



ATHABASCA OIL CORPORATION

LEISMER D054 PERFORMANCE REPORT 2022

JUNE 2023

ATHABASCA
OIL CORPORATION

SUMMARY

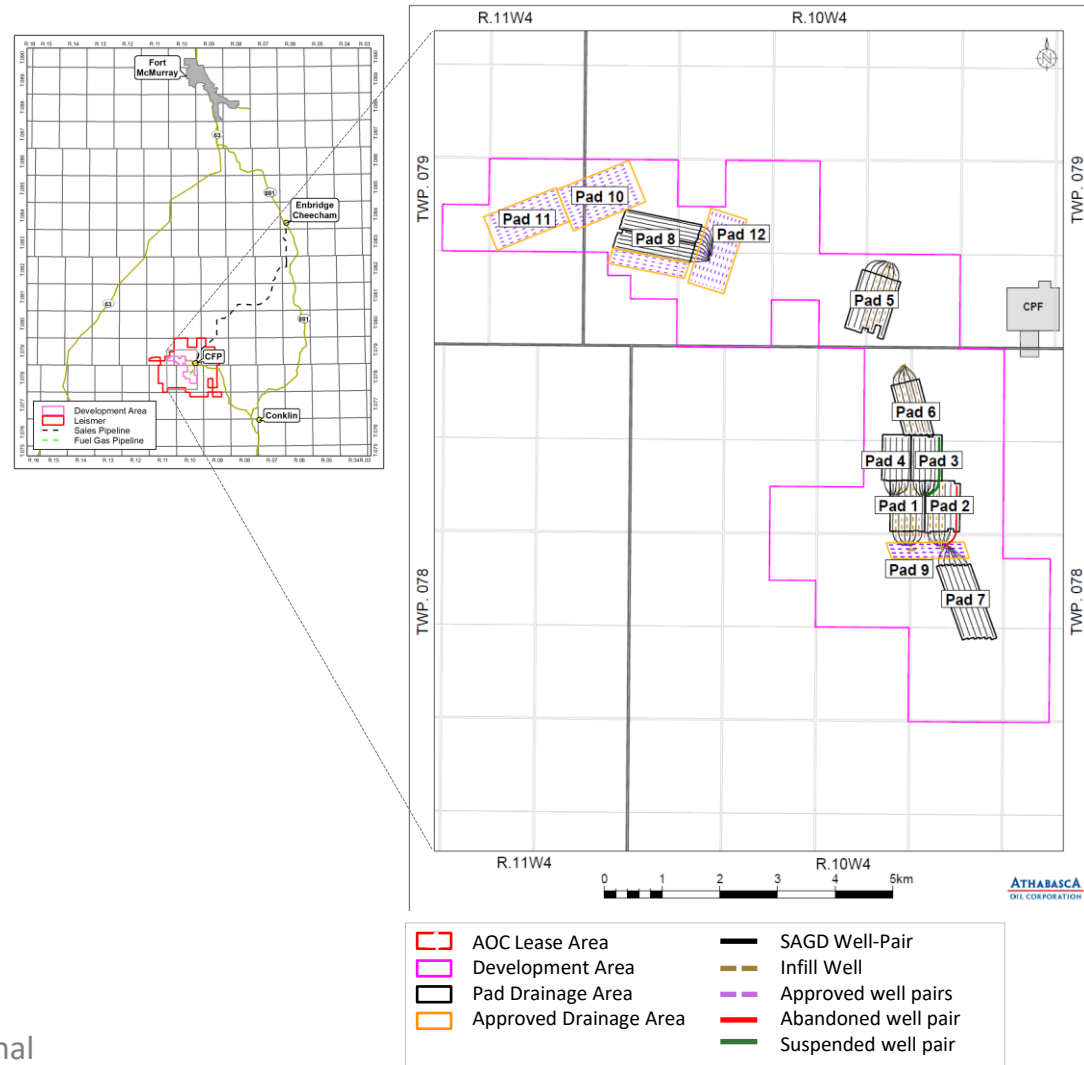
- Development Overview
- Subsurface
- Surface Operations
- Regulatory and Compliance

PROJECT DETAILS

- First steam September 2010
- Approved processing capacity 40,000 bbl/d
- 8 producing pads
 - 50 horizontal well pairs
 - 17 infill wells
- Approved for development
 - Pad 7 (4 infill wells)
 - Pad 8 (4 additional well pairs)
 - Pad 9 (4 well pairs)
 - Pad 10 (11 well pairs)
 - Pad 11 (9 well pairs)
 - Pad 12 (9 well pairs)

INFRASTRUCTURE

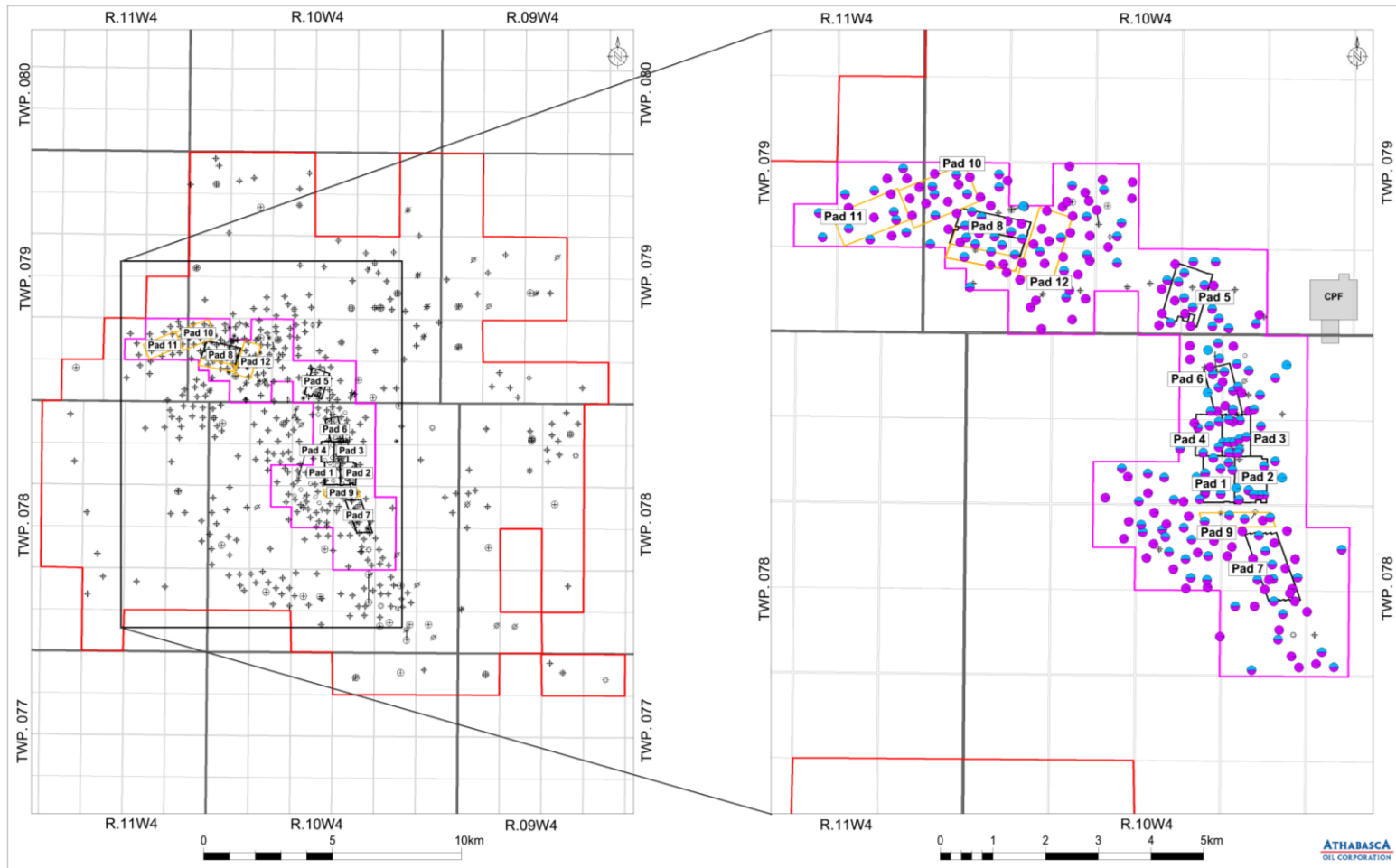
- Fuel gas from TransCanada Pipeline (TCPL)
- Dilbit export to Enbridge Cheecham Terminal
- Diluent supply from Enbridge Cheecham Terminal





SUBSURFACE

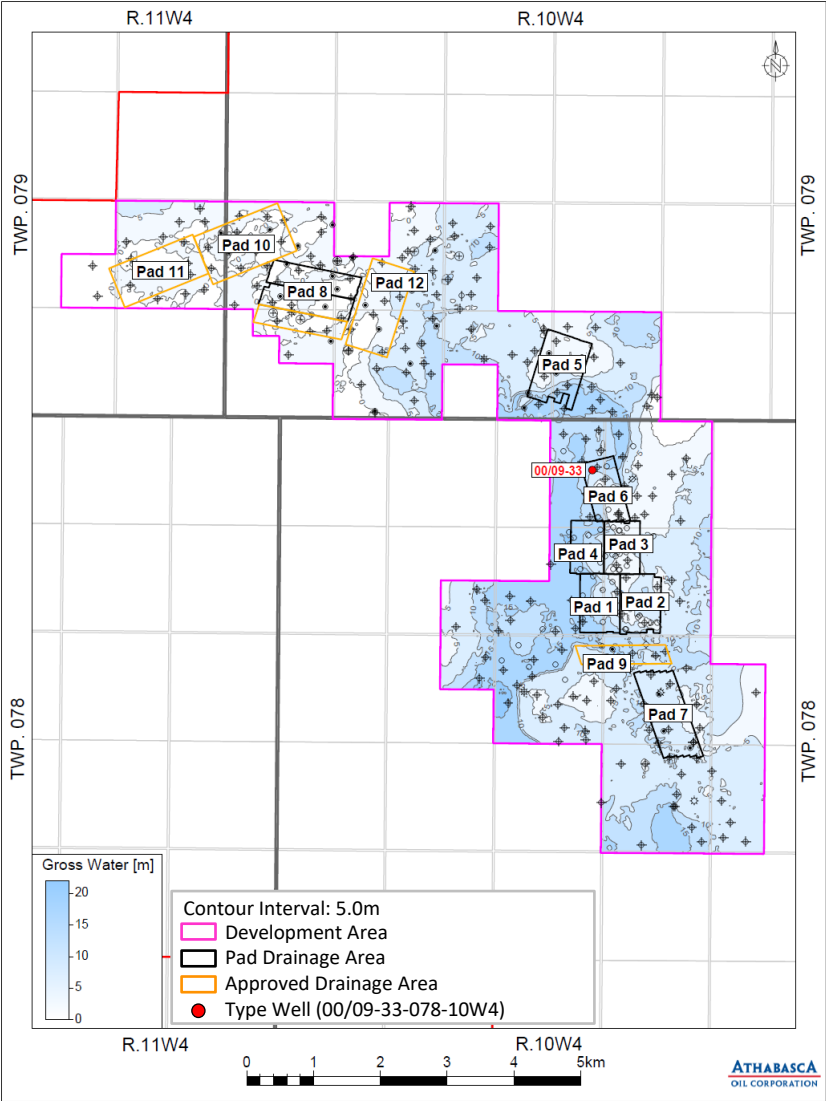
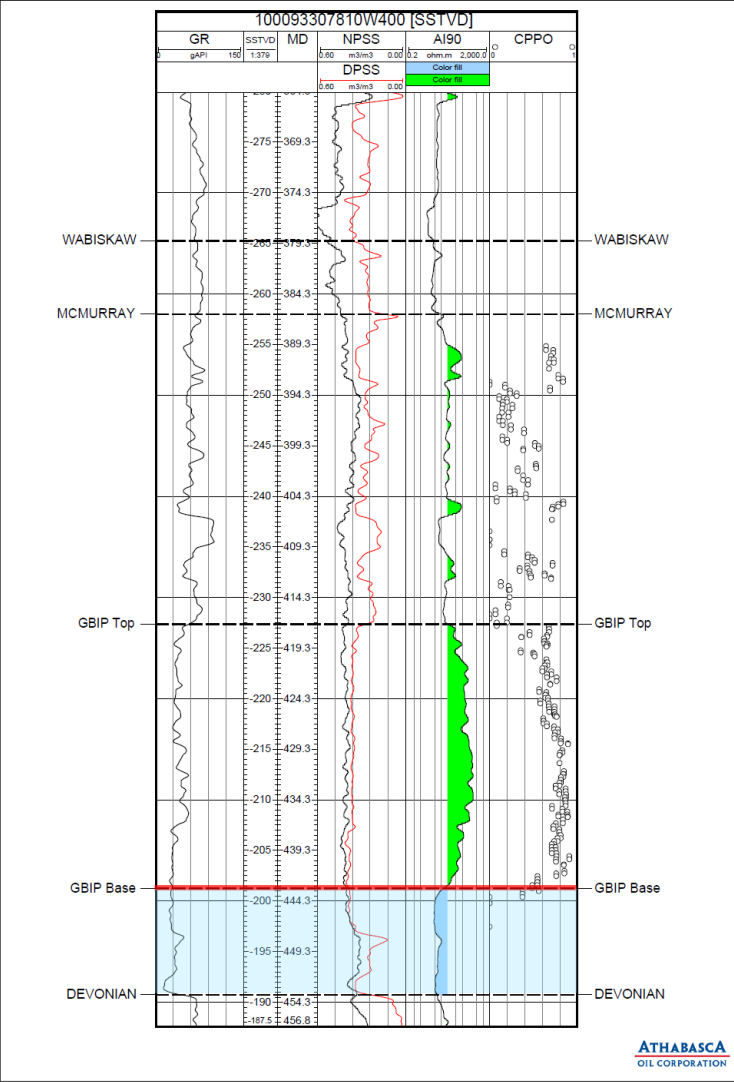
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Area	Area (km ²)	Cored Wells	Image Logs
Lease Area	326	370	625
Development Area	37.4	145	244

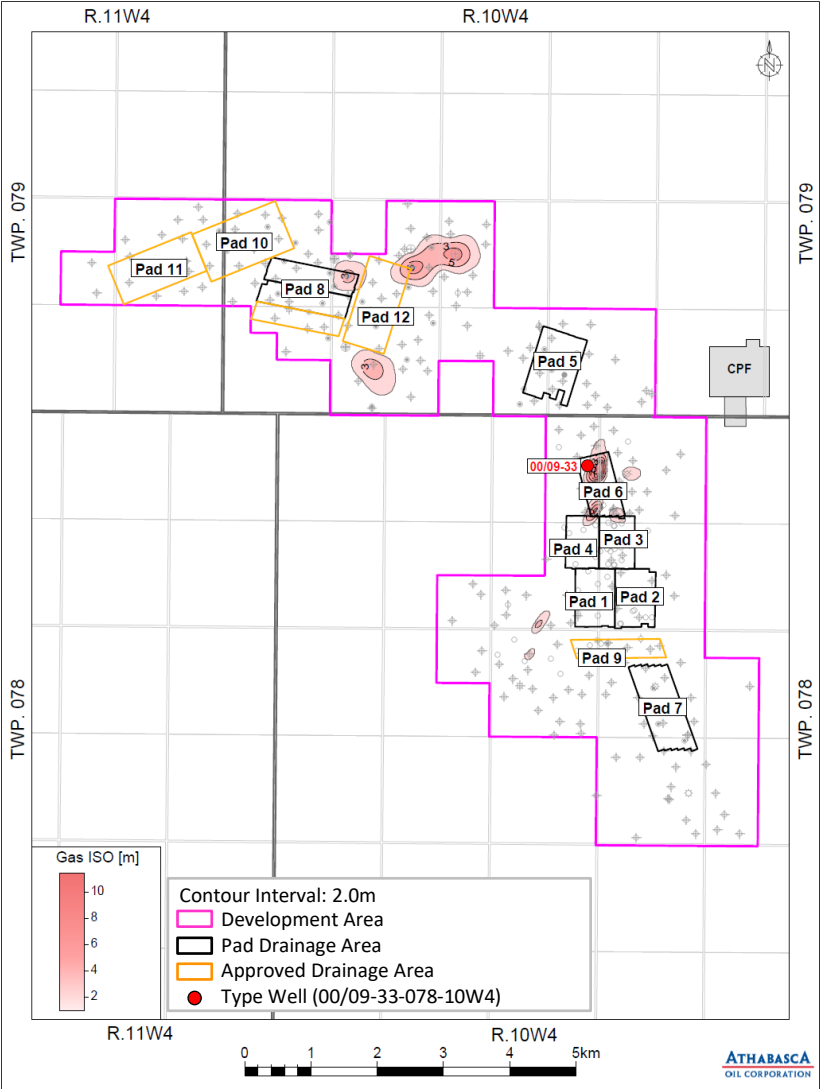
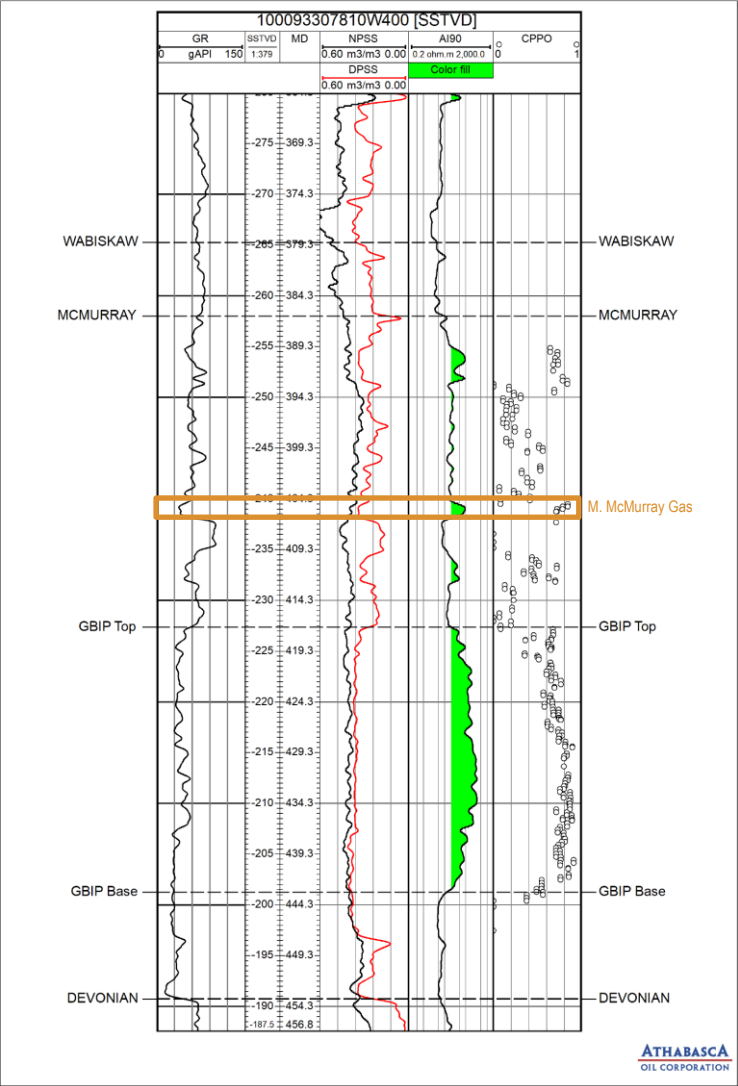
- AOC Lease Area
- Development Area
- Pad Drainage Area
- Approved Drainage Area
- Cored Well
- Image Log(HMI) Well

BOTTOM WATER THICKNESS MAP



TOP GAS THICKNESS MAP

MINIMAL GAS THICKNESS AND LIMITED DISTRIBUTION WITHIN DEVELOPMENT AREA

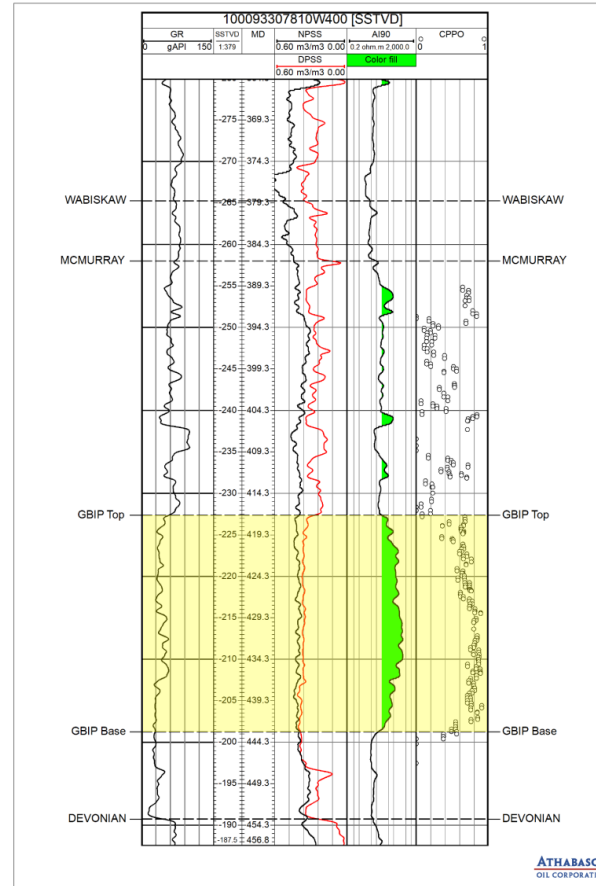


RESERVOIR CRITERIA

- 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

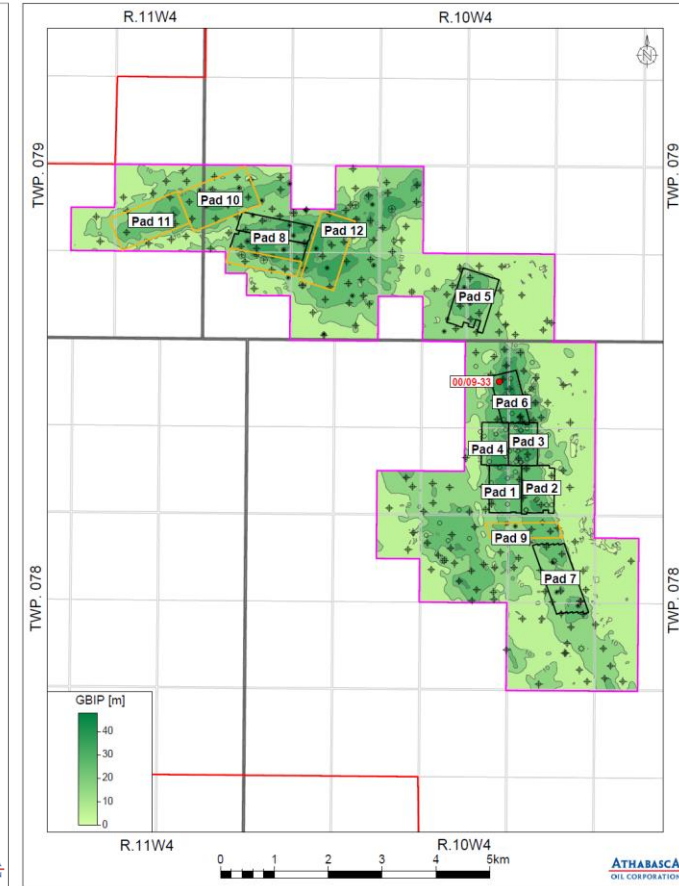
NET PAY CRITERIA

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



Elevation Range: 202 -241 masl

NET PAY ISOPACH



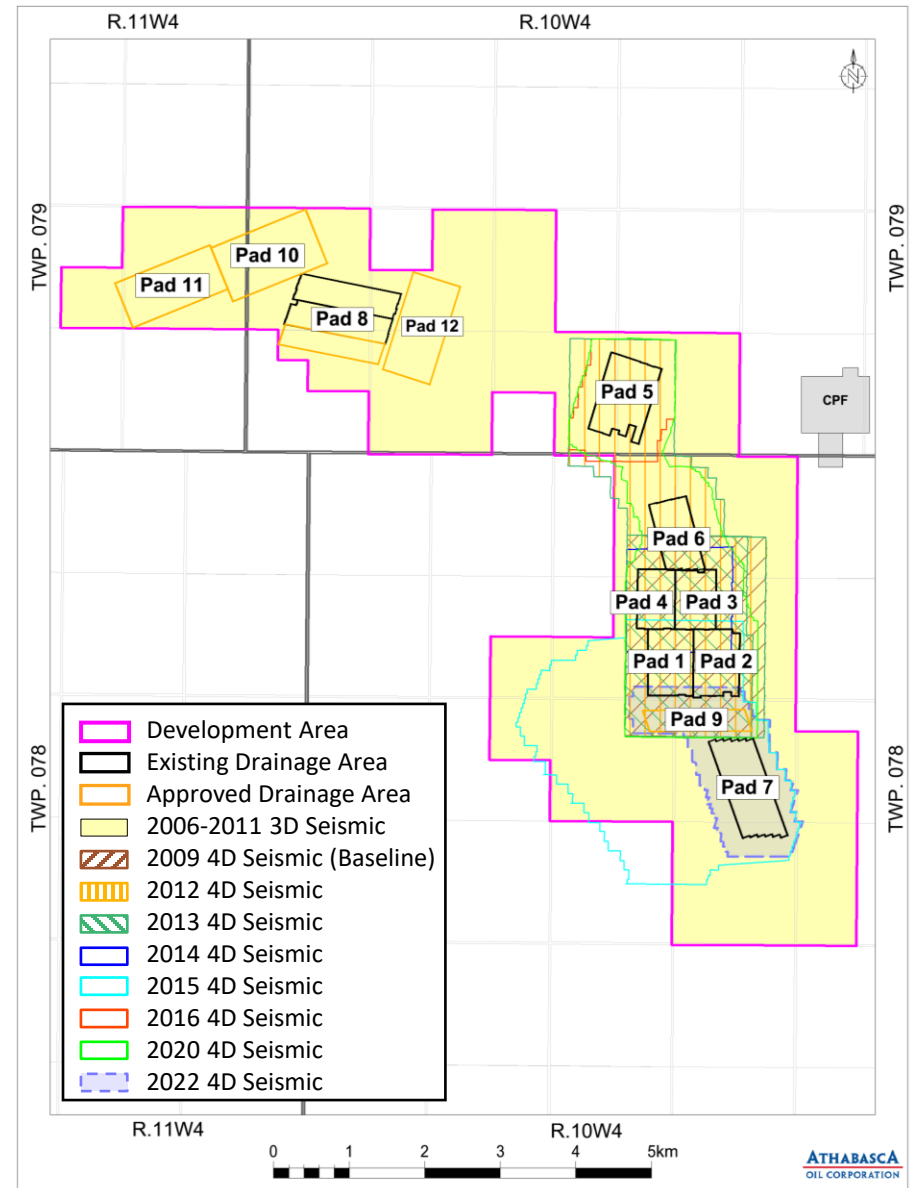
- Contour Interval: 5.0m
- Development Area
- Pad Drainage Area
- Approved Drainage Area
- Type Well (00/09-33-078-10W4)

2022

- Acquired 2.7 km² 4D for Pad 7 and Pad 9 in Q1 2022

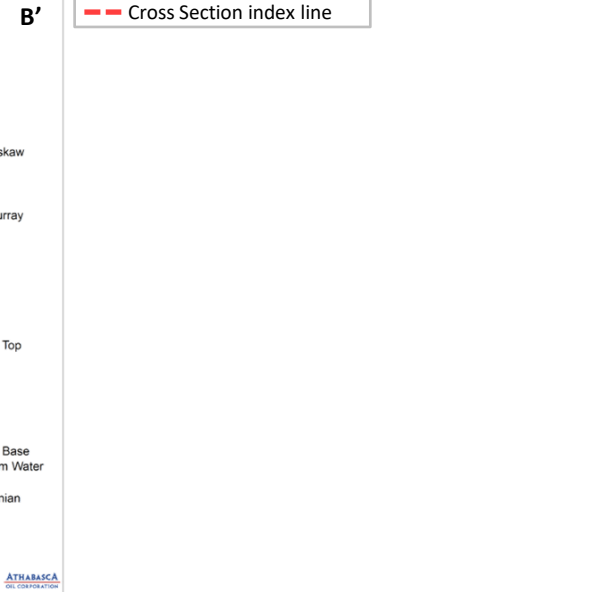
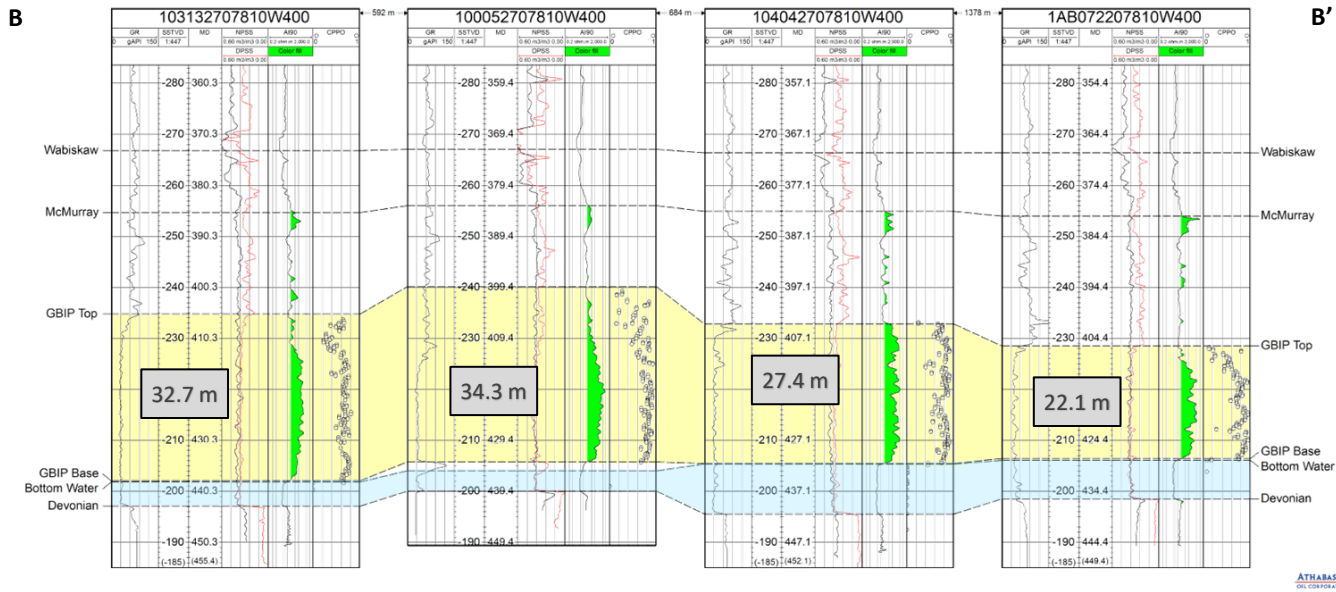
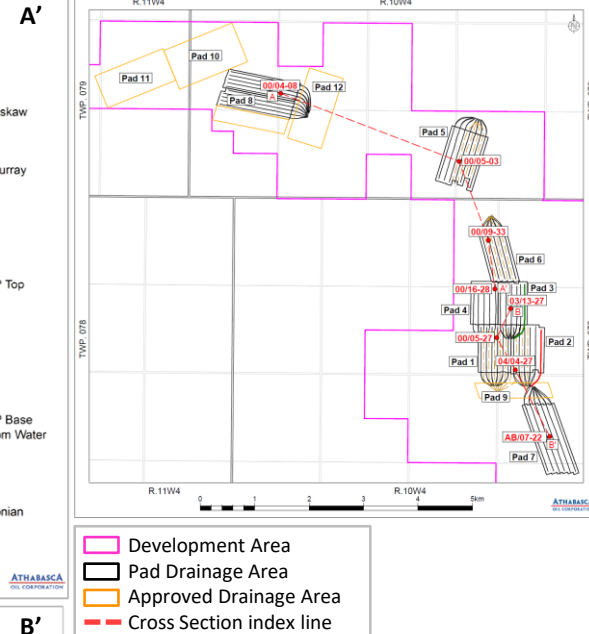
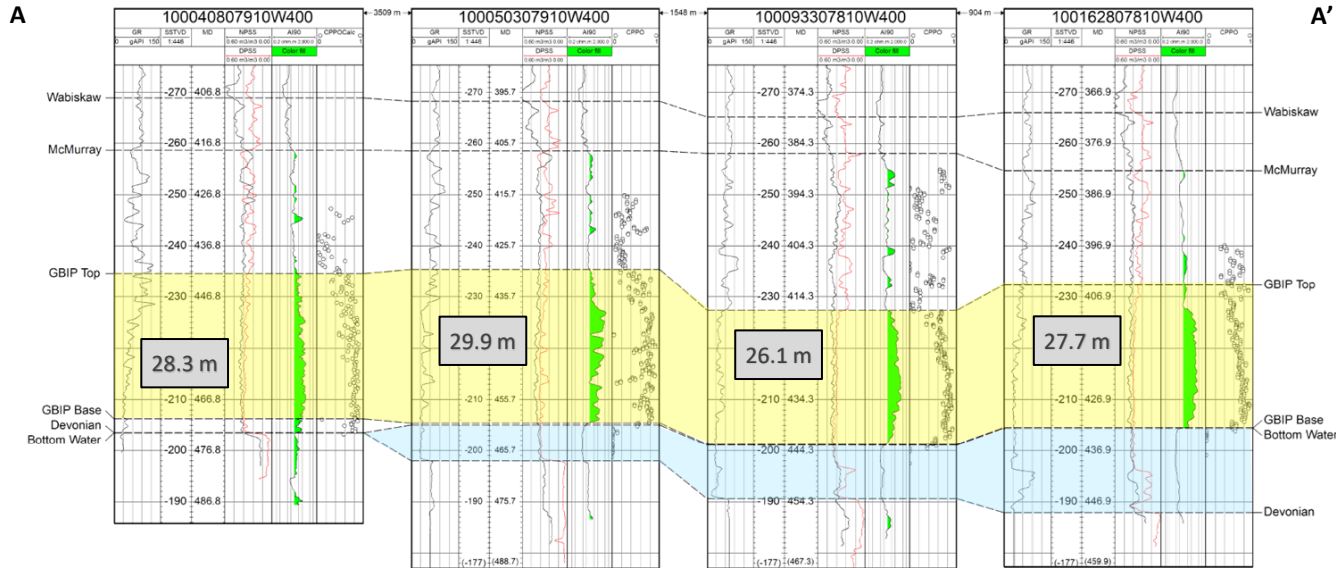
HISTORICAL

- Q1 2020: 7.1 km² 4D seismic acquired for Pads 1-6
 - First monitor for Pad 6
 - Second monitor for Pad 5
 - Fourth monitor for Pads 1-4
- Q1 2016: 2.0 km² first 4D survey for Pad 5
- Q1 2015: 9.0 km² 3D survey
 - Third 4D repeat survey (2.2 km² active SAGD Pads 1 & 2)
 - Repeat 3D seismic for higher resolution data
- Q1 2014: 2.1 km² 4D survey (active SAGD Pads 3 & 4)
- Q1 2013: 4.5 km² 3D survey
 - Second repeat survey (4.9 km² of active SAGD Pads 1–4)
- Q1 2012: 8.6 km² 3D survey
 - First 4D survey (4.9 km² of active SAGD Pads 1–4)
 - New baseline survey for Pads 5 and 6 (3.7 km²)
- Q1 2009: 4.9 km² baseline survey (pre-steam) Pads 1–4
- Development area covered by data acquired in 2006, 2007, 2008 and 2011 and merged into one continuous 3D



PADS 1-8 STRUCTURAL CROSS SECTION N-S

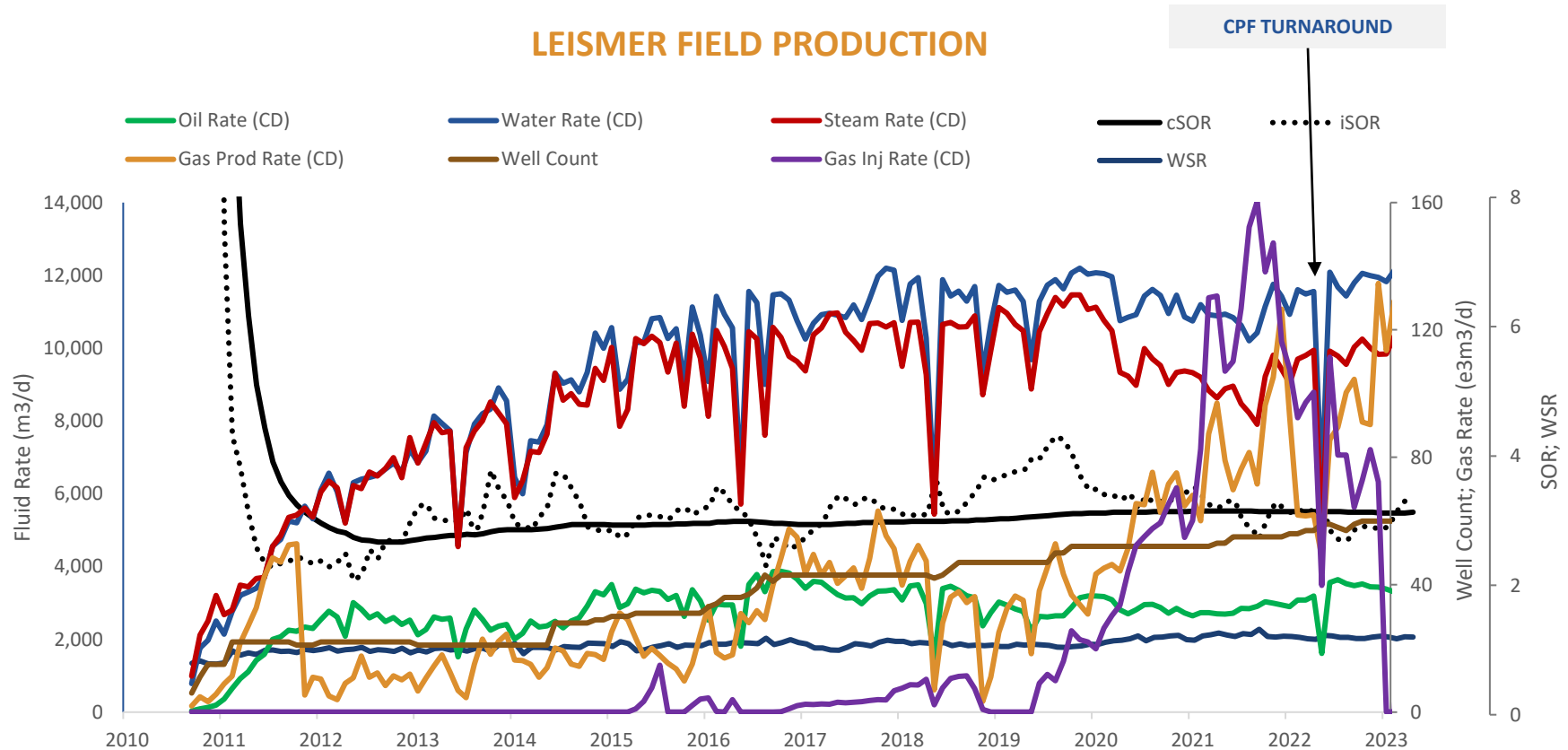
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Gross GBIP thickness

REPORTING YEAR HIGHLIGHTS

- 8 producing pads (50 SAGD well pairs and 17 infill wells)
 - *Pad 8 North (five well pairs) was converted to production in H1 2022*
 - *Pad 6 infills began production in Q3 2022*
- NCG co-injection on Pads 1-6 for SOR management



PAD RESERVOIR PROPERTIES AND RECOVERY FACTOR

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RESERVOIR PROPERTIES

- Original Reservoir Pressure: 2,300 to 2,600 kPa
- Original Reservoir Temperature: 14°C
- Depth: 410 to 444 m TVD (-230 to -216 m subsea)

Pad	Well Pairs	Infills	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 ⁶ m ³)	Cumulative Production (10 ⁶ m ³)	Recovery Factor (%)	EUR = Producible Bitumen in place (10 ⁶ m ³)	EUR RF (%)
1	6	6	775	527	0.83	0.34	5.4	3.7	26.8	4.1	2.5	61%	2.7 - 3.1	65-75%
2	5	3	745	398	0.81	0.33	4.7	3.4	21.4	3.2	2.0	63%	2.1 - 2.4	65-75%
3	6	0	690	421	0.81	0.34	5.9	4.5	28.9	3.5	1.9	54%	1.9 - 2.3	55-65%
4	5	0	695	393	0.81	0.34	5.2	3.7	24.2	2.7	1.3	48%	1.5 - 1.8	55-65%
5	7	4	900	694	0.82	0.34	5.5	4.1	23.6	4.6	1.7	37%	3.0 - 3.5	65-75%
6	5	4	860	468	0.80	0.35	5.6	4.4	35.3	4.7	1.5	32%	3.1 - 3.5	65-75%
7	6	0	1,250	752	0.80	0.34	4.8	4.0	18.6	3.9	1.0	26%	2.2 - 2.5	55-65%
8 (North)	5	0	1,250	468	0.82	0.35	6.2	4.9	25.8	3.5	0.2	6%	1.9 - 2.3	55-65%
8 (Mid)	5	0	1,250	465	0.81	0.34	5.2	3.9	29.9	3.9	0.0	0%	2.1 - 2.5	55-65%
Total	50	17		4,586						34.1	12.1	36%		

- Cumulative production as of December 31, 2022
- No production from Pad 8 Mid in 2022
- Volumes include 50 m at heel and toe of 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* ~ 340 10⁶m³, Full Project Area=262 10⁶ m²
- Development Area GBIP Net-hydrocarbon pore volume* ~ 140 10⁶m³, Development Area=37 10⁶ m²

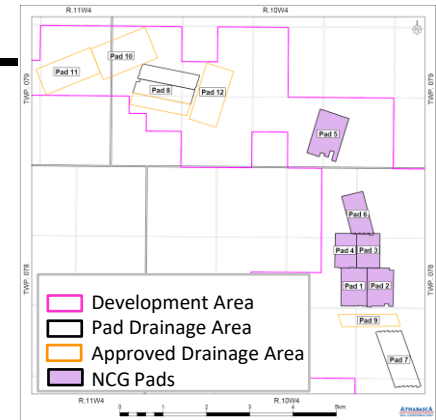
*Project and development area volumes constrained to >10m GBIP Net

NON-CONDENSABLE GAS CO-INJECTION

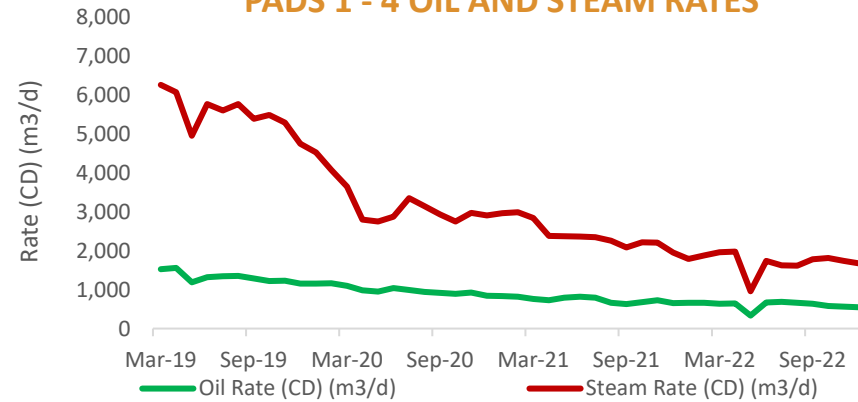
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SUMMARY

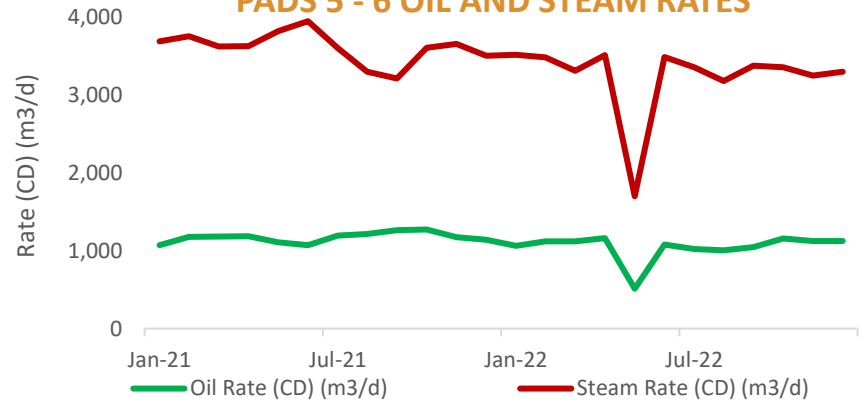
- NCG Co-injection started in 2019 for SOR optimization
 - Pads 1-4 NCG co-injection used for SOR management; continue to see improved SOR on these pads
 - NCG co-injection has been helpful in balancing steam chamber pressure in relation to bottom water
 - No observed negative impact of gas injection to recovery factor outlook and wellbore integrity
- NCG implemented to Pads 5-6 starting in May 2021, continuing to optimize



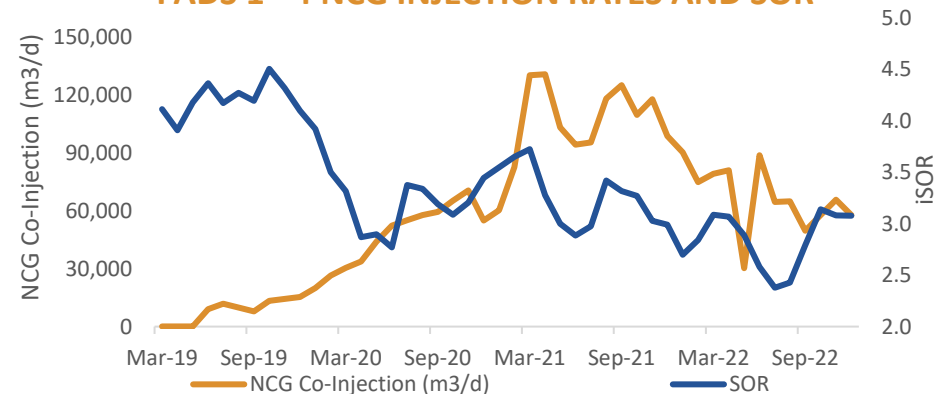
PADS 1 - 4 OIL AND STEAM RATES



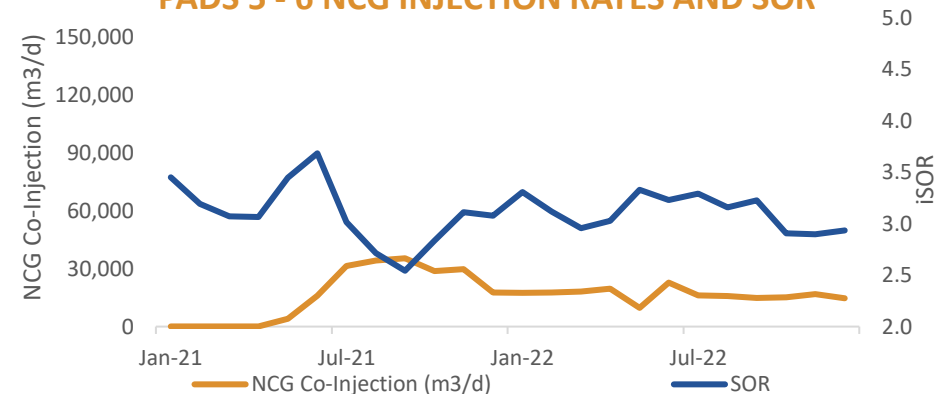
PADS 5 - 6 OIL AND STEAM RATES



PADS 1 - 4 NCG INJECTION RATES AND SOR



PADS 5 - 6 NCG INJECTION RATES AND SOR



CLASS 1B DISPOSAL APPROVAL 11479C

- Basal McMurray injection wells
 - 00/12-33-078-10W4/00
 - 00/13-33-078-10W4/00
- Clearwater B injection wells
 - F2/01-10-078-10W4/00
 - F2/04-28-078-10W4/00
- Extensive monitoring network
 - Basal McMurray
 - Clearwater B
 - Lower Grand Rapids

BASAL MCMURRAY MONITORING

- Pressure declining, consistent with reservoir operating strategy

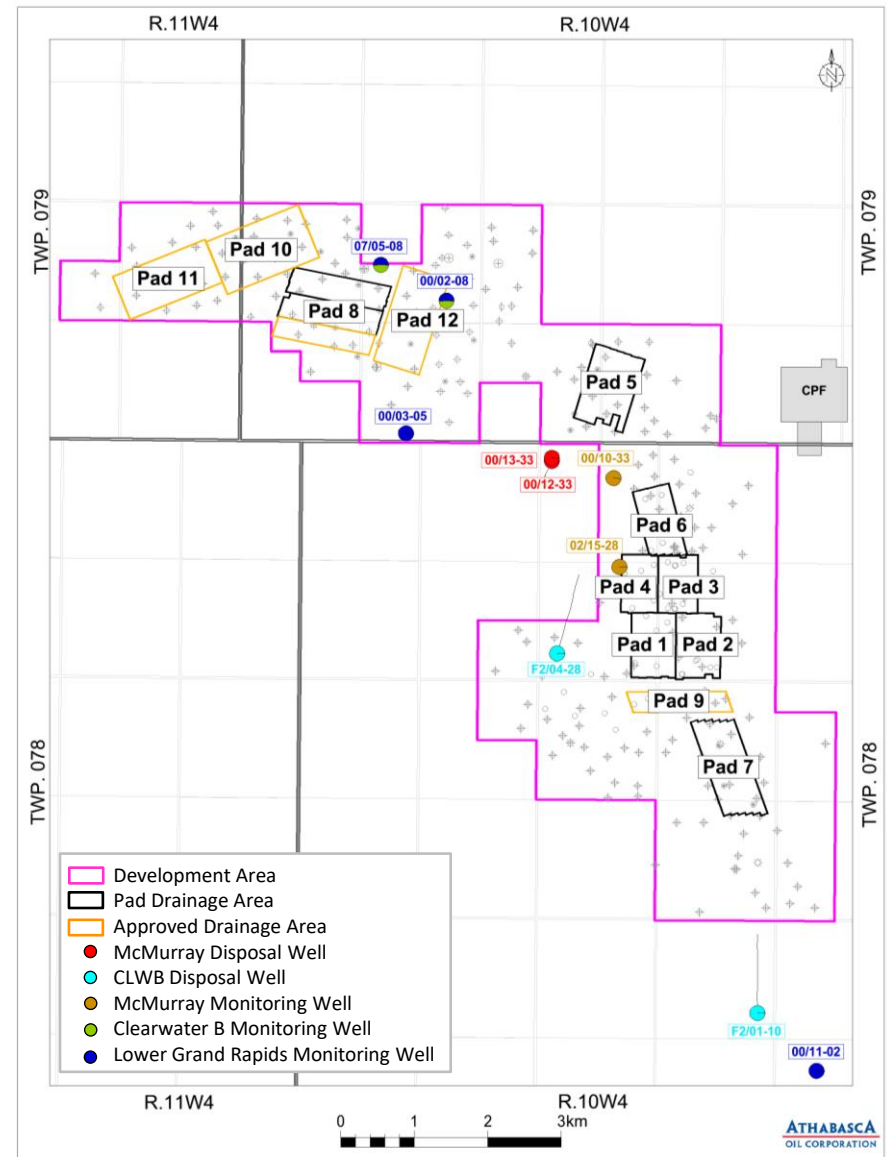
CLEARWATER B MONITORING

- No pressure response at Clearwater B monitoring wells

LOWER GRAND RAPIDS MONITORING

- Pressure response in Lower Grand Rapids monitoring wells remains consistent with pumping rates of the Lower Grand Rapids source water wells

No unexpected responses observed at any of the monitoring wells during the reporting year



INNOVATION AND LEARNINGS

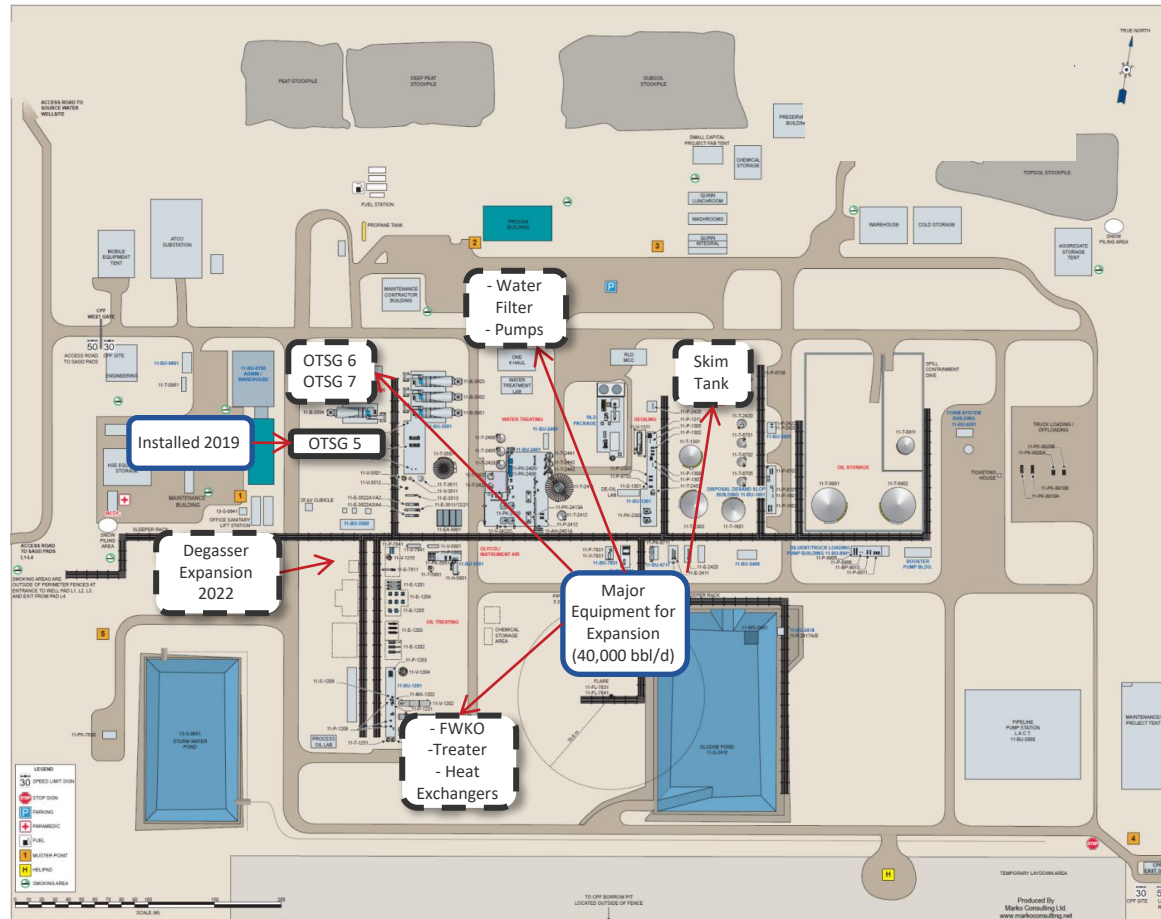
- Continuing to optimize NCG co-injection to improve SOR
- Implementing steam splitters and FCDs on new well pairs moving forward
- Evaluating infill well performance in relation to well placement
- No immediate plans for future pilots



SURFACE OPERATIONS

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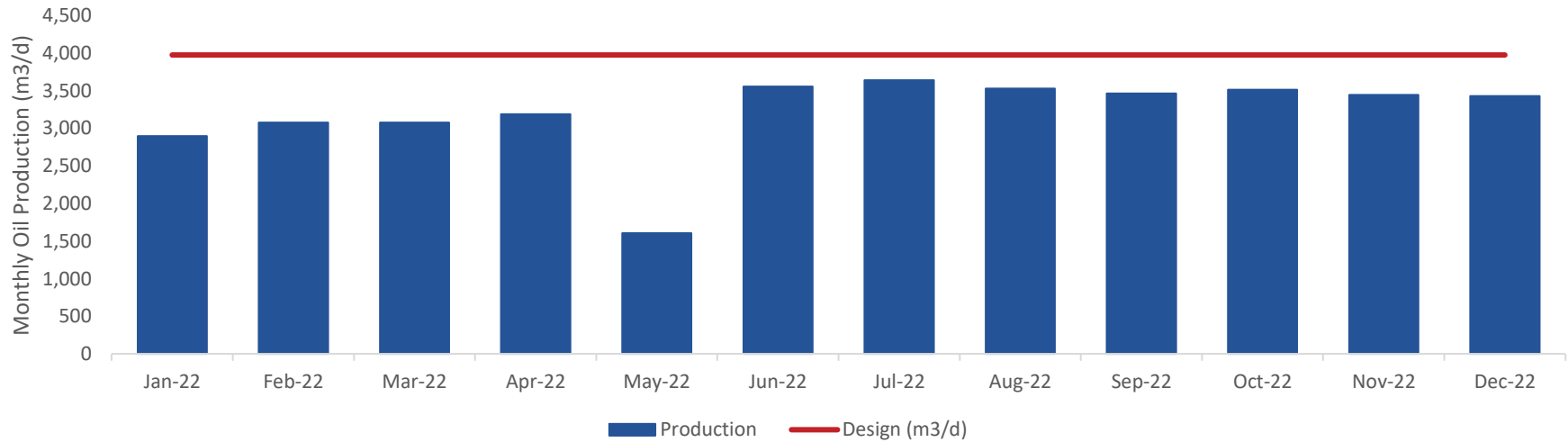
GAS HANDLING SYSTEM UPGRADE (DEGASSER EXPANSION) INSTALLED IN 2022



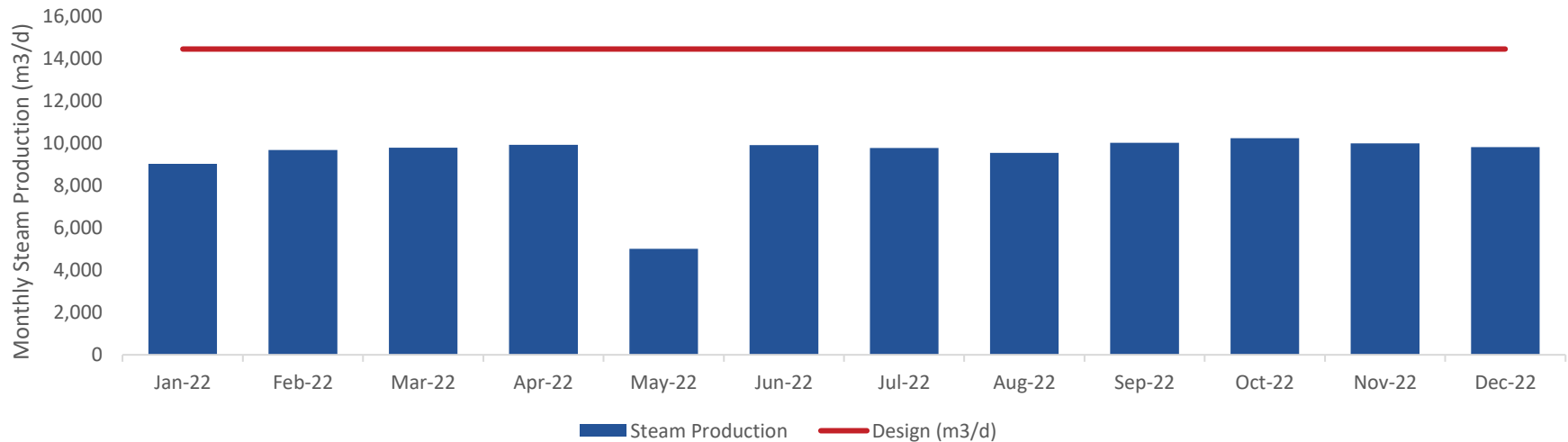
LEISMER OIL AND STEAM RATES

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OIL

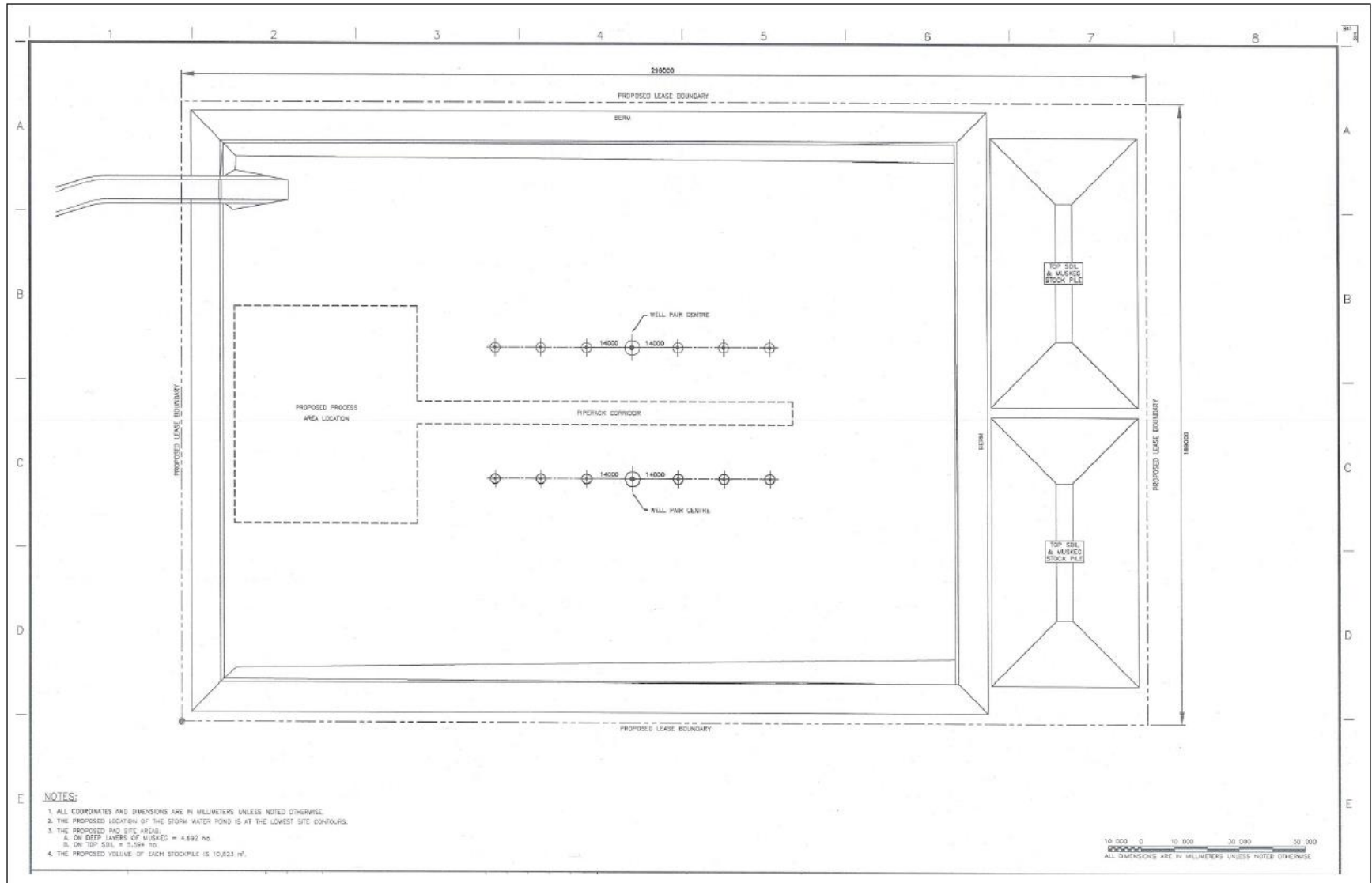


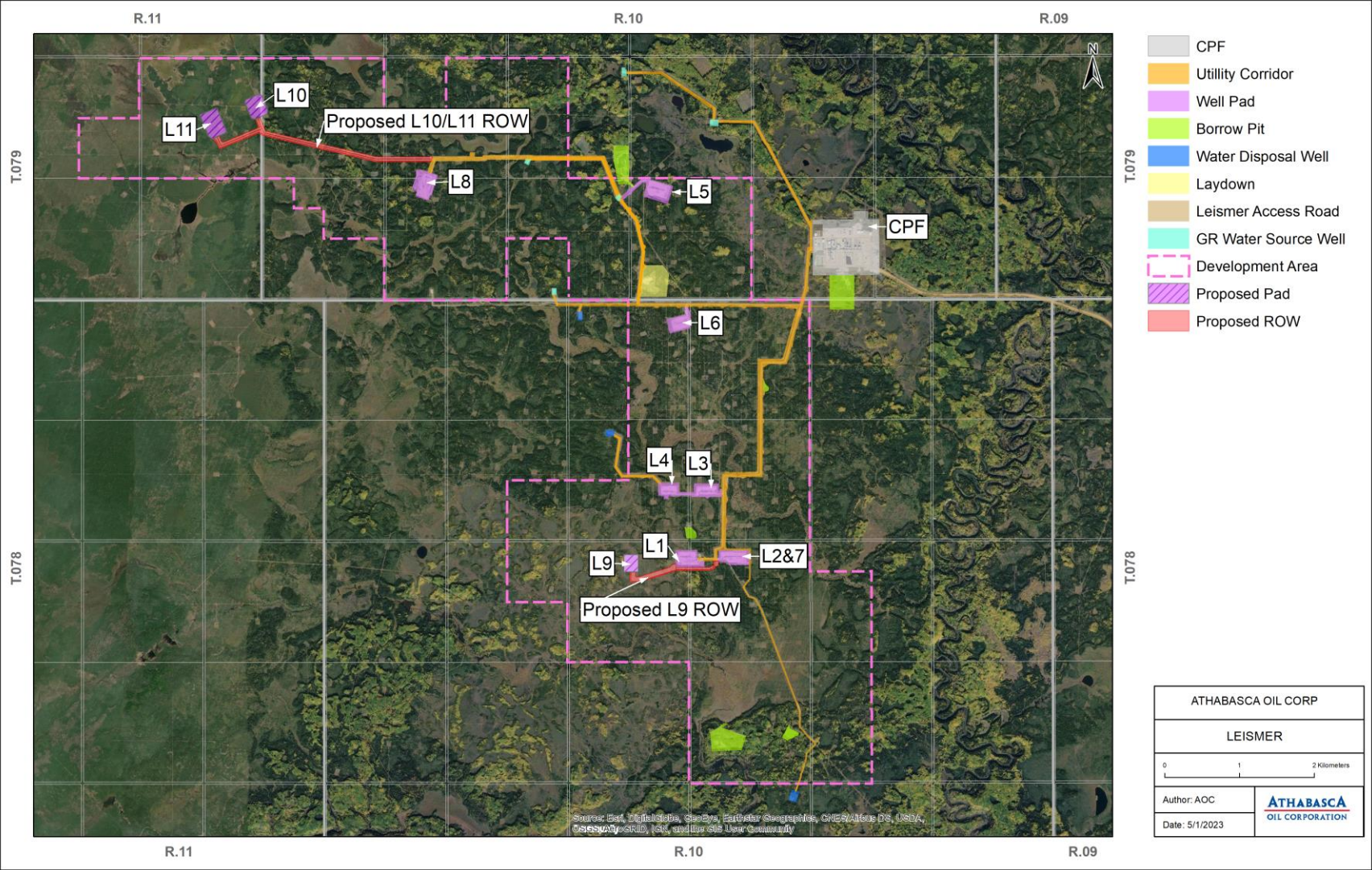
STEAM



TYPICAL WELL PAD SCHEMATIC (PAD 6)

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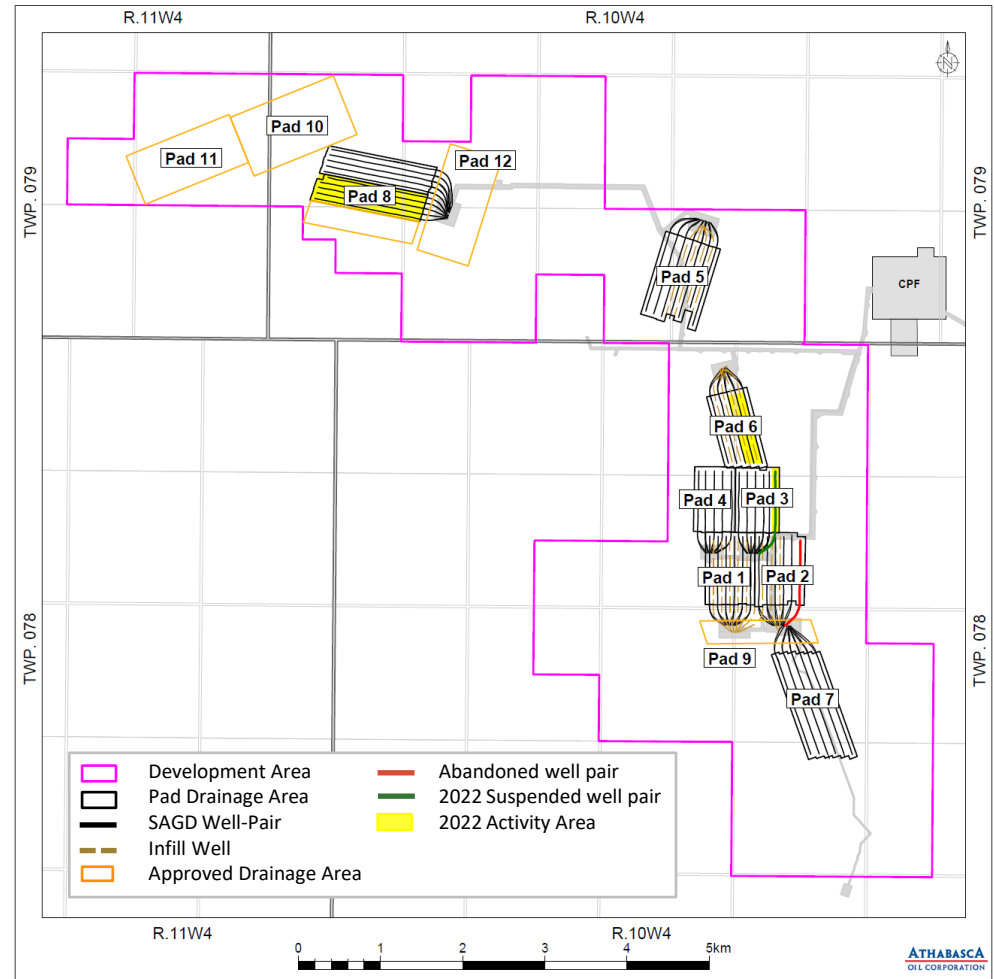


2022 ACTIVITY

- CPF turnaround completed (May)
- Pad 6 - drilled 2 infill wells (July)
- Pad 8 - drilled 5 SAGD well pairs (August – December)
- Continued expanding NCG co-injection across the field for pressure management and SOR management

SUSPENSION AND ABANDONMENT

- 2022 – L3P1 suspension (September)
- Historical
 - 1 producer/injector well pair abandoned February 2020
 - L2P1 (106/11-27-078-10W4/00)
 - L2I1 (100/06-27-078-10W4/00)





REGULATORY & COMPLIANCE

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APPROVALS, AMENDMENTS, AND RENEWALS

Application No. or Approval No.	Approval Date	Description
OSCA Application No. 1935228 D023 Category 1	January 20, 2022	Produced water transfers - Hangingstone Facility to Leismer Facility
Water Act License No. 239880-03-00 renewal	July 1, 2022	10 year term – Lower Grand Rapids water for steam
OSCA Application No. 1938236 D023 Category 2	July 27, 2022	5 new drainage areas
OSCA Application No. 1938779 D023 Category 2	September 30, 2022	Infill and redrill wells within approved drainage areas

OSCA – Oil Sands Conservation Act

SPILLS

- No reportable spills in 2022

AUDITS

- No AER audits completed in 2022

INSPECTIONS

- AER completed 11 inspections; no outstanding items

VOLUNTARY SELF-DISCLOSURES

- No voluntary self-disclosure in 2022

NON-COMPLIANCE

- EDGE 0389070- EPEA Approval, Wetland Research Program Proposal - late submission (March)
 - *Corrective Actions: Proposal submitted and approval conditions reviewed for all proposal submission dates*

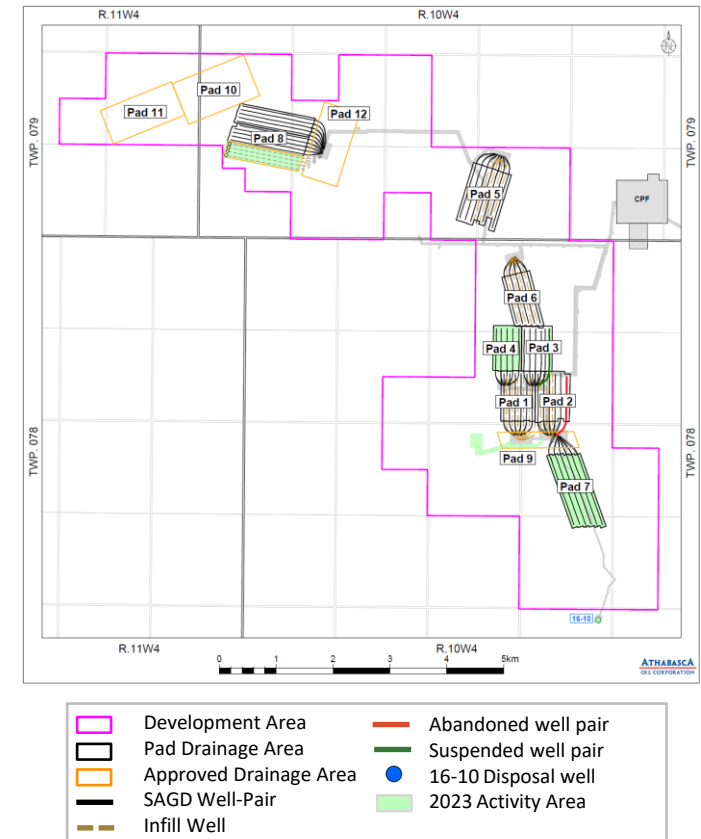
2023 ACTIVITY

- Pad 7 – drill 4 infill wells
- Pad 8 – drill 4 well pairs
- Drill 16-10-78-10W4/00 1b disposal well
- Pad 9 – construct well pad and utility corridor
- Continue expanding NCG co-injection across the field for pressure management and SOR management
- Complete facility design for CO₂ capture from OTSG 5

FUTURE PLANS

- CPF modifications and pad additions to expand oil capacity to 28,000 bbl/d
- Evaluating CPF modifications and pad additions to expand oil capacity to 40,000 bbl/d
- Finalize evaluation of local CO₂ capture and storage project

Planned Development



The logo for Athabasca Oil Corporation features the word "ATHABASCA" in a large, bold, blue serif font. A thick red horizontal line is positioned directly beneath "ATHABASCA". Below this line, the words "OIL CORPORATION" are written in a smaller, blue, all-caps sans-serif font.

ATHABASCA

OIL CORPORATION

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