

**Aboriginal Environmental Services Network -
Environmental Monitoring Technician Training
Program for First Nations and Métis
Communities in Northeastern Alberta
2015 Pilot**



**Final Report Prepared by Alberta Innovates-Technology
Futures**

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EXECUTIVE SUMMARY

Fifteen representatives from eight Indigenous communities in northeastern Alberta, and approximately 35 science and monitoring staff from the Alberta Environmental Monitoring, Evaluation and Reporting Agency (AEMERA), Alberta Innovates-Technology Futures (AITF) and the Alberta Biodiversity Monitoring Institute (ABMI) participated in the 2015 Environmental Monitoring Technician Training Program pilot. The five-week training pilot focused on safety, water quality monitoring and wildlife monitoring. The objectives of the training pilot were to: (1) enable Indigenous involvement in field monitoring within communities, with industry or with AEMERA, (2) provide technical competence in the field in surface water quality monitoring, wildlife monitoring and safety, and (3) provide an opportunity for AEMERA and Indigenous communities to build connections which should, in the long-run, enable productive relationships between these parties. AEMERA collaborated with AITF to conceptualize and run the training pilot under the purview of the Aboriginal Environmental Services Network (AESN), a network designed by AITF to increase Indigenous involvement in the environmental services industry by providing training, communication and other support services.

All 15 participants successfully completed training program, and joined in a celebration upon completion. As part of the safety training, they received certifications in bear and wildlife awareness and avoidance, ATV (All-Terrain Vehicle) operation, standard first aid with level “C” CPR, water safety-swift water (3-day advanced technician), WHMIS (Workplace Hazardous Materials Information System) 2015, Transportation of Dangerous Goods (TDG) Ground, defensive driving, ice safety and rescue (2-day advanced technician) and collision avoidance.

The pilot program demonstrated that our approach to training in Indigenous communities increased community participation in environmental monitoring, and assisted AEMERA in their work to incorporate Indigenous wisdom and input from Alberta’s Indigenous communities. Outcomes of the training program included expansion in the sites monitored in Indigenous communities, submission of a multi-year proposal to initiate a community-based wildlife monitoring program, and employment of one of the trainees by their community to collect traditional land use information. Another key success of this pilot was the personal connections that were built amongst the trainees, their communities, and the trainers.

In a training evaluation survey, both trainees and trainers rated the pilot highly. All trainees indicated that they would use what they had learned, and would recommend the training program to others. From the trainers’ perspective, 70% of trainers believe they obtained ‘high or very high value’ from the experience, and 80% of trainers described the trainees as being ‘highly or very highly engaged’.

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1.0 THE BUSINESS CASE FOR THE ENVIRONMENTAL MONITORING TECHNICIAN TRAINING PROGRAM FOR FIRST NATIONS AND MÉTIS COMMUNITIES IN NORTHEASTERN ALBERTA

As Canada seeks to implement the United Nations Declaration on the Rights of Indigenous Peoples, Indigenous people with environmental monitoring training and experience will be required to facilitate meaningful participation in resource development decisions. A widely held belief in Indigenous culture is that resources should be used in such a way that sufficient resources remain for seven generations. Traditionally, Indigenous peoples have a strong cultural connection to the land, and depend on a healthy natural environment to maintain their way of life. They have been hunters, trappers, berry pickers and medicine harvesters for centuries, and have accumulated wisdom about their environment, by taking the time to study and understand natural cycles and the interconnectedness of nature. It is this traditional way of life, and holistic cultural perspective of considering the environment that positions Indigenous peoples as stewards of the land.

Though there is a propensity for conducting environmental monitoring, Indigenous peoples often face a hurdle in pursuing formal qualifications to conduct environmental monitoring. Formalized schooling can take them away from their communities for extended periods, and relatively few individuals pursue the scientific subject areas required to enter the field of environmental monitoring. Other less formalized qualification options are available [for example, training through *Building Environmental Aboriginal Human Resources (BEAHR)* or *Technical Services Advisory Group (TSAG)*], but still one of the biggest hindrances to being involved in environmental monitoring is attributed to lack of training.

The Alberta Environmental Monitoring, Evaluation and Reporting Agency (AEMERA, operations started in 2015) is the province's new environmental monitoring agency with a mandate to incorporate Indigenous wisdom and input from Alberta's Indigenous communities. To help address the training barrier to community involvement in environmental monitoring, AEMERA and Alberta Innovates - Technology Futures (AITF) co-funded a 5-week training program for First Nations and Métis individuals in Northeastern Alberta. The training program exposed participants to specific environmental monitoring protocols used by AEMERA in the areas of surface water quality monitoring and wildlife monitoring. Participants also obtained relevant safety certifications to enable them to conduct the monitoring protocols in a safe manner, and to fulfil safety requirements set by monitoring agencies and companies as a prerequisite to employment. Regular interaction between AEMERA staff (who provided instruction) and trainees resulted in valuable awareness and relationship building among both parties. Trainees were able to see monitoring procedures and protocols first-hand, and began to envision how they might be able to contribute to what the Agency does to monitor species and ecosystems.

AEMERA collaborated with AITF to conceptualize and deliver the Environmental Monitoring Technician Training Program pilot for 15 representatives from eight Indigenous communities. AITF has delivered training programmes for Indigenous communities since 2005, and has significant experience and a successful track record in the delivery of these programs (for example, the *Aboriginal Internship for Land Stewardship Program*, a finalist in the 2010 Emerald Awards). AITF is part of the province's research and innovation system that helps build sustainable resource management capacity. AITF coordinated the delivery of the Environmental Monitoring Technician Training Program pilot under the *Aboriginal Environmental Services*

Network, a network designed to increase Aboriginal involvement in environmental services by providing training, communication and business support services. This report describes what occurred during the 5-week Environmental Monitoring Technician Training Program pilot, and how it can be replicated to build further capacity in Indigenous communities.

2.0 A FRAMEWORK FOR TRAINING - THE ENVIRONMENTAL MONITORING TECHNICIAN TRAINING PROGRAM

2.1 Curriculum

A curriculum was scoped to identify thematic areas within environmental monitoring that would be of high interest and value to trainees, have monitoring protocols that could be easily implemented by trainees, and include monitoring protocols that are used by AEMERA and/or its contractors. Thematic areas considered were biodiversity monitoring, surface and ground water quality monitoring and air quality monitoring. The objective was to equip trainees with technical competence in the field as entry-level interns. After reviewing AEMERA monitoring protocols associated with each thematic area, AITF and AEMERA choose to build a curriculum around surface water quality monitoring and wildlife monitoring, including a focus on associated technologies such as Global Positioning System (GPS), Autonomous Recording Units (ARU) and wildlife cameras. Certifiable safety training required to conduct these activities was also covered. Training consisted of a combination of field and classroom sessions delivered in and around Edmonton, Vegreville and Rocky Mountain House. Where possible, training was conducted by AEMERA staff to foster awareness building about the Agency, and to help build relationships between trainees and the Agency. Training was also conducted by staff from AITF and ABMI, as appropriate to help build mutual awareness and understanding between Indigenous communities and these organisations. Because of the desire to build relationships between AEMERA (and its contractors) and Indigenous communities by utilising AEMERA's staff as trainers, other existing training providers for Indigenous communities were not contracted in the pilot (e.g. TSAG, BEAHR).

The curriculum was developed using the following framework that can be applied to different areas of environmental monitoring using a specific monitoring protocol:

1. Select a thematic area within environmental monitoring (E.g. surface water quality monitoring).
2. Using the monitoring protocol, make an inventory of the tasks and processes the field technician is required to complete.
3. Select a number of tasks and processes feasible for completion by an entry-level technician with a few hours of training and of Indigenous communities' interest
4. Define a curriculum to teach the tasks and processes.
5. Identify and provide associated safety training.
6. In-field instruction, testing and validation.

The curriculum followed during the 2015 Environmental Monitoring Technician Training Program pilot is outlined below. A detailed schedule of activities can be found in Appendix 1.

Safety Certifications

There are 10 safety certifications/areas associated with conducting surface water quality and wildlife monitoring. Trainees were offered all 10 certifications/areas: bear and wildlife awareness and avoidance, outdoor survival skills, ATV (All-Terrain Vehicle) operator, standard first aid with level "C" CPR, water safety-swift water (3 day advanced technician), WHMIS (Workplace Hazardous Materials Information System) 2015, Transportation of Dangerous Goods (TDG) Ground, defensive driving, ice safety and rescue (2 day advanced technician) and collision avoidance. Some certifications are valid for a period of 3 years and others are valid for a lifetime. Training was conducted by contracted safety course providers. Outdoor survival was taught according to an established AITF Standard Operating Procedure, and is not certifiable by an external auditor.

Surface Water Quality Monitoring

Training was conducted by AEMERA staff, led by Brian Jackson (Surface Water Quality Monitoring Supervisor). Training was focused on the AEMERA surface water quality monitoring protocol and associated equipment. Training took place over 2 days and included a half day in a classroom setting at McIntyre Field Station, half day on the North Saskatchewan River in Devon, and 1 day on Wabamun Lake. Topics covered included: lake and reservoir protocols, river and stream protocols, measurement of physico-chemical characteristics and benthic invertebrate community as well as general sampling considerations. Participants were taught to collect and preserve a water sample for laboratory analysis.

Wildlife Monitoring

Training was conducted by the Alberta Biodiversity Monitoring Institute (ABMI) and AITF staff at AITF's Vegreville office. Training took place over 2 days and focused on ABMI wildlife monitoring protocols and associated wildlife camera and Autonomous Recorder Unit (ARU) technologies. Topics included camera and ARU functionality and deployment in treed areas. Training covered the latest advances in wildlife monitoring technologies, specifically the shift from winter snow tracking to wildlife cameras for monitoring mammals, and from point counts to ARUs to monitor birds.

Short sessions

Eleven short sessions (typically 2-7 hours in duration) were offered to cover various topics in environmental monitoring, and to provide an opportunity for trainees to meet and interact with additional staff from AEMERA, ABMI and AITF. A short session on how to start your own business was also offered for those participants who were considering starting their own environmental service business. Short sessions offered were:

1. Introduction to GPS, compass and map reading
2. Ecology of lakes and rivers
3. Introduction to AEMERA and environmental monitoring standards and protocols
4. Alberta Biodiversity Monitoring Institute monitoring results (wildlife) and how to access data
5. Humane trapping

6. Introduction to information management systems for community based monitoring
7. Air monitoring demonstration
8. Bison tour at Elk Island National Park
9. Involvement in the Aboriginal Environmental Services Network
10. Introduction to environmental monitoring design
11. How to start your own business

2.2 Recruitment

We sought candidates that were 18 years or older, had the support of their community or employer, possessed a demonstrated interest in the environment, were able to read and write in English, had a valid Alberta drivers' license, were computer literate, possessed basic swimming capability and had attained Grade 10 Math. The training program was advertised by sending the program outline, applicant criteria and application form to all Indigenous communities in the northeastern oil sands area 6 weeks in advance of the anticipated start of the training program (Appendix 2). A three-week timeframe was given for the receipt of applications to the program. During this time, community visits and phone calls were scheduled to ensure that communities were aware of, and supported the training opportunity, and could submit suitable applicants. Approximately 30 applications were received, and 15 candidates were selected based on the screening criteria.

2.3 Participant profiles

We selected 15 trainees for the program; these individuals comprised a diverse group with an age range of 22-59 (mean age was 40; the group included one Elder and four youth). Twelve trainees were from First Nations and 3 were Métis. At the time of their application to the program, most trainees were employed (13 of 15), and their employer was an Aboriginal community (except for one trainee who was employed by Stantec). Approximately half the trainees (eight) possessed a high school diploma or post-secondary education, and half (eight) were working in an environmental monitoring related occupation.

2.4 Training Program Logistics

Trainees were asked to spend one week per month in Edmonton for training from August 2015 to December 2015. Attendance was recorded for all sessions. Being hosted in Edmonton provided trainees with an opportunity to leave their community for short periods of time (1 week) and build relationships with new people both from other communities and from various environmental monitoring organisations in Alberta, such as AEMERA, ABMI and AITF. Trainees were asked to arrive in Edmonton at the beginning of the training week on Sunday or Monday depending on the week's schedule. Trainees were housed at the Holiday Inn Express and Suites in Edmonton South with each individual housed in a separate room. Costs covered by the program included: hotel room, mileage for travel to and from training sessions, and meals.

2.5 Program celebration

A program celebration event took place on February 29, 2016 (two months after training sessions concluded) in honour of the 15 graduates of the 2015 Environmental Monitoring Technician Training Program pilot. Approximately 90 people attended including all 15 graduates and their guests (Councillors, family members, employers and colleagues), along with scientists, monitoring and other staff from AEMERA, AITF, ABMI and Alberta Energy. The event featured ceremonial aspects such as an invocation delivered by Elder Dr. Elsie Yanik (McMurray Métis) and traditional singing and dancing, including the honour song. Addresses from Elder Mike Beaver (Bigstone Cree Nation), Jay Nagendran (AEMERA CEO), and Stephen Loughheed (AITF CEO) were given. The program coordinator (Dr. Shauna-Lee Chai, AITF) provided an overview of the program outcomes, and plans to keep the graduates connected through the Aboriginal Environmental Services Network. Each graduate was given the opportunity to address the audience after being presented with a certificate of program completion.

3.0 PROGRAM OUTCOMES AND EVALUATION

The 2015 Environmental Monitoring Technician Training Program pilot achieved its objective of providing appropriate training to enable Indigenous involvement in environmental monitoring with a focus on safety, water quality and wildlife. All participants maintained attendance and successfully completed the training program. Both trainees and trainers rated the program highly in a program evaluation survey (sections 3.1 and 3.2). The program was featured by *CKUA Radio Network* and *Oilweek* magazine, as well as features in internal and external communications by both AEMERA and AITF.

The Environmental Monitoring Technician Training Program pilot demonstrated that this approach to training in Indigenous communities, is feasible, and has the potential to contribute to increased participation by communities in environmental monitoring. There were several instances during the training program, where its value was demonstrated, and learnings from the program were applied. Some examples are highlighted below:

1. Expansion in sites monitored in Indigenous communities

New monitoring sites were planned on North and South Wabasca Lakes (Lakes Wabasca and Desmarais). No monitoring data had been collected on these lakes in forty years, and they represented a data gap for the province's lake monitoring activities. AEMERA will now be conducting lake monitoring activities on North and South Wabasca Lakes during the 2016 season as part of the Regional Lakes Monitoring Program.

2. Employment of program participants

- Immediately following completion of the training program, one trainee was able to obtain employment with his community to assist in conducting traditional land use studies. This employment is a testament to the job-training potential of the program, even during the current economic downturn in Alberta.
- Another trainee - owner of a small environmental services, was also able to obtain new business through the contacts made with fellow trainees.

3. Demonstrated desire to form a network to connect interested individuals and organisations

One trainee started a Facebook group 'Aboriginal Environmental Services Network' to enable the trainees to maintain their connection to each other and to other scientists and monitoring staff they met during the program. Trainees posted photographs and commentary about their training experiences during August - December 2015. Group members now post conferences, grants and training opportunities to the page.

4. Increased interest in community-based environmental monitoring

- One trainee was able to access and download ABMI data on moose distribution for his community. He is also working to obtain funding for BEAHR environmental training for a number of his community members with a view to

employing them on a part time basis to collect data. He has also indicated an interest in starting a wildlife camera monitoring program in his community to contribute to ABMI's wildlife monitoring data.

- In an effort to apply the new wildlife monitoring skills acquired in the Training Program, one trainee expressed a strong desire to start a wildlife camera monitoring program along traplines in his community. He and AITF have submitted a proposal to the Aboriginal Fund for Species At Risk, entitled: "Establishing a Community-based Monitoring Program for Traditionally Important Mammal Species in Northeastern Alberta". The proposal will fund the acquisition of 40 wildlife cameras for his community.

5. Relationship building and knowledge sharing between AEMERA staff and Indigenous communities

- One trainee made arrangements with Sarah Hustins (water quality technician, AEMERA) to accompany her whenever sampling is conducted on Peerless Lake.
- Trainees also provided feedback on a visual representation of AEMERA's value chain, making it more readily understandable by Indigenous communities.

3.1 Trainee reaction and learning

A program evaluation survey was completed by all 15 trainees. Most respondents described their reason for undertaking the training program as professional development (87%) and improvement of skills or knowledge (80%). All respondents rated their learning from the program highly.

All respondents rated the water quality monitoring session content taught by Brian Jackson (AEMERA) as either very good or good. The wildlife monitoring session was also rated as very good or good by 14 of the 15 respondents (one respondent rated it as satisfactory). A number of respondents commented that more time could have been dedicated to the GPS and map reading session; 50% of respondents rated the pace of the session as too fast (43% satisfactory, 57% rated it good or very good). Of the short sessions, the bison tour of Elk Island National Park was rated highest. Of the safety sessions, ice safety, swift water safety and collision avoidance were the highest rated sessions.

Program logistics were rated as very good or good for timing (93%), frequency (93%) and location (100%). All respondents would recommend the training program and note that they will use what they have learned. Almost all respondents felt more inspired to pursue a career in environmental services (92%), felt more connected to the land (80%), had made new contacts through the program (93%), and wanted to be part of the *Aboriginal Environmental Services Network* (85%). All of the suggested potential topics for future programmes were rated as being highly desirable: firearm safety, wilderness first aid, Traditional Land Use/Traditional Ecological Knowledge, regulatory issues and legislation, climate change and soils. When asked about their current needs, most respondents (87%) indicated they would like more training for themselves at a higher level. This could indicate that participation in the current training program potentially sparked interest among trainees to pursue further studies in the field of environmental monitoring.

All participants indicated that they would like to be contacted in the future by the program organisers. This indicates the positive associations created, and the importance of maintaining and building the connections established with training participants.

3.2 Trainer reaction

We surveyed 10 trainers who participated in the Program. One trainer from ABMI commented that of all the groups she has trained including both seasonal staff and consultants, this group had demonstrated the highest ability in deploying wildlife cameras and ARUs. Trainers from AEMERA who sample in remote locations also expressed appreciation to now have connections in communities who could advise them on such information as local weather conditions and suitable locations to launch their boats. Trainers were overall very satisfied with the venues (90%), dates (70%) and support from organiser (80%). Trainers felt that they had the necessary information required to prepare for the training exercise (90%), and that the information was received in a timely manner (100%). Most trainers indicated that 1 months' notice was sufficient to prepare for training. Others wanted 3 months' notice (20%). The main benefit to trainers was indicated as sharing knowledge, and most believe they obtained high or very high value from the experience (70%). From the trainers' perspective, trainees were described as highly or very highly engaged (80%).

3.3 Recommendations for future training programmes

Due to the success of the Environmental Monitoring Technician Training Program pilot, it is recommended that future training programmes follow the pilot closely in general design and content. A number of adjustments could also potentially improve the pilot, and these along with best-practices are detailed below:

1. Curriculum

- a. Training in thematic areas of safety, surface water quality and wildlife monitoring have proven to be well-suited for Indigenous communities. Safety training can be applied to everyday situations in the bush and other remote locations where Indigenous people work or conduct traditional land use. Safety certifications can also increase a candidate's likelihood of being successfully selected for employment; many job advertisements seek candidates who already possess these certifications. The availability of wildlife is of great concern to Indigenous communities; knowing how to monitor their populations using cameras is an activity that has proven to draw keen interest. Water quality is also of great importance to Indigenous communities, many of whom have boil water advisories and conduct traditional fishing activities. For the water quality session, an experienced limnologist should be invited to conduct a session on the current state of health of lakes in northeastern Alberta, and provide a list of basic requirements for communities to start a water quality monitoring program. Providing some relevant equipment and supplies to the trainees such as boat wrap kits (the use of which is taught in the ice and swift water rescue courses) would also be of great value.

- b. Where possible, the hands-on portion of the sessions should be increased; Indigenous people traditionally learn by observing and then doing.
- c. Involving other organizations, where feasible, in the delivery of the program, for example: TSAG (Technical Services Advisory Group - First Nations), Alberta Environment and Parks and Alberta Energy Regulator.
- d. Provide a more thorough introduction to GPS and map reading, as many of the trainees indicated that they would like to learn more about this area.
- e. Adding an Elder session to the program would demonstrate respect for Indigenous wisdom and show that both western science and Indigenous wisdom can be used to monitor the environment. Several trainees indicated that they would benefit from this type of session.

2. Recruitment, class size and hosting

- a. Selecting candidates who are already employed by their community in environmental monitoring is a best practice. People who are already working in the field stand to gain the most from this training experience and association with science and monitoring staff. They are also more likely to be able to apply what they learned to increase community based monitoring, or support other provincial monitoring programmes.
- b. A group size of 10-15 individuals is ideal. Training arrangements and equipment sourcing for this number of individuals can be done relatively easily by coordinating with different monitoring organisations and safety certification providers.
- c. Sensitivity and flexibility in working with trainees should be maintained. An understanding of the culture of Indigenous peoples contributed to the success of the training program pilot, including timely reimbursement for travel expenses, rescheduling missed sessions where possible, providing healthy meals and understanding of the importance of family ties.

3. Timing

- a. Training for one week per month was well-received by trainees. It allowed them time to maintain their regular employment and family obligations, while still being able to leave the community for a short time to meet others from different communities and organisations.
- b. Beginning the program in July, instead of August would allow for more training to occur during warm weather conditions. Safety training should be scheduled with contractors in July as training in late summer (August) is preferable over early summer for staff from AEMERA and ABMI; early summer is the peak sampling season for many monitoring activities.
- c. Approximately three months should be given between the initial training advertisement and deadline for applications to the training program. This will allow communities sufficient time to put forward suitable candidates.

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Appendix 1. Program Schedule for the Environmental Monitoring Technician Training Program

	Session/Activity	Instructor	Date	Training overview	Location and time
ORIENTATION, GPS AND SAFETY WEEK	Travel to Edmonton		Aug. 9	Travel to Edmonton and hotel check-in	Hotel accommodation at Holiday Inn Express, 2440 Calgary Trail NW, Edmonton, AB Tel: (780) 440-5000
	Orientation dinner at Japanese Village, 2940 Calgary Trail NW	Shauna-Lee Chai & Carter Yellowbird		Dinner at 7 pm	
	Orientation	Shauna-Lee Chai & Carter Yellowbird	Aug. 10	Opening prayer Welcome and Introduction to the program, session outline, participant and program coordinator introductions.	Start time: 8 am Location: Alberta Innovates-Technology Futures, 250 Karl Clark Road, Edmonton. Room: Multipurpose Room
	GPS/compass/map reading (1 day)	Trevor Wiens (TSAG Instructor, University of Calgary Instructor)	Aug. 10	Use of the Garmin GPSMAP 78 will be taught. Text used will be <i>Wilderness Navigation</i> by Bob Burns and Mike Burns (third edition). Participants will be given a copy of the textbook to keep for their reference. Training will address specific use of GPS in surface water quality and wildlife monitoring. Topics covered will include projections, waypoint averaging, labelling points, tracking and recording survey pattern and area traversed.	Start time: 9 am Location: Alberta Innovates-Technology Futures, 250 Karl Clark Road, Edmonton. Room: Multipurpose Room
	Bear & wildlife awareness & avoidance (1/2 day)	Greg Brooke-Team Lead, Field Operations, ABMI	Aug. 11	Certifiable-Canada Safety Council.	Start time: 9 am Location: Alberta Innovates-Technology Futures, 250 Karl Clark Road, Edmonton. Room: Board Room
	Outdoor survival skills (1/2 day)	Greg Brooke-Team Lead, Field Operations, ABMI	Aug. 11	Taught by Alberta Innovates - Technology Futures, Standard Operating Procedure (SOP).	Start time: 1 pm Location: Alberta Innovates-Technology Futures, 250 Karl Clark Road, Edmonton. Room: Multipurpose Room
	ATV operator (1 day)	Mike Lachance – Mike’s Rentals and Safety Training OR Duane at Pioneer Offroad Rentals-	Aug. 12	Certifiable-Canada Safety Council. Please wear boots/sneakers and a rain jacket. Group will be split into 2. Maximum of 8 people per location.	Start time: 8 am Location: Mike’s Rentals, 242 Pembina Road (Terrick Enterprise building), Sherwood Park OR Pioneer Offroad Rentals: 8835-53 Ave NW.

Session/Activity	Instructor	Date	Training overview	Location and time
Standard First Aid with Level “C” CPR (2 days)	8835-53 Ave NW St. John’s Ambulance	Aug. 13-14	Certifiable-Canada Safety Council.	Start time: 8 am Location: Alberta Innovates-Technology Futures, 250 Karl Clark Road, Edmonton. Room: Multipurpose Room
WATER WEEK	Travel to Rocky Mountain House	Sept. 20	Travel to Rocky Mountain House and hotel check-in	Hotel accommodation at Best Western, 4407 41st Ave, Rocky Mountain House, AB T4T 1A5 (403) 844-3100
	Raven Rescue	Sept. 21-23	Certifiable. Day 1-classroom, Day 2-flatwater, Day 3-swift water at Rocky Mountain House. This comprehensive swiftwater session focuses on the safe work procedures that personnel should follow if they must enter moving water in the session of their work. The session will cover: <ul style="list-style-type: none"> • Swiftwater dynamics and water-related physiology. • Site safety assessment and safe working procedures. • Applicable communications systems (whistles, hand signals etc.) • Signs and symptoms of specific medical problems related to water accidents. • Rescue and extricate an accident victim from the water. • Safely swim swiftwater so as to negotiate river hazards and obstacles at various water levels. • Swiftwater rescue team organization and victim responses. • Ford shallow and fast-moving water utilizing various techniques. • Cross deep, slow-moving and fast-moving water utilizing basic rope systems 	Start time: 9 am Day 1-Classroom, Best Western Board Room Day 2-Field river site Day3-Field river site
Surface water quality monitoring and monitoring kit (2 days)	Brian Jackson-Surface Water Quality	Sept. 24-25	Training will focus on (1) the process of what to do to test water quality in a community, e.g. taking a water sample, who to contact, how to act as a liaison between	Start time: 8 am

	Session/Activity	Instructor	Date	Training overview	Location and time
		supervisor, AEMERA		AEMERA and your community. (2) AEMERA surface water quality monitoring protocol and associated kit. ½ day: classroom at McIntyre Field Station, ½ day: North Saskatchewan River in Devon, 1 day: Wabamun Lake. Topics to be covered include: lake and reservoir protocols, river and stream protocols, measurement of physico-chemical characteristics and benthic invertebrate community as well as general sampling considerations.	Location: McIntyre Field Station, 4816, 89 Street Edmonton, AB T6E 5K1
WILDLIFE, AEMERA AND SAFETY WEEK	Travel to Edmonton		Oct. 5	Travel to Edmonton and hotel check-in	Hotel accommodation at Holiday Inn Express, 2440 Calgary Trail NW, Edmonton, AB Tel: (780) 440-5000
	WHMIS 2015 (1/2 day)	Online at: http://www.whmis.ca	Oct. 6	Certifiable.	Start time: 9 am Location: AITF, 250 Karl Clark Road, Edmonton Room: Computer Training laboratory
	Ecology of lakes and rivers	Dr. Brian Eaton	Oct. 6	Common terms and concepts in water quality monitoring Ecology of lakes and rivers	Start time: 1 pm Location: AITF, 250 Karl Clark Road, Edmonton Room: Conference Room
	Wildlife monitoring - remote cameras & Autonomous Recorder Units (2 days)	Nina Veselka-Field Coordinator, ABMI Colin Twitchell (Program Lead ABMI Monitoring Centre)	Oct. 7-8	Introduction to ABMI – Monitoring Centre Introduction to Ecosystem Management at AITF, Vegreville – Tour of trapping and wildlife labs Training will focus on the ABMI wildlife monitoring protocol and associated wildlife camera and Autonomous Recorder Unit (ARU) technology. Topics to be covered include camera and ARU functionality and deployment in treed areas. Training will cover recent advances in wildlife monitoring technologies,	Start time: 9 am Location, Day 1: AITF Office in Vegreville, Hwy 16A & 75 Street Vegreville. Room: Vegreville Main Conference Room Day 2: Start 9 am Outdoors at AITF Vegreville

Session/Activity	Instructor	Date	Training overview	Location and time
	Michelle Hiltz (Business Relationship Manager, AITF)		specifically the move from winter snow tracking to wildlife cameras and the move from bird point counts to ARUs. Bison Backstage Tour- How the plains bison was brought back from near extinction and how its continued safety and health are ensured. Get a fresh perspective of these 2,000-pound beasts as park staff lead you through a labyrinth of corrals, catwalks, alleys and gates, demonstrating the techniques behind the successful conservation program that conservation facilities around the world rely on to restock herds.	Day 2 at 2 pm: Tour at Elk Island National Park to discuss bison conservation program.
	Parks Canada Interpreter			
Introduction to AEMERA and Environmental Monitoring (1 day)	AEMERA staff	Oct. 9	AEMERA staff will provide an overview of the Agency and its function.	Time: 9 am to 3:40 pm Location: AEMERA, 10 th Floor, South Petroleum Plaza, 9915 108 Street, Edmonton Boardroom 10C

	Session/Activity	Instructor	Date	Training overview	Location and time
COMMUNITY-BASED INFORMATION MANAGEMENT AND SAFETY WEEK	Travel to Edmonton		Nov. 2	Travel to Edmonton and hotel check-in	Hotel accommodation at Holiday Inn Express, 2440 Calgary Trail NW, Edmonton, AB Tel: (780) 440-5000
	Transportation of Dangerous Goods (TDG) Ground (1/2 day)	Safety Coordination Services. Online at: http://www.bistrainer.com	Nov. 3	Certifiable.	Start time: 9 am Location: Alberta Innovates-Technology Futures, 250 Karl Clark Road, Edmonton. Room: Computer Training laboratory
	Alberta Biodiversity Monitoring Institute Monitoring Results (wildlife)	Dr. Jim Schieck	Nov. 3	Discussion of ABMI's monitoring results with a focus on wildlife	Start time: 1 pm Location: Alberta Innovates-Technology Futures, 250 Karl Clark Road, Edmonton. Room: Multipurpose Room
	Discussion session on AEMERA	Michael Gubbels & Zoey Wang	Nov. 3	How can AEMERA further support you? E.g. more training, internship.	Room: Multipurpose Room 3-4 pm
	Defensive driving (1 day)	Fleet Safety International. Online at: http://www.defensivedriving.ca/	Nov. 4	Certifiable.	Start time: 9 am Location: Alberta Innovates-Technology Futures, 250 Karl Clark Road, Edmonton. Room: Computer Training laboratory
	Collision avoidance (1 day)	AMA	Nov. 5	Certifiable.	Training will occur at the AMA South Edmonton Facility.
	Introduction to information management systems for community monitoring (1/2 day)	Dr. Scott Heckbert – AITF	Nov. 6	Introduction to a community information management system – Cultural Environmental Information Management System (CEIMS) that is a spatial database that contains GIS data and media of other formats (video, audio, documents) that are spatially referenced. The CEIMS system can be used to collect and maintain data, and has a broad functionality for generating reports and output data. It is used for collecting, maintaining, and reporting on data and can be used as a community-based monitoring technology, currently an important focus in Alberta. One of the main features of the system is the security controls regarding who can	Start time: 9 am Location: Alberta Innovates-Technology Futures, 250 Karl Clark Road, Edmonton Room: Multipurpose Room

	Session/Activity	Instructor	Date	Training overview	Location and time
	Air monitoring demo	Marty Collins	Nov. 6	access data, which is important in collecting and maintaining culturally-sensitive data. MAML demo by AEMERA	1-3 pm- 4946-89 Street
PROGRAM EVALUATION AND SAFETY WEEK	Travel to Edmonton		Dec. 14	Travel to Edmonton and hotel check-in	Hotel accommodation at Holiday Inn Express, 2440 Calgary Trail NW, Edmonton, AB Tel: (780) 440-5000
	Ice Safety & Rescue – Technician (2 days) (Note: Swiftwater Rescue Technician, SRT 1 certification is a pre-requisite for the ice safety and rescue session)	Raven Rescue	Dec. 15-16	Certifiable. This session is comprehensive training for those who work or travel on ice over lakes, ponds, and reservoirs, or rivers that are completely frozen over. The curriculum includes the formation of ice and the factors that influence its decay, how to determine ice thickness, the identification of hazards, travelling on ice, self-rescue and a range of options for the rescue of others - including single rescuer techniques for field personnel that work in pairs. The curriculum also includes the medical complications posed by cold water immersion and hypothermia, and the significant implications for rescue and transport.	Start time: 8:30 am Day 1 Location: AITF, 250 Karl Clark Road, Edmonton Room: Multipurpose Room Day 2 – river field site
	Module evaluation by participants (1/2 day) and discussion of next-step opportunities and involvement in the Aboriginal Environmental Services Network (1/2 day)	Shauna-Lee Chai	Dec. 17	We will identify and discuss the aspects of the training program that worked well and what could be improved. Participants will be asked to fill out an evaluation questionnaire. Session feedback will be included in the final report. We will discuss next-step opportunities available such as the Aboriginal Environmental Services Network, additional training, involvement of the participants in AEMERA monitoring and community based monitoring.	Start time: 9 am Location: AITF, 250 Karl Clark Road, Edmonton Room: Multipurpose Room
	How to start your own business (1/2 day)	Business Link Alberta	Dec. 17	From start-up to expansion, resources are tailored to meet the unique needs of Aboriginal clients. Services and support for Aboriginal entrepreneurs and communities is offered.	Start time: 1 pm Location: AITF, Multipurpose Room

Session/Activity	Instructor	Date	Training overview	Location and time
Introduction to environmental monitoring design	Karin Smith-Fargey	Dec. 18	The 5-week Aboriginal environmental training pilot has focused primarily on the data acquisition phase of the Monitoring Evaluation and Reporting cycle. Here the focus will shift to the design of a monitoring program and the various considerations that are relevant such as the question, budget, timeframe, statistical validity and indicators. The purpose of this day is to use wetlands as a case study for designing an environmental monitoring program.	8:30 am-2:30pm Location: AITF, Multipurpose Room
Graduation Ceremony		February 29, 2016		

Appendix 2. List of First Nations and Métis Communities and Organizations that were invited to submit applicants to the training program

Beaver Lake Cree Nation	Kikino Metis Settlement
Cold Lake First Nation	Peavine Metis Settlement
Frog Lake First Nation	Metis Local 63 Fort McKay
Heart Lake First Nation	Metis Local 193 Conklin
Kehewin First Nation	Metis Local 780 Willow Lake (Anzac)
Onion Lake Cree Nation	Metis Local 1909 Lakeland (Lac La Biche)
Saddle Lake First Nation	Metis Local 1935 Fort McMurray
Whitefish (Goodfish) Lake First Nation	Metis Local 1949 Owl River
Athabasca Chipewyan First Nation	Metis Local 2002 Buffalo Lake
Bigstone Cree Nation	Metis Local 2020 Fort McMurray
Chipewyan Prairie Dene First Nation	Metis Local 2097 Lac La Biche
Duncan's First Nation	Metis Local 125 Fort Chipewyan
Fort McKay First Nation	Metis Local 2010 Athabasca Landing
Fort McMurray #468 First Nation	Metis Local 100 Bonnyville
Loon River First Nation	Metis Local 90 Wabasca
Peerless Trout First Nation #478	Metis Local 1994 Cadotte Lake
Whitefish Lake First Nation	
Woodland Cree First Nation	
Driftpile First Nation	
Horse Lake First Nation	
Kapawe'no First Nation	
Little Red River Cree Nation	
Mikisew Cree First Nation	
Sawridge First Nation	
Swan River First Nation	
Tallcree First Nation	
Buffalo Lake Metis Settlement	
Elizabeth Metis Settlement	
Fishing Lake Metis Settlement	
Gift Lake Metis Settlement	