

# ENERGY & WATER TEACHER SUMMER INSTITUTE

The first week of July is usually a time when most teachers put up their feet and unwind from a long school year. For 21 teachers from across Alberta, the first week of July was one more bonus week focused on their students and professional development. Joining Inside Education for the Energy & Water Summer Institute, these teachers were looking to learn how the energy industry, specifically natural gas and oilsands, intersect with water resources in Alberta. Our program ran over 5 days, taking our participants through two Treaty Territories, three watersheds, and over 1000 km to get their feet wet and to tap in to energy and water experts. Each day focused on different themes and topics in order to help teachers dive into the complex relationships we have with energy and water.



## Major Program Themes



**PROCESSES AND EXTRACTION**  
HYDRAULIC FRACTURING, STEAM ASSISTED GRAVITY DRAINAGE, & OILSANDS MINING



**INNOVATION & CAREERS**  
PRACTICAL RESEARCH AND TECHNOLOGY



**WATER MANAGEMENT & MONITORING**  
DATA GATHERING, SCIENCE, AND THE ROLE OF PROTECTED AREAS



**SOCIETY AND CULTURE**  
HISTORICAL CONTEXT & CULTURAL WAYS OF KNOWING

## THE PROGRAM: MIXING SCIENCE WITH SOCIAL

Inside Education's teacher professional development programs strive to bring science to life through tours, hands-on activities, and presentations. Increasingly, natural resource topics beg for interdisciplinary considerations, and the Summer Institute is no exception. Woven throughout our program are the softer considerations of history, culture, policy, management, and personal connections to the resources we use every day. Starting at Leduc #1 Oil Discovery Centre entrenched our participants firmly in the history of oil discovery in Alberta, and we traveled the historical route of oilsand technology from Devon to Anzac to Fort McMurray and back.

### Day 1: Introduction to the Energy Industry & Innovations

Repsol, Alberta Innovates, and a tour of the CanmetENERGY - Devon Research Centre

### Day 2: In-situ Oilsands & Impacts

Tour of one of Cenovus' steam-assisted gravity drainage sites and a reclaimed well pad near Christina Lake; Willow Lake Metis

### Day 3: Oilsands Mining and Cumulative Effects

Tour of Suncor's Millennium Mine and Wapisiw Lookout; a panel of Canada Parks, Fort McKay Sustainability, and Bear Scare representatives

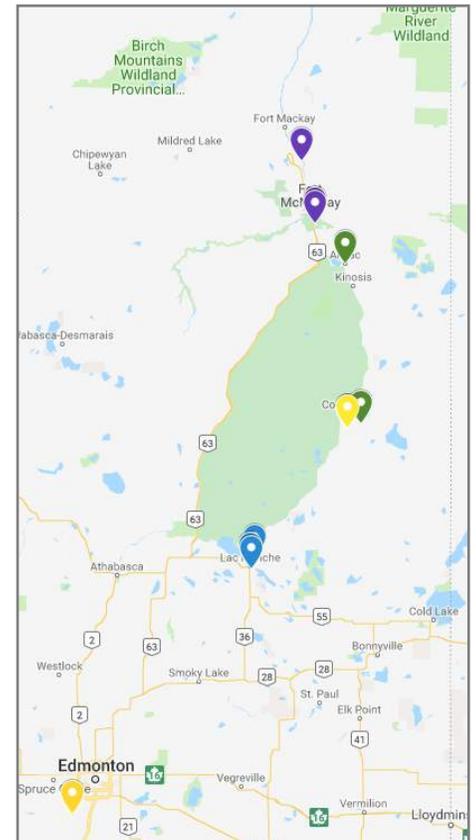
### Day 4: Watershed Health and Stewardship

Portage College groundwater and surface water monitoring showcase, and a local watershed tour co-hosted by the Keepers of the Athabasca, Stewards of the Lac La Biche Watershed, Athabasca Watershed Council and Portage College. We ended with a tour of the Winston Churchill Provincial Park with Alberta Parks staff.

### Day 5: Education Workshop

Inside Education led this final workshop to help teachers make connections back into their classrooms.

One of the highlights for teachers is the networking opportunities that come with spending five days together. There is always lots of laughter and great conversations on the bus, and the decision to have our final dinner together at the Lac La Biche Legion was brilliant! The Legion were excellent hosts, and we had a chance to socialize with locals over their Friday Night Steak Dinner. None of our participants won the 50/50, but we were all on the edge of our seats when the numbers were called! It was the perfect way to end a week together!



# THE PARTICIPANTS

Our twenty enthusiastic participants came from across Alberta, with teaching assignments ranging from Grade 3 to Grade 12 Biology and Physics. Of note this year was a representative from the junior high program at Maria Montessori Education Centre, as well as a support worker at Windsor Park who is also a member of the Home Education community. Half of our participants were new to Inside Education’s professional development programs.

**Paula Campbell** - Athabasca Delta Community School, Fort Chipewyan

**Connie Goudie** - Bassano School, Bassano

**Tanya Faulkner** - Bridlewood School, Calgary

**Susan Giesbrecht** - C.J. Schurter School, Slave Lake

**Debbie Deyell** - Centennial School, Edmonton

**Katrina Bruin** - Christ the King School, Leduc

**Melissa McQueen** - Christ the King School, Leduc

**Peggy Townsend** - Crescent Heights High School, Calgary

**Alison Katzko** - Edgemont Elementary, Calgary

**Jamie Burdon** - Florence Hallock, Edmonton

**Lindsay Barrett** - G.H. Dawe School, Red Deer

**Kerrie-Ann Dalstra** - Gateway Christian School, Red Deer

**Ryan Haggarty** - George McDougall High School, Airdrie

**Jaycee Doolittle** - Magrath Elementary School, Magrath

**K.A. Asher** - Maria Montessori Education Centre, Calgary

**Jesica Torres** - Our Lady of Peace School, Calgary

**Jay Doolittle** - St. Mary's School, Taber

**Cailey Meuse** - Westmount Charter School, Calgary

**Christine P. Avey** - Westmount Charter School, Calgary

**Yana Artsimonia** - Windsor Park School, Calgary

## BY THE NUMBERS

# of Participants:

20

# of Participating Schools:

18

# of km Traveled:

1260

# of Speakers:

25

# of Students Who will benefit directly from their teacher’s participation in this PD:

1200+

# of teachers who would absolutely recommend an Inside Education PD program:

100%

Absolutely!



## EXCEPTIONAL EXPERTS

We extend deep thanks to our program partners who helped provide funding for the 2018 Energy & Water Summer Institute. We would not be able to do this without you. Participants traveling long distance voiced their appreciation for covering mileage and accommodations the night before the program, and everyone expressed gratitude at being provided a full scholarship in order to attend the program. We are proud to work with partners committed to excellence in natural resource education.



## ENERGIZING CLIMATE EDUCATION

The Summer Institute is unique from our other professional development programs as the teachers aren't expecting "Monday-morning ready" lesson plans. We have found that teachers are more often considering broader, more systemic changes to their methods of teaching, and are looking to have higher level conversations about teaching philosophies and ways of learning. We collaborated with Ingenium's Let's Talk Energy program to provide educational connections throughout the program. This is a different model than our previous Summer Institutes, and it was very successful. Every second day, Let's Talk Energy's Adam Young took the stage for thirty to forty-five minutes to run through relevant activities that teachers could implement in order to cover the topics of the day. Not only did it help the teachers mull over their own learnings, but it made deeper connections to how the day's information could translate into the classroom for various grade levels. From interpreting graphs and charts, to differentiating mitigation from adaptation, to hosting climate dialogues, the activities catalyzed conversations about climate in the classroom. The teacher participant feedback was very positive, and this model will be replicated on future professional development programs.



**“This has been a game changer. I am infused and bubbling over with excitement!”**  
**Christine P. Avey**

# CATALYZING QUESTIONS

In our final education workshop, participants were tasked with building an inquiry-based project to implement in their classrooms. Inside Education staff had collected inspiring, controversial, and catalytic quotes from our speakers throughout the tour. On the last day, we hung flip-chart paper around the room with these quotes and asked teachers to circulate while considering what questions they might still have around these topics. Then, we asked teachers to create groups around the topic areas they were still uncomfortable with, and has them work in teams to create a list of Big Questions to use in inquiry-based projects for their students. It was inspiring to see teachers band together and discuss their nervousness around certain topics. Each group then presented their Big Questions to the group.

**“The education workshop was the best in 3 years. Keep up the great work.”**

**Jay Doolittle**

Finally, we asked the teachers to move to the topic area they were most comfortable talking about. Participants then went around the room and reintroduced themselves, their teaching assignments and offered ways they could help others.

This was a moving experience. It allowed teachers, in small groups, to discuss their fears and frustrations teaching topics that made them uncomfortable, as well as discover their own gaps in knowledge or experience that made these topics difficult to teach. By then standing next to the topics they did feel comfortable with, we immediately allowed participants to identify allies who could offer lesson plans and ideas for curriculum connections and left the workshop with a sense of hope.

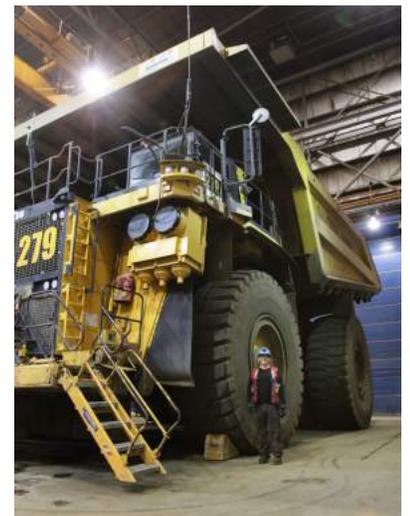
Inside Education created a shared Google Folder for participants to access in in order to build upon ideas, and discussions. All speaker presentations, as well as the classroom activities and resources mentioned through the program, were readily made available to participants. The participants also have access to a Google Doc that serves not only as a list of resources, granting organizations, and websites, but has also become a place for delegates to share ideas or ask questions of each other.



A Cenovus employee shows a sample of newly unearthed oil sand slurry.



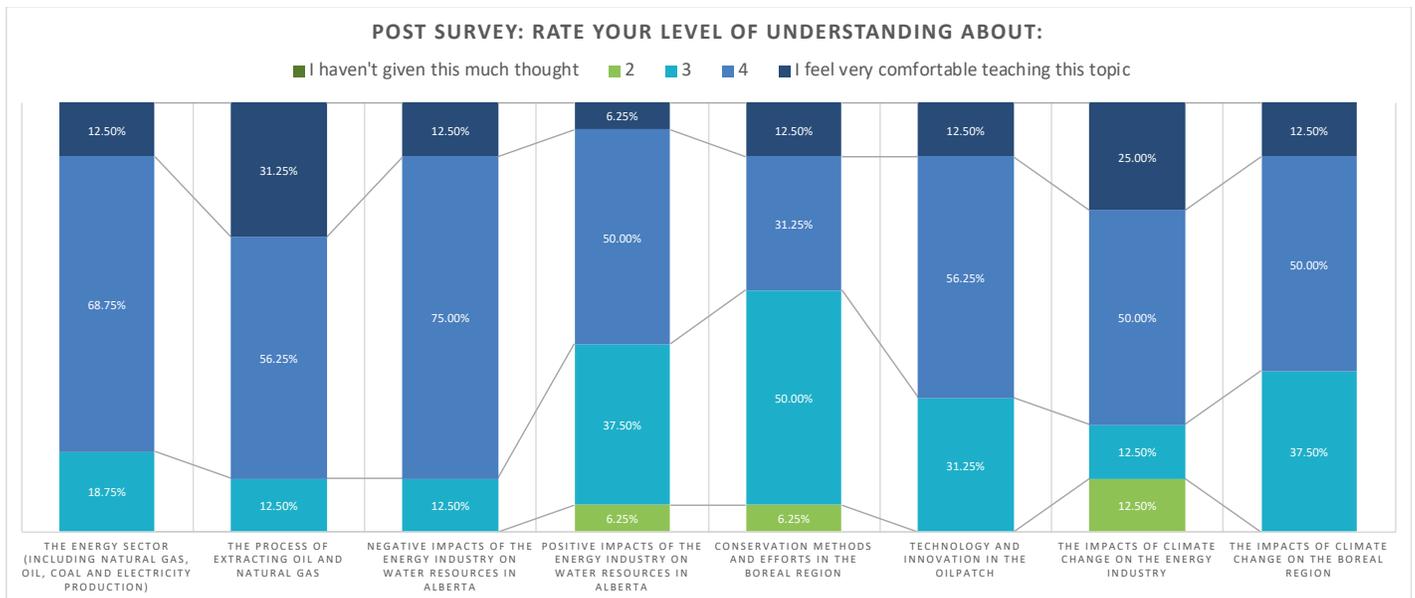
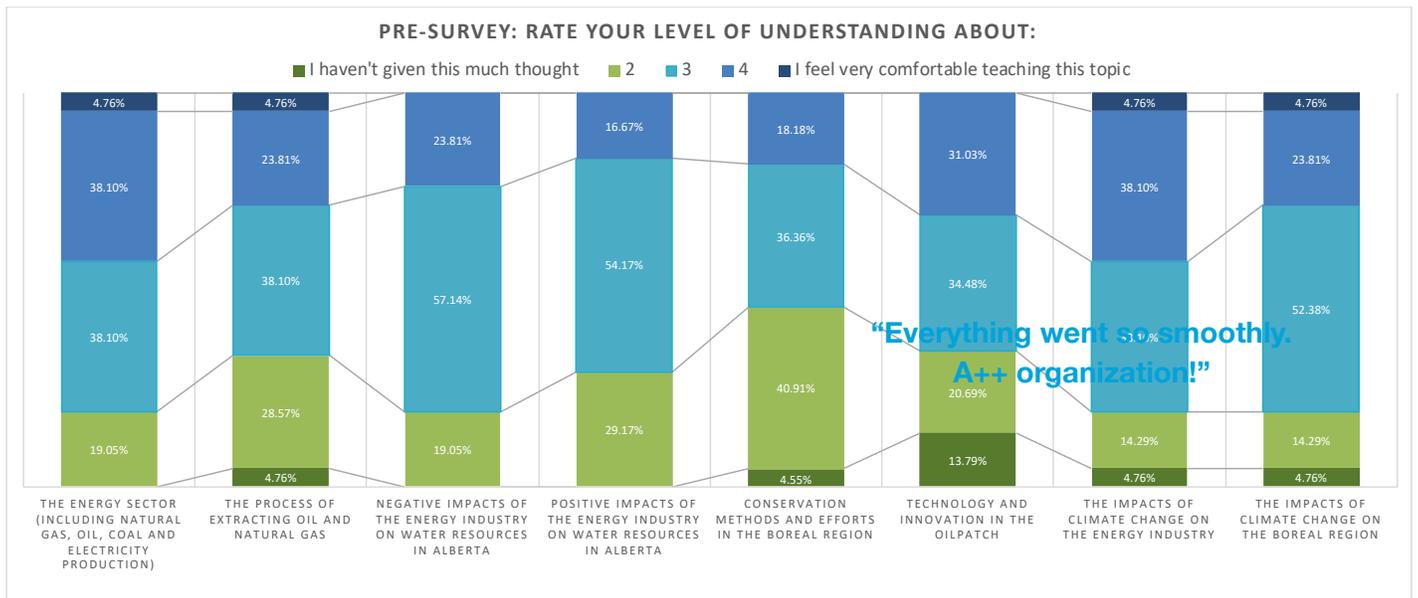
Top: Vicki Lightbown from Alberta Innovates discusses innovation in the industry, Bottom: The coach bus was a major source of conversation and camaraderie.



A Suncor employee stands next to an oil sands truck for scale.

# FEEDBACK & RECOMMENDATIONS

Inside Education is excited to share the outstanding feedback from teachers following the 2018 Energy & Water Summer Institute! Participant evaluations demonstrated that the program objectives were surpassed, and all teachers found the program highly valuable. Of note, our delivery model this year was praised by several participants who cited both indigenous connections models, as well as inquiry-based models. This praise, as well as the results below, reinforces Inside Education’s approach to experiential professional development programs as an effective way to support teachers in their understanding of natural resource development in Alberta.



In the follow-up survey, participants were asked how they would use the information gathered during the PD program. Consistently, participants enthusiastically replied that they would use the information to deepen their lessons by adding ground-truthed content and photos from the trip. Aside from informing their lessons, some of our participants planned to use the information as a catalyst for inquiry-based projects, eco-clubs, or simply to structure their lesson plans with a deeper story.

**“I would like to start an energy club at my school and work with students to see how we are using energy and what we can do to reduce our energy use.”**

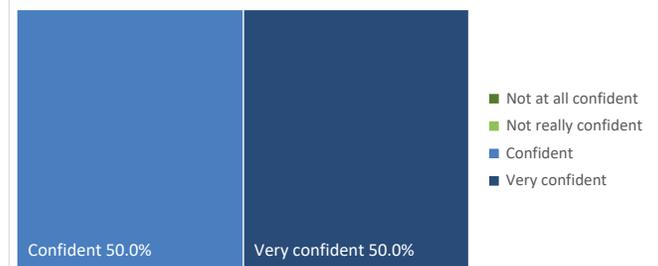
**“I plan on tweaking my program to include much more of the multiple perspective approach.”**

**“This PD has tapped in to my intellect and emotions. I want to replicate this experience with my students. I recognize my biases better and will look for opportunities to incorporate climate change/energy and water.”**

The Summer Institute was a success thanks to the commitment of our partners, the enthusiasm of our speakers and tour hosts, and the highly dedicated teacher participants. It is evident from both survey and vocal feedback that this type of programming is a venerated professional development opportunity for teachers. Serendipitously, a small group of participants pitched a basic schedule for a PD program focused on geology, which almost exactly matched the themes in our upcoming Mining in Alberta PD program set for Fall 2018!

Inside Education recognizes an ongoing need for high quality, accessible teacher professional development programs to advance water and energy education in Alberta. With this, we are committed to continuing to offer energy and water related teacher professional development programs, classroom programs, learning resources, and youth summits. We actively encouraged our junior high and high school teacher-participants to bring students to our upcoming energy-themed youth summits: our Regional Summits (offered in Edmonton, Calgary, Fort McMurray, and Medicine Hat) and Generate 2019 will be an excellent compliment to this PD by connecting students with energy experts from across industries.

After participating in the program, how confident are you in bringing energy and water related topics into your classroom?





### In my opinion, the 2018 Water & Energy PD Education Program was:

