



ATHABASCA OIL CORPORATION
HANGINGSTONE D54 PERFORMANCE REPORT
June 2021

SUMMARY

- Development Overview
- Subsurface
- Surface Operations
- Regulatory and Compliance

HANGINGSTONE PROJECT

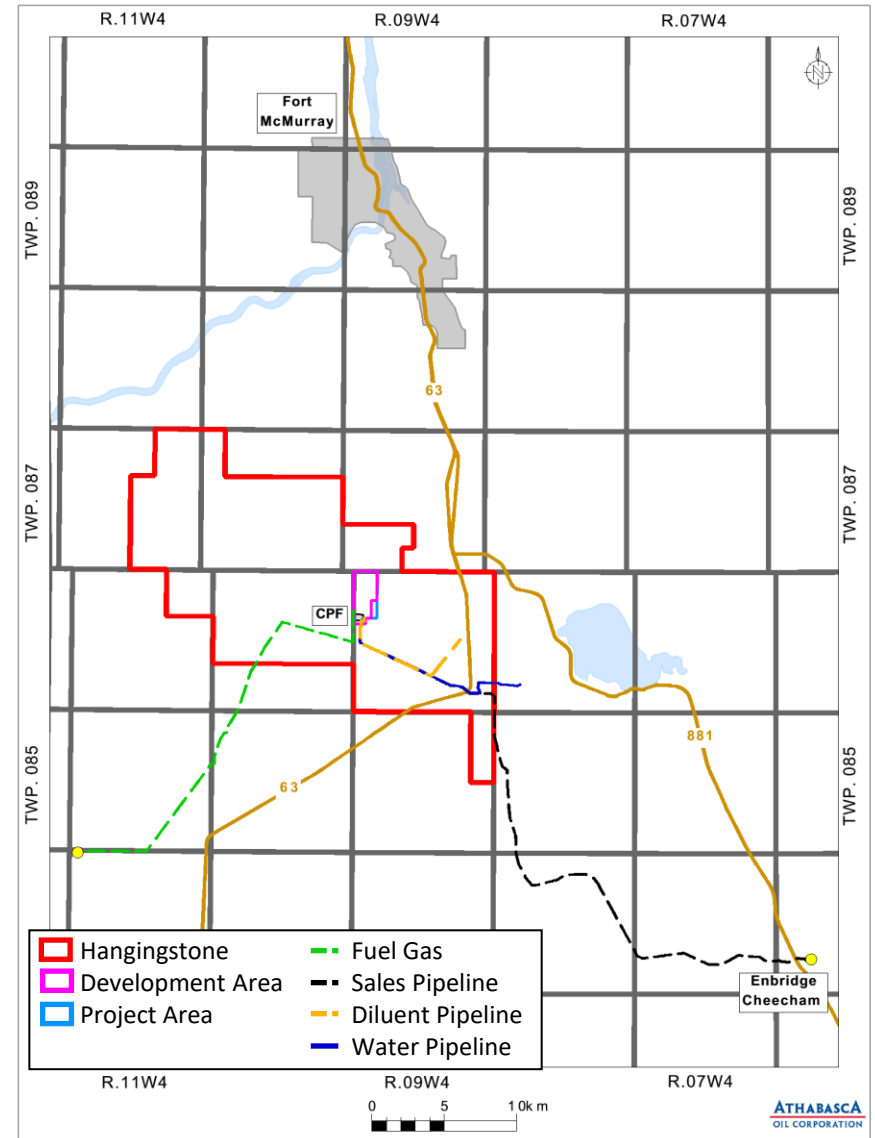
- First steam March 2015
- 24 well pairs online with 1 standing well pair

PROJECT DETAILS

- Located 20 km south of Fort McMurray, AB
- 5 production pads (5 pairs per pad)
- Central Processing Facility (CPF)
- Offsite services and utilities

INFRASTRUCTURE

- Fuel gas from TransCanada Pipeline (TCPL)
- Dilbit export to Enbridge Cheecham Terminal
- Diluent from Inter Pipeline (IPL)

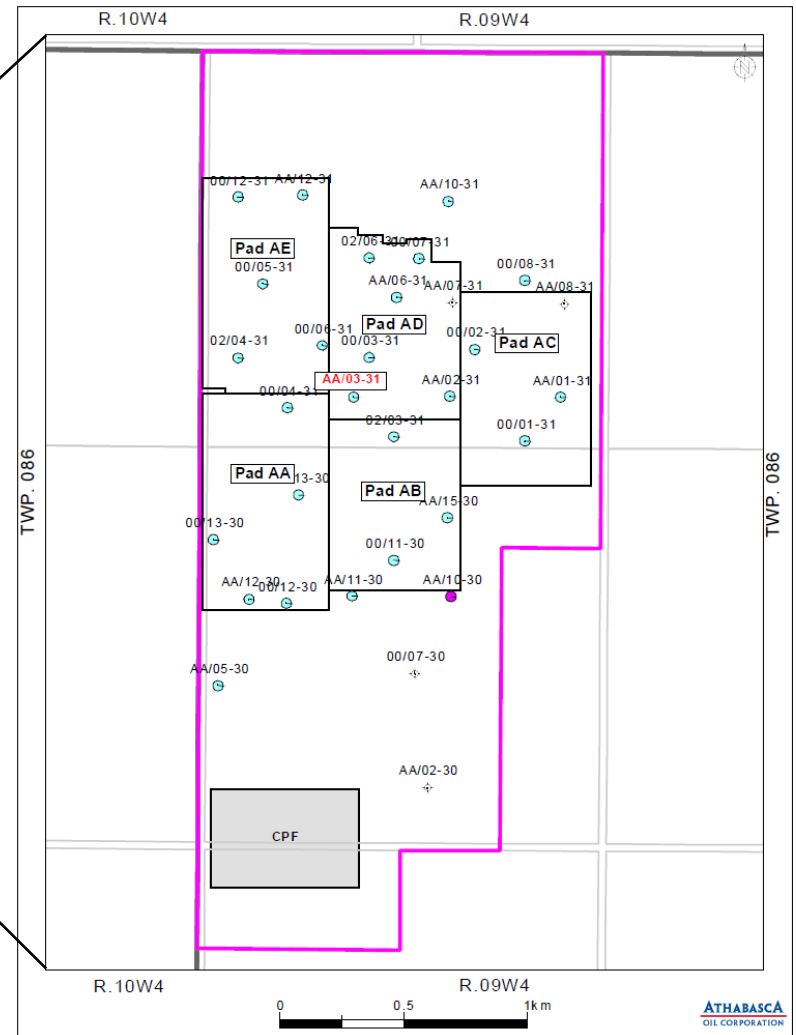
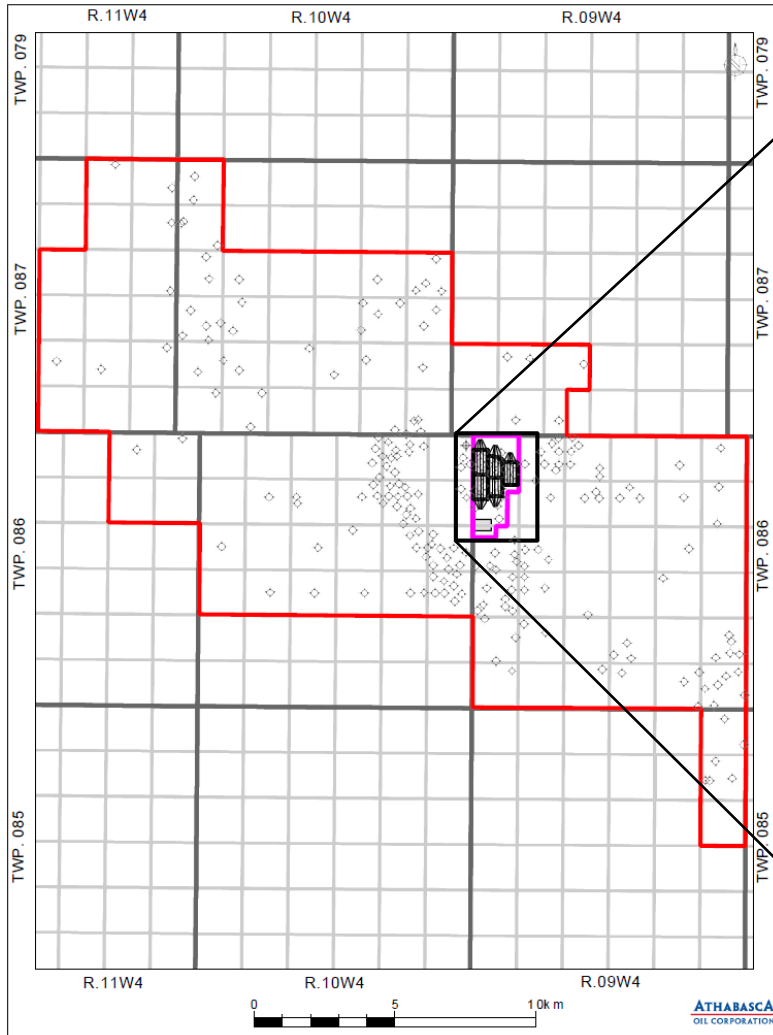




SUBSURFACE

ATHABASCA
OIL CORPORATION

SURFACE DATA OVERVIEW



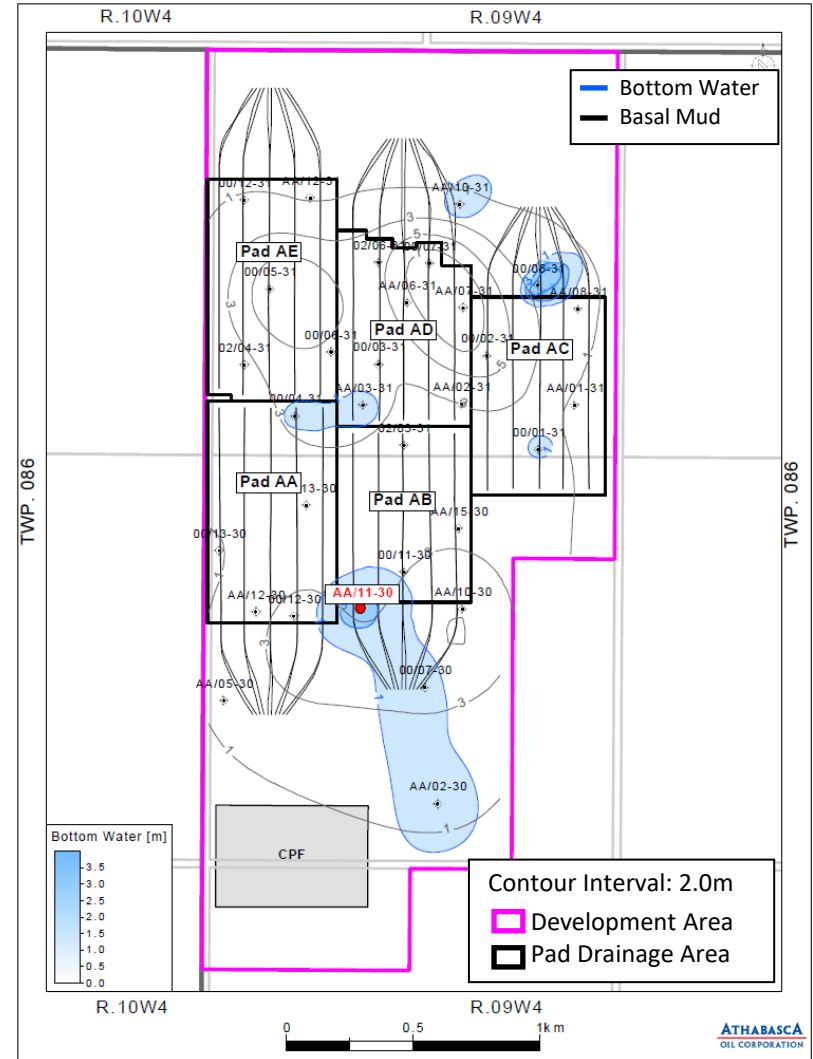
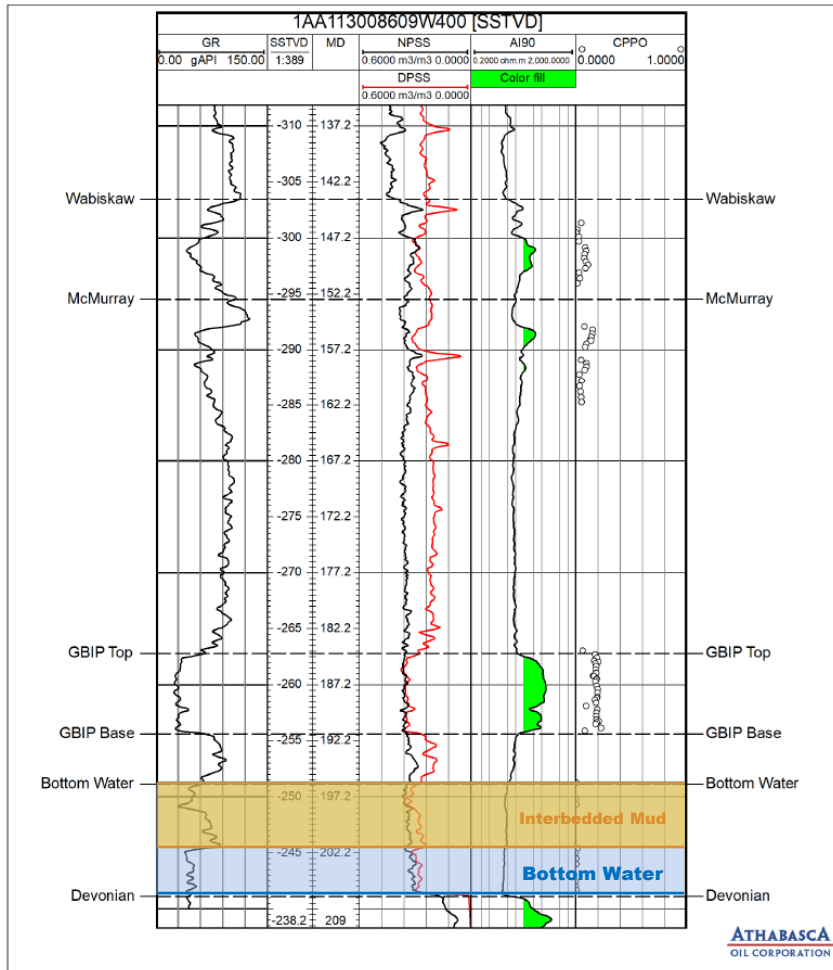
Area	Area (km ²)	MCMR Cored Wells	Image Logs	Caprock Core
Development Area	5.1	26	31	1
Project Area	5.6	26	31	1

- Wells with Core
- Caprock Core Well
- Development Area
- Pad Drainage Area

BOTTOM WATER THICKNESS MAP

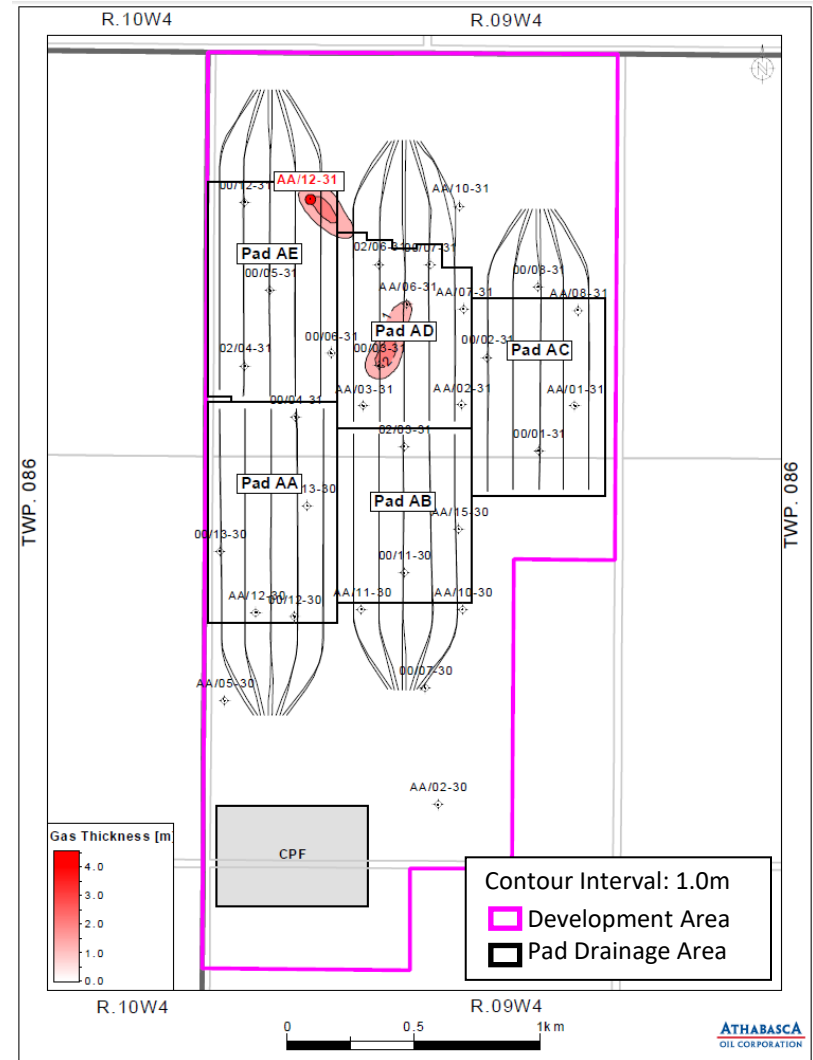
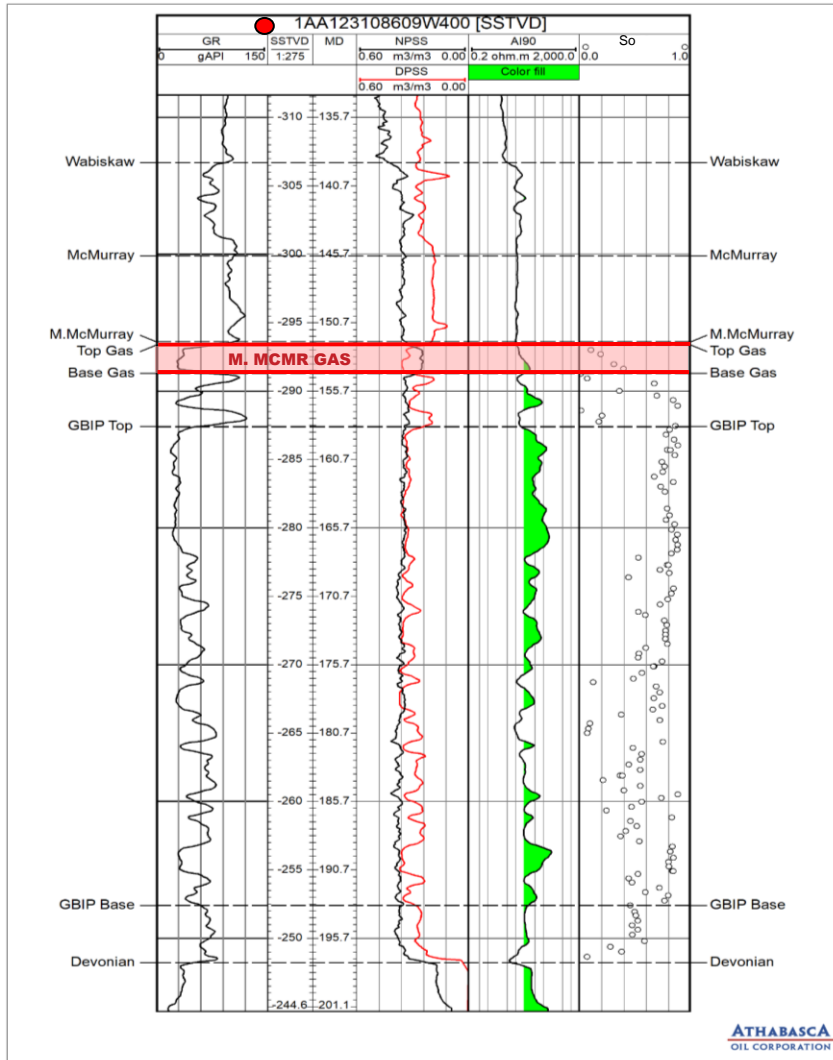
BOTTOM WATER

- Localized and not in direct contact with bitumen; separated by MIHS and/or basal mud
- Bottom water interval consists of interbedded mud and sand (resistivity < 10 ohm-m)



MIDDLE MCMURRAY FM GAS THICKNESS MAP

MINIMAL GAS THICKNESS AND LIMITED DISTRIBUTION WITHIN DEVELOPMENT AREA

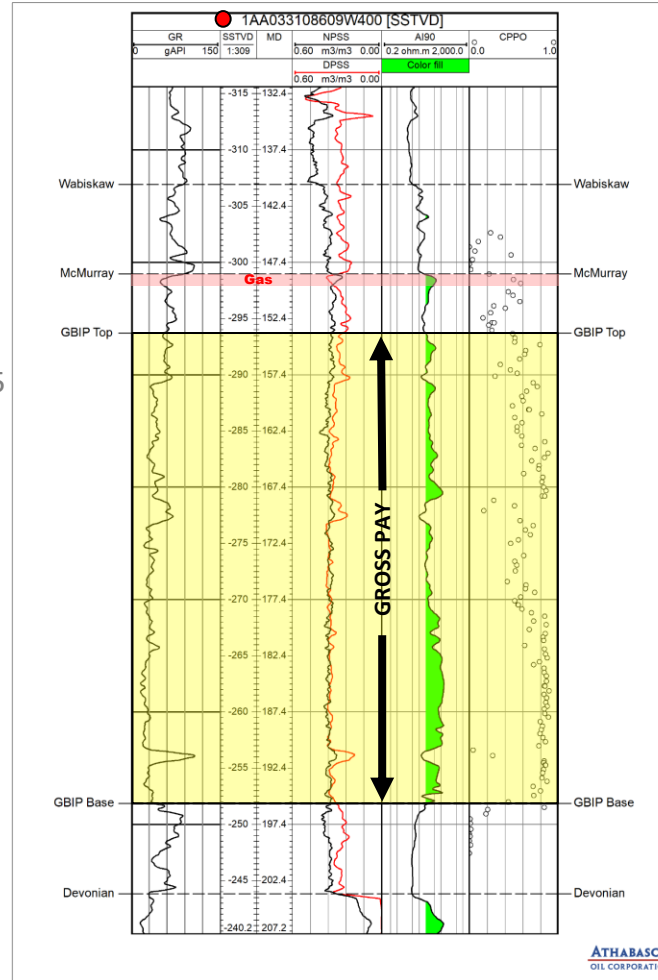


RESERVOIR CRITERIA

- Facies classification based on percentage mud
 - F1: Breccia = variable
 - F2: Sand = 0-10%
 - F3: Sandy IHS = 10-30%
 - F4: Muddy IHS = 30-70%
 - F5: Mud = >70%
- Gross Bitumen in Place (GBIP)
 - Reservoir criteria: F1-4, <1m F5

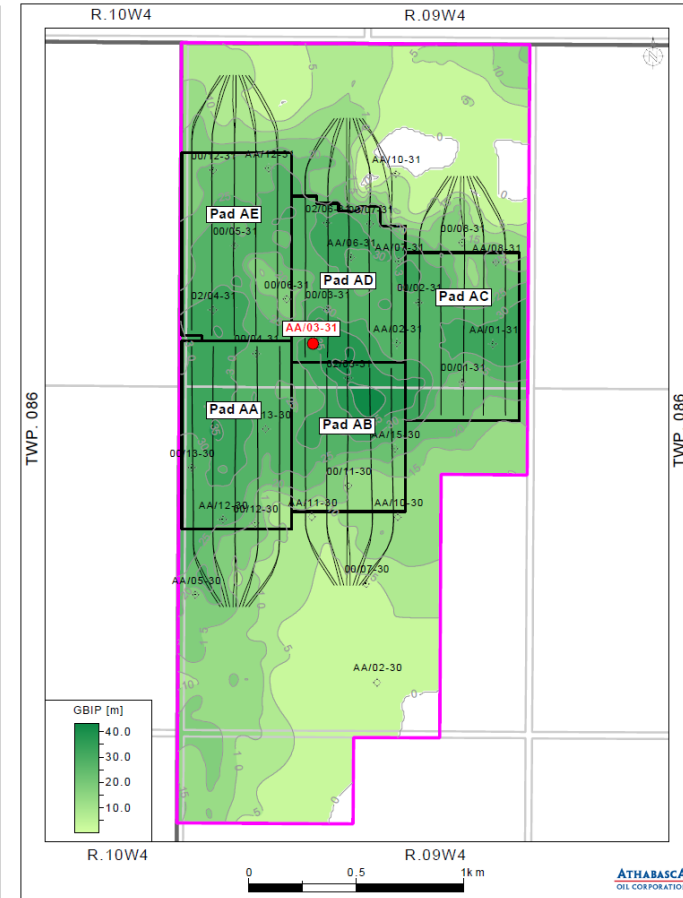
NET PAY CRITERIA

- Gross Bitumen in Place (GBIP)
 - Petrophysical criteria:
 - Porosity (PHIT) $\geq 27\%$
 - Saturation (SwT) $\leq 50\%$



Final GBIP volumes include mid-lean zone. Mid-lean zones volumes calculated using PHIT 27% and no saturation cut off

NET PAY ISOPACH



Contour Interval: 5.0m

Development Area

Pad Drainage Area

SEISMIC DATA OVERVIEW

2020

- No new data acquired in reporting period

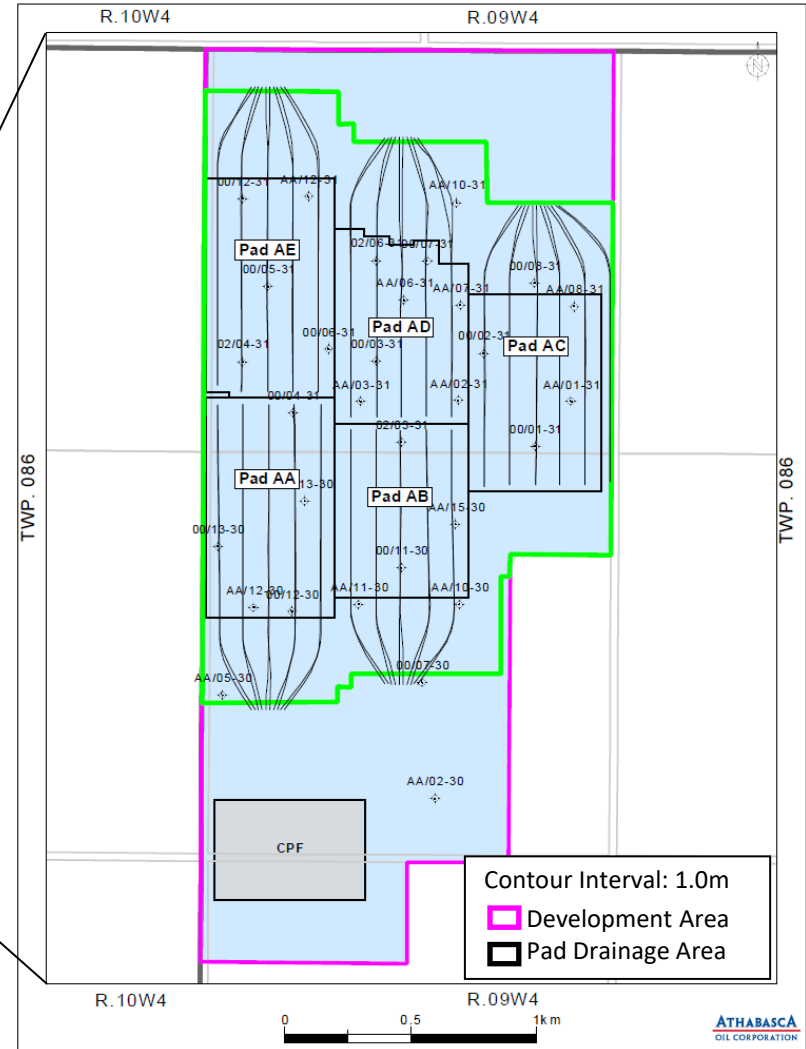
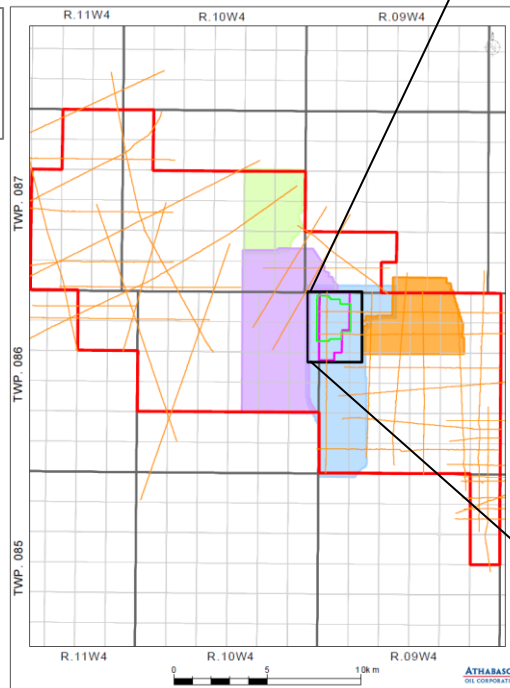
HISTORICAL

- 3D acquired in 2011 and 2012, merged in 2012
- Total proprietary 2D ~ 450 km
- Total 3D area ~98 km² (merged), covers development area
- Total 4D area ~3.72 km²
 - Baseline acquired Q1 2014
 - First Monitor acquired Q1 2016 / Second Monitor acquired Q1 2017

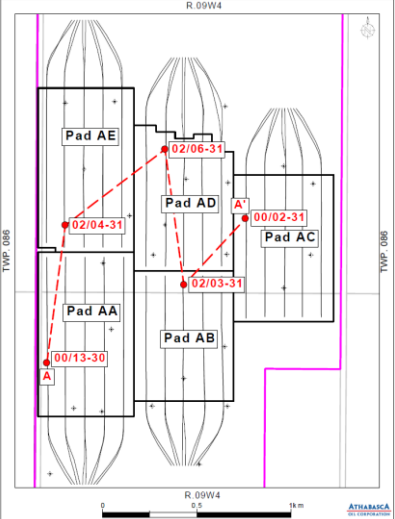
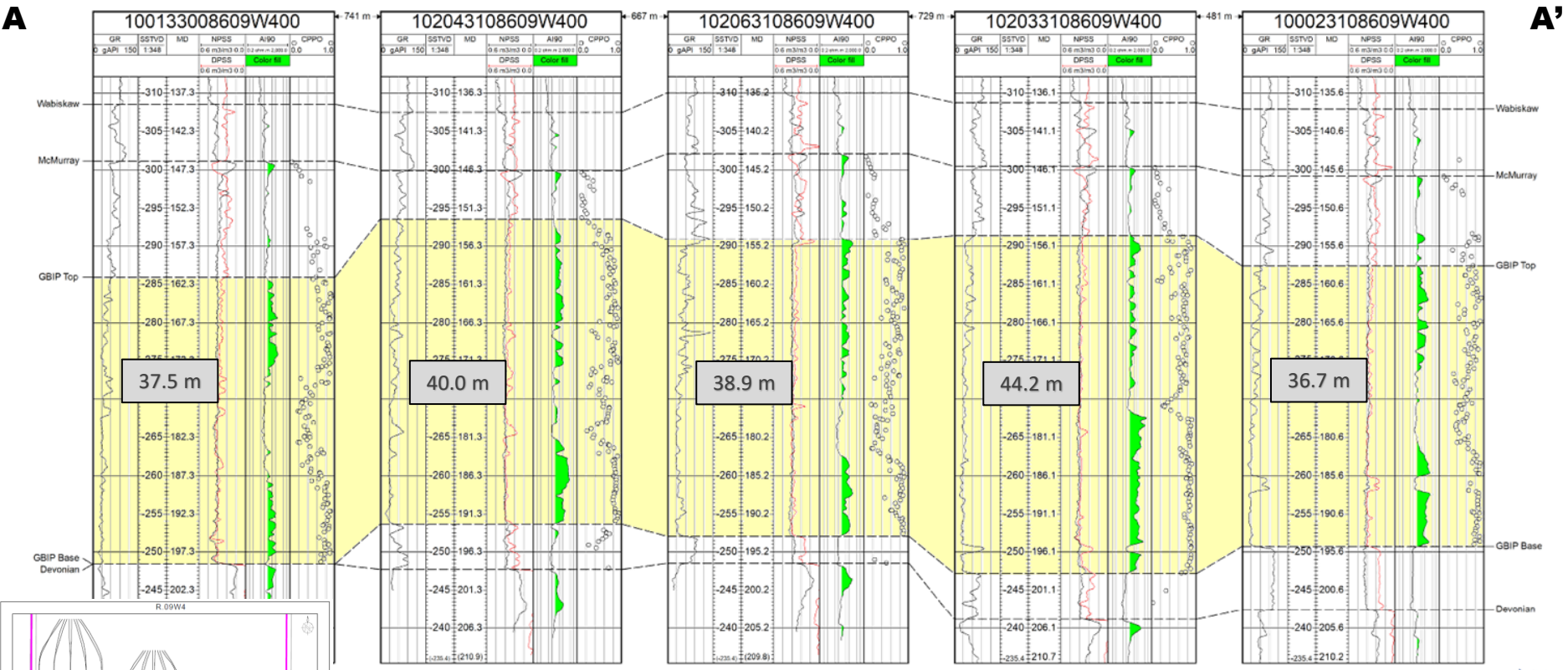
3D/4D PARAMETERS

- Source line/source spacing: 60m/20m
- Receiver line/receiver spacing: 40-60m/20m

- AOC Lease Area
- Development Area
- 2011 Hangingstone River 3D
- 2011 Hangingstone River North 3D
- 2012 Halfway Creek 3D
- 2012 Highway 3D Seismic
- 2015/16/17 4D Seismic
- Proprietary 2D Seismic



STRUCTURAL CROSS SECTION NW-SE ACROSS HS1 AREA 10



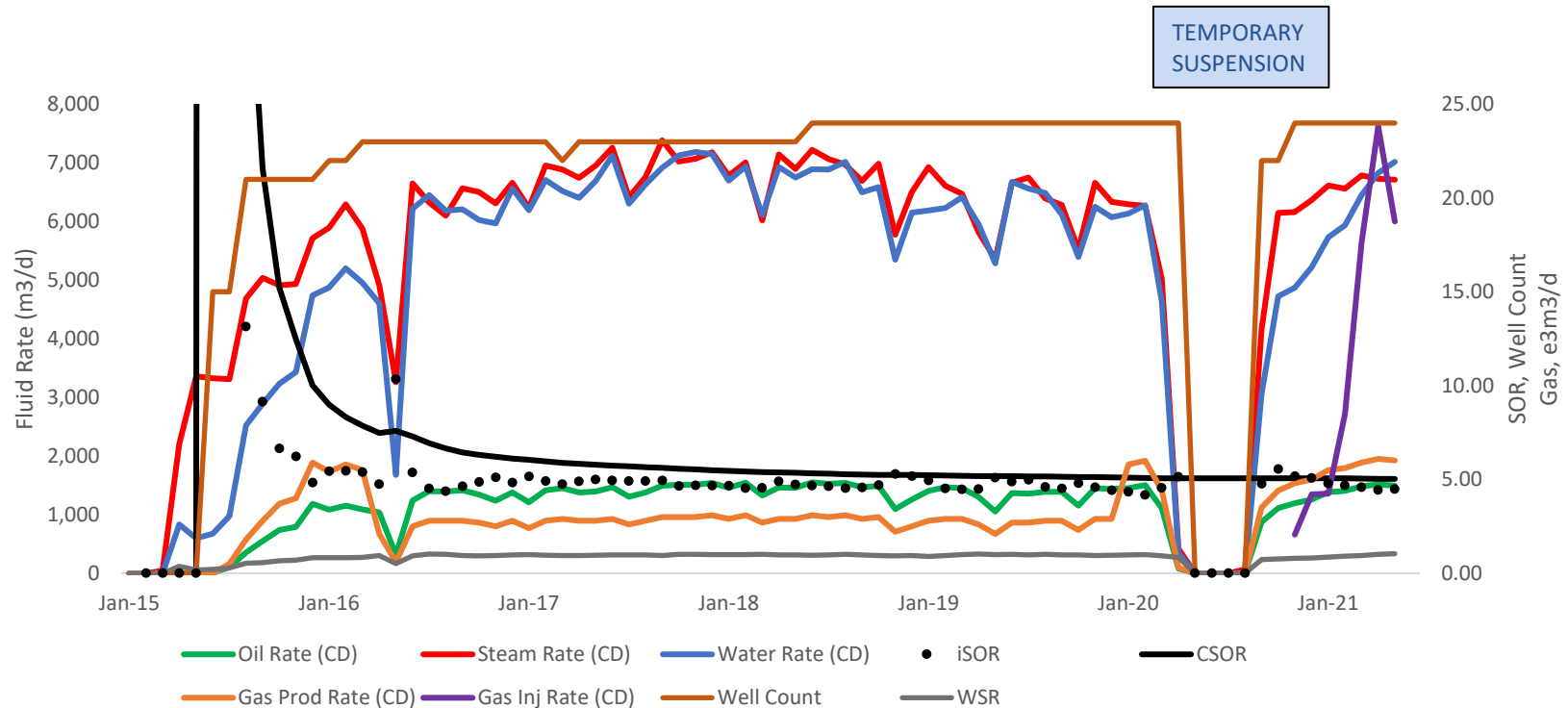
■ Gross GBIP thickness

- Development Area
- Pad Drainage Area
- Cross Section A – A'

REPORTING YEAR HIGHLIGHTS

- 5 producing pads (24 producing SAGD well pairs)
- Field shut in from April to August 2020 due to extremely oil price volatility
 - *Successfully recovered from field suspension*
- Initiated NCG co-injection for SOR management

HANGINGSTONE FIELD PRODUCTION

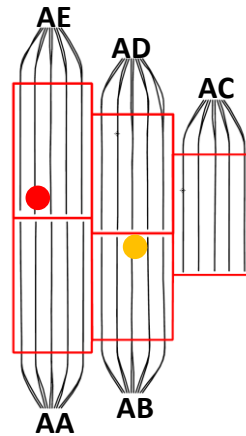
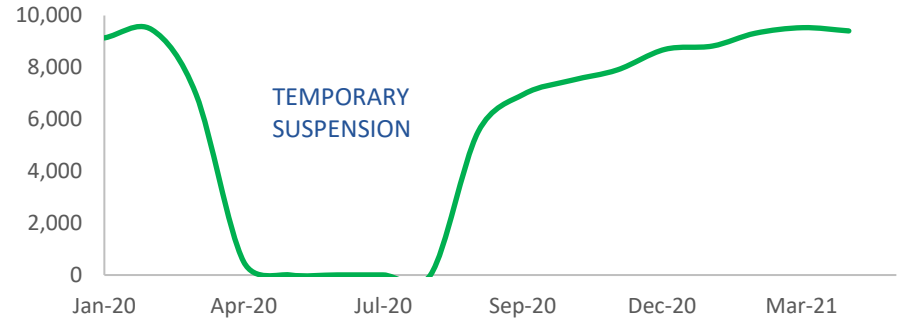


POST SUSPENSION LESSONS LEARNED

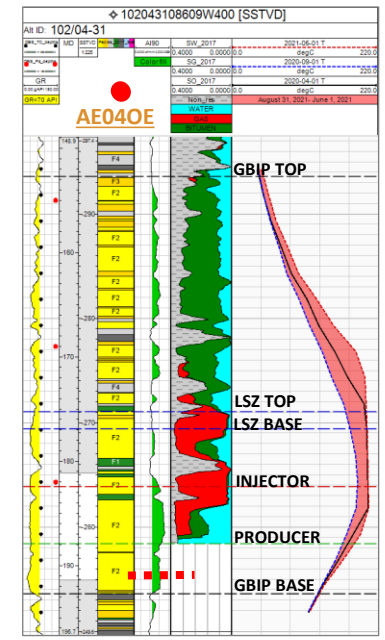
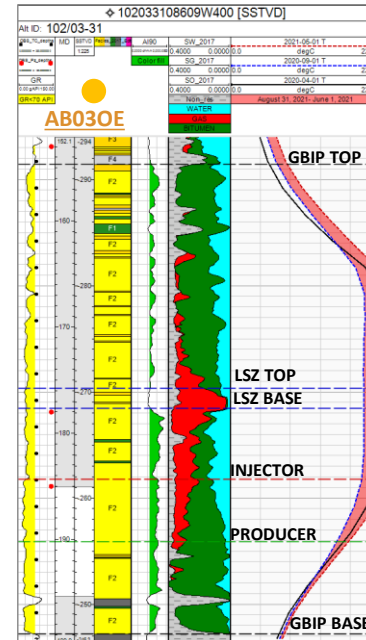
SUMMARY

- Field has fully recovered from the temporary suspension
 - Oil rates back to Q1 2020 levels
 - Steam chambers have recovered and continue to grow
- Continue to see heating into the IHS

HANGINGSTONE FIELD OIL RATE (BBL/D)



TEMPERATURE PLOTS
 — MARCH 31, 2020
 ■■■■ AUG 1, 2020
 ■■■■ JUNE 1, 2021



PAD RESERVOIR PROPERTIES AND RECOVERY FACTOR

RESERVOIR PROPERTIES

- Typical Producer Depth: 191 TVD (258 masl)
- Initial Reservoir Pressure @ 190 m TVD: 600 kPaa
- Initial Reservoir Temperature: 8°C
- Bitumen Viscosity @ initial reservoir temperature: >1 mln cP

GBIP= Net GBIP plus Lean Zone (without saturation constraint)

Pad	Well Pairs	Lateral Length (m)	Area (10 ³ m ²)	Oil Saturation (frac)	Porosity (frac)	Perm Kh (D)	Perm Kv (D)	Net Pay (m)	GBIP Net (10 ³ m ³)	Cumulative Production (10 ³ m ³)	Recovery Factor (%)	EUR = Producible Bitumen in place (10 ⁶ m ³)	EUR RF (%)
AA	4/5	850	459	0.72	0.35	4.6	2.9	27.5	3,543	382	11%	1.8-2.5	50-70%
AB	5/5	640	347	0.75	0.36	5.0	3.6	26.5	2,747	787	29%	1.4-1.9	50-70%
AC	5/5	750	399	0.74	0.34	4.8	3.5	25.9	2,785	293	11%	1.4-1.9	50-70%
AD	5/5	670	381	0.73	0.34	4.5	3.2	29.4	2,978	425	14%	1.5-2.1	50-70%
AE	5/5	830	448	0.73	0.34	5.3	3.7	25.3	3,102	450	15%	1.6-2.2	50-70%
TOTAL	24/25		2,033						15,153	2,339	15%		50-70%

- Cumulative production as of December 31, 2020
- Well Spacing: 100 m, Spacing between pads: 130 m
- Volumes include 25 m at heel and toe of the well pair
- GBIP= Gross bitumen in place, GBIP NET is based on PHIT >= 27% and SwT <= 50%
- EUR = Estimated Ultimate Recovery of Bitumen = Producible Bitumen in Place within the GBIP interval
- RF = The ratio of recoverable bitumen reserves to the estimated bitumen in place in the reservoir
- Oil Saturation and porosity averages based on net SoT and PHIT
- Project area GBIP Net-hydrocarbon pore volume* ~ 20 10⁶m³, Full Project Area= 5.4 10⁶ m²

*Project area volume constrained to >10m GBIP Net

SUMMARY

- NCG co-injection began on 2 wellpairs in late November 2020 to aid in ramp-up and SOR optimization after suspension
 - *AA01 and AE05*
- No observable effect on recovery factor or on wellbore integrity due to early stage of injection (2 months)
- Continuing to evaluate the results with more data



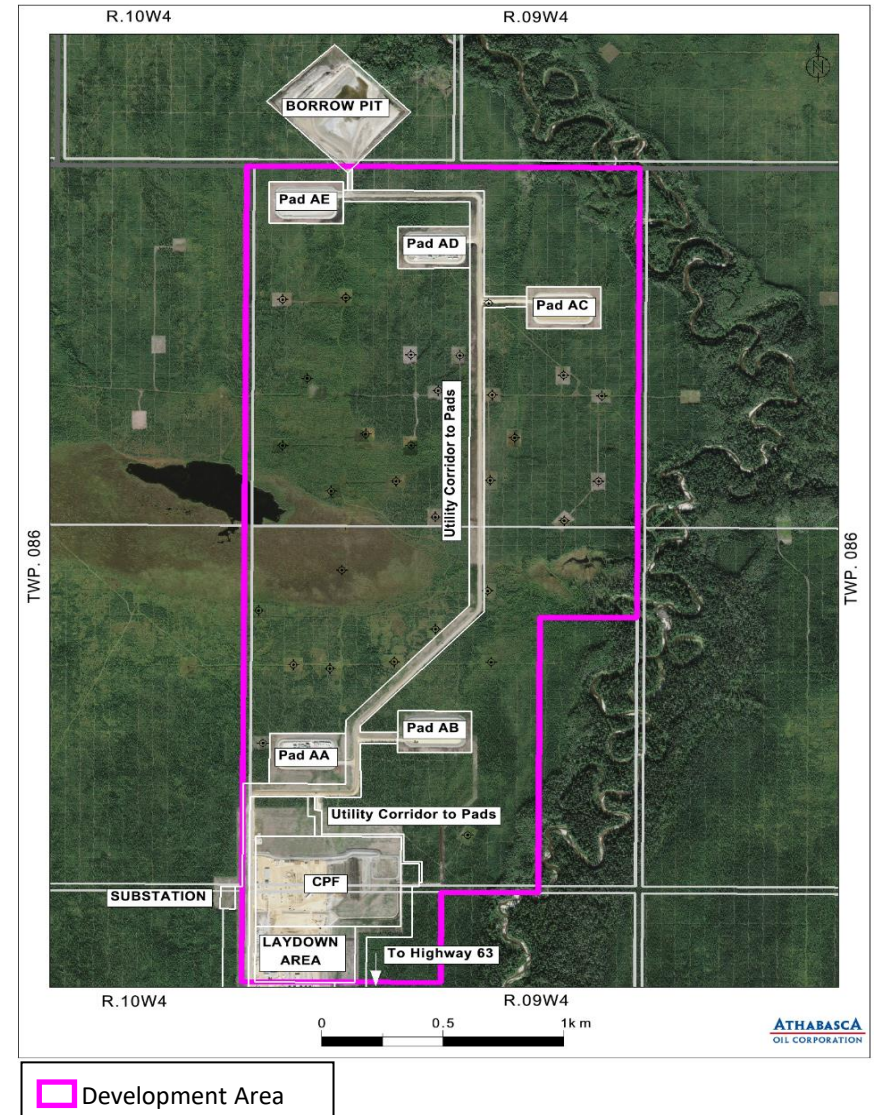
SURFACE OPERATIONS

2020 ACTIVITY

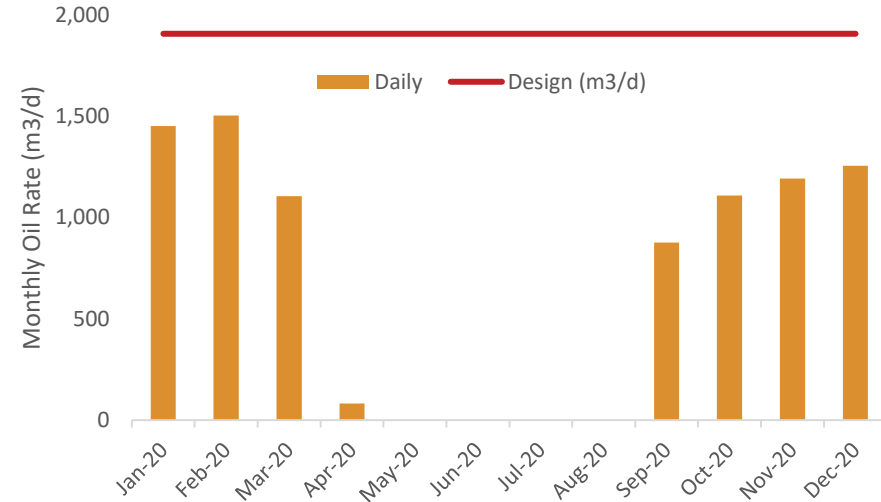
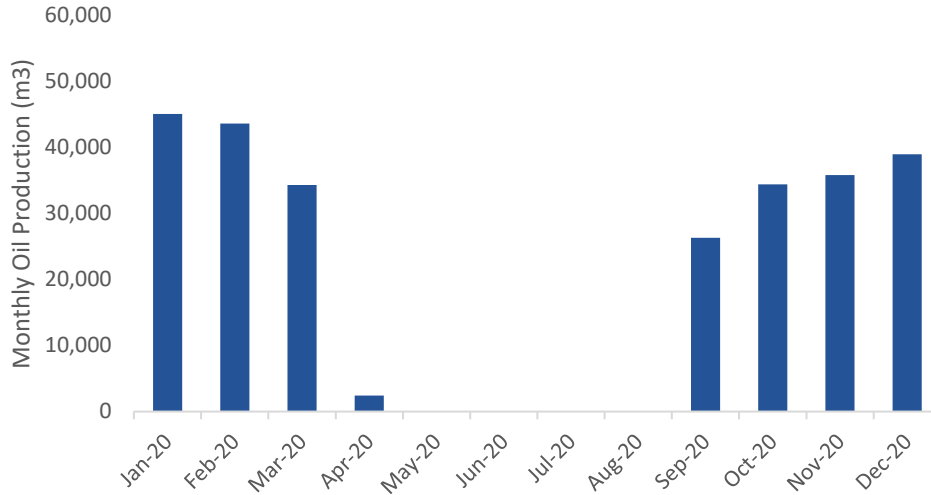
- Operations suspended April to September in response to unprecedented commodity prices
- Turnaround completed during facility suspension
- No CPF modifications were made that required an AER application approval

SUSPENSION AND ABANDONMENT

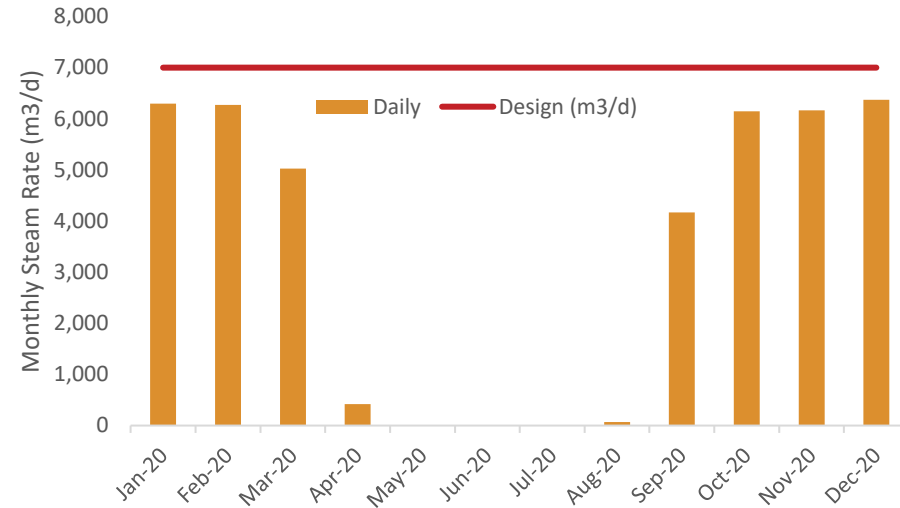
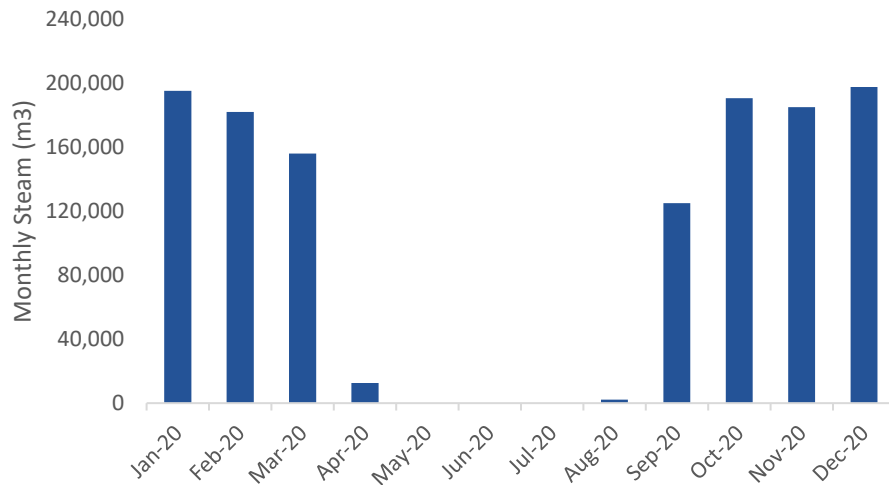
- No wells abandoned or suspended to date



OIL PERFORMANCE



STEAM PERFORMANCE





REGULATORY & COMPLIANCE

APPROVALS, AMENDMENTS AND RENEWALS

Application No. or Approval No.	Approval Date	Description
EPEA Approval No. 289664	May 27, 2020	Suspension of environmental monitoring and reporting during facility suspension
Application No. 1929342 D023 Category 1	August 17, 2020	Operation of a temporary boiler for facility re-start
Application No. 1929421 D023 Category 2, EPEA s.67(3)	September 14, 2020	NCG strategy (co-injection with steam and without)
Application No. 192652 D051 Class III Injection	September 25, 2020	Well Approval (NCG injection) for all existing wells
Application No. 1929874 D023 Category 1	October 19, 2020	AGAR meter calibration deferral following facility re-start
Water Act License No. 316166 Renewal	Submission Q4 2020	Renewal of TIER II Water Act License for additional 5 yr. term

Notes

EPEA – Environmental Protection and Enhancement Act Approval

INSPECTIONS

Inspections			
Event	License	Inspection ID	Result
AER Facility Inspection June 30, 2020	F45426	502760	Satisfactory
AER Facility Inspection July 30, 2020	F46678	502807	Satisfactory
AER Facility Inspection July 30, 2020	F46681	502808	Satisfactory
AER Facility Inspection August 5, 2020	F45426	502732	Satisfactory
AER Facility Inspection August 10, 2020	F45426	502809	Satisfactory
AER Facility Inspection, September 22, 2020	F45426	504065	Satisfactory
AER Facility Inspection November 3, 2020	F45426	505530	Satisfactory
AER Facility Inspection November 3, 2020	F45426	505533	Satisfactory
AER Facility Inspection November 3, 2020	F45426	505398	Low risk
AER Facility Inspection November 3, 2020	F45426	505607	Satisfactory
AER Facility Inspection November 3, 2020	F45426	505322	Satisfactory
AER Facility Inspection November 4, 2020	F45426	505324	Satisfactory
AER Facility Inspection November 12, 2020	F45426	505541	Satisfactory

AUDITS

- No AER audits performed in 2020

NON-COMPLIANCE SUMMARY

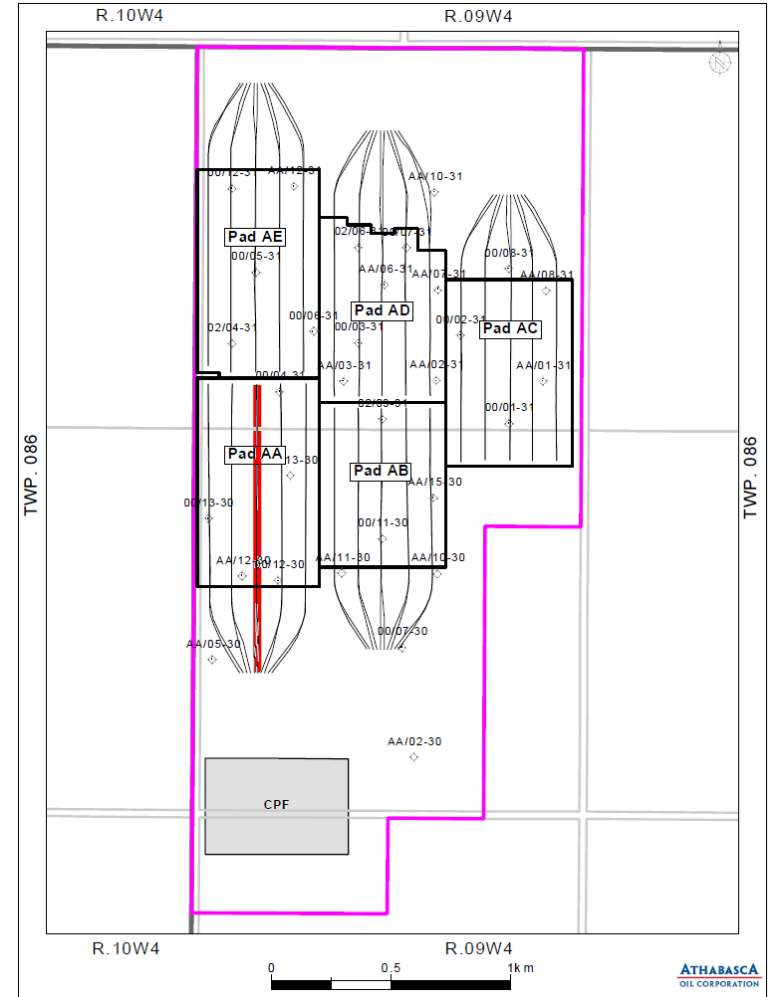
- No reportable incidents
- No voluntary self disclosures
- No notices of non-compliance
- No reportable spills

2021 ACTIVITY

- NCG injection field-wide for pressure management and energy intensity reduction
- Started steaming well AA03 in April 2021
- Truck rack modifications to support 3rd party Dilbit receiving

FUTURE OPERATIONS

- EPEA Approval No. 289664 renewal submission Q1 2022
- Continue conversion of remaining active PCP wells to ESPs
- Evaluate opportunities for Flow Control Devices (FCDs) into producer wells
- Figure represents planned development for the next 5 years



- ▭ Development Area
- Pad Drainage Area
- Well pair AA03

ATHABASCA

OIL CORPORATION

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