



Scheme No. 11461 Performance Report

2021



OUTLINE



4.1 Introductions

4.1.1 Subsurface Overview Related to Resource Evaluation and Recovery

4.1.2 Surface Operations, Compliance, and Issues Not Related to Resource Evaluation and Recovery



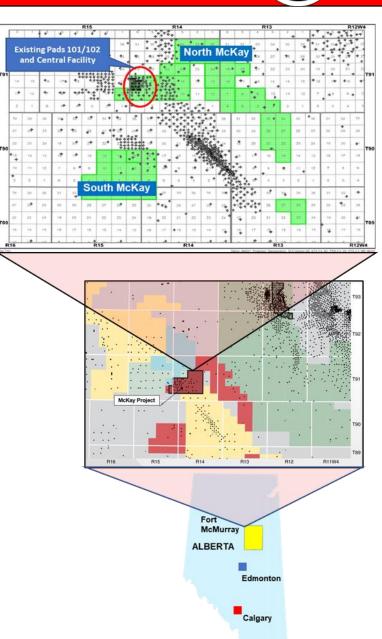




- McKay River Project was previously owned and operated by Southern Pacific Resource Corp.
 - November 2010 Receives project approval:
 - EPEA Approval No. 255245-00-00
 - Oil Sands Conservation Act Approval No. 11461
 - Approved Capacity 12,000 bbl/d oil treating
 - In January 2015, Southern Pacific Resources, previous owner of STP McKay, was granted protection under the CCAA and subsequently entered Receivership in June 2015
 - Due to the depressed commodity price environment and high operating costs at the time, production was shut-in, and the Receiver initiated and completed a warm-hibernation program by August 2015
- Project was officially transferred to Everest Canadian Resources on February 2019

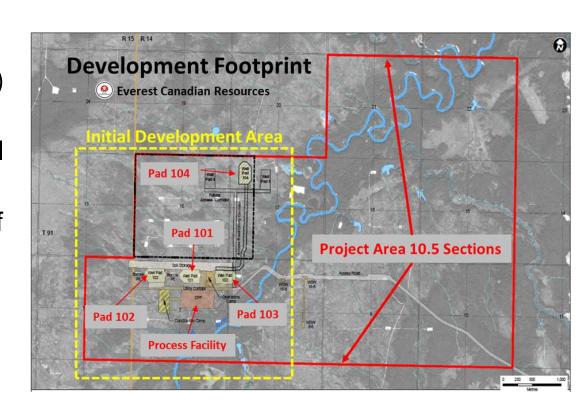


- Everest Canadian Resources (ECR) McKay is a 12,000 bpd Name Plate, Steam-Assisted-Gravity-Drainage ("SAGD") facility.
- Located 45 km northwest of Fort McMurray on an approved 10.5 section development area within a larger acreage block
- Project Area is 10.5 sections in Township 91,
 Range 14, W4M and Township 91, Range 15, W4M
- Development Area is 1.25 Sections in Township 91, Range 14, W4M





- Current approved development includes four well pads (101 to 104)
- The initial development is west of the MacKay River and includes well pads 101 & 102
- Process Facility existing capacity of 12,000 bbld oil and 37,400 bbld steam





SUBSURFACE

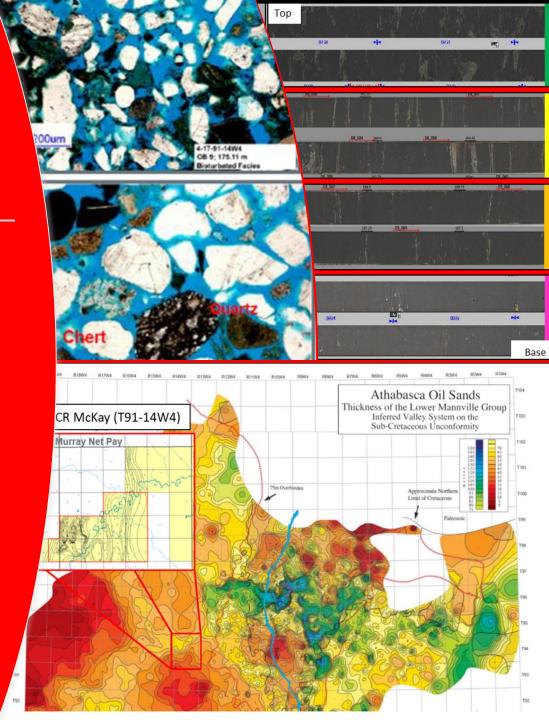


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4.2 SUBSURFACE

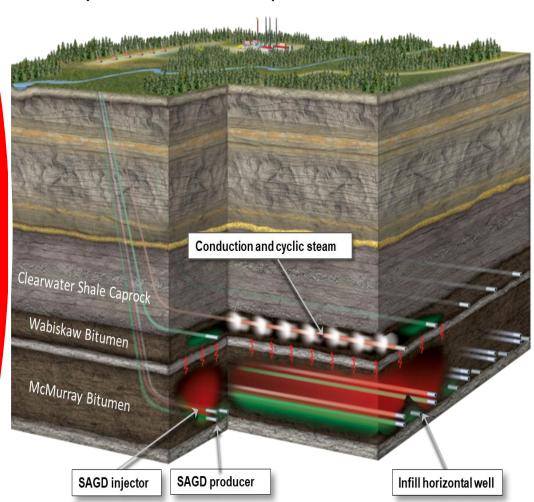
- 1. GEOLOGY & GEOSICENCE
- 2. HEAVE MONITORING & CAPROCK
- 3. DRILLING & COMPLETIONS
- 4. OBSERVATION WELLS
- 5. SCHEME PERFORMANCE
- 6. SUBSURFACE FUTURE PLANS

McKay: Full Bitumen Exploitation Plan



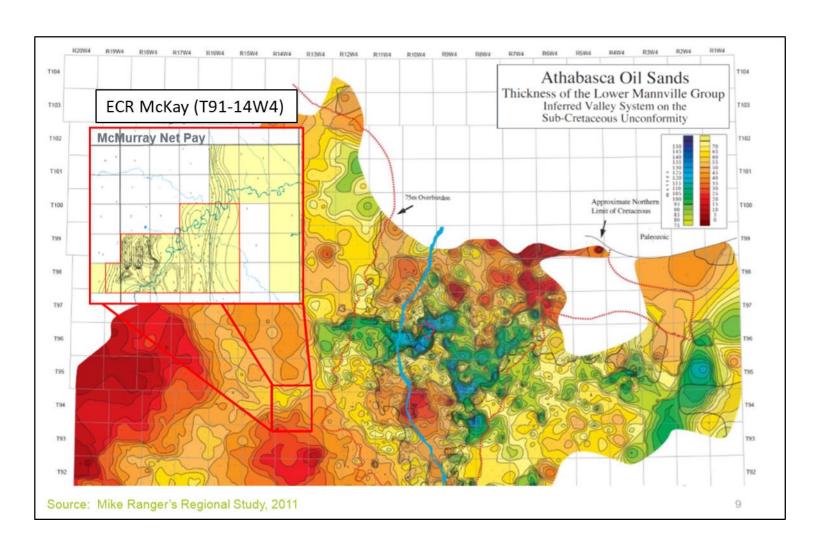
Everest Canadian Resources

GEOLOGY & GEOSICENCE



REGIONAL GEOLOGY - MCMURRAY

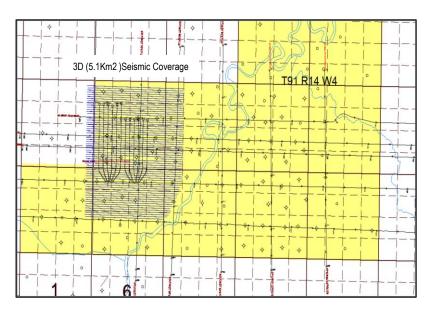


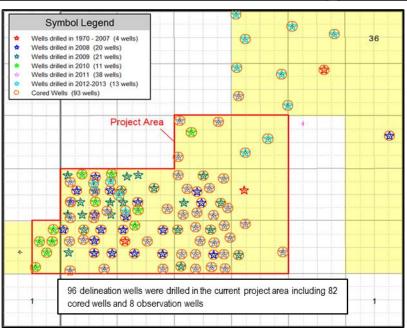


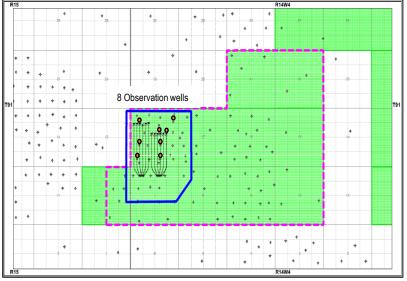
APPROVAL AREA



- Approval Area
 - 10.5 Sections (27 Km²)
- Approval Area OBIP
 - 92.1 x 10⁶ m³ (579 MMbbl)
- Seismic
 - 5.1 m² 3D seismic coverage







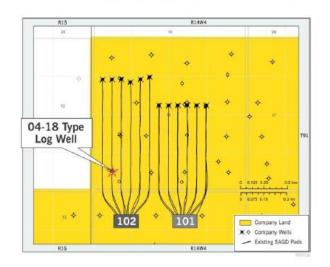
APPROVAL AREA STRATIGRAPHY

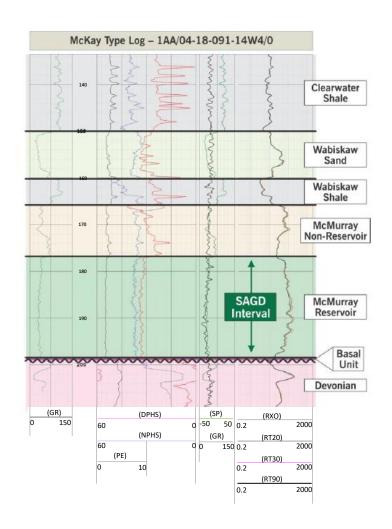


- Upper McMurray in North McKay
 - Estuarine/Deltaic deposits:

The reservoir at STP's North McKay project ranges from a thickly bedded, tidally influenced, sand dominated tidal unit to a slightly brackish-water, sandy embayment.

Large continuous sand deposits:
 Ichnofossils in these sands include:
 Planolites, Thalassinoides, Asterosoma with rare Cylindrichnus, Rhizocorralium



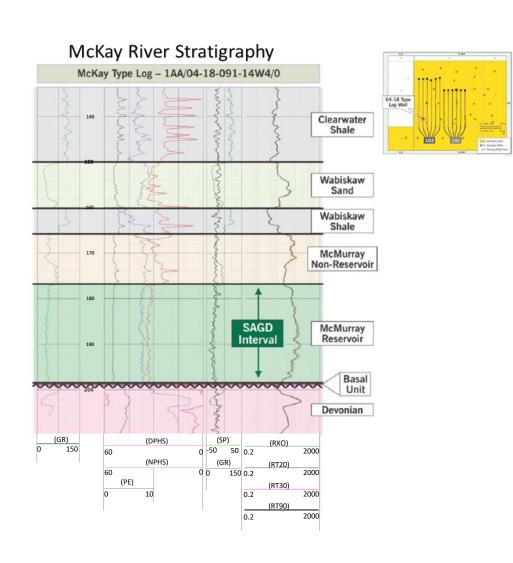


APPROVAL AREA RESERVOIR PROPERTIES



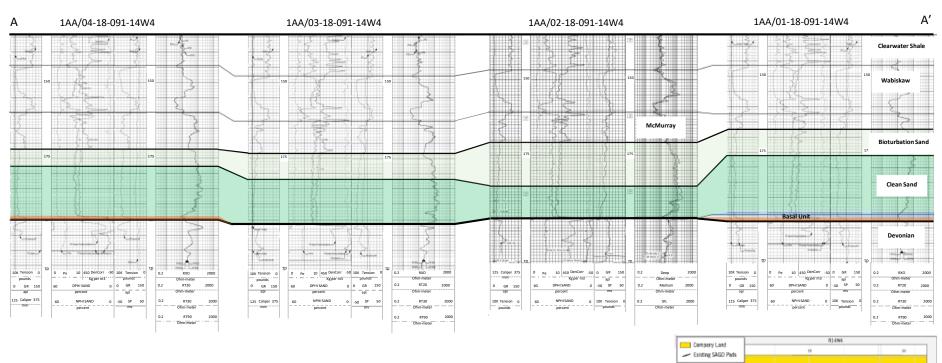
Average Reservoir Properties

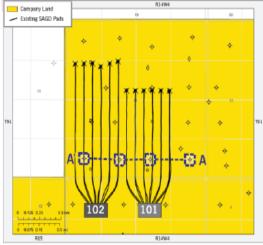
Depth (m TVD)	190
Pay Zone Thickness (m)	17 - 27
Lateral Well Pair Spacing (m)	100
Horizontal Well Length (m)	800 - 1100
Porosity (%)	32
Oil Saturation (%)	74
Original Reservoir Pressure (kPa)	650
Original Reservoir Temperature (°C)	8.5
·	



APPROVAL AREA CROSS SECTION

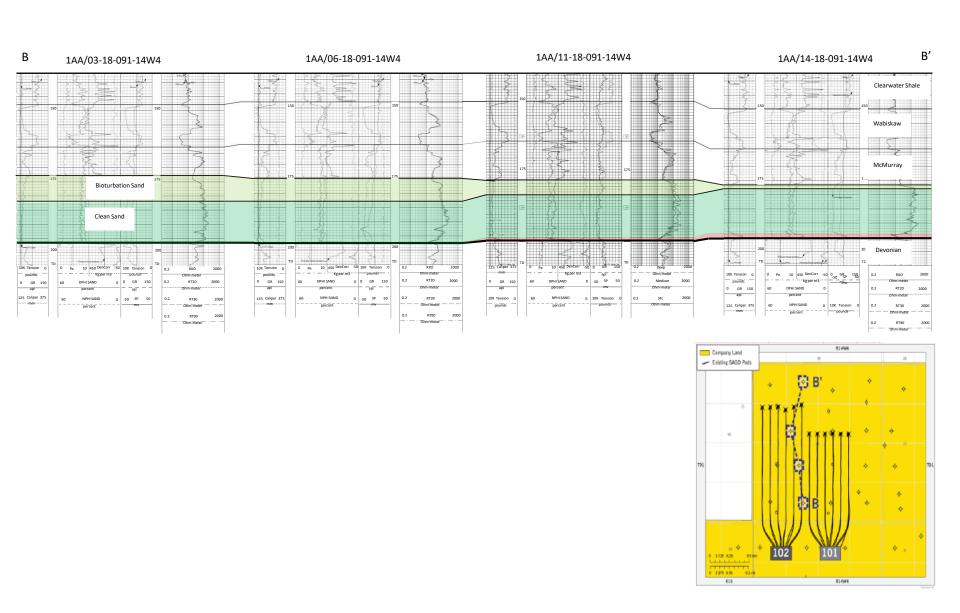






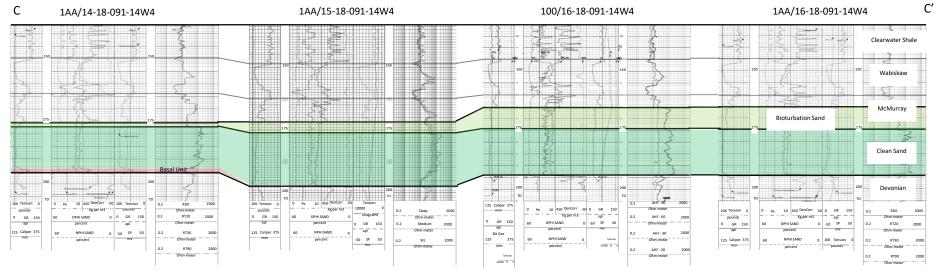
APPROVAL AREA CROSS SECTION

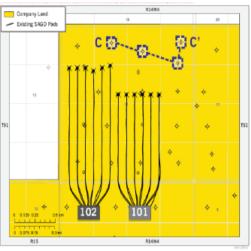




APPROVAL AREA CROSS SECTION

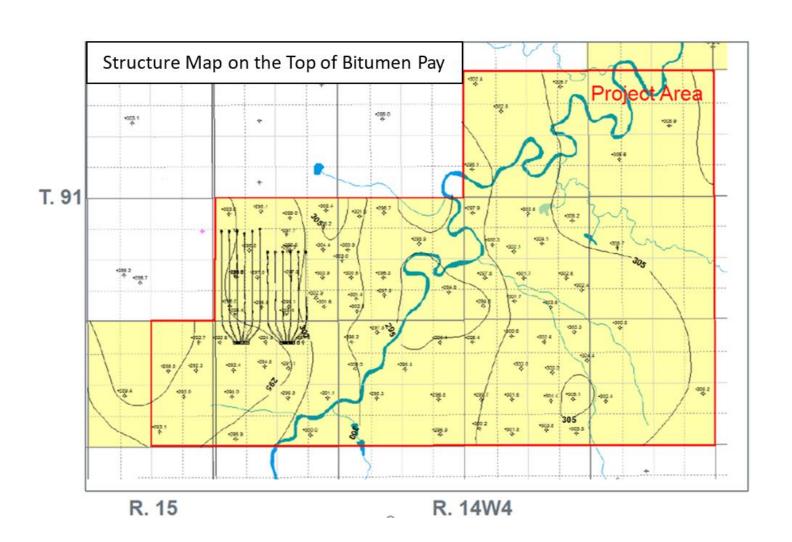






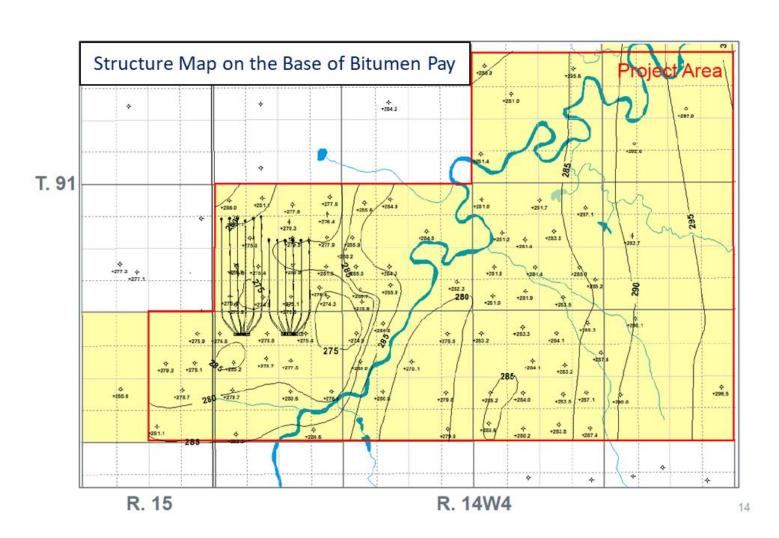
APPROVAL AREA STRUCTURE





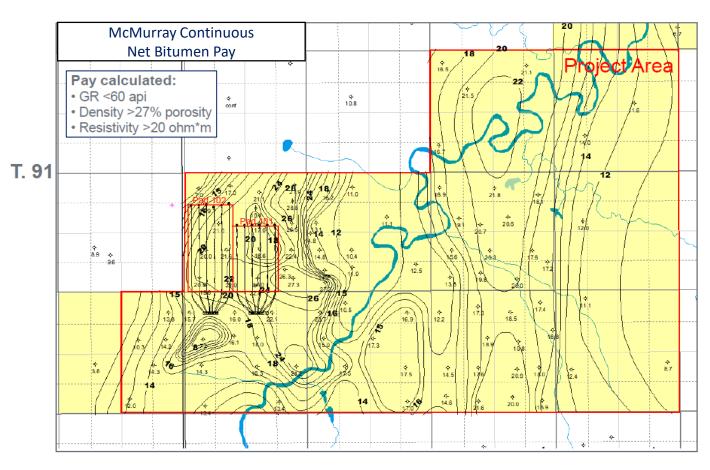
APPROVAL AREA STRUCTURE





APPROVAL AREA CONTINUOUS NET PAY

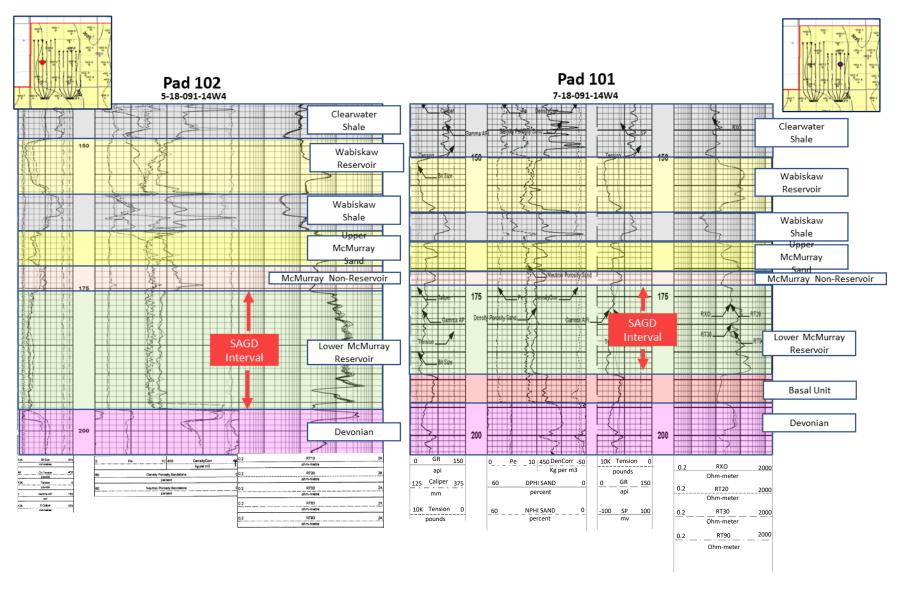




R. 15 R. 14W4

APPROVAL AREA TYPE CURVE





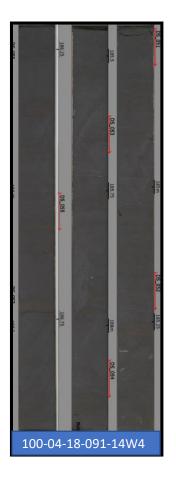
Approval Area Bitumen Pay Facies





Basal Unit (non-Pay)

- Non-Producible Facies Common on Pad 1
- Terrestrial Depositional Environment
- Typically GR>75, Density Porosity < 27%, Resistivity < 20 ohms
- Porosity and Permeability no sample, very low value by visual.
 Saturation - Negligible
- North section of Pad 1 producers encountered this facies.

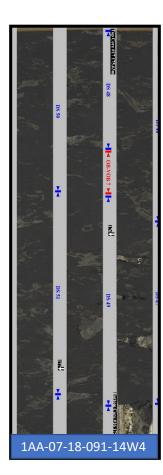


Clean Sand

- Producible Facies Common on Pad 1 and Pad 2
- Estuarial Channelized Depositional Environment
- Rare Bioturbation
- Typically < 5% mud
- Vertical Permeability Range 2000mD to 4000mD
- Fine to Medium grained
- Porosity of 33% or better
- Saturations of 75-90%
- Locally Common Facies on Pad 1 and Pad 2

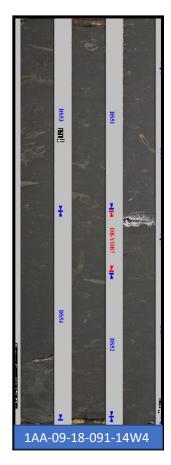
Approval Area Bitumen Pay Facies





Bioturbated Sand

- Producible Facies Found in McKay
- Marginal-Marine Depositional Environment
- Common Bioturbation
- Typically 15 30% fines (mud)
- Vertical Permeability Range 150 mD to 300 mD
- Porosity of 30-34%
- Saturations of 55-70%
- Only encountered on Pad 1 wells

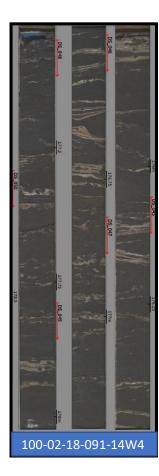


Bioturbated Sand

- Producible Facies Found in McKay
- Marginal-Marine Depositional Environment
- Typically <15% fines (mud)
- Vertical Permeability Range 250mD to 475mD
- Porosity of 32 36%
- Saturations of 50-70%
- Locally Facies within Pad 3

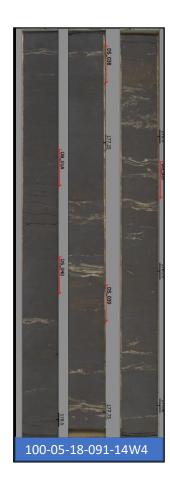
Approval Area Bitumen Pay Facies





Interbedded Sand

- Producible Facies Found in McKay
- Marginal-Marine Depositional Environment
- Common Bioturbation
- Typically 15-30% fines (mud)
- Vertical Permeability Range 400mD to 1500mD
- Porosity of 31-34%
- Saturations of 60-80%
- Interbeds form permeability baffles that decrease oil rates and increase SOR's
- Facies Found on Pad 1

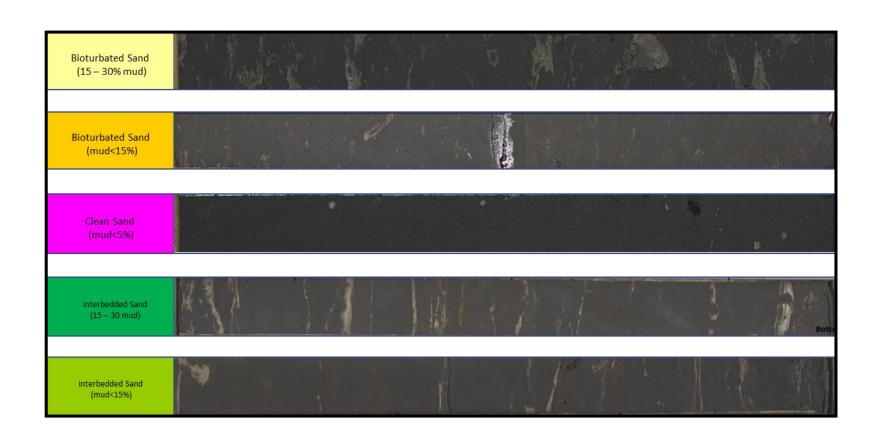


Interbedded Sand

- Producible Facies Common in McKay
- Marginal-Marine Depositional Environment
- Rare common Bioturbation by various trace fossils
- Typically <15% fines (mud)
- Permeability Range 400mD to 2000mD
- Porosity of 32 36%
- Saturations of 65-85%
- Locally Common Facies in McKay

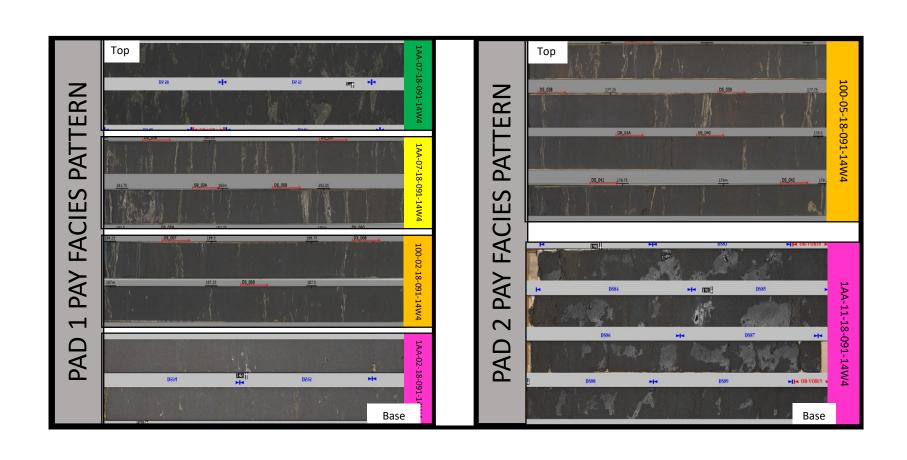
APPROVAL AREA BITUMEN PAY FACIES SUMMARY





BITUMEN PAY FACIES PATTERN ON PAD 1 & 2

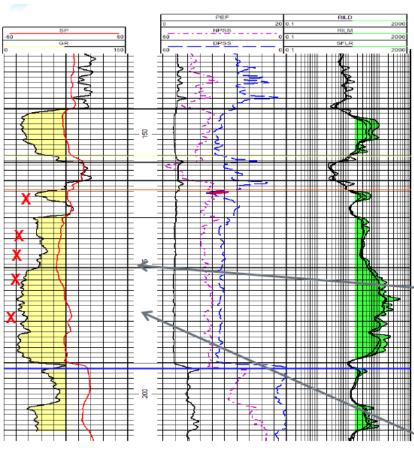




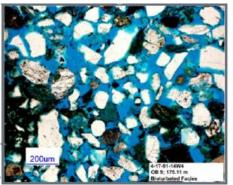
APPROVAL AREA PETROGRAPHICAL ANALYSIS



AA/04-17-91-14w4

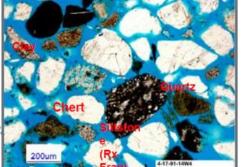


Core Analysis/Thin Section



Upper Reservoir (Bioturbated)

- Very Fine to Fine grained (<180 um)
- · Moderately sorted, Subangular with elongate grains
- Framework consists of quartz, common chert, siltstones with some feldspars
- Clays are within the microporosity of the chert, but also exist within the pore spaces. Pore space has 10% clay in the pore space.
- XRD: Analysis shows 86% qtz, 4% K-feldspar, 2% Plagioclase, 1% dolomite, 1% pyrite and 6% total clay.



Main Reservoir

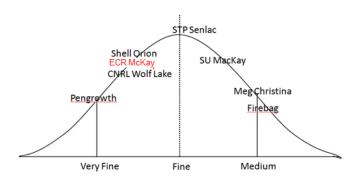
- Fine to Medium grained (180-250 um)
- Moderately sorted, Subrounded with elongate and spherical grains
- Framework consists of quartz, chert, siltstones with some feldsnars
- Similar clays with less interstitial clay found in the rock matrix.
- \bullet XRD: Analysis shows 93% qtz, 2% K-feldspar, 1% pyrite and 4% total clay.

APPROVAL AREA RESERVOIR QUALITY COMPARISON

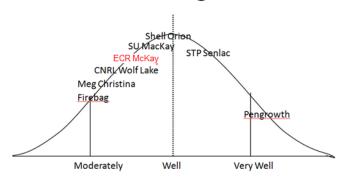


Reservoir Quality Comparison

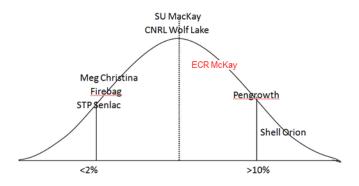
Grain Size



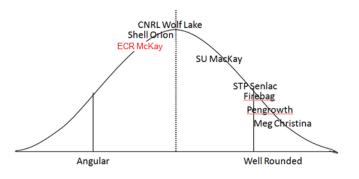
Sorting



Fines Content



Roundness



PAD 1 & PAD 2 RESERVES



PAD	# Well Pairs	Drainage Box Area A(m2)	Average Pay Thickness H(m)	Average Porosity Ø(%)	Average Saturation So (%)		Average Horizontal Permeability (mD)			Estmated Ultimate Recovery (%)
PAD1	5	540,000	19.8	31.1	74	1598	2210	2,422	2.0	59
PAD2	6	720,000	20.1	32.1	78	2323	3137	3,594	5.2	65

 \emptyset = Average porosity from the SAGD reservoir interval

So = Average bitumen saturation from the SAGD reservoir interval

A = Drainage Area

H = Average Pay Thickness

OBIP = Original Bitumen In-Place and measured in 10⁶m³ units

OBIP =
$$A \times H \times \emptyset \times S$$

PAD 1 & PAD 2 RESERVES



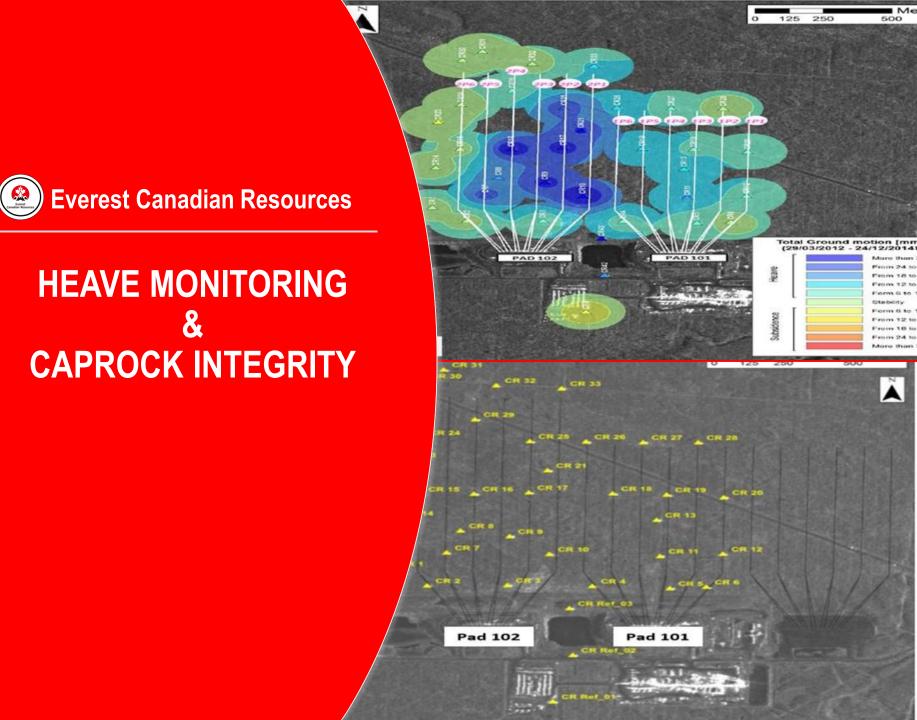
Operating Pads Average Reservoir Properties:

- Porosity: 32%

- Oil Saturation: 74%

- Net Pay: 17 – 27m

PAD	OBIP (10 ³ m ³)	Recoverable Reserves (10 ³ m ³)	Total Produced Bitumen(10 ³ m ³)	Remaining Recoverable Reserves (103m3)
Pad 1 & Pad 2	6,016	2,132	233	1,899



SURFACE MONITORING (HEAVE MONUMENTS)



- 35 Corner reflectors were installed in 2012
- The Surface monitoring started in March 2012
- Based on historical, between 2012 and 2015, cumulative movement of the surface since SAGD operations started was insignificant, ranged between -10 mm (subsidence) and 38 mm (heave).
- Everest did not conduct Heave or other surface monitoring for year 2021.

CAPROCK INTEGRITY



- No change in Caprock integrity
- AER approved Maximum Operating Pressure (MOP) of 2,450 kPa.
- McKay met all AER conditions and information requests and received approval in 2011
- Caprock integrity studies was focused on:
 - Core and geological log evaluations
 - No fault planes observed on logs or in core.
 - No borehole breakouts/drilling induced fractures observed from 17 HMI logs.
 - Laboratory testing (reservoir & geomechanical)
 - Low permeability caprock.
 - · Geomechanical properties derived from lab testing.
 - Mini-frac testing for characterizing in situ stress state
 - Mini-frac tests conducted at 2 wells.
 - Geomechanical simulation (Taurus Reservoir Solutions)
 - 2,450 kPa operating pressure is conservative

MINI-FRAC TESTS AND FRACTURE PRESSURE



- Mini-Frac Tests
 - Mini-frac tests completed at wells 5-16 and 1-18
 - Stress gradient results are consistent and similar to those expected in the Athabasca Oil Sands.
 - Vertical stress gradient is ~21.5 kPa/m.

Well	5-16-91-14W4	Date	March 2009	
Depth (m TVD)	Lithology	Minimum Stress (kPa)	Minimum Stress Gradient (kPa/m)	
126	Clearwater Shale	2520	20.0	
140	Clearwater Shale	2760	19.7	
155	Wabiskaw Shale	2710	17.5	
174	McMurray Sandstone	2900	16.7	

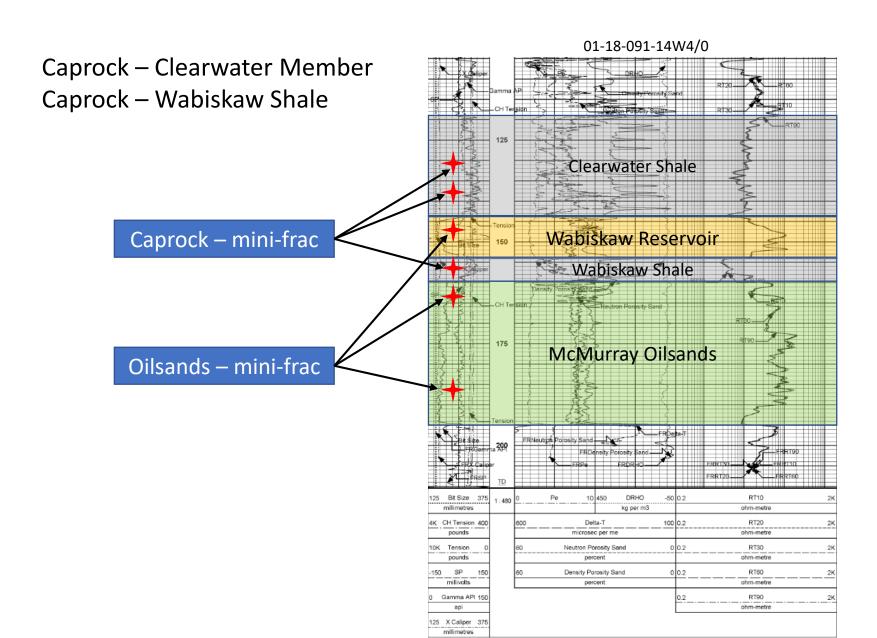
Well	1-18-91-14W4	Date	April 2011	
Depth (m TVD)	Lithology	Minimum Stress (kPa)	Minimum Stress Gradient (kPa/m)	
131	Clearwater Shale	No Breakdown		
138	Clearwater Shale	2900	21.0	
147	Wabiskaw Sandstone	3060	20.8	
156	Wabiskaw Shale	3250	20.8	
164	Upper McMurray Sandstone	3300	20.1	
186	McMurray Sandstone	3060	16.5	

- Fracture Pressure
 - Assessment of minimum fracture pressure (Smin) at the base of the Clearwater Formation using mini-frac test results.
 - Smin from both wells 5-16 and 1-18 were consistent.
 - Smin fracture pressure at the base of the Clearwater Formation caprock was between ~2,860 kPa and ~ 3,020 kPa.

Well	' Fracture Gradient		Pressure
5-16	145	19.7	2857
1-18	144	21.0	3024

MINI-FRAC TESTS AND FRACTURE PRESSURE





CAPROCK INTEGRITY- MONITORING



- Clearwater Formation:
 - 6 vertical, nested observation wells measuring pressure and temperature.
- Wabiskaw Member:
 - 1 horizontal well measuring temperature and pressure
- Surface heave monitoring program
- Blanket Gas system to monitor bottomhole injection pressures.



DRILLING &

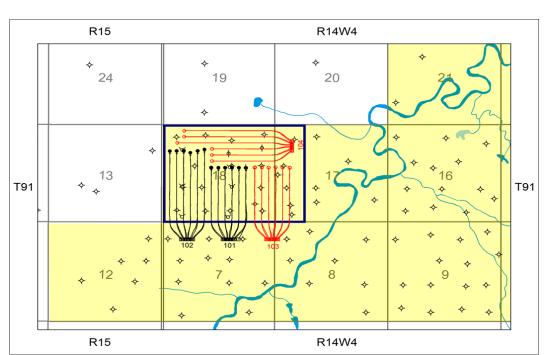
COMPLETIONS



WELL LAYOUT



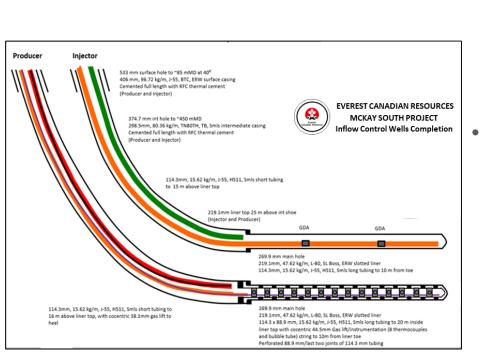
- Approved Development area outlined in blue
- Drilled to date (black):
 - Pad 101 (6 pairs) → 800 m Hz
 - Pad 102 (6 pairs) → ~ 1,000 m Hz
 - Wabiskaw observation well (lies above 1P1)
- Approved Pads (red):
 - Pad 103 (6 pairs)
 - Pad 104 (6 pairs)

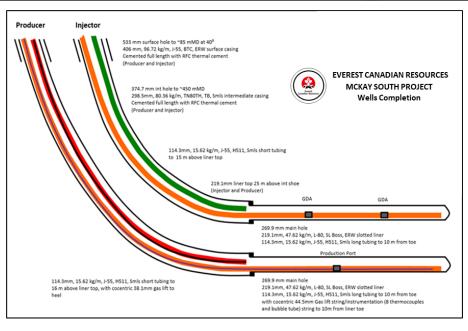


WELLS COMPLETION SCHEMATICS



- Initial Wells completion design
 - Six installations in production wells
 - All production wells are equipped for gas lift
 - Coil tubing with temperature instrumentation is run to toe.





- ICD Installation Producer (Gas Lift)
 - Six installations in production wells
 - All production wells are equipped for gas lift
 - Coil tubing with temperature instrumentation is run to toe.

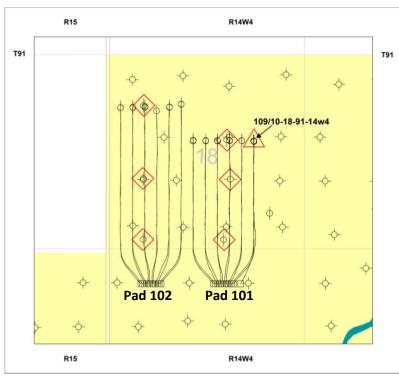
Everest Canadian Resources

OBSERVATION WELLS

OBSERVATION WELLS



- 6 Vertical, Nested Observation Wells:
 - Pressure and temperature measurements extending from McMurray to Clearwater Formations
 - 10-18 and 12-18 wells have experienced 1 TC failure each. 5-18 has experienced 4 TC failures.
- Horizontal Observation Well:
 - Wabiskaw Member
 - Temperature/Pressure measurements

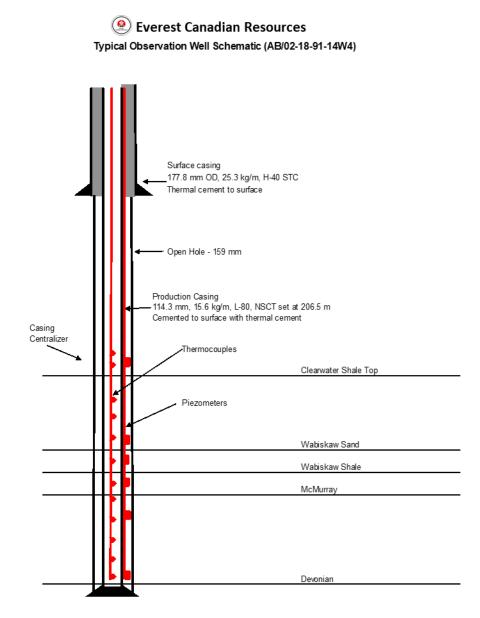


Well	Temperature	Pressure
AB/2-18-91-14W4	12 temperature points	6 pressure points
AB/4-18-91-14W4	12 temperature points	6 pressure points
AB/5-18-91-14W4	12 temperature points	6 pressure points
AA/7-18-91-14W4	11 temperature points	5 pressure points
AB/10-18-91-14W4	12 temperature points	6 pressure points
AA/12-18-91-14W4	12 temperature points	6 pressure points
09/10-18-914-14W4	High Temperature Fibre	

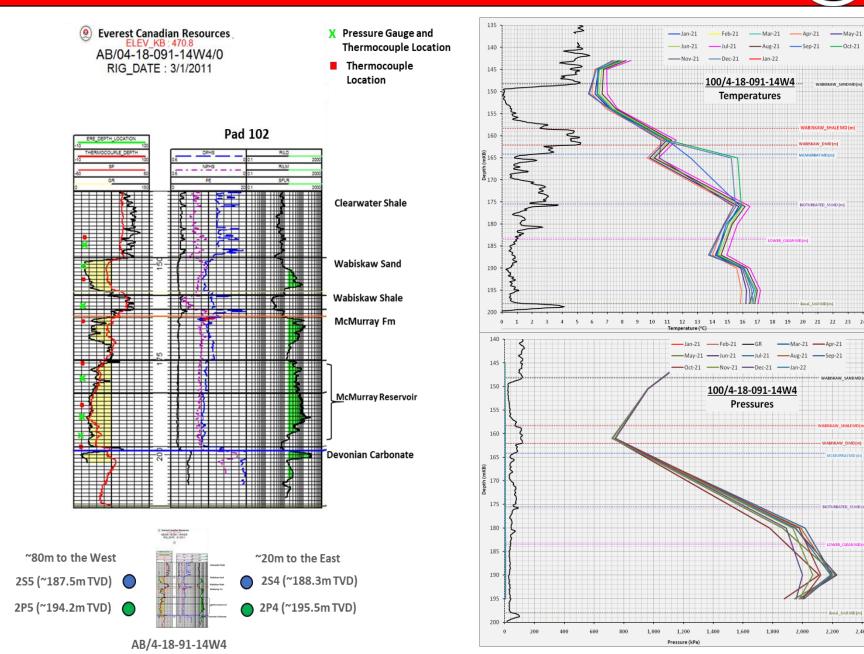
TYPICAL VERTICAL WELL



- 12 thermocouples spaced between the Base of McMurray to Clearwater
- 6 piezometers spaced between Base of McMurray to Clearwater
- Instrumentation strapped to outside of casing string

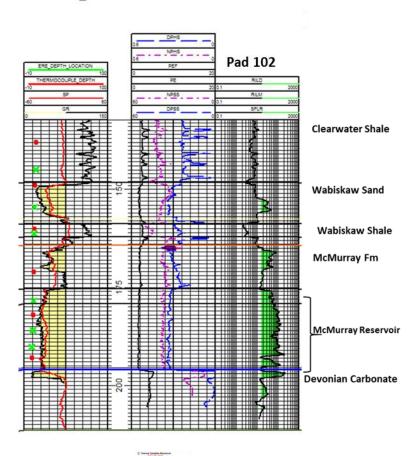


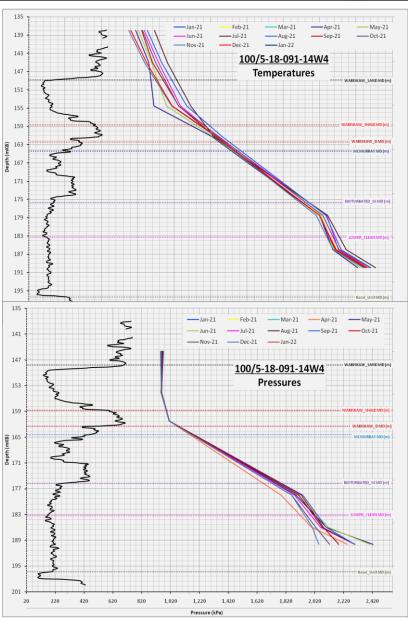






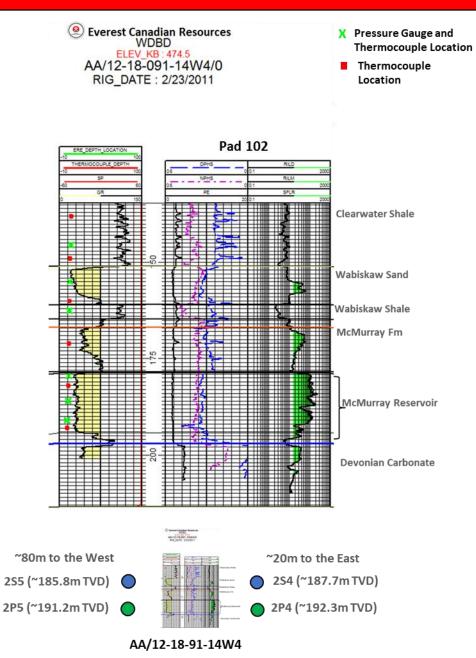
Everest Canadian Resources ELEV_KB: 472.2 AB/05-18-091-14W4/0 RIG_DATE: 2/26/2011

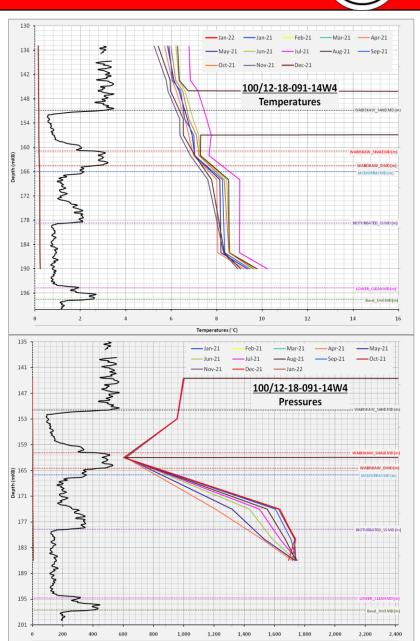




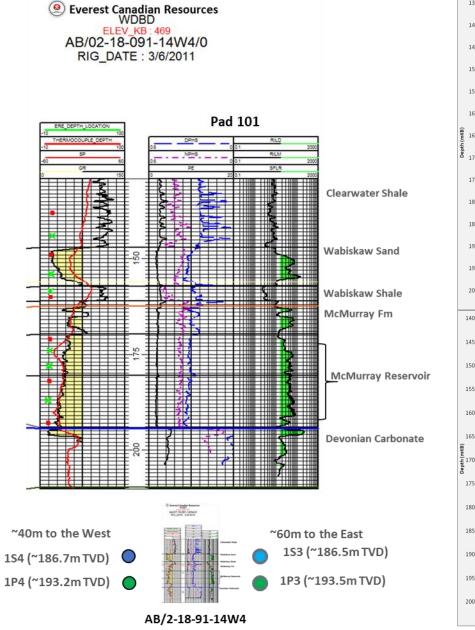
AB/5-18-91-14W4

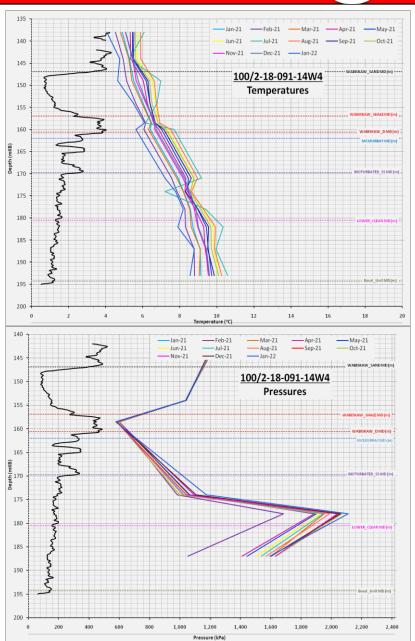




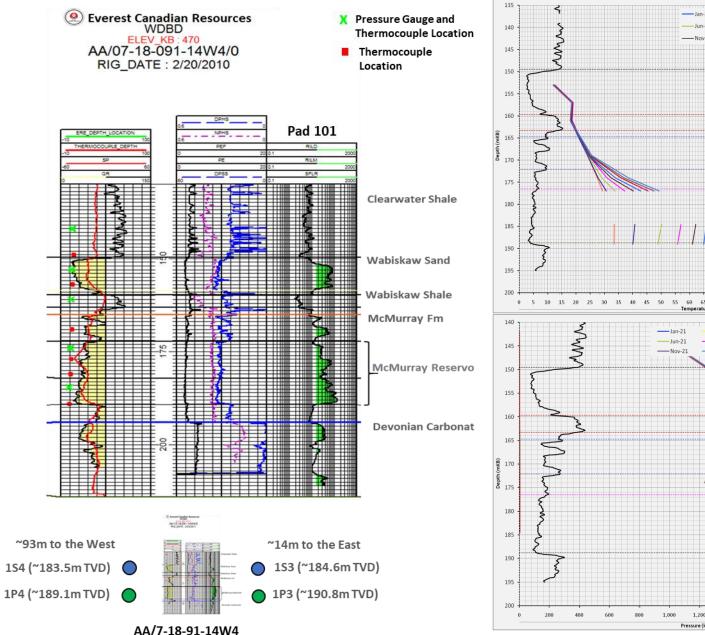


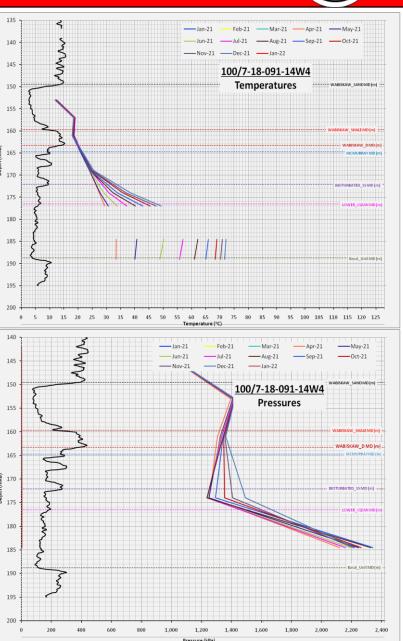




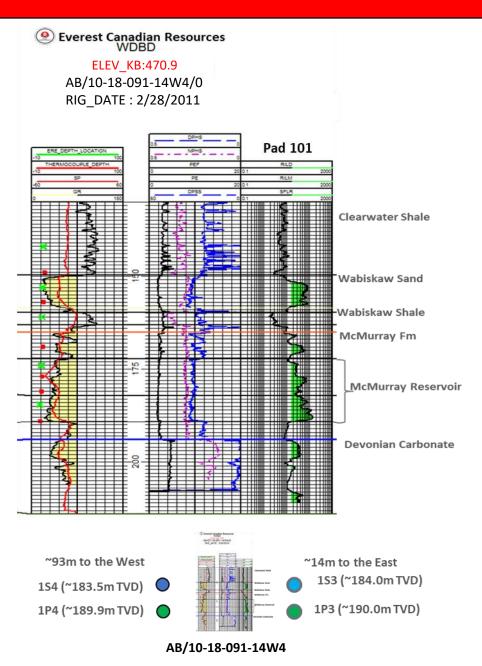


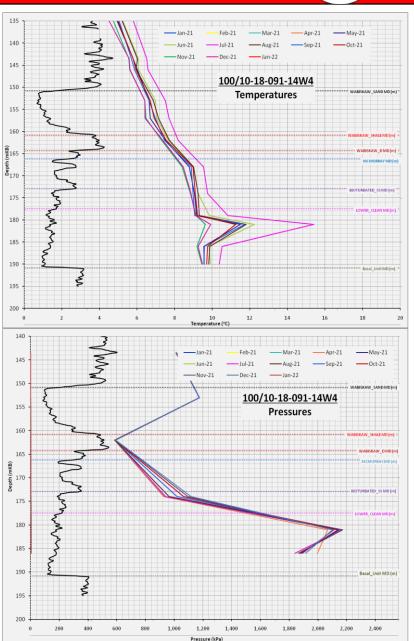








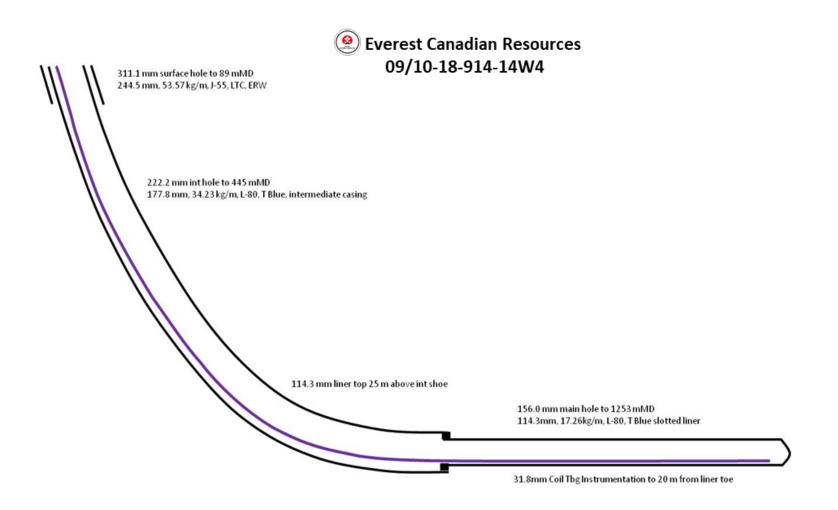




HORIZONTAL WABISKAW OBSERVATION WELL



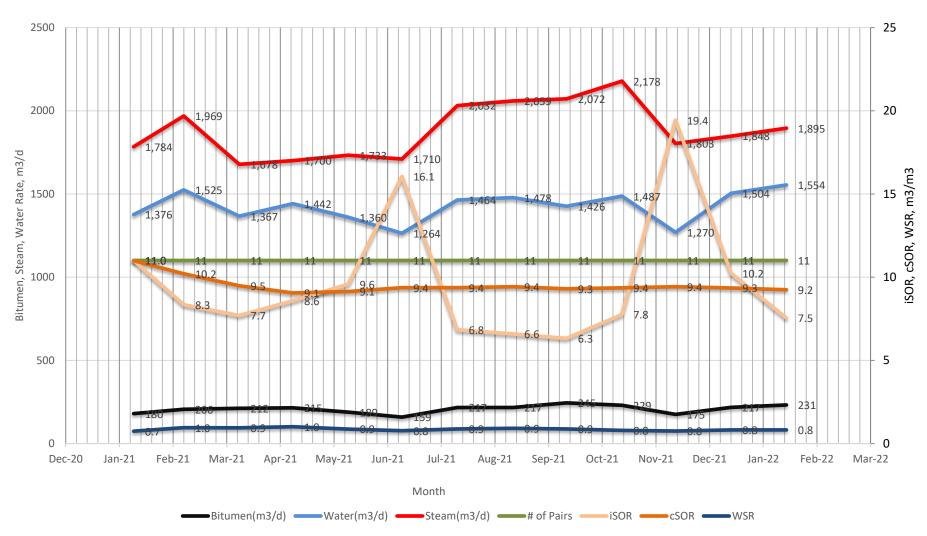
 Horizontal observation well designed and drilled in Wabiskaw formation for potential future production from zone







Scheme Performance





4.3.8.c Annual Operational Bitumen and Steam Rates

ECR - McKay

ECR-McKay	Actual Operational	Facility Design
Bitumen	230 m3/cd	1905 m3/sd
Steam	1781 m3/cd	5937 m3/sd



Compliance History

- Reportable Incidents
- On July 16, 2021, approximately 7.0 m3 of process water was released due to inadequate maintenance (Incident 20211618). Approximately 7.0 m3 of process water was recovered.
- On July 17, 2021, approximately 3.5 m3 of crude oil and 5.0 m3 of waste was released due to inadequate maintenance (Incident 20211620). Approximately 3.5 m3 of crude oil and 5.0 m3 of waste were recovered.



Compliance History

- Voluntary Self-Disclosures
- None
- Contraventions
- •Missing well, source water well and well pads signage Everest has installed new signage in June of 2021 in accordance with the OGCR rules.
- Groundwater Monitoring Wells Not Locked Everest has proceeded to lock all groundwater monitoring wells on location at the water source wells.
- No ambient air quality monitoring station Everest has contracted BV, the station was installed October 1, 2021.
- No Flow Meter on Test Separator Everest has repaired and calibrated the non-functioning flow meters associated with the test separators at both pads. Both the 101 Pad and 102 Pad flow meters were calibrated and certified on June 2, 2021, the 101 Pad meter was also replaced at this time.
- Flare & Vent Logs Flare and Vent log sheet has been created and are being maintained.



Compliance History

- Contraventions
- •Surface Water Pump Off Records As of April 2, 2021, the runoff control valves on both pads and the east sedimentation pond have been closed.
- Monthly Tank/Interstitial Space Inspections Tank inspections began March 2021 and have been conducted monthly since.
- Failure to take appropriate remedial action to spill cleanup, Slop Oil Spill Moving forward Everest will engage its onsite personnel to follow the spill reporting guidelines set out in Appendix H of their EPEA renewal.



Compliance History

Corresponding remediation or compliance efforts for EPEA

Since the restart of the plant, Everest has been working with AER, related departments and consultants on regulatory compliance obligations. And Everest will continue to build capacity to ensure compliance with all AER regulations and requirements, including the EPEA Approval.

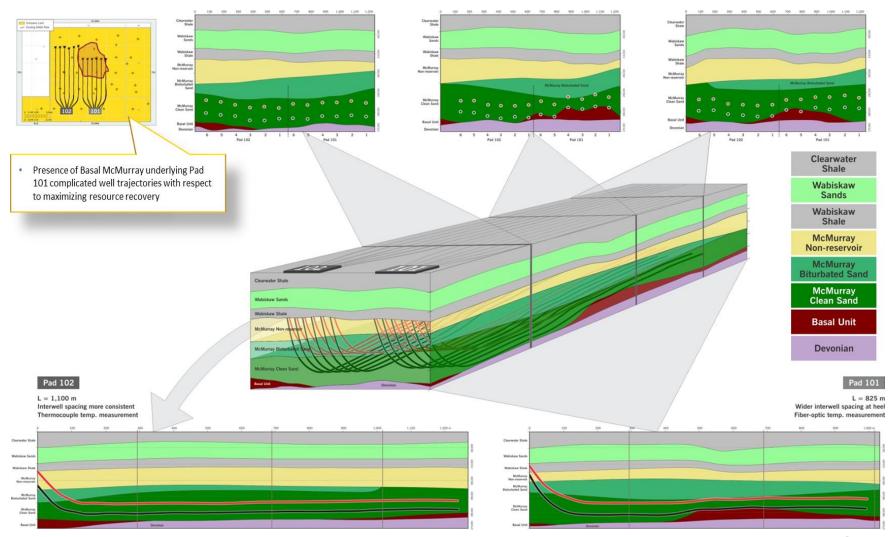
The process of resetting to ensure regulatory compliance continues, we are committed to getting this right – correct, accurate, complete, on time – to provide reliable reports. However, it is complex and involves many elements, does take time to be accomplished. We have responded and corrected many outstanding environmental compliance issues at our facility, per past communications with the AER. We are building an Environmental Management System that includes scheduling of Approval reporting requirements. This will prevent missing reporting deadlines in the future.

Operationally, our project is running well, and we are able to meet our production goals without major upsets. Plans are being developed to optimize resource extraction and Everest looks to add production in the near future.

WELLPAIR CURRENT STATUS



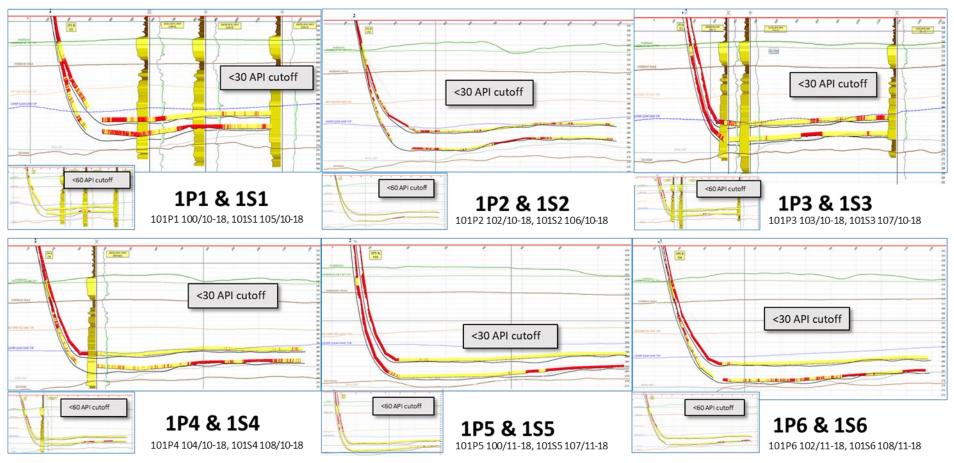
Pad 101 and 102 Schematic Sections



WELLPAIR CURRENT STATUS



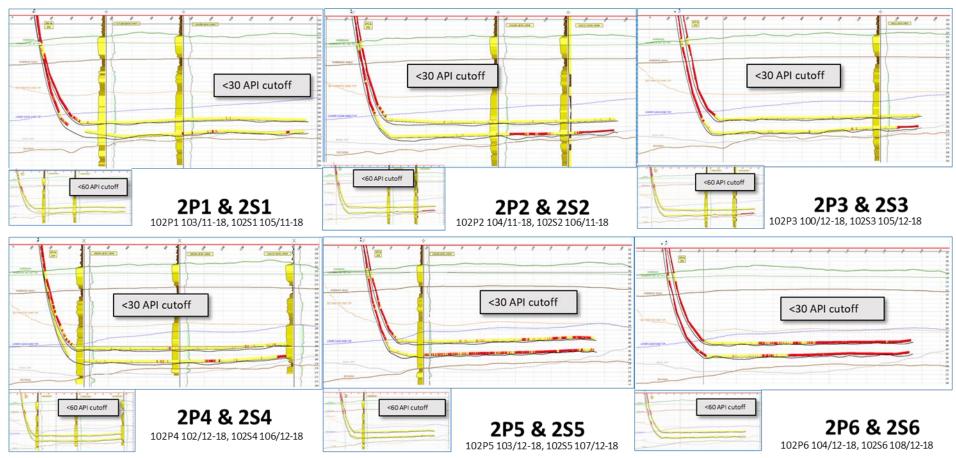
Pad 101 Schematic Sections



WELLPAIR CURRENT STATUS



Pad 102 Schematic Sections



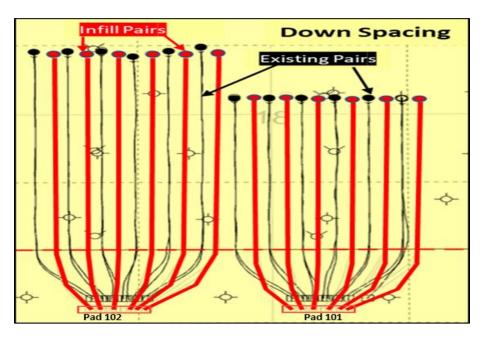
Everest Canadian Resources

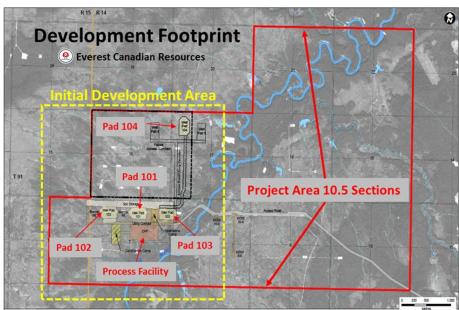
SUBSURFACE FUTURE PLANS

SUBSURFACE FUTURE PLANS



- Continue with Pad 102 and Pad 101 wellpairs rampup throughout 2021 until SAGD rampup is completed
- Drilling Plans Medium to Long Term
 - Pads 101 and 102 Downspacing
 - Down-spacing amendment application fully approved by AER
 - Capacity for 12 additional well pairs (infills) on existing Pads 101 and 102
 - Pads 103 and 104 are currently approved (with 100 m spacing/Six Pairs), an amendment will be submitted to the AER to reduce spacing increase well count

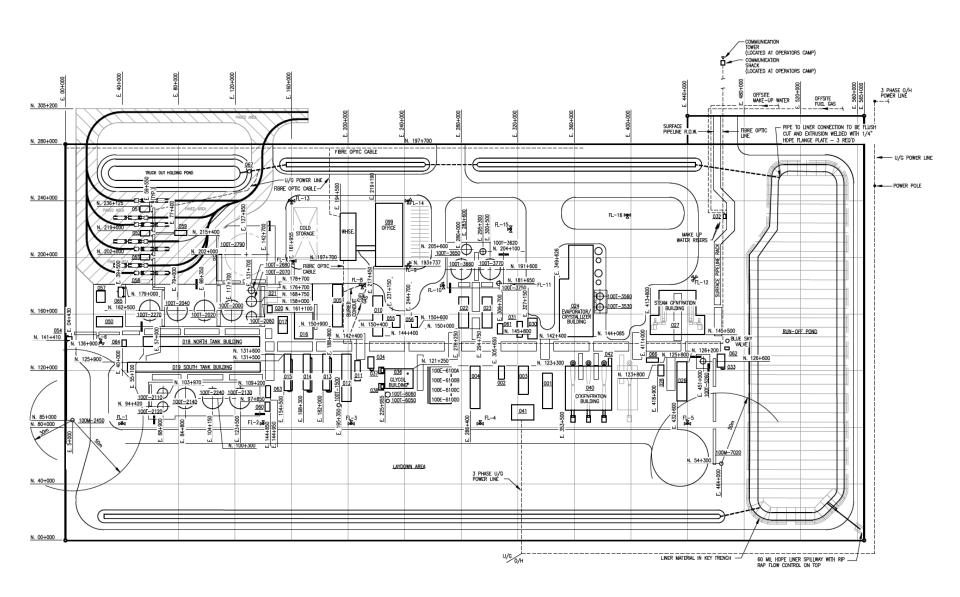






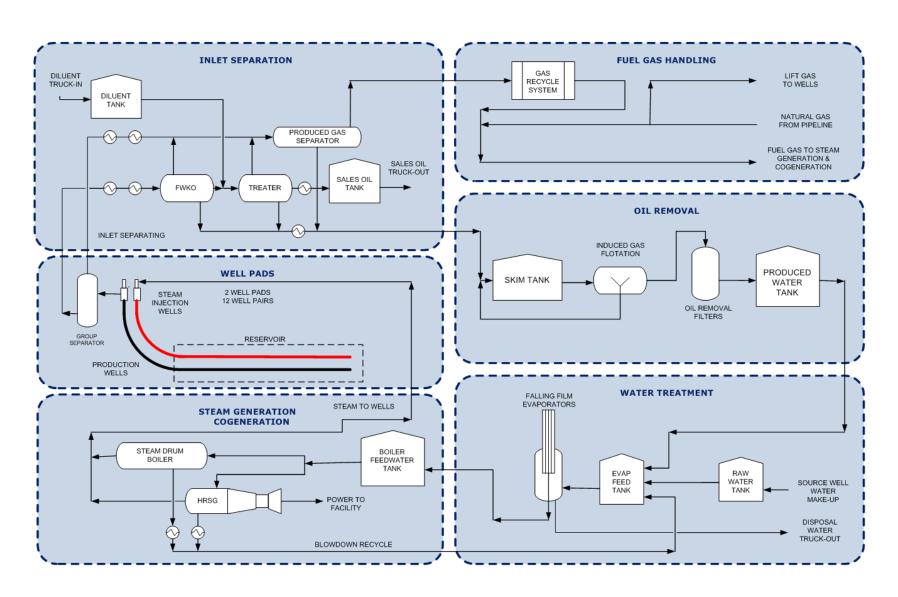
CENTRAL PROCESSING FACILITY PLOT PLAN





SIMPLIFIED FACILITY SCHEMATIC





MEASUREMENT AND REPORTING



- General
 - EPEA approval renewal completed.
 - MARP approved: No updates.
 - EPAP Declaration: Completed.
 - Well Production / Injection Volumes
 - Well test separator liquid meters have been reinstalled and certified
 - Well production will be prorated from bulk scheme production using intermittent test data via dedicated test separators on Pads 101 (5 pairs) and 102 (6 pairs).
 - Manual samples will be taken to determine bitumen, water, solids and chloride content and have proven reliable and repeatable.

WATER SOURCES & USES



- Water Act licence amendment No. 00262149-02-00 was granted on April 06, 2020 extending the licence expiry date to April 5, 2025
- Fresh Water Uses make-up water for the project to be drawn from the McKay Channel Empress Formation. Details on the Water Act license are as follows:

Licence No. 00262149-02-00		
8-8-91-14-W4M	853 m³/ day	
16-8-91-14-W4M	2,401 m ³ / day	
15-8-91-14-W4M	2,475 m ³ / day	
Daily Maximum Diversion	5,729 m ³ / day	
Annual Maximum Diversion	419,750 m ³	

ENVIRONMENTAL SUMMARY



- AER Commercial Scheme Approval No. 11461 no compliance issues
- EPEA Approvals all main approvals have been transferred to Everest:
 - EPEA Approval 255245-00-00
 - EPEA Approval 255245-00-01
 - EPEA Approval 255245-00-02
- Water Act Diversion Licence Amended No. 00262149-02-00 extended to April 5, 2025 no compliance issues

SURFACE FUTURE PLANS



- Everest Canadian Resources top priority is to re-establish safe, compliant and steady-state operations
- Plans include but not limited to:
 - CPF
 - Pursue optimization opportunities
 - Wellpads
 - Wellpad 102 → Continue with optimization
 - Wellpad 101 → Continue with optimization