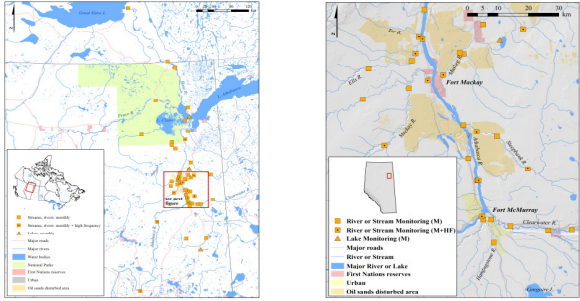


# 2018-19 Work Plan Template

All fields with an \* are mandatory

Project Description Summary			Co-Chair Decision (March 8, 2018)
Date *	Project/Work Plan Identifier (if applicable)	Program Type and Strategic Alignment *	<p><b>* Decision Pool A: Workplan approved at reduced funding levels.</b>  <b>* Approved at \$5,885,567</b></p> <p>* This project was underspent in 2017/18. Quarterly updates on expenditures and accurate forecasts for 18/19 are required.</p> <p>* Deliverables for this level of funding are to be clarified and an amended joint (AEP and ECCO) workplan is to be submitted before March 31, 2018 to the Oil Sands Monitoring Secretariat. Specifically, clarity is required on the respective roles of AEP and ECCO and the transition plan between the organizations by April 30, 2018.</p> <p>* The OSM Secretariat will schedule a meeting with COSIA and the Alberta Energy Regulator that the project lead is to attend/participate in. The intent of the meeting will be to discuss the rationalization of the water quality monitoring program.</p> <p>* It is a requirement of funding that key members of the project team participate in a Water Monitoring Integration Workshop to be informed by the Oil Sands Monitoring Secretariat.</p> <p>* Funding expectations: as a minimum an annual progress report is required by February 28, 2019. All publications or products resulting from this work requires acknowledgement of funding from the Oil Sands Monitoring Program and are to be provided to the Oil Sands Monitoring Secretariat for tracking and any programmatic communications purposes. Work funded through the Oil Sands Program will be available for public dissemination.</p>
9/1/2018	W-LTM-S-2-1819	OSM - Long Term Monitoring	
Program Category *	Status *	Dept. ID	
Watershed Sciences (Surface Water and Groundwater)	Existing Project	1104	
Project Leadership / Contact information			
Project Title *	Key Words (max 10) *		
Surface Water Quality Monitoring	Water Quality, Athabasca River, Tributaries, Contaminants, oil sands		
Surname *	Given Name *	Title *	
Cooke	Colin	Dr.	
Organization *	Department	Division	
Alberta Provincial	Alberta Environment and Parks	Environmental Monitoring and Science	
Branch *	Section/Unit (if applicable)	Phone *	
Science	Watershed Science	7802297297.00	
Email *	Mailing Address	City	
Colin.Cooke@gov.ab.ca	10th floor, 9888 Jasper Ave	Edmonton	
Postal Code	EMSD Executive Owner (If Applicable)		
T5J 5C6	Bill Donahue		
Project Information			
Project Objective(s) (Bullet Form) *	(1) quantify the impact of oil sands mining and processing activities on regional water quality; (2) document status and trends in water quality at key sites; and (3) support water quality data requirements for other longterm monitoring components and focused studies.		
Plain Language Overview (100 words) *	This project continues long-term water quality data records that can be used to meet a variety of information needs. For example, the data may be used to assess status and trends, support modelling activities, and interpret aquatic ecosystem based measures. Long-term water quality monitoring will inform assessments of potential impacts related to resource extraction. The design of the program is adaptive in the sense that decision triggers that inform the management of the program will be integral to the program.		
Project Duration *	Project Original Start Date *	Estimated Completion Date *	
Multi-Year	1/4/2012	31/03/2022	
Specify Objectives This Project Will Address in 2018/2019. *	Ongoing data collection to establish regional reference conditions for water courses that pass through, are within, or are potentially influenced by oil sands activities. Ongoing data on concentrations of water quality constituents that can be used to identify changes in the magnitude or frequency of exceeding water quality guidelines or regional reference conditions. Ongoing data to assist in the information needs of other long-term monitoring programs and focused studies.		
Specify Objectives This Project Will Address Beyond 2018/19 (if multi-year). *	Ongoing data collection to establish regional reference conditions for water courses that pass through, are within, or are potentially influenced by oil sands activities. Ongoing data on concentrations of water quality constituents that can be used to identify changes in the magnitude or frequency of exceeding water quality guidelines or regional reference conditions. Ongoing data to assist in the information needs of other long-term monitoring programs and focused studies.		
List Key Questions/Hypotheses Related to Each Objective Stated Above. *	Detect and report concentration levels and trends of chemical substances of concern in the aquatic environment that may cause adverse human and/or environmental health effects either individually or synergistically. To detect a change in water quality constituents and be able to attribute this change to a particular human activity requires accurate characterization of the concentration and load measured at both unimpaired sites and those adjacent to or downstream of human activities.		
Main Assumptions, Constraints, Dependencies. *	Timely securement of contracts (e.g., external analytical laboratories) and maintenance of current staffing levels is critical; Transition of responsibility for portions of the monitoring plan is ongoing; Efficiencies will be discussed regarding transition with possibility of AEP and ECCO crews conducting joint monitoring at some sites where feasible and as sufficient human, capital, and financial resources are available; Deliverables associated with grants are still to be determined but will likely include conference presentations and peer-reviewed publications.		

Partner Categories (select all that apply) * A partner is an individual, group, agency, community etc. that is an active participant in the project and in achieving the project deliverables.	Knowledge System *	Location (select all that apply) *
<input checked="" type="checkbox"/> Federal Government <input type="checkbox"/> Another AEP Division <input type="checkbox"/> Another GoA Department <input checked="" type="checkbox"/> University/Academic Institution <input type="checkbox"/> Solely delivered by GoA <input type="checkbox"/> Citizen Science <input type="checkbox"/> Indigenous Community or Organization <input type="checkbox"/> ENGO <input type="checkbox"/> Other	Classical Science	<input checked="" type="checkbox"/> Office or Laboratory <input type="checkbox"/> Sub-regional <input checked="" type="checkbox"/> Transboundary (provincial/territorial) <input checked="" type="checkbox"/> Lower Peace Region <input type="checkbox"/> Upper Peace Region <input type="checkbox"/> North Saskatchewan Region <input type="checkbox"/> Red Deer Region <input checked="" type="checkbox"/> Lower Athabasca Region <input type="checkbox"/> Upper Athabasca Region
<b>AEP ONLY: Strategic Alignment to EMSD Outcomes</b>		
AEP ONLY: Strategic Alignment to EMSD Science Plan, select 1-2 areas that apply (if Applicable)		
Human Relationship with the Environment Ecosystems and Predicting Change		
<b>AEP ONLY: Strategic Alignment to AEP Departmental Outcomes</b>		
AEP ONLY: Environmental and Ecosystem Health and Integrity	AEP ONLY: Sustainable Economic Diversity	AEP ONLY: Social Well-Being
Water (Surface and Ground)	No	No
AEP ONLY: Protected Public Health and Safety from Environmental		
Yes		
AEP ONLY: IMAG/IMSC Information Needs, Please Specify Which Need(s) is Being Addressed. File location M:\EMSD\Common\Portfolio Mgmt System Shared Docs	EMSD Reference Numbers: 2, 3, 4, 7, 8, 16, 18, 23, 28, 31, 35. Ambient water quality data collected in the Lower Athabasca region plays a crucial role in many activities across departments and disciplines within the Government of Alberta. It provides critical baseline information for water-based scientific questions as described in the above reference numbers for IMAG/IMSC information needs.	
AEP ONLY: How This Project Will Address Each Strategic Theme Selected Above.	Impacts from human activities in the oil sands region are evidenced as an increase in concentrations or loads of water quality constituents compared to background values as measured by this project. These constituents are directly linked to both ecosystem integrity and public health.	
<b>Project Methodology</b>		
List the Key Project Phases and Provide Bullets for Each Major Task Under Each Project Phase. *	<p><b>Data Collection:</b> Based on the monitoring schedule (see OSM Sampling Schedule), data is collected from field sites: - preparation for field work - collection of samples - shipping and submission to designated laboratory</p> <p><b>Laboratory analysis:</b> - acknowledgement of sample arrival - analysis of sample for requested parameters laboratory specific quality assurance and quality control - delivery of results</p> <p><b>Data Management:</b> - data received and uploaded to database - review of results including matching with sample metadata and verification and validation of data, - preparation of data release files in machine readable format (e.g., CSV format) - review and approval for data release - public data release.</p> <p>During each year progress reports will be provided semi-annually. Progress reports will include a summary of sites sampled, number of samples collected, challenges encountered, and if necessary, resultant monitoring adaptations made against the planned sampling</p>	
Describe How Changes in Environmental Condition Will Be Assessed. *	Changes will be assessed to measured parameters on an ongoing basis. Anomalous changes or unusual trends will be flagged and subject to further investigation. Reporting products such as those for the surface water quality management framework under the Land-Use Framework provides formal periodic assessment of data. Ongoing data evaluation and reporting products preparation will be achieved through partnerships with academic institutions by providing funding that supports graduate students and postdoctoral fellows focused on answering questions of relevance to this program.	
Are There Benchmarks (e.g., objectives, tiers, triggers, limits, reference conditions, thresholds, etc.) Being Used to Assess Changes in Environmental Condition? If So, Please Describe, If Not, State "NONE". *	Yes, there are both federal Government of Canada (CCME) and provincial Government of Alberta surface water quality guidelines. In addition, triggers and limits have been formally established for 38 indicators under the surface water quality management framework for the Lower Athabasca Regional Plan.	
Provide a Brief Description of the Methods By Project Phase. *	<p>Data Collection: Data and samples are collected by EMSD field staff following protocols for the various constituents measured.</p> <p>Laboratory analysis: Field samples are sent to the contracted laboratory for analysis.</p>	
List the Key Indicators Measured. *	Major ions (e.g., calcium) nutrients (e.g., phosphorus) physical parameters (e.g., total suspended solids), total and dissolved metals (e.g., lead), total and dissolved mercury and methylmercury, total and dissolved polycyclic aromatic hydrocarbons (e.g., phenanthrene), total hydrocarbons (e.g., BTEX), water isotopes, and naphthenic acids (key sites to be determined).	

Describe Sample Handling Procedures, If Not Applicable, State N/A.*	All sample handling procedures will follow appropriate standard operating procedures.
List SOPs that Will Be Used, If Not Applicable, State N/A.*	ECCC-Draft-SOP_Water_Quality Nov 2016, ECCC-Draft_SOP_SPMD_Field_Procedures_Nov 2016, ECCC-Draft_SOP_Equipment_Nov 2016, ECCC-Draft_SOP_Data_Management_Procedures Nov 2016
Describe the QA/QC Plan, If Not Applicable, State N/A.*	Parameter dependent.
Describe How Indigenous Communities are Involved in the Project Design, Data Collection, and Analysis (Knowledge Co-creation) and How is their Consent Sought. If Not Applicable, State N/A.*	N/A
<b>Components Delivered by Others</b>	
List by Project or Project Phase Each Component That Will Be Delivered by An External Party (including analytical laboratories) and Name the Party. State None if Not Required.*	<p>Water quality Laboratory analyses:  MAXXAM - Routines and major ions, Nutrients and carbon;  Innotech Alberta EAS - Chlorophyll-a, Trace Elements;  SGS AXYS - Organics (PAHs);  ALS - Organics (non-PAHs);  University of Alberta BASL - Mercury;  Innotech Alberta Isotope Lab - Water isotopes</p> <p>New Grants:  University of Alberta - Sediment supply and contaminant assessment - scope TBD, grant not yet drafted</p>
Will These Components be Delivered Under Grant or Contract or Both? Please Describe and Name the Associate Work Plan/Grant/Contract for These Services if Not Included Within This Work Plan.*	<p>Both contracts and grants will be used. Contract and grant numbers are listed below</p> <p>Existing (on-going) contracts:  MAXXAM - 18AEM819  Innotech Alberta EAS - 18AEM829  SGS AXYS - 17AEM816  ALS - 18AEM817  University of Alberta BASL - 18AEM809  Innotech Alberta Isotope Lab - 18AEM818</p> <p>New Grants:  University of Alberta - Sediment supply and contaminant assessment - scope TBD, grant not yet drafted</p>
<b>Monitoring Site Locations and Coordinates (for all sites, please add them to the Monitoring Site Location tab - a separate excel sheet)</b>	
Attach Map of Locations. Distinguish Indicators by Station if Necessary. Distinguish Sampling Frequency by Station if Necessary.	
<b>Project Schedule</b>	
<b>FOR OIL SANDS MONITORING PROJECTS ONLY:</b> A coordinated field monitoring schedule for the OSM Program is required. Please complete the attached document named "OSM Program Field Monitoring Schedule" in addition to this work plan. Fill as much as you can recognizing that scheduling changes will occur and the scheduling document will be updated regularly. Please note the scheduling document will be shared with stakeholders.	See attached schedule.
<b>FOR OIL SANDS MONITORING PROJECTS ONLY:</b> Have You Coordinated With Other Project Leads On Field Logistics? If So, Please Specify.*	Yes, field logistics are being coordinated within AEP EMOB staff. Additionally, AEP-EMSD and ECCC monitoring staff are coordinating sampling of the Athabasca River.
<b>Other</b>	

Additional Details.	None.	
Will Capacity Building and Training be a Component of the Project and If So, Explain How. If Not, State N/A.*	N/A	
Environmental Impact and Considerations.	N/A	
<b>Data Management and Digital Assets</b>		
Will Data be Produced as a Result Of This Project? *	Type of Quantitative Data Variables	Frequency Of Collection
Yes	Continuous	Monthly
Data Collection Period: Start Date - End Date	Timeline For Upload Period: Start Date - End Date	
Is There a Data Sharing Agreement? (Yes or No).	No	
Will the Data Include Traditional Knowledge as Defined by and Provided by an Indigenous Representative, Community or Organization (Yes / No).	No	
Platform/Location of Data Storage.	TBD	
<b>Project Deliverables</b>		
<b>Proposed 2018-19 Deliverable Type (for each deliverable outline document, presentation, meeting, etc.)</b>		
<input type="checkbox"/> Peer-reviewed Journal Publication	<input checked="" type="checkbox"/> Peer-reviewed Conference Proceeding	<input type="checkbox"/> Non-peer reviewed Conference Proceeding
Q1 - Deliverable, Comments	Q1 - Deliverable, Comments	Q1 - Deliverable, Comments
Q2 - Deliverable, Comments	Q2 - Deliverable, Comments	Q2 - Deliverable, Comments
Q3 - Deliverable, Comments	Q3 - Deliverable, Comments	Q3 - Deliverable, Comments
Q4 - Deliverable, Comments	Q4 - Deliverable, Comments	Q4 - Deliverable, Comments
<input type="checkbox"/> Technical Report	<input type="checkbox"/> Book Chapter	<input type="checkbox"/> Public Dissemination Document
Q1 - Deliverable, Comments	Q1 - Deliverable, Comments	Q1 - Deliverable, Comments

Q2 - Deliverable, Comments	Q2 - Deliverable, Comments	Q2 - Deliverable, Comments
Q3 - Deliverable, Comments	Q3 - Deliverable, Comments	Q3 - Deliverable, Comments
Q4 - Deliverable, Comments	Q4 - Deliverable, Comments	Q4 - Deliverable, Comments
<input type="checkbox"/> Conference Presentation(s)	<input type="checkbox"/> Stakeholder Presentation	<input type="checkbox"/> Key Engagement/Participation Meeting *
Q1 - Deliverable, Comments	Q1 - Deliverable, Comments	Q1 - Deliverable, Comments
Choose one	Choose one	Name of Meeting, Year, Location, Dates, Participant Groups and Number of Participants.
Q2 - Deliverable, Comments	Q2 - Deliverable, Comments	Q2 - Deliverable, Comments
Choose one	Choose one	Name of Meeting, Year, Location, Dates, Participant Groups and Number of Participants.
Q3 - Deliverable, Comments	Q3 - Deliverable, Comments	Q3 - Deliverable, Comments
Choose one	Choose one	Name of Meeting, Year, Location, Dates, Participant Groups and Number of Participants.
Q4 - Deliverable, Comments	Q4 - Deliverable, Comments	Q4 - Deliverable, Comments
Choose one	Choose one	Name of Meeting, Year, Location, Dates, Participant Groups and Number of Participants.
<input type="checkbox"/> EMSD Strategic & Operational Publication	<input type="checkbox"/> Other Documents	
Q1 - Deliverable, Comments	Q1 - Deliverable, Comments	
Q2 - Deliverable, Comments	Q2 - Deliverable, Comments	
Q3 - Deliverable, Comments	Q3 - Deliverable, Comments	
Q4 - Deliverable, Comments	Q4 - Deliverable, Comments	

<input type="checkbox"/> Peer-reviewed Journal Publication	<input type="checkbox"/> Peer-reviewed Conference Proceeding	<input type="checkbox"/> Non-peer reviewed Conference Proceeding
Q1 - Deliverable, Comments	Q1 - Deliverable, Comments	Q1 - Deliverable, Comments
Q2 - Deliverable, Comments	Q2 - Deliverable, Comments	Q2 - Deliverable, Comments
Q3 - Deliverable, Comments	Q3 - Deliverable, Comments	Q3 - Deliverable, Comments
Q4 - Deliverable, Comments	Q4 - Deliverable, Comments	Q4 - Deliverable, Comments
<input type="checkbox"/> Technical Report	<input type="checkbox"/> Book Chapter	<input type="checkbox"/> Public Dissemination Document
Q1 - Deliverable, Comments	Q1 - Deliverable, Comments	Q1 - Deliverable, Comments
Q2 - Deliverable, Comments	Q2 - Deliverable, Comments	Q2 - Deliverable, Comments
Q3 - Deliverable, Comments	Q3 - Deliverable, Comments	Q3 - Deliverable, Comments
Q4 - Deliverable, Comments	Q4 - Deliverable, Comments	Q4 - Deliverable, Comments
<input type="checkbox"/> Conference Presentation(s)	<input type="checkbox"/> Stakeholder Presentation	<input type="checkbox"/> Key Engagement/Participation Meeting *
Q1 - Deliverable, Comments	Q1 - Deliverable, Comments	Q1 - Deliverable, Comments
Choose one	Choose one	Name of Meeting, Year, Location, Dates, Participant Groups and Number of Participants.
Q2 - Deliverable, Comments	Q2 - Deliverable, Comments	Q2 - Deliverable, Comments
Choose one	Choose one	Name of Meeting, Year, Location, Dates, Participant Groups and Number of Participants.

<b>Q3 - Deliverable, Comments</b>	<b>Q3 - Deliverable, Comments</b>	<b>Q3 - Deliverable, Comments</b>
Choose one	Choose one	Name of Meeting, Year, Location, Dates, Participant Groups and Number of Participants.
<b>Q4 - Deliverable, Comments</b>	<b>Q4 - Deliverable, Comments</b>	<b>Q4 - Deliverable, Comments</b>
Choose one	Choose one	Name of Meeting, Year, Location, Dates, Participant Groups and Number of Participants.
<input type="checkbox"/> <b>EMSD Strategic &amp; Operational Publication</b>	<input checked="" type="checkbox"/> <b>Other Documents</b>	
<b>Q1 - Deliverable, Comments</b>	<b>Q1 - Deliverable, Comments</b>	
<b>Q2 - Deliverable, Comments</b>	<b>Q2 - Deliverable, Comments</b>	
<b>Q3 - Deliverable, Comments</b>	<b>Q3 - Deliverable, Comments</b>	
<b>Q4 - Deliverable, Comments</b>	<b>Q4 - Deliverable, Comments</b>	
	Annual progress report.	
<b>Journal Paper</b>		
<b>Required Format: Author (follow APA citation format), Year, Title, Journal, Volume, Page Numbers, Open or Closed and Document Location</b>		
Example: Jacoby, W. G. (1994). Public Attitudes Toward Government Spending. American Journal of Political Science, 38(2), 336-361.		
Fearon, J. D., & Laitin, D. D. (2003). Ethnicity, Insurgency, and Civil War. American Political Science Review, 97(01), 75. doi: 10.1017/S0003055403000534		
1)		
2)		
3)		
4)		
5)		
<b>Technical Report</b>		
<b>Required Format: Author, Year, Title, Publisher Location, Name of Publisher, Publisher, Document Location</b>		
Example: Author, F.M. (Publication Year). Title of Report (Report No. XXX). Publisher City, State: Publisher		
1) Cooke, C. A., Droppo, I. G., di Cenzo, P., Glozier, N.E., Chambers, P. A., Conly, M., and Gupta, A. DRAFT. Rationalizing and optimizing the water quality monitoring network in the oil sands. Alberta Environment and Parks.		
2)		
3)		
4)		
5)		
<b>Book Chapter</b>		
<b>Required Format: Author, Year, Title of Paper, Editors, Title of Book, Page Numbers, Location of Publisher, Name of Publisher, Document Location</b>		
Example: Hemingway, E. (1999). The Killers. In J. Updike & K. Kenison (Eds.), The Best American Short Stories of the Century (pp.78-80). Boston, MA: Houghton Mifflin)		
1)		
2)		
3)		

4)
5)
<b>Conference Proceeding</b>
<small>Required Format: Author, Year, Title of Paper, Editors, Title of Proceedings, Name of Conference Location of Conference, Publisher Location, Name of Paper Presented at Title of Conference: Subtitle of Conference, Location (inclusive page numbers). Place of Publication: Publisher.)</small>
1)
2)
3)
4)
5)
<b>Public Dissemination Document</b>
<small>Required Format: Author, Year, Title, Journal / Report, Volume, Publisher, Page Number, Number of Pages, Document Location</small>
1)
2)
3)
4)
5)
<b>AEP ONLY: EMSD Strategic and Operational Publication</b>
<small>Required Format: Author, Year, Title, Publisher Location, Name of Publisher, Publisher, Document Location</small>
1)
2)
3)
4)
5)
<b>Other Documents</b>
<small>Detailed information of Other Documents</small>
1)
2)
3)
4)
5)
<b>Conference Presentation</b>
<small>Required Format: Presenter, Date, Location, Title, Platform or Poster, Conference Name</small>
1)
2)
3)
4)
5)
<b>Stakeholder Presentation</b>
<small>Required Format: Presenter, Date, Location, Title, Platform or Poster, Name of Meeting</small>
1)
2)
3)
4)
5)
<b>Key Engagement/Participation Meeting</b>
<small>Required Format: Meeting Host, Date, Location</small>
1)
2)
3)
4)
5)
<b>Human Resources / Staffing Plan (roles and responsibilities)</b>



Name & Role	Organization	Responsibilities
Dr Colin Cooke	AEP	PI Water Quality
Dr Yi Yi (wage, conver to temp sal)	AEP	Scientist (Nutrients, Ions, isotopes)
Temp Sal	AEP	Scientist (Inorg. contam.)
Temp Sal	AEP	Scientist (Org. contam.)
Temp Sal	AEP	Water Quality Technician
Temp Sal	AEP	Water Quality Technician
Temp Sal	AEP	Water Quality Technician
Temp Sal	AEP	Water Quality Technician
Temp Sal	AEP	Water Quality Technician
Temp Sal	AEP	Water Quality Technician

AEP ONLY: Additional Human Resources		
Name & Role	Branch - Section	Estimated time (% of annual FTE)
Dr Colin Cooke	Science - Watershed Science	50
Dr Yi Yi	Science - Watershed Science	100
Temp Sal	Science - Watershed Science	100
Temp Sal	Science - Watershed Science	100
Jessica Pope	EMOB	50
Abigail Grieve	EMOB	50
Elynn Murray	EMOB	100
Monica Polutranko	EMOB	50
Christopher Ware	EMOB	50
Meghan House	EMOB	100
Tye Dubrule	EMOB	100
Meghan Anderson	EMOB	100

Financial Details and Budget Request		
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Source of Funding Requested Year 1 - 2018/19			
	AEP ONLY: EMSD	OSM	ECCC (Openwater + Winter)
Salaries and Benefits		420000	575500
Salaries and Benefits - New OSM		720000	0
Operations and Maintenance		120000	820000
Consumable materials and supplies		56000	52000
Conferences and meetings travel		20000	4000
Field work travel		35000	230680
Project-related travel		15000	14840
Engagement		0	0
Reporting		0	8220
External Contracts - Organization/Vendor/Suppliers		2107796	99960
Overhead			351571
U of A Grants		125000	0
Capital		110000	0
<b>Total budget request for the year</b>	<b>0</b>	<b>3728796</b>	<b>2156771</b>
Total budget approved			

Source of Funding Requested Year 2 - 2019/20		
	AEP ONLY: EMSD	OSM
Salaries and Benefits		
Operations and Maintenance		
Consumable materials and supplies		
Conferences and meetings travel		
Field work travel		
Project-related travel		
Engagement		
Reporting		
External Contracts - Organization/Vendor/Suppliers		
Overhead		
Grants		
Capital		
<b>Total budget request for the year</b>	<b>0</b>	<b>0</b>
Total budget approved		


Source of Funding Requested Year 3 - 2020/21		
	AEP ONLY: EMSD	OSM
Salaries and Benefits		
Operations and Maintenance		
Consumable materials and supplies		
Conferences and meetings travel		
Field work travel		
Project-related travel		
Engagement		
Reporting		
External Contracts - Organization/Vendor/Suppliers		
Overhead		
Grants		
Capital		
<b>Total budget request for the year</b>	<b>0</b>	<b>0</b>
Total budget approved		

Source of Funding Requested Year 4 - 2021/22		
	AEP ONLY: EMSD	OSM
Salaries and Benefits		
Operations and Maintenance		
Consumable materials and supplies		

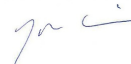
Conferences and meetings travel		
Field work travel		
Project-related travel		
Engagement		
Reporting		
External Contracts - Organization/Vendor/Suppliers		
Overhead		
Grants		
Capital		
Total budget request for the year	0	0
Total budget approved		
<b>Budget Request for the Entire Project</b>	0	5,885,567

**Project Approval(s)**

Proposal Submitted by		
Surname	Given Name	Organization
Cooke	Colin	EMSD

Signature	Date
	12/2/2018

**Proposal for OSM Reviewed by**

EMSD Executive Director	Signature	Date
John Orwin per Bill Donahue		12/2/2018

AEP Administrator/Coordinator - Review	Signature	Date

ECCC Administrator/Coordinator - Review	Signature	Date

**OSM Project Approved by**

AEP Co-Lead for OSM	Signature	Date

ECCC Co-Lead for OSM	Signature	Date

**AEP ONLY: Proposal for EMSD Reviewed by**

EMSD Director	Signature	Date

**AEP ONLY: EMSD Project Approved by**

EMSD Executive Director	Signature	Date

EMSD Chief Scientist	Signature	Date

**OSM / EMSD Project Has Not Been Approved**

Project Status	Date Notified	Date Required
The project is conditionally approved. The following conditions are required before approval is granted.		

List the Condition(s)

Condition(s) Addressed / Approval Granted  
Choose one

**OSM / EMSD Approval Post Removal of Condition(s)**

Name & Title	Signature	Date

**Add All Monitoring Site Locations and Coordinates (insert more rows if required)**

Site Identifier *	Location Name *	Long/Lat *
<b>Site 1</b>		
AB07DA1360	Calumet River Near Mouth	57.4098327522 / -111.652218893
AB07CD0050	Clearwater u/s of Christina at WSC gauge	56.6633 / -110.9286
AB07CD0200	Clearwater River At WSC Gauge Near Draper	56.684852 / -111.255546
AB07DA2999	Ells River 35km u/s Town Of Fort Mackay Water Pump House	57.222961 / -111.973451
AB07DA3007	Ells River 5km d/s Town Of Fort Mackay Water Pump House	57.2446 / -111.7366
AB07DA0700	Ells River at WSC Gauge	57.2678 / -111.7142
AB07DC0010	Firebag River approx. 120km u/s WSC Gauge	57.334848536322 / -110.476303360202
AB07DC0060	Firebag River 20km u/s of Mouth at Winter Road Crossing	57.65075 / -111.201916666667
AB07CD0040	Hangingsstone River at Fort McMurray	56.7088 / -111.3561
AB07CD0010	Hangingsstone River 5km u/s Prairie Creek	56.6321 / -111.349835905376
AB07CD0300	High Hills River u/s Confluence With Clearwater River	56.7618020066 / -110.467229216
AB07CC0050	Horse River near Mouth	56.7097 / -111.3994
AB07DB0005	Dover River Approx 40km u/s Confluence With Mackay River	57.12142 / -112.013283888889
<b>Site 14</b>		
AB07DB0350	Mackay River approx 35km d/s Birchwood Creek	56.9666083333333 / -111.56998
<b>Site 15</b>		
AB07DB0060	Mackay River At Hwy 63	57.1758833333333 / -111.1434
AB07DA0600	Jackpine Creek u/s Muskeg River	57.2597 / -111.4522
AB07DA0430	Muskeg River 27.5km u/s Stanley Creek	57.3316 / -111.1204
AB07DA0475	Muskeg River u/s Stanley	57.3531 / -111.3358
AB07DA0595	Muskeg River u/s Jackpine Creek	57.2639 / -111.4725
AB07DA0610	Muskeg River at WSC Gauge	57.1918 / -111.5700
AB07DA0110	Poplar Creek 21.6km North Of Fort McMurray Via Hwy #63	56.9133 / -111.4603

AB07DA2720	Steepbank River 6km d/s North Steepbank River	56.8691 / -111.1434
AB07DA1010	Steepbank River approx. 10km u/s WSC Gauge	56.9795 / -111.2987
AB07DA1000	Steepbank River 4.5 miles u/s Mouth at WSC Gauge	56.9995 / -111.4066
AB07DA0260	Steepbank River at Mouth	57.0232 / -111.4757
AB07DA1350	Tar River Near Mouth	57.3216 / -111.6907
AB07DA1350	Tar River Approx 32km u/s Confluence with Athabasca River	57.3216 / 111.6907
AB07CE0001	Christina River 70km u/s May River	55.8884 / -111.5430
AB07CE0030	Christina River 11.5km d/s Pony Creek	55.8767 / -110.8130
AB07CE0050	Christina River Above Confluence With Clearwater River	56.6644 / -111.0547
Birch River	Birch River	58.3250 / -113.0647
Upper Buckton	Upper Buckton	57.9792 / -111.7720
Lower Buckton	Lower Buckton	58.1278 / -111.8890
Mcivor River	Mcivor River	58.0593 / -111.9048
Quatre Fouches	Quatre Fouches	58.6318 / -111.3350
Richardson River	Richardson River	58.3602 / -111.2410
AB07BE0010	Athabasca River At Town Of Athabasca	54.7222 / -113.2861
AB07CC0130	Athabasca River above Grande Rapids Arc km 438.5	56.3102 / -112.5907
AB07CC0030	Athabasca River u/s Fort McMurray	56.7203 / -111.4056
NEW	Lake Athabasca near Fort Chipewyan Drinking Water Intake	
AB07CE0250	Christina Lake	55.6325 / -111.0441
AB07DA2210	Kearl Lake	57.2979 / -111.2514
AB07DA2290	McClelland Lake	57.4913 / -111.2784

**Table of analytical costs by laboratory and by month for 2018/19 fiscal year. The total cost is included**

<b>Analytical Laboratory</b>	<b>Total Cost</b>	<b>Apr-18</b>	<b>May-18</b>	<b>Jun-18</b>	<b>Jul-18</b>
Maxxam	\$ 161,394	\$ 20,868	\$ 29,748	\$ 20,868	\$ 16,650
AITF	\$ 155,869	\$ 20,154	\$ 28,730	\$ 20,154	\$ 16,080
AITF UVic	\$ 21,810	\$ 2,820	\$ 4,020	\$ 2,820	\$ 2,250
AXYS	\$ 379,665	\$ 46,530	\$ 66,330	\$ 46,530	\$ 37,125
BASL	\$ 362,046	\$ 46,812	\$ 66,732	\$ 46,812	\$ 37,350
ALS	\$ 34,055	\$ 4,174	\$ 5,950	\$ 4,174	\$ 3,330
<b>Total cost</b>	<b>\$ 1,114,839</b>	<b>\$ 141,357</b>	<b>\$ 201,509</b>	<b>\$ 141,357</b>	<b>\$ 112,785</b>

**Table of estimated helicopter rental costs by month. Actual cost may vary depending on the vendor ar**

<b>Service</b>	<b>Total Cost</b>	<b>Apr-18</b>	<b>May-18</b>	<b>Jun-18</b>	<b>Jul-18</b>
Helicopter rental	\$ 1,396,500	\$ 126,000	\$ 168,000	\$ 126,000	\$ 105,000

in

<b>Aug-18</b>	<b>Sep-18</b>	<b>Oct-18</b>	<b>Nov-18</b>	<b>Dec-18</b>	<b>Jan-19</b>	<b>Feb-19</b>	<b>Mar-19</b>
\$ 14,430	\$ 12,210	\$ 7,770	\$ 7,770	\$ 7,770	\$ 7,770	\$ 7,770	\$ 7,770
\$ 13,936	\$ 11,792	\$ 7,504	\$ 7,504	\$ 7,504	\$ 7,504	\$ 7,504	\$ 7,504
\$ 1,950	\$ 1,650	\$ 1,050	\$ 1,050	\$ 1,050	\$ 1,050	\$ 1,050	\$ 1,050
\$ 32,175	\$ 27,225	\$ 17,325	\$ 17,325	\$ 22,275	\$ 22,275	\$ 22,275	\$ 22,275
\$ 32,370	\$ 27,390	\$ 17,430	\$ 17,430	\$ 17,430	\$ 17,430	\$ 17,430	\$ 17,430
\$ 2,886	\$ 2,442	\$ 1,554	\$ 1,554	\$ 1,998	\$ 1,998	\$ 1,998	\$ 1,998
<b>\$ 97,747</b>	<b>\$ 82,709</b>	<b>\$ 52,633</b>	<b>\$ 52,633</b>	<b>\$ 58,027</b>	<b>\$ 58,027</b>	<b>\$ 58,027</b>	<b>\$ 58,027</b>

1d monthly rate.

<b>Aug-18</b>	<b>Sep-18</b>	<b>Oct-18</b>	<b>Nov-18</b>	<b>Dec-18</b>	<b>Jan-19</b>	<b>Feb-19</b>	<b>Mar-19</b>
\$ 94,500	\$ 84,000	\$ 63,000	\$ 126,000	\$ 126,000	\$ 126,000	\$ 126,000	\$ 126,000