxide (NO₂)

Nitrogen oxide in the ambient air reacts with ozone to form nitrogen dioxide. Nitrogen dioxide is a reddish-brown gas with a pungent odour and is partially responsible for the “brown haze” observed near large cities.

Transportation (automobiles, locomotives and aircraft) is the major source of oxides of nitrogen in Alberta. Other major sources include industrial sources (oil and gas industries) and power plants. Smaller sources of include natural gas combustion, heating fuel combustion, and forest fires.

November 2006 – October 2007

Air Monitoring Station (AMS)	Average 1-Hour Readings(ppb)	Maximum 1-Hour Readings (ppb)	Number of 1-hour Guideline Exceedences
AMS 1 - Fort McKay	5.9	39	0
AMS 6 - Patricia McInnes	6	42.3	0
AMS 7 - Athabasca Valley	9.8	52.8	0
AMS 8 - Fort Chipewyan	1.6	31	0
AMS 10 - Albion Mine Site	10.9	95.2	0
AMS 12 - Millennium Mine	15.5	168.2	0
AMS 13 - Syncrude UE1	5.3	37.9	0
AMS 14 - Anzac	3.5	57.6	0
Alberta Environment Guidelines	32	210	

Particulate Matter (PM_{2.5})

Particulate matter refers to particles in the air. Larger particles can be inhaled through the nose and throat, and smaller particles are respirable, which means they are small enough to penetrate the lungs.

Sources of particulates include soil dust, road dust, forest fire and wood burning smoke, vehicle exhaust and industrial emissions.

November 2006 – October 2007

Air Monitoring Station (AMS)	Average 1-Hour Readings(ppb)	Maximum 1-Hour Readings (ppb)	Number of 1-hour Guideline Exceedences
AMS 1 - Fort McKay	4.3	141.9	-
AMS 6 - Patricia McInnes	3.8	247.7	-
AMS 7 - Athabasca Valley	5.1	125.8	-
AMS 8 - Fort Chipewyan	2.3	144	-
AMS 10 - Albion Mine Site	5.3	163.7	-
AMS 12 - Millennium Mine	17.2	406.3	-
AMS 13 - Syncrude UE1	3.9	94.7	-
AMS 14 - Anzac	5.5	225.4	-
Alberta Environment Guidelines	*	*	

* There are no guidelines set by Alberta Environment for particulate matter

Ammonia (NH₃)

Ammonia is a colourless gas with the well-known pungent odour found in ammonia-containing household cleaners.

Natural sources of ammonia include the decay of plant material and animal waste. A small portion is also released during respiration. In Alberta, the fertilizer industry is the main industrial source of ammonia which produces synthetic ammonia for either direct application to soil as a fertilizer, or as a raw material for use in the production of other fertilizer products. Other major sources include commercial feedlots, specifically from their large amounts of animal waste.

November 2006 – October 2007

Air Monitoring Station (AMS)	Average 1-Hour Readings(ppb)	Maximum 1-Hour Readings (ppb)	Number of 1-hour Guideline Exceedences
AMS 1 - Fort McKay	0	293.9	0
AMS 6 - Patricia McInnes	0.2	949.7	0
Alberta Environment Guidelines	*	2000	

* There is no annual average guideline set by Alberta Environment for ammonia

Please Note: The number and variety of parameters measured is different at each air monitoring station depending on where the station is located, i.e. stations closer to communities measure more parameters than others because their data is used for effects studies as well as assessing ambient air quality.

As development expands so does WBEA's air monitoring network...

The WBEA will add a 15th station to its air monitoring network in early 2008. As part of their operating approval, Canadian Natural Resources Limited (CNRL) will install an air monitoring station near their Horizon plant site (north of Fort McKay). The station will measure eight key air parameters as well as meteorological data.

The location of the station was determined based on a number of factors including; the ability to capture the maximum predicted air concentrations, the ability to act as an early warning notification to the community of Fort McKay, regional wind patterns, and the ability to identify the source of concentrations.

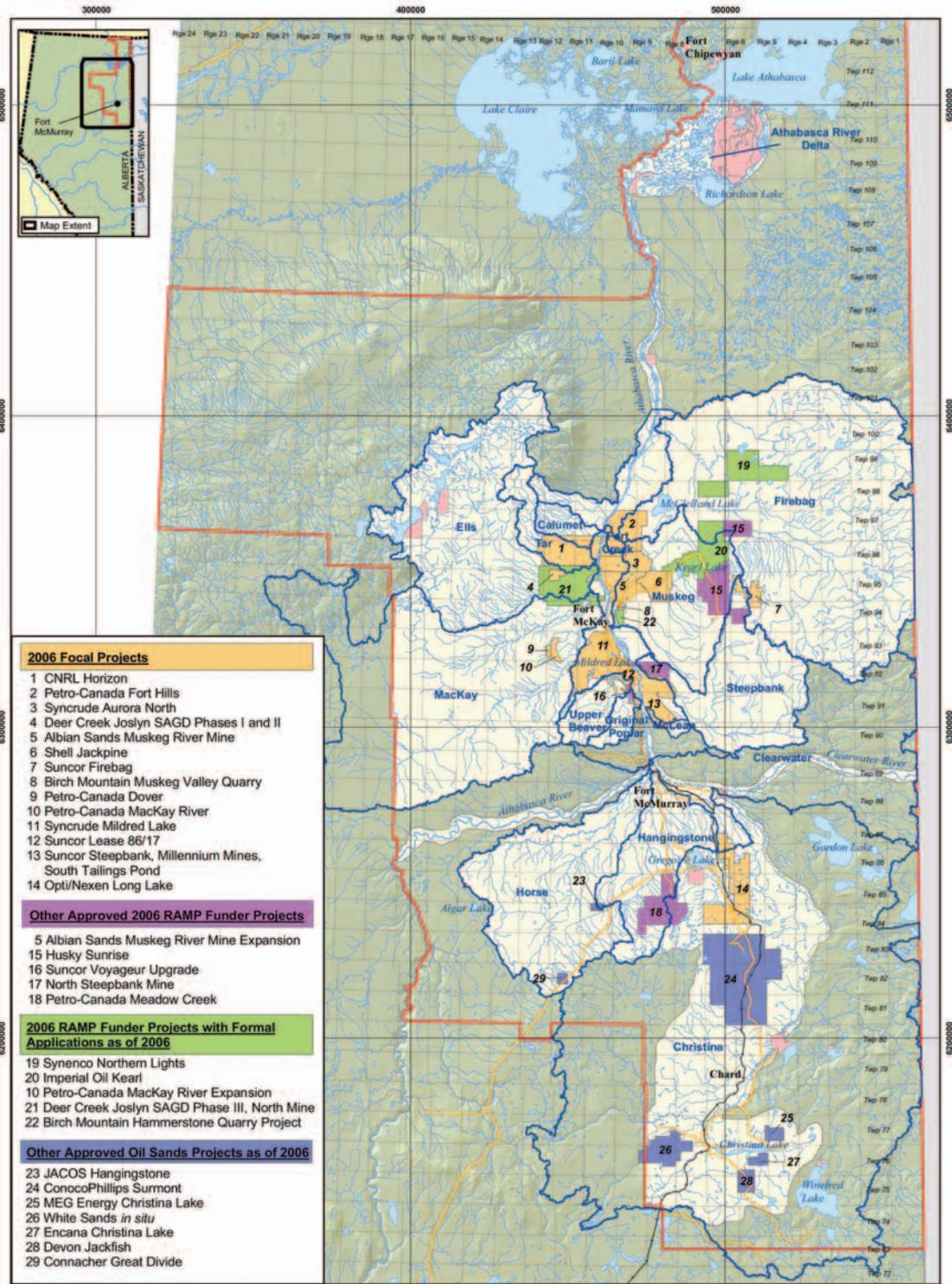
The CNRL station will be integrated into the existing WBEA air monitoring network and will be operated by WBEA's air quality technicians and, as with all WBEA air monitoring stations, data from the CNRL station will be publicly available on the WBEA website.

5. RAMP Section



RAMP Update...

RAMP has been monitoring the health of Wood Buffalo's lakes and rivers since 1997. Over the years RAMP has continued to grow and adapt to the needs of the community, regulators and industry. We've become more responsive and better able to modify our activities based on past monitoring results, new oil sands developments, technological advances and community concerns. Through our work we identify long-term trends, regional issues and potential long term effects related to industrial development.



- 2006 Focal Projects**
- 1 CNRL Horizon
 - 2 Petro-Canada Fort Hills
 - 3 Syncrude Aurora North
 - 4 Deer Creek Joslyn SAGD Phases I and II
 - 5 Albian Sands Muskeg River Mine
 - 6 Shell Jackpine
 - 7 Suncor Firebag
 - 8 Birch Mountain Muskeg Valley Quarry
 - 9 Petro-Canada Dover
 - 10 Petro-Canada MacKay River
 - 11 Syncrude Mildred Lake
 - 12 Suncor Lease 86/17
 - 13 Suncor Steepbank, Millennium Mines, South Tailings Pond
 - 14 Opti/Nexen Long Lake
- Other Approved 2006 RAMP Funder Projects**
- 5 Albian Sands Muskeg River Mine Expansion
 - 15 Husky Sunrise
 - 16 Suncor Voyageur Upgrade
 - 17 North Steepbank Mine
 - 18 Petro-Canada Meadow Creek
- 2006 RAMP Funder Projects with Formal Applications as of 2006**
- 19 Synenco Northern Lights
 - 20 Imperial Oil Kearl
 - 10 Petro-Canada MacKay River Expansion
 - 21 Deer Creek Joslyn SAGD Phase III, North Mine
 - 22 Birch Mountain Hammerstone Quarry Project
- Other Approved Oil Sands Projects as of 2006**
- 23 JACOS Hangingstone
 - 24 ConocoPhillips Surmont
 - 25 MEG Energy Christina Lake
 - 26 White Sands *in situ*
 - 27 Encana Christina Lake
 - 28 Devon Jackfish
 - 29 Connacher Great Divide

RAMP

Regional Aquatics Monitoring Program

Data Sources:
 a) National Topographic Data Base (NTDB) obtained from the Centre for Topographic Information - Shertrooke, used under license.
 b) Oil Sands Development Areas derived from the Cumulative Environment Management Association (CEMA) Development Scenario GIS Mapping Database and Oil Sands Lease Boundaries from Alberta Government.
 c) Watershed Boundaries also from CEMA.

- Lakes / Ponds
- Rivers / Streams
- Major Roads
- Secondary Roads
- Railways
- First Nations Reserve
- RAMP Regional Study Area
- RAMP Focus Study Area
- Watershed Boundary

2006 Focal Projects are those projects within the RAMP FSA that were active in 2006 and were operated by 2006 RAMP funders. Boundaries for projects in advanced implementation reflect their approximate physical project footprint. Boundaries for projects in their early stages of implementation reflect operator lease boundaries. Township and Range designations are relative to W4M.



Projection: UTM, Zone 12 NAD83

RAMP study area...

Our monitoring area encompasses the entire Regional Municipality of Wood Buffalo; with specific focus on watersheds where oil sands development is already occurring or is planned for the future. Up to three times a year we measure water quality and quantity in selected rivers, streams and lakes. We also monitor fish populations and benthic invertebrate communities. We assess habitat quality and monitor climate at a number of stations.

Monitoring results and findings...

2007 was our 11th year of monitoring and our latest annual sampling results showed that there were no detectable regional changes in aquatic resources related to oil sands development. There were however localized, site specific exceptions.

Summary of 2006 RAMP Results

Waterbody	"River Flow/ Lake Level"	Water Quality	Aquatic Insects	Sediment Quality	Fish	Comments
Athabasca River and Delta	◆	●	nm	nm	●	2006 was a dry year in oil sands region
Clearwater-Christina rivers	●	●	●	●	●	
Muskeg River	◆	●	●	●	●	increased run-off due to land clearing
Steepbank River	●	●	●	●	●	
Tar River	◆	◆	◆	●	○	approved diversion of river
MacKay River	●	●	●	●	○	
Calumet River	●	●	●	●	○	
Firebag River	●	●	●	●	○	
Ells River	●	●	●	●	○	
Hangingsone River	●	●	●	●	○	
Poplar Creek	◆	●	●	●	○	Poplar spillway regulation
Fort Creek	●	●	●	●	○	
50 Acid-Sensitive Lakes	○	●	○	○	○	

● within normal range ◆ change in 2006 related to natural factors ◆ potential oil sands effect in 2006 ○ not monitored in 2006

Monitoring mercury in our regions aquatic environments...

RAMP monitors for mercury because it is a concern of our stakeholders and we want to continue to be responsive to the needs of the region.

Mercury in ecosystems occurs both naturally and anthropogenically (through atmospheric fallout). There are numerous bodies of water distant from the oil sands that have the same high levels of mercury in large-sized fish. In fact, mercury levels in fish from the Athabasca delta are no higher than levels found in other parts of the Athabasca upstream of the oil sands region.

RAMP monitors for mercury because it is a concern of our stakeholders and we want to continue to be responsive to the needs of the region. RAMP passes information about mercury on to Alberta Health and Wellness, Alberta Sustainable Resource Development and related federal agencies on a regular basis.

For more information about mercury and safe consumption levels please visit the Environment Canada webpage on mercury:

<http://www.ec.gc.ca/MERCURY/EN/fc.cfm#BC>

Or check out information provided in the Alberta Guide to Sportfishing Regulations:

<http://www.albertaoutdoorsmen.ca/fishingregs/other-information.html#mercurycontamination>



Health Canada joins RAMP...

Health Canada sees RAMP as an important program and a valuable tool for understanding environmental conditions in the oil sands region.

In September of 2007 Health Canada representatives made a formal presentation to the RAMP Steering Committee and expressed interest in becoming a RAMP member organization. Health Canada is focusing on linkages between potential environmental impacts and human health and are particularly interested in programs such as RAMP that conduct environmental monitoring.

Health Canada sees RAMP as an important program and a valuable tool for understanding environmental conditions in the oil sands region. RAMP looks forward to collaborating with Health Canada to share technical expertise and monitoring results.

How you can help...

There are several ways that members of the public can help RAMP in monitoring the health of our region's lakes, rivers and fish populations:

Fish Tagging Program

If you catch a fish that has been tagged, please report the tag number, tag colour, type of fish and (if possible) its length and weight to Alberta Sustainable Resource Development at 780-743-7200. If you intend to release the fish, please do not remove the tag.

Please carefully release radio tagged (wire extending from the fishes belly) fish alive after recording the tag number and fish information to allow the study to continue.

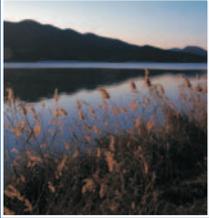
Fish Health Program

If you catch a fish that looks unusual or unhealthy (missing fins, curved spine, growths or sores) please release it and contact Hatfield Consultants in Fort McMurray at 780-743-4290.

River Response Network

Please report any occurrences of spills, foam, scum, turbidity and other events (which may or may not be due to natural causes) to Alberta Environment by calling 1-800-222-6514 (toll-free).

6. CEMA Section



CEMA places high priority on the environment of the Municipality of Wood Buffalo and is committed to communicating timely, accurate and useful information about its activities. CEMA works to ensure meaningful involvement of all its 48 stakeholders in a consensus based approach where each member has one equal vote.

CEMA work is completed through 5 Working Groups:

- NOx SO2 Management Working Group (NSMWG)
- Reclamation Working Group (RWG)
- Sustainable Ecosystems Working Group (SEWG)
- Surface Water Working Group (SWWG)
- Trace Metals and Air Contaminants Working Group (TMAC)

These 5 groups study the air, water, ecosystems and environmental related health effects in the region and have produced over 100 reports.

CEMA also acknowledges the value of Traditional Environmental Knowledge (TEK) which it incorporates into the decision making process and products via a TEK Standing Committee. This committee is composed of representation from First Nations and Métis Locals within the Municipality of Wood Buffalo.

Successes over the past year...

The SWWG is committed to developing a comprehensive Water Management Framework for the LAR (Phase 2) that includes perspectives from science, integrated water management options and socio-economics.

Instream Flow Needs

The Alberta Government implemented a new Instream Flow Needs Management Framework for the Lower Athabasca River (LAR), in the spring of 2007. Many of the key recommendations of the Instream Flow Needs adopted by Alberta Environment were developed and researched by CEMA's Surface Water Working Group. CEMA is proud of the hard work of the SWWG and its commitment to maintaining a strong and healthy Athabasca River!

The Government of Alberta and the Federal Department of Fisheries and Oceans has written to CEMA requesting assistance implementing the second phase of the Instream Flow Needs Framework for the LAR. CEMA has accepted the challenge.

The SWWG is committed to developing a comprehensive Water Management Framework for the LAR (Phase 2) that includes perspectives from science, integrated water management options and socio-economics. This message was recently confirmed by letter from CEMA to Alberta Environment which indicated SWWG will assume the recommendations made for CEMA outlined in the Alberta Environment/Department of Fisheries and Oceans Water Management Framework for the Phase 2.

The study is designed to address the migration of burbot, lake whitefish, longnose suckers and flathead chubb and includes the timing of migratory movements and the duration of residence in the different segments of the LAR and the lower reaches of accessible tributaries.

Fish Telemetry Study

CEMA has begun to study several components that will incrementally address information needs for fish use of the lower Athabasca River (LAR) from Fort McMurray downstream to the foot of the delta at Lake Athabasca. The study is essential to address some of the key instream flow needs uncertainties for fish populations in the LAR.

The study is designed to address the migration of burbot, lake whitefish, longnose suckers and flathead chubb and includes the timing of migratory movements and the duration of residence in the different segments of the LAR and the lower reaches of accessible tributaries. The study will focus on the fall and ice – covered seasons as this is the period of greatest concern, but will also collect data for other seasons. This research will help to locate potential spawning areas in the LAR as well as potential use of tributaries. An initial step will be the determination of which segments are frequented by different species. This will be accomplished with the use of fixed, cellular or satellite telephone equipped radio tag monitoring stations near river segment boundaries. This will identify the areas of the river for more in – depth aerial tracking from aircraft to locate potential resting and spawning habitats. Also included in the field program will be on – ice tracking and collection of habitat data when and where possible.

Output from this study should provide for data to indicate: when fish species that frequent the delta enter the river upstream of the delta; whether they remain in the mainstem of the river or ascend tributaries; how long they spend in different areas of the river or tributaries; and, when and if they leave the river for areas in either the lower delta or Lake Athabasca. Additional effort is proposed to determine if eggs and drifting fry are present in the presumed spawning areas identified during the fall and winter assessment.

Aboriginal Roundtable

In December, CEMA sponsored an Aboriginal Roundtable in Fort McMurray. The daylong session was a chance to explore environmental issues facing the First Nations and Métis communities in the Regional Municipality of Wood Buffalo. Nine Aboriginal communities in the region participated. The purpose of the Roundtable was to hear the views of Aboriginal Peoples on the air, land, water and wildlife in our environment.

Due to the success of the Roundtable, CEMA has secured funding and struck a new task group of participants to develop and improve our relationship with the First Nations and Métis communities.

CEMA would like to thank the following groups for attending the Aboriginal Roundtable:

- Conklin Métis Local 193
- Willow Lake Métis Local 780
- Fort McMurray Métis Local 1935
- Fort McMurray Métis Local 2020
- Fort McMurray First Nations
- Fort McKay Métis Local 63
- Fort McKay First Nations
- Fort Chipewyan Métis Local 125
- Chard Métis Local 214

Traditional Food Consumption Study

Trace Metals & Air Contaminants Working Group's (TMAC) Traditional Food Consumption Study was conducted in the communities of Fort McKay, Fort Chipewyan, Conklin and Fort McMurray from November 13th through December 11th, 2007.

In a recent literature review and evaluation of human health risk assessments, the lack of accurate documentation on the quantity and type of traditional food consumed in the region and the subsequent assumptions used in place of local information, were identified as major sources of uncertainty. The project is designed to collect representative information on the types of traditional foods consumed and the amounts and seasonality of consumption. This information will then be available for use in risk assessments completed in the region, and for other regional studies and initiatives. A secondary objective of the study is to record, during the interviews, whatever concerns people express about their health or the health of the environment. This information will be used by TMAC in the development of the management framework to ensure that the issues of greatest importance to Aboriginal peoples are addressed in the framework.

The information can also be used by the individual communities as a base for further research or as part of an education program.

Due to the success of the Roundtable, CEMA has secured funding and struck a new task group of participants to develop and improve our relationship with the First Nations and Métis communities.

The project is designed to collect representative information on the types of traditional foods consumed and the amounts and seasonality of consumption. This information will then be available for use in risk assessments completed in the region, and for other regional studies and initiatives.

This report describes reclamation practices for the development of functioning wetland systems in the oil sands region and has been sent by CEMA to the Government of Alberta to be used as a guideline for operators in this region.

Guideline for Wetland Establishment

In 2007, the Guidelines for Wetland Establishment on Reclaimed Oil Sands Leases (2nd Edition) was finalized and was approved by members at the last CEMA general meeting. This report describes reclamation practices for the development of functioning wetland systems in the oil sands region and has been sent by CEMA to the Government of Alberta to be used as a guideline for operators in this region.

This second edition describes an integrated approach to the planning, design, construction, monitoring and adaptive management of reclaimed wetlands.

The approach adopted by this guideline is founded on five basic principles:

- Recognition of the critical function of wetlands in distributing and retaining water on the reclaimed landscape;
- Recognition of the complex interaction of climate, hydrology, geology, ecology and time on wetlands creation and evolution in the oil sands region;
- Recognition of the need for inter-disciplinary collaboration and coordination when working toward wetlands reclamation;
- Recognition that good will, compromise and communication among stakeholders will be invaluable in the pursuit of a complex and dynamic result – healthy, functioning reclaimed wetlands that approximate natural systems as best as current knowledge and capabilities allow;
- Recognition that best practices will evolve with continued research, monitoring, and adaptive management.



How will the wetland guide be used?

This report will be used to create wetlands that:

- Are meaningful to regional stakeholders, including First Nation and Métis People;
- Are environmentally sustainable; and
- Meet regulatory requirements.

Using management frameworks to protect, sustain and reclaim our environment...

A management framework is a systemized approach applied to achieve management objectives. This approach can include options such as research, monitoring, better technology, controls on resource use, operational guidelines, a tiered management system, or amendments to existing policies and programs. Management Frameworks completed by CEMA to date include:

- April 2006, Land Capability Classification for Forest Ecosystems in the oil sands, 3rd edition.
- May 2006, Ozone Management Framework.
- August 2004, Landscape Design Checklist 3th edition.
- February 2004, Acid Deposition Management Framework.
- February 2004, Ecosystems Management Tools.
- November 2001, Trace Metals Management Framework.

NOTE: All of the above mentioned reports were implemented by Alberta Government. A full list of CEMA reports and work is available on our website at www.cemaonline.ca.

In 2008, CEMA will see the competition of three NEW management frameworks; SEWG's Land Management Framework; NSMWG's Eutrophication Management Framework and TMAC's Trace Air Contaminants Management Framework. Each of these frameworks will help to improve the environment in the region we call home.

A management framework is a systemized approach applied to achieve management objectives.

Our Membership

	CEMA	RAMP	WBEA
Alberta Aboriginal Affairs and Northern Development	○		
Alberta Conservation Association	○		
Alberta Department of Energy	○		
Alberta Energy and Utilities Board	○	○	○
Alberta Environment	○	○	○
Alberta Fish and Game Association	○		
Alberta Pacific Forest Industries Ltd.	○	○	
Alberta Sustainable Resource Development	○	○	
Albian Sands Energy/Shell Canada	○	○	○
Athabasca Chipewyan First Nation		○	○
Athabasca Tribal Council	○	○	○
Birch Mountain Resources	○	○	○
Canadian Environmental Assessment Agency	○		
Canada National Resources Limited	○	○	○
Canadian Parks and Wilderness Society	○		
Chard Métis Local #214	○		
Chipewyan Prairie Dene First Nation		○	○
Conklin Métis Local #193	○		
ConocoPhillips Canada	○		
Deer Creek Energy	○		
Department of Fisheries and Oceans	○	○	
Devon Canada	○		
EnCana Corporation	○		
Environment Canada	○	○	
Fort Chipewyan Métis Local #125	○	○	
Fort McKay First Nation	○	○	○
Fort McKay Métis Local #63	○		○
Fort McMurray #468 First Nation	○		○
Fort McMurray Environmental Association	○		○
Fort McMurray Field Naturalists	○		
Fort McMurray Métis Local #2020	○		
Health Canada	○	○	○
Husky Energy	○	○	○
Imperial Oil Resources	○	○	○
Japan Canada Oilsands Ltd.	○		
Mikisew Cree First Nation		○	○
Natural Resources Canada	○		
Northern Lights Health Region	○		○
Nunee Health Authority			○
Oil Sands Environmental Coalition		○	
OPTI Canada/Nexen Inc.	○	○	○
Pembina Institute for Appropriate Development	○		○
Pembina Pipelines	○		
Petro-Canada Oil and Gas	○	○	○
Regional Municipality of Wood Buffalo	○	○	○
Saskatchewan Environment	○		○
Suncor Energy Inc.	○	○	○
Syncrude Canada Inc.	○	○	○
Synenco Energy Inc.	○	○	○
Total E&P Canada Ltd.	○		○
Toxics Watch Society of Alberta	○		○
UTS Energy Corporation	○		○
Williams Energy Canada Inc.			○
Wood Buffalo National Park	○		



CEMA

p. 780-799-3947
f. 780-714-3081
e. corey.hobbs@cemaonline.ca
w. www.cemaonline.ca

#214, Morrison Centre
9914 Morrison Street
Fort McMurray, AB
T9H 4A4



RAMP

p. 780-743-4290
f. 780-715-1164
e. mpennell@wbea.org
w. www.ramp-alberta.org

Hatfield Consultants
8542B Franklin Avenue
Fort McMurray, AB
T9H 2J4



WBEA

p. 780-799-4420
f. 780-715-2016
e. mpennell@wbea.org
w. www.wbea.org

#202, Morrison Centre
9914 Morrison Street
Fort McMurray, AB
T9H 4A4