ConocoPhillips

Surmont In Situ Oil Sands Project

Directive 054 Submission & Annual OSCA Report

Commercial Scheme Approval No. 9426
EPEA Approval No. 48263-01-00, as amended

Reporting Period: March 1, 2019 to December 31, 2019

Submission Date: September 30, 2020

Scope

This submission is intended to provide information in compliance with:

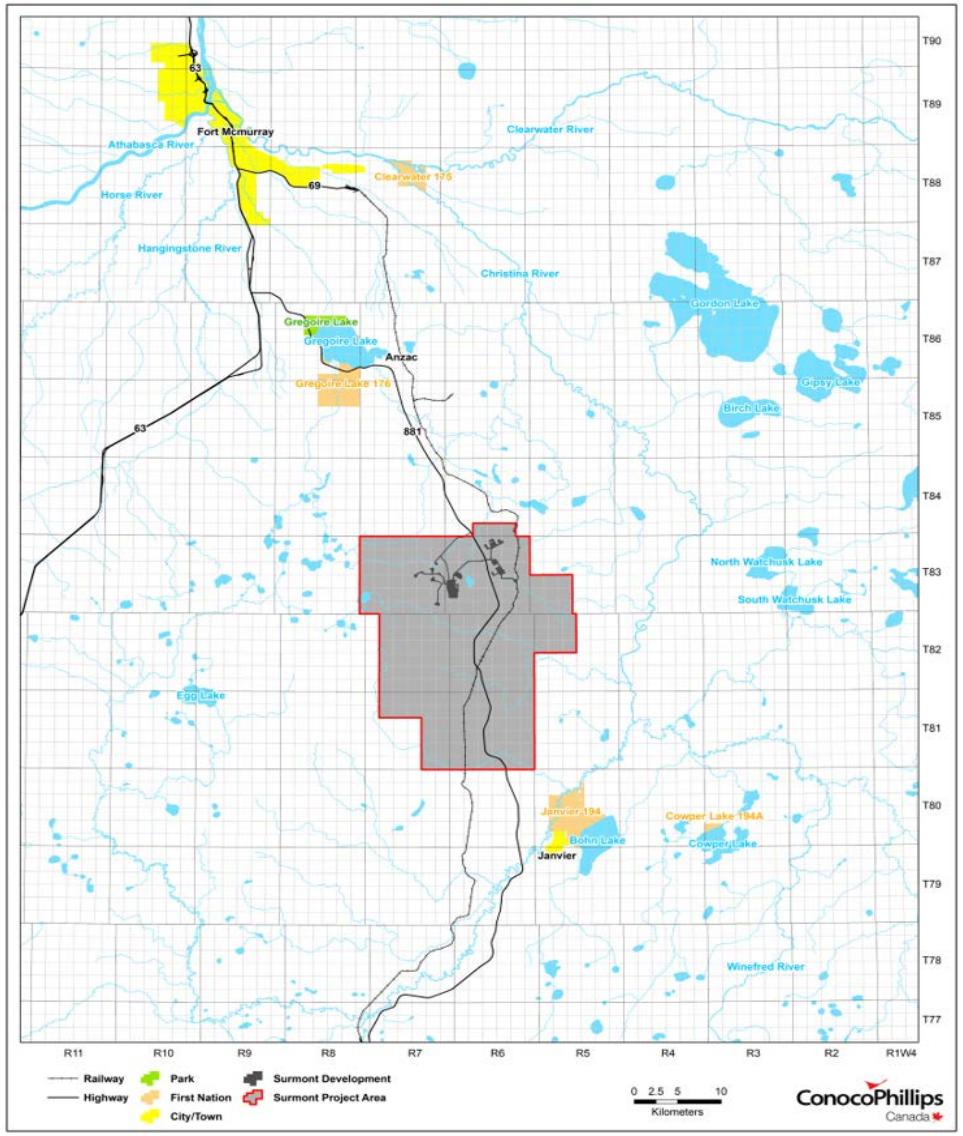
- *Directive 054: Performance Reporting and Surveillance of in Situ Oil Sands Schemes* (April 2020) for the operating period from March 1, 2019 to December 31, 2019
- Condition 23 of Commercial Scheme Approval No. 9426VV for the submission of an annual *Oil Sands Conservation Act* Report (*OSCA* Report)

Introduction

Directive 054: Section 4.1

Surmont Overview

Area Map: Approved Surmont Project Area



OWNERSHIP

Surmont is a steam-assisted gravity drainage (SAGD) bitumen recovery facility in the Athabasca oil sands area that is operated by ConocoPhillips Canada under a 50/50 joint venture agreement with Total E&P Canada.

LOCATION

The project is approximately 63 km southeast of Fort McMurray, Alberta and covers 219 sections of land in Townships 80, 81, 82, 83, and 84, and Ranges 5, 6, and 7, west of the fourth meridian.

PROJECT HISTORY

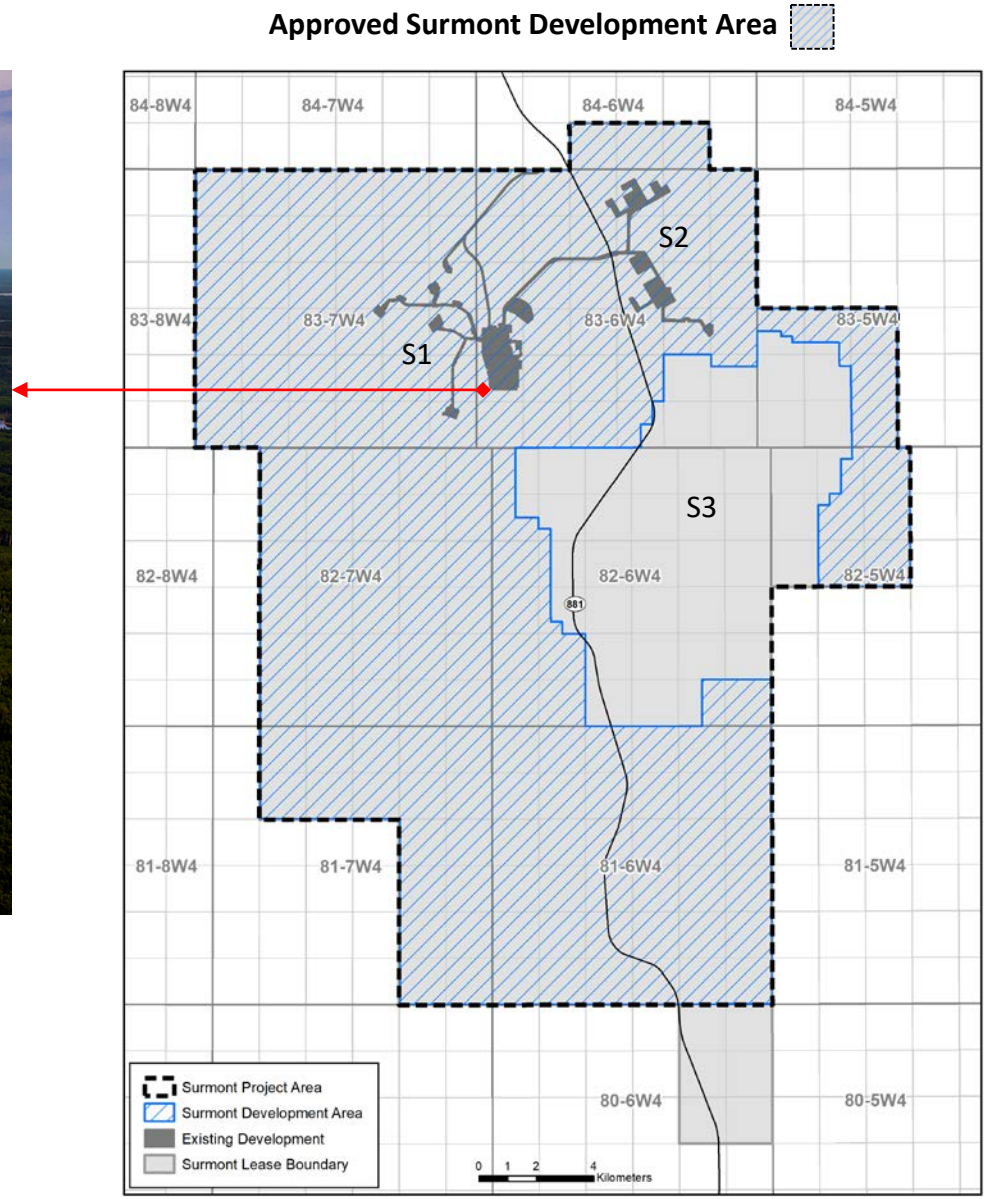
Surmont currently features two phases:

- 2004 - construction start at Surmont Phase 1 (“S1”)
- 2007 - commercial production at S1
- 2010 - construction start at Surmont Phase 2 (“S2”)
- 2015 - commercial production at S2

APPROVED BITUMEN PRODUCTION LIMIT

29, 964 cubic metres per day (m^3/d) on an annual average basis or 188 thousand barrels of oil equivalent per day (MBOED)

Surmont Overview



APPROVED DEVELOPMENT AREA

The development area associated with the proposed Surmont Phase 3 (“S3”) project (Application No. 1800069) is under review by the AER and therefore excluded.

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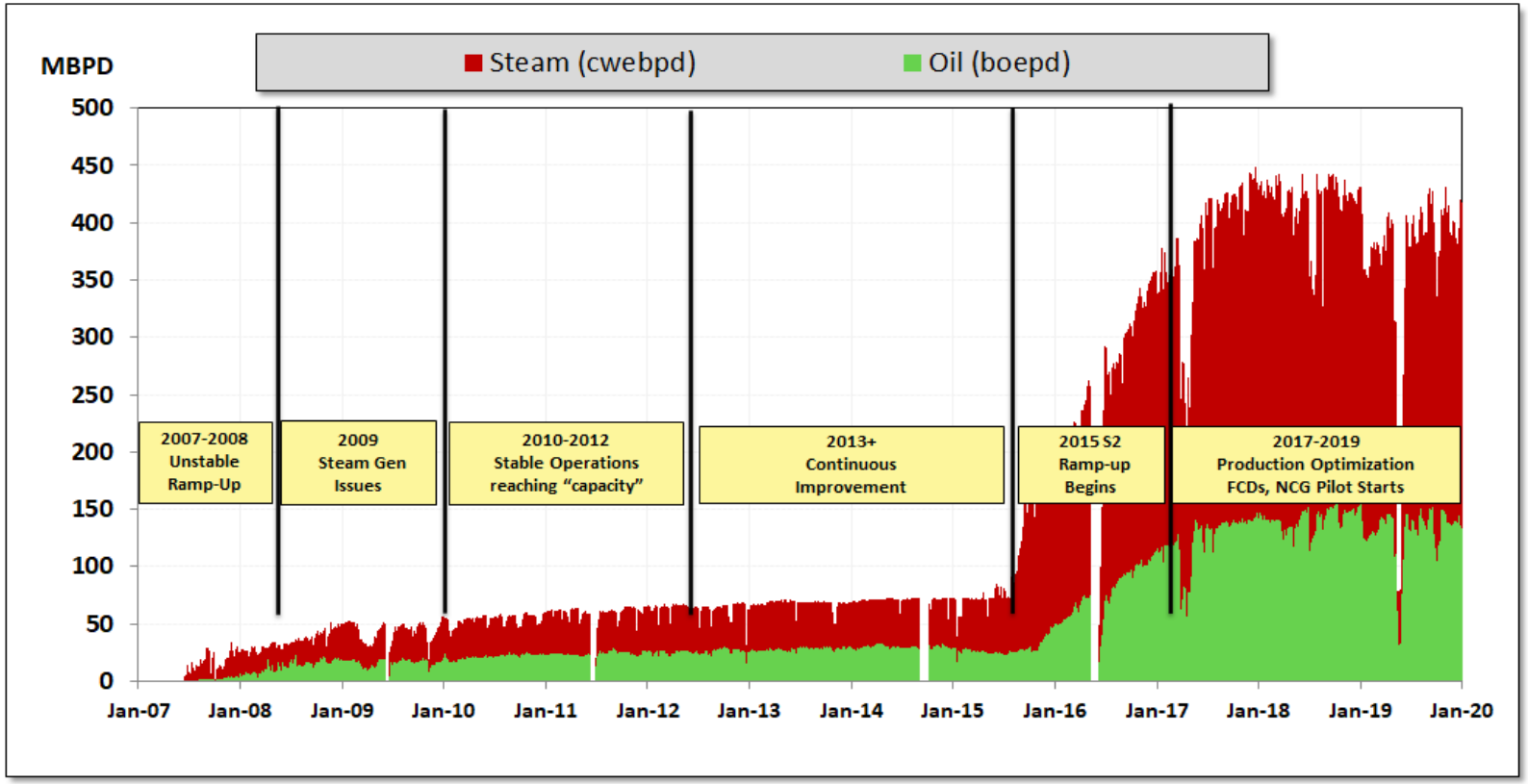
Subsurface

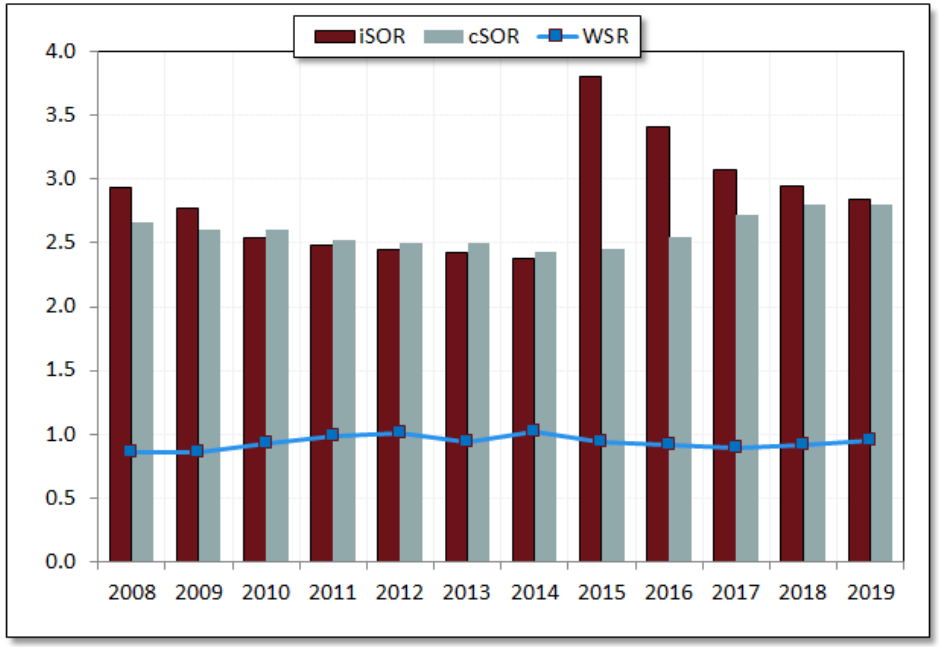
Directive 054: Section 4.2
OSCA Report: Table 1 (2) (4)

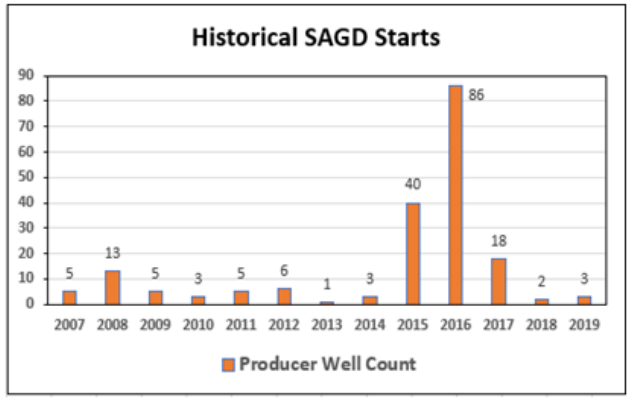
OneSurmont Lifespan Production

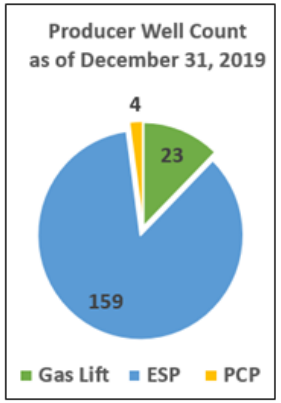
Historical Steam Injection and Bitumen Production



Historical iSOR, cSOR and WSR



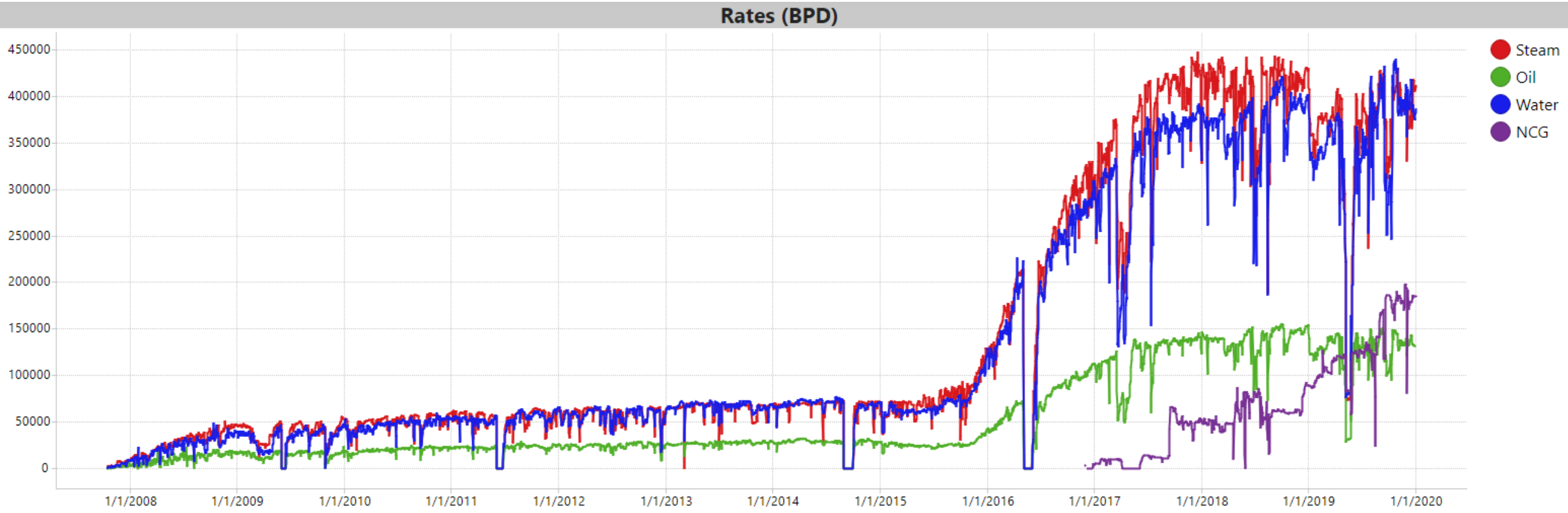




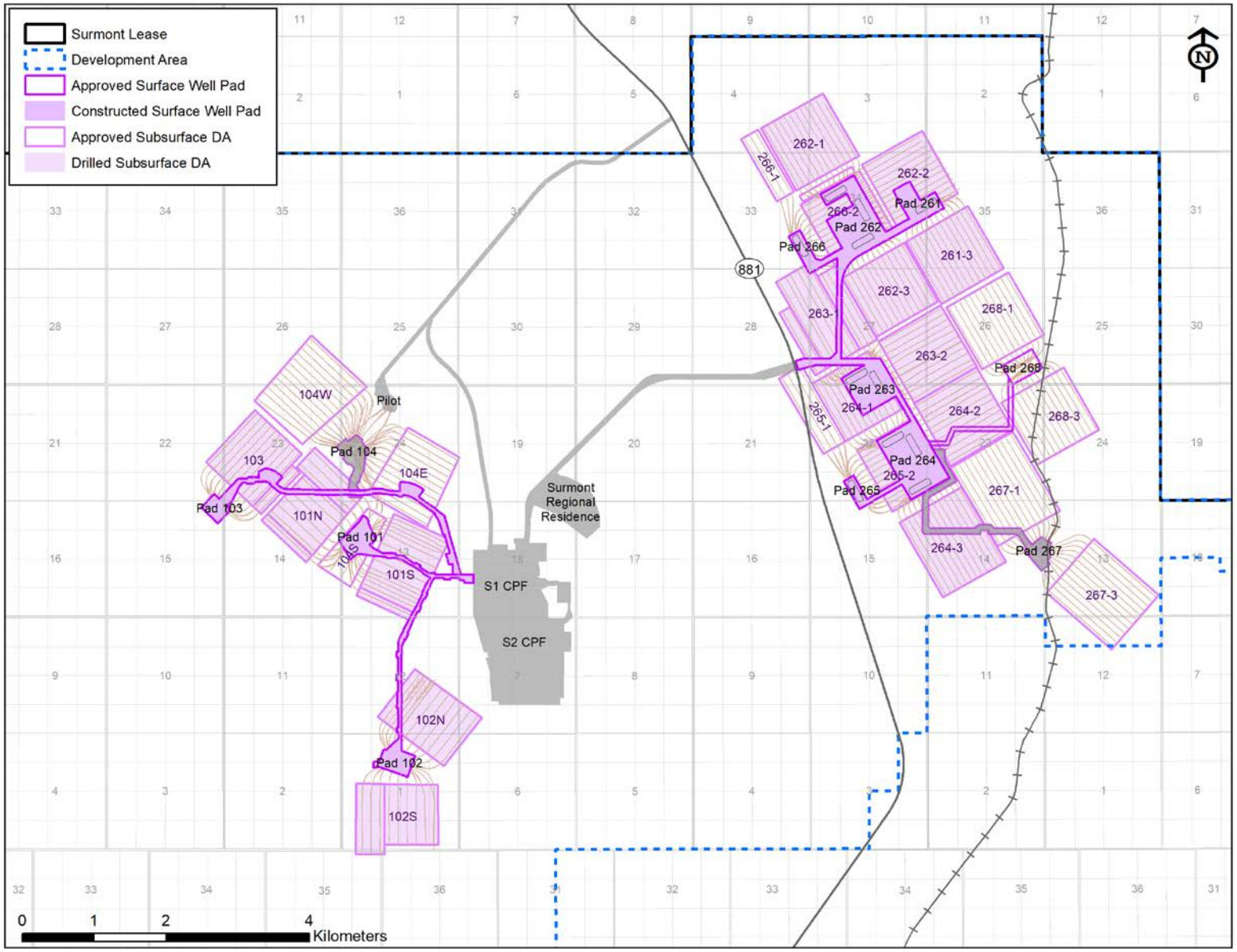
2019 Highlights

- Continued execution of NCG in the following pads;
  - 102N, 102S and 101N
- 265-2 NCG pilot saw positive results for top water thief zone mitigation
- S2 Turnaround in Q2
- One multilateral wellbore drilled and completed in pad 263-2

OneSurmont Lifespan Production



Development Area Maps: Drilled and Approved Drainage Areas



DRILLED

- 101N
- 101S
- 102N
- 102S
- 103
- 261-3
- 262-1
- 262-2
- 262-3
- 263-1
- 263-2
- 264-1
- 264-2
- 264-3
- 265-2
- 266-2

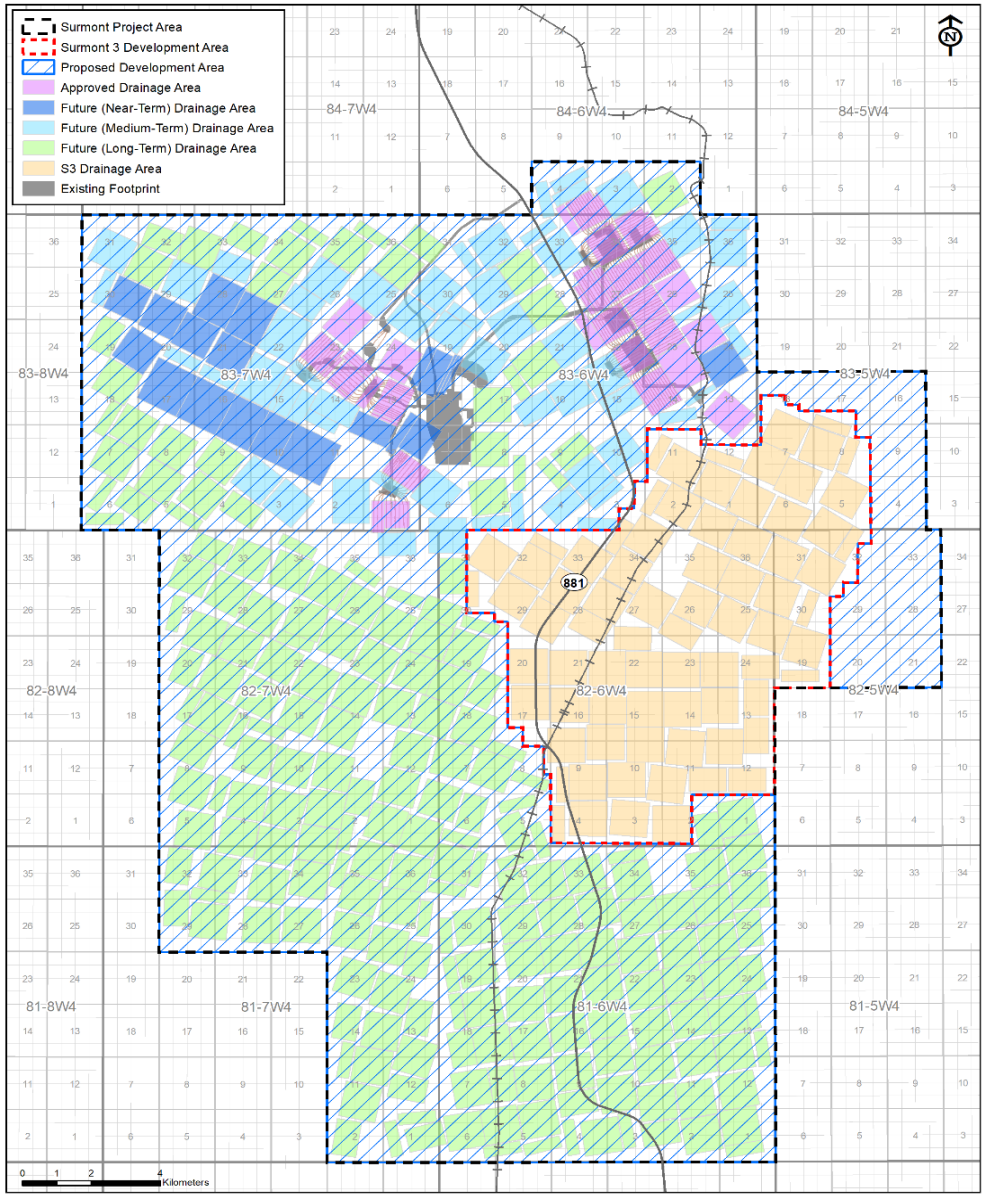
APPROVED

- 104E
- 104W
- 104S
- 267-1
- 267-3
- 268-1
- 268-3
- 265-1
- 266-1

LIFECYCLE APPROVAL

Additional future drainage areas approved as part of ConocoPhillips' 2019 Lifecycle Project (Application No. 1922683) are illustrated on Slide No. 10

Development Area Maps: Drilled and Approved Drainage Areas



LIFECYCLE APPROVAL (APPLICATION NO. 1922683)

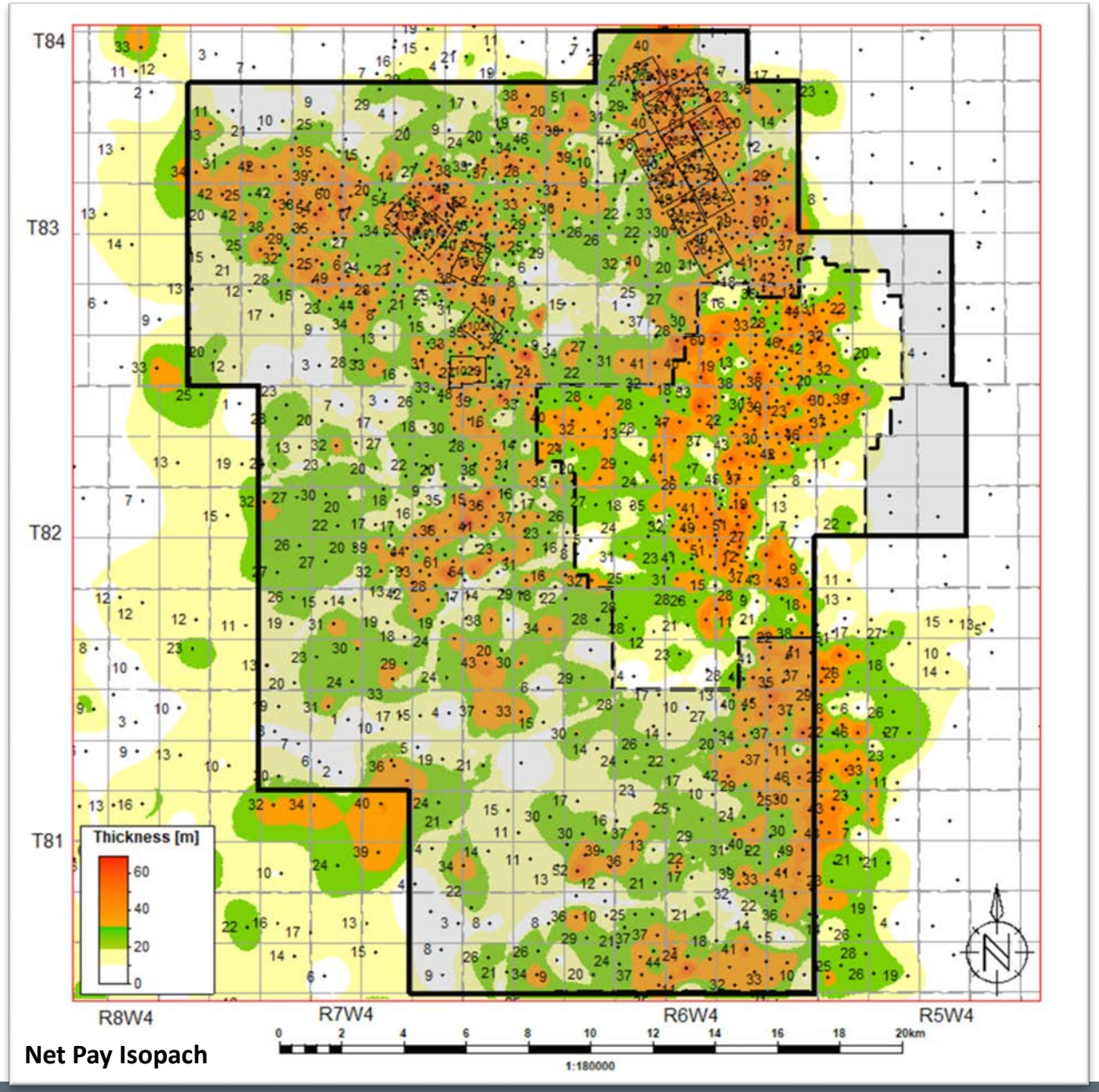
The conceptual locations of future subsurface drainage pattern areas are identified based on current sequencing scenarios as follows:

- future near-term drainage areas: next 10-15 years
- future medium-term drainage areas: development years 15-41
- future long-term drainage areas: beyond development year 41

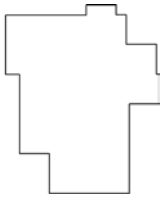
LIFECYCLE APPROVAL/SUBSURFACE INFORMATION

No new subsurface information is available related to approved lifecycle activities, i.e., drainage area evaluation, design, or development

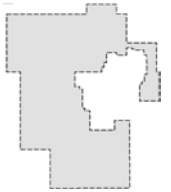
Development Area Maps: Net Pay Isopach



Net Pay Isopach



Surmont Project Area



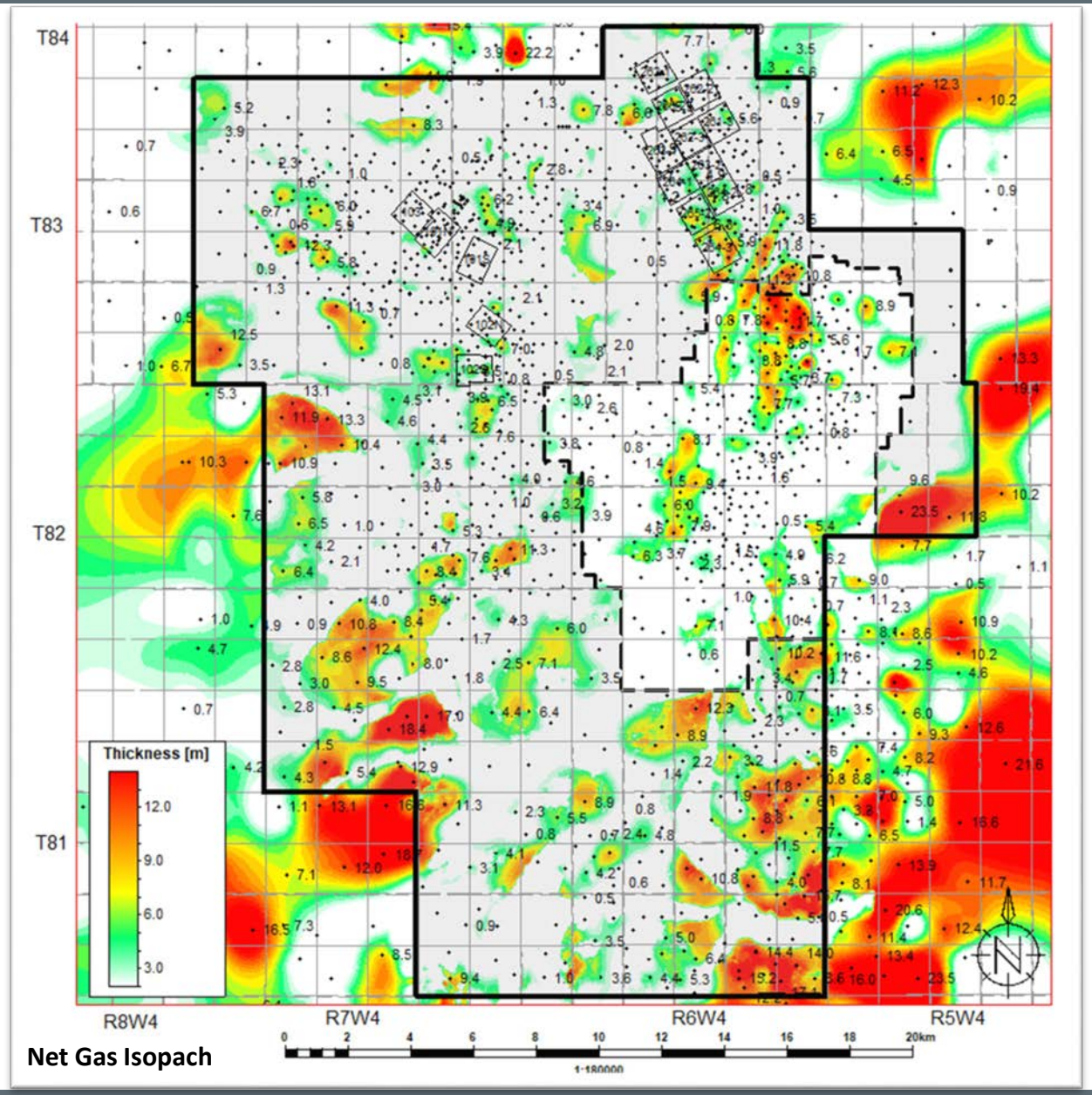
Development Area

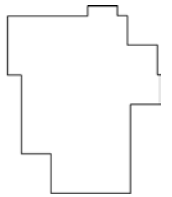
Drainage Areas

OBIP = Thickness x Phie x So x Area

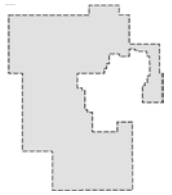
Properties	Development Area
NCB Thickness Range	0 to Greater than 30 m
Phie in NCB	31.72%
So in NCB	75.78%
OBIP in NCB > 18m	13914.95 MMbbls Deterministic

Development Area Maps: Major Gas Interval





Surmont Project Area



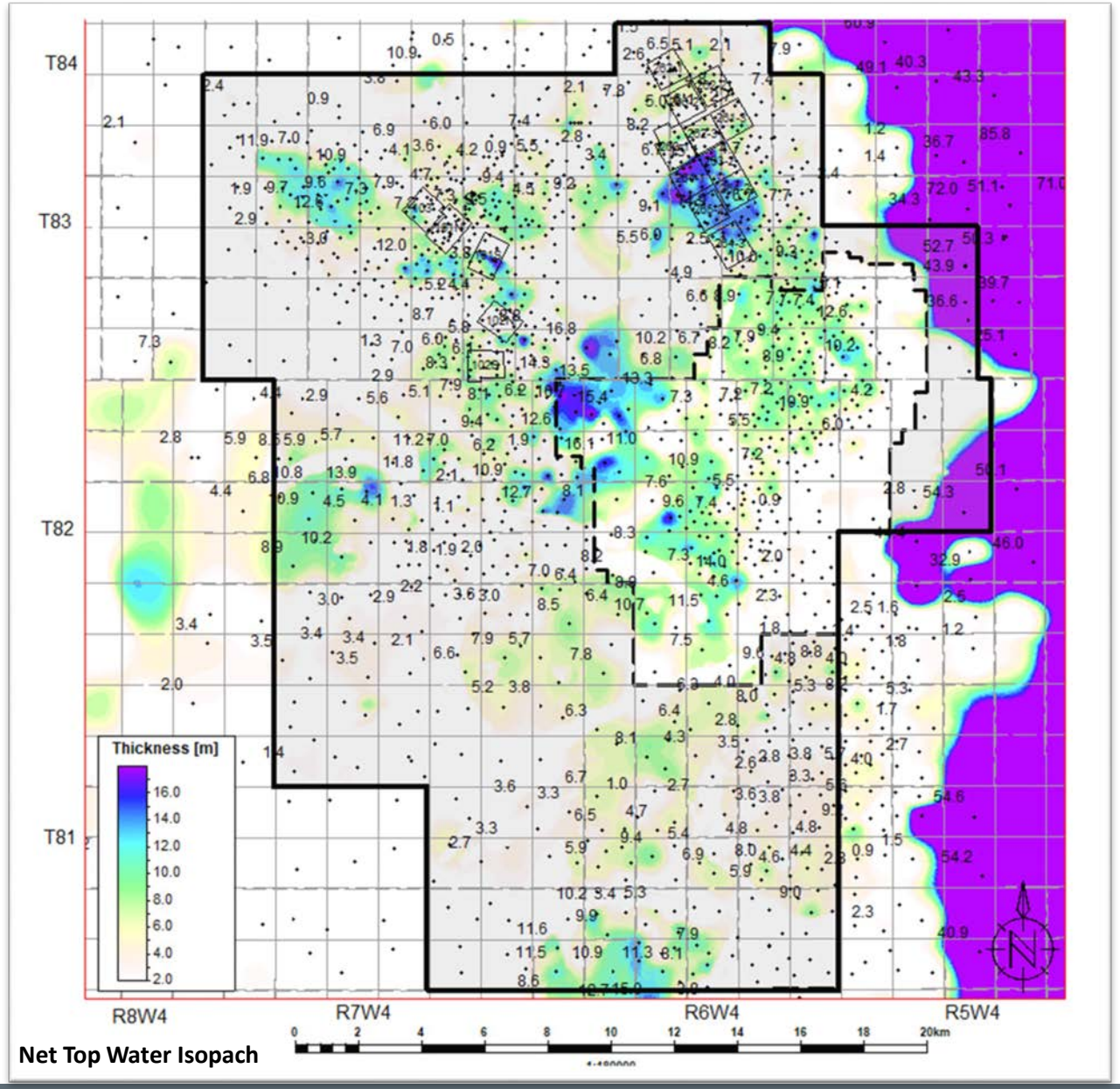
Development Area

Drainage Areas

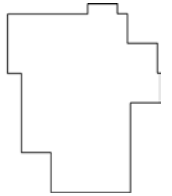
Net Top Gas thickness = sands having

- **Deep Resistivity ≥10 Ω-m, and**
- **Vsh < 65%**

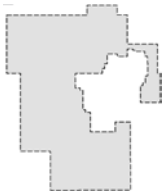
Development Area Maps: Major Water Intervals (Net Top Water)



Net Top Water Isopach



Surmont Project Area



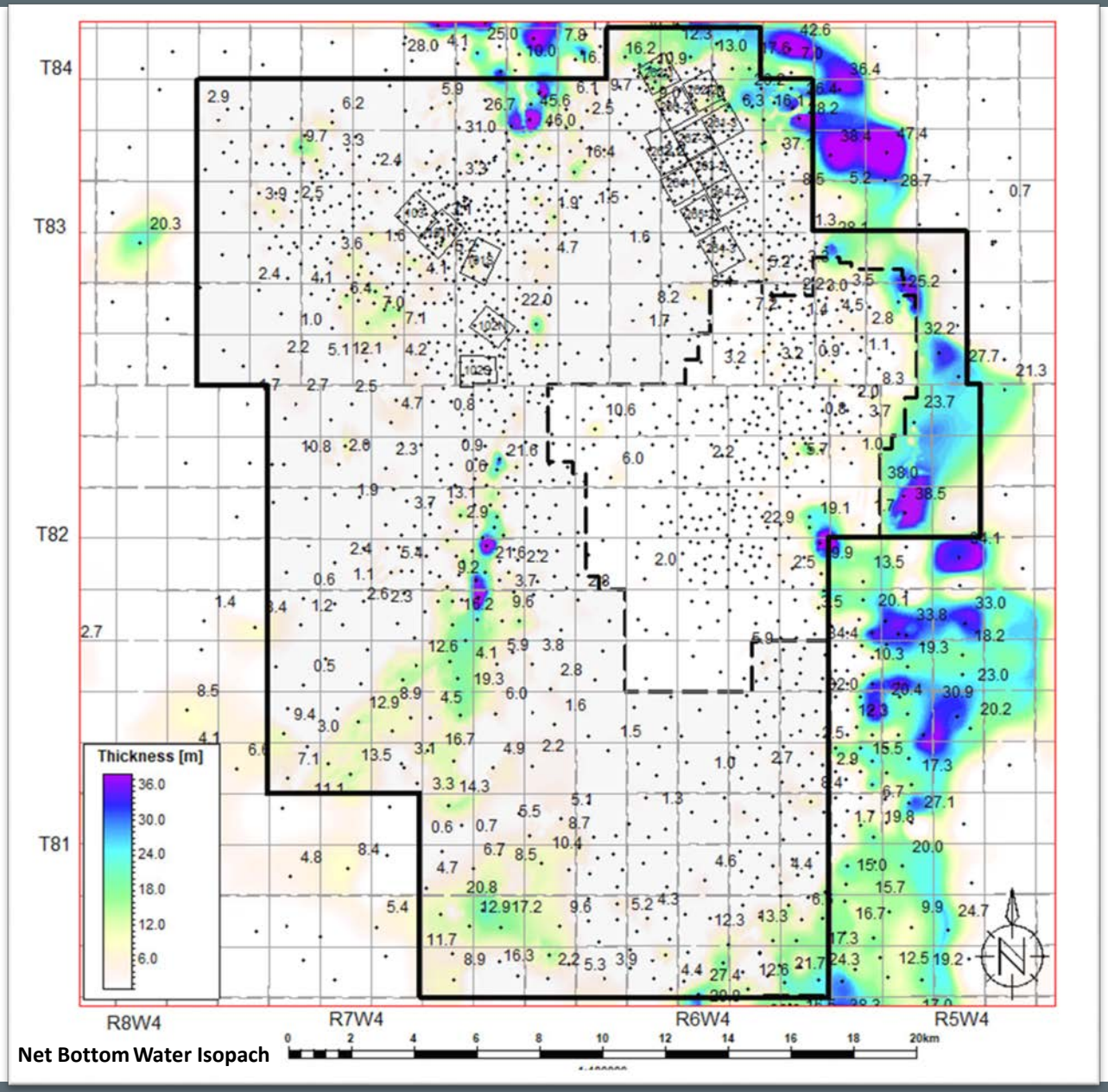
Development Area

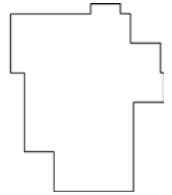
Drainage Areas

Net Top Water thickness = sands having

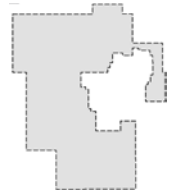
- **Deep Resistivity < 10 Ω-m, and**
- **Vsh < 45%**

Development Area Maps: Major Water Intervals (Net Bottom Water)





Surmont Project Area



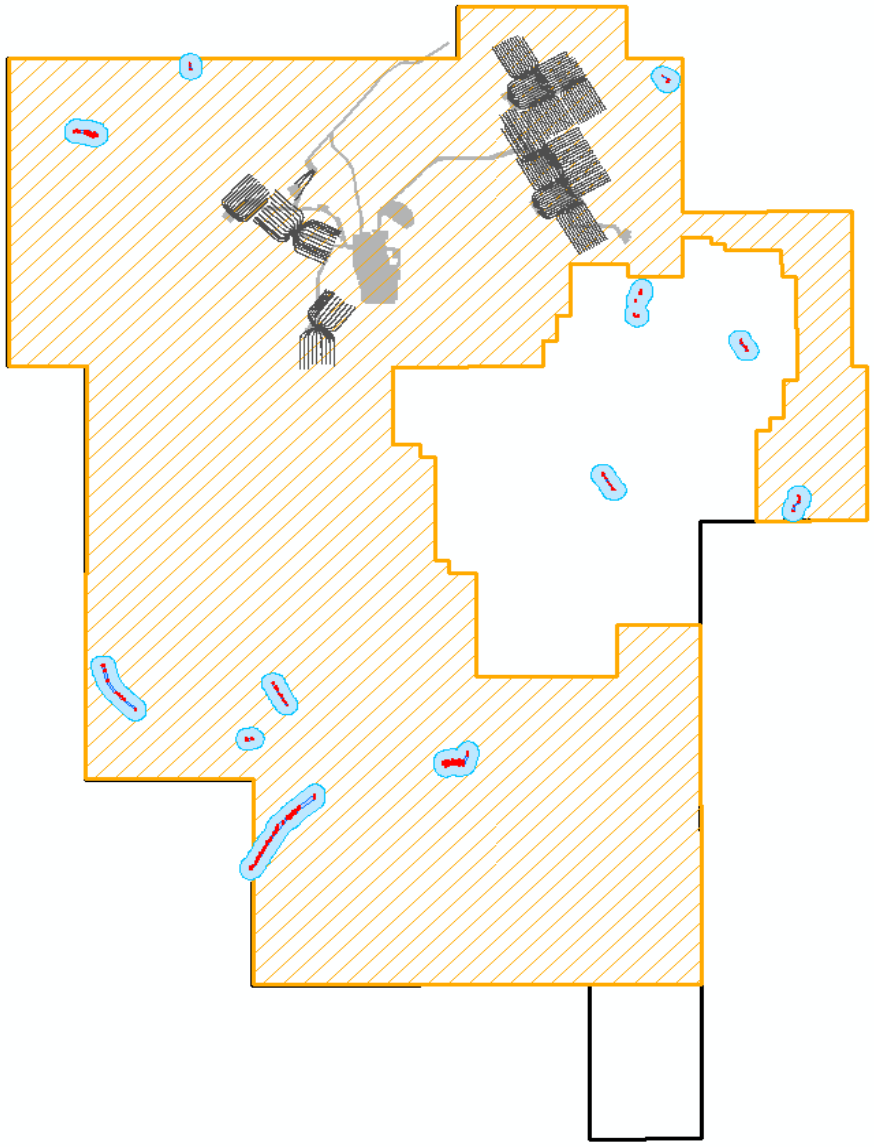
Development Area

Drainage Areas

Net Bottom Water thickness = sands having

- **Deep Resistivity < 10 Ω-m, and**
- **Vsh < 45%**

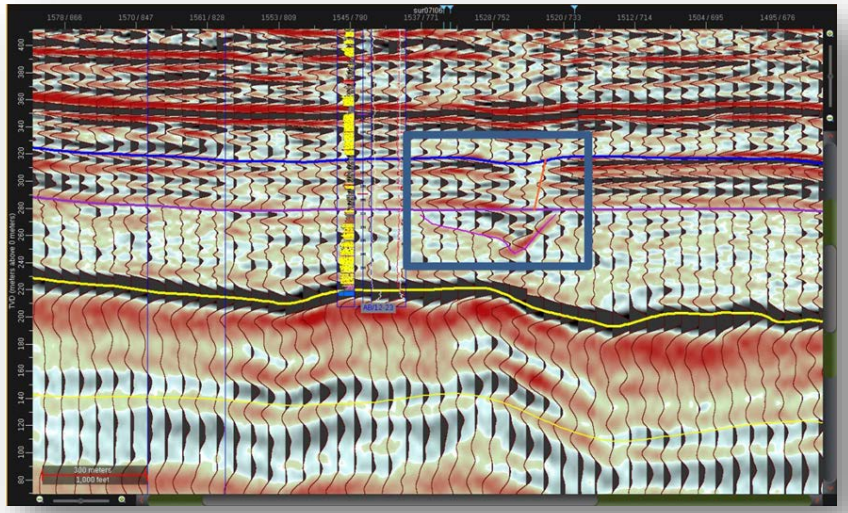
Development Area Maps: Seismic Discontinuities



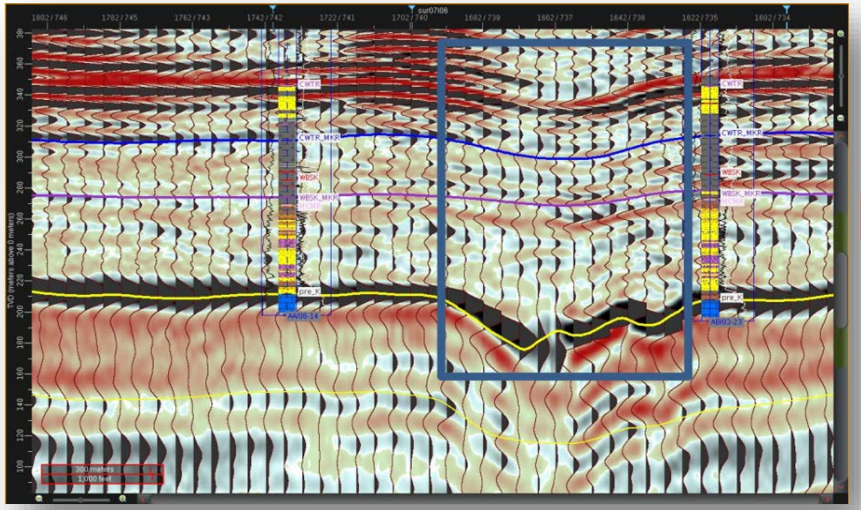
CAPROCK GEOTECHNICAL HAZARD ANALYSIS

- No new seismic discontinuities have been identified within the Surmont development area since the submission of Lifecycle Application No. 1922683.
- The three highest risk structural mechanisms for caprock integrity are:
  1) caprock faulting or fracturing,
  2) post-caprock dissolution of the Prairie Evaporite, and
  3) post-caprock karsting of underlaying Devonian carbonates (Slides 16 and 17).
- None of these features are present within the near-term development area. Discontinuities will be investigated prior to pad development activities in those areas.

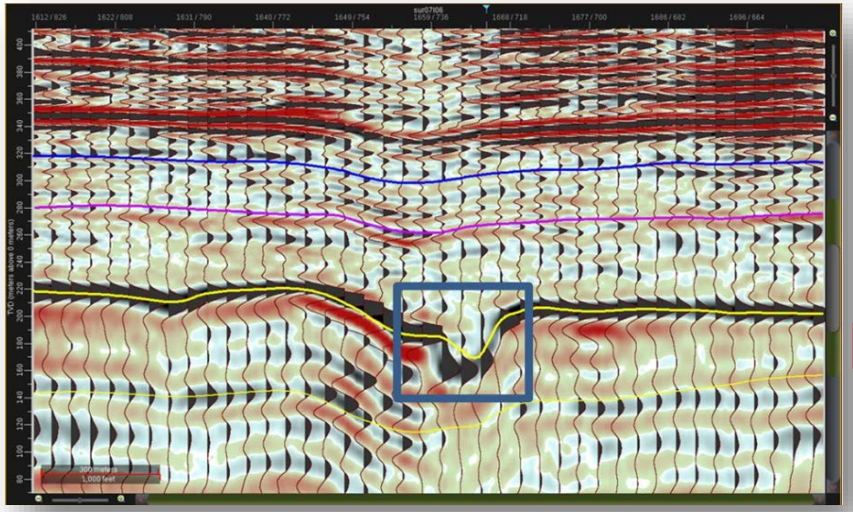
Development Area Maps: Potential Geomechanical Anomalies



1) Caprock seismic discontinuities due to *Differential Compaction* of McMurray mud abandoned channels

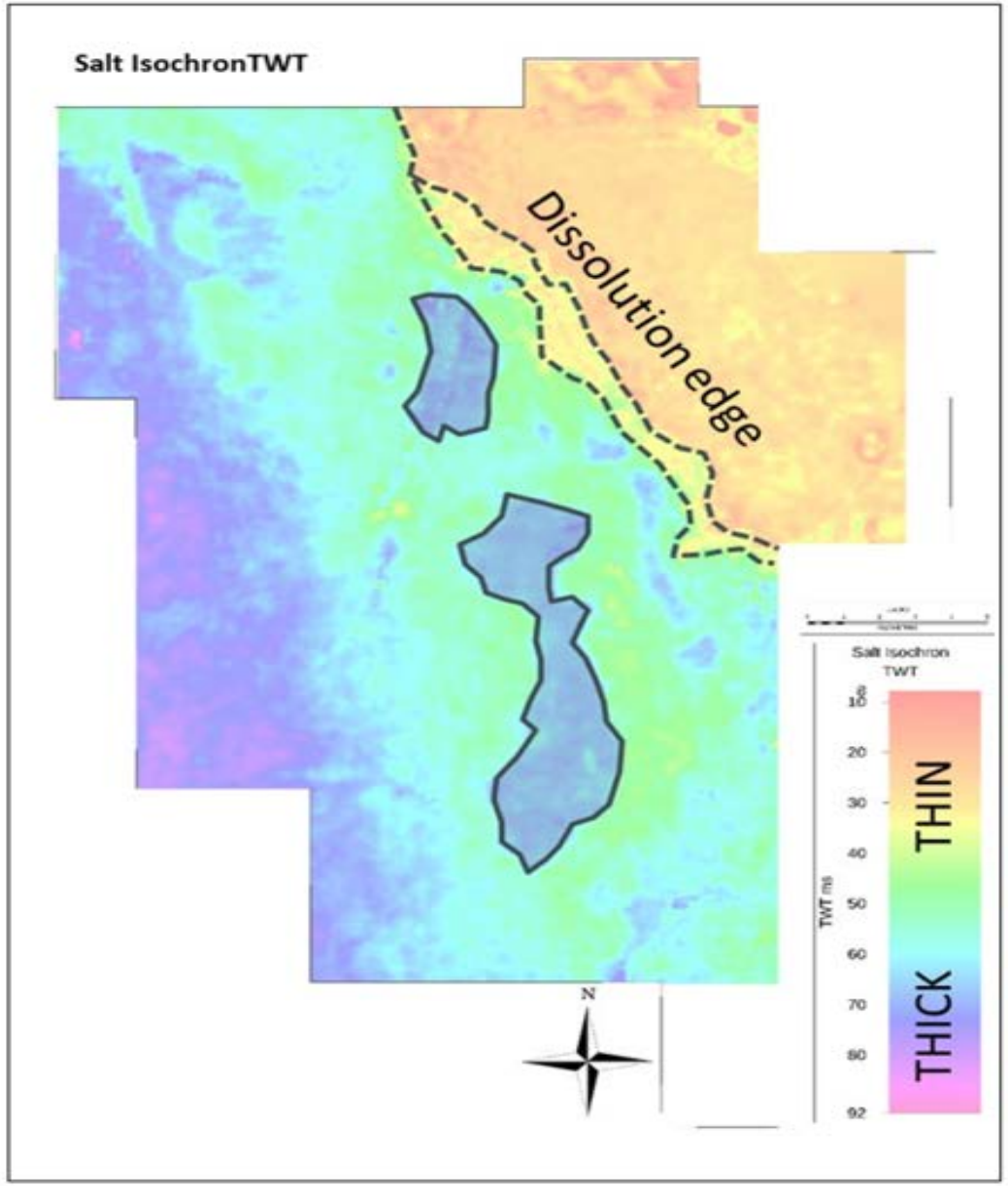


2) Post caprock *Dissolution* of the Prairie Evaporite, Cold Lake, or Lotsberg Salts



3) Post caprock *Karsting* of underlying Devonian carbonates

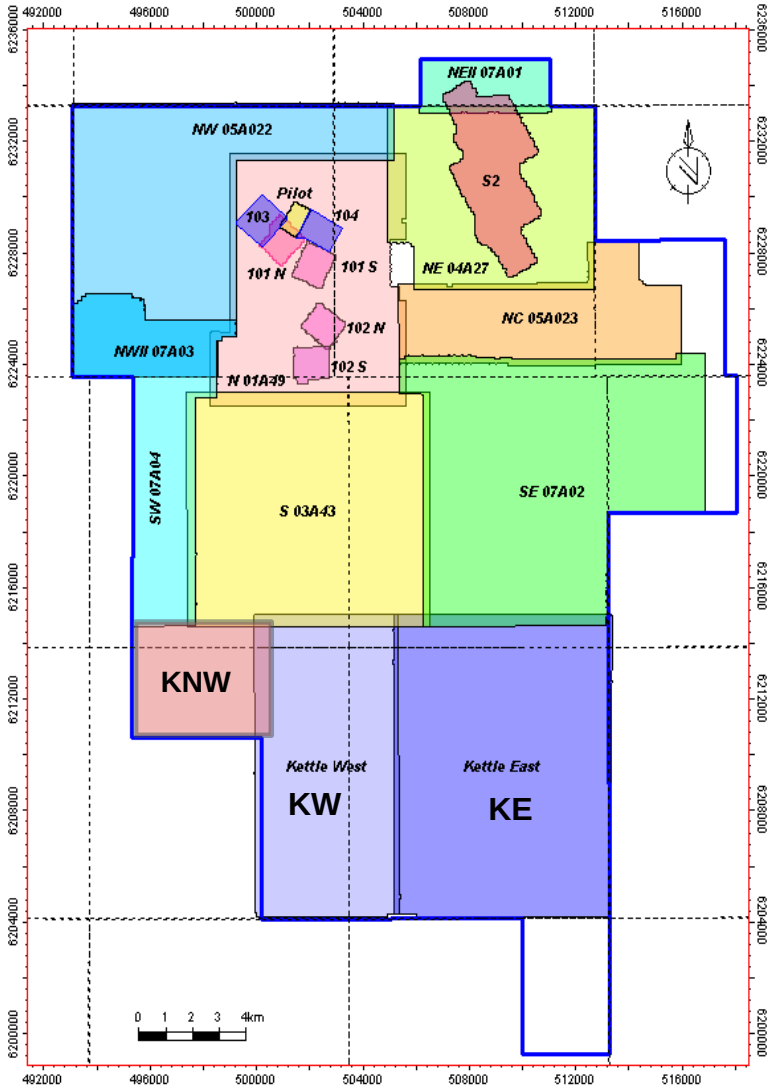
Development Area Maps: Geomechanical Anomalies



MAP OF MAJOR DISSOLUTION

- Seismically interpreted isochron of Prairie Evaporite at Surmont illustrating areas of major dissolution

Development Area Maps: Existing Seismic Acquisition



3D SEISMIC AT SURMONT

Existing Seismic

3D	km²	Shots	S-R line	S-R
N	60	17 004	60	60x30
S	75	33 668	80x120	24x18
NE	50	24 512	120x80	24x18
NW	65	29 906	80(160)x120	20x20
NC	33	24 009	60(120)x80	20x20
NEII	9	3 598	120x80	24x18
NWII	14	4 394	160x120	20x20
SW	23	7 236	160x120	20x20
SE	86	54 801	80x100	20x20
KNW	22	9 543	120x80	20x20
KW	58	24 690	120x80	20x20
KE	85	55 808	80x80	20x20
	580	289 169		

4D SEISMIC AT SURMONT

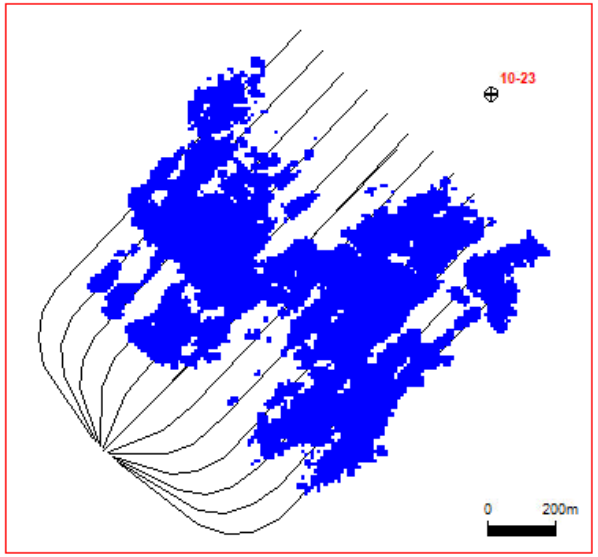
Existing Seismic

4D	km²	S-R	# Monitors
101N	1.8	10x10	9
101S	1.8	10x10	9
102N	1.6	20x20	10
102S	1.7	20x20	7
103	1.9	20x20	4
S2	15.0	20x20	3 (*)
	23.8		42

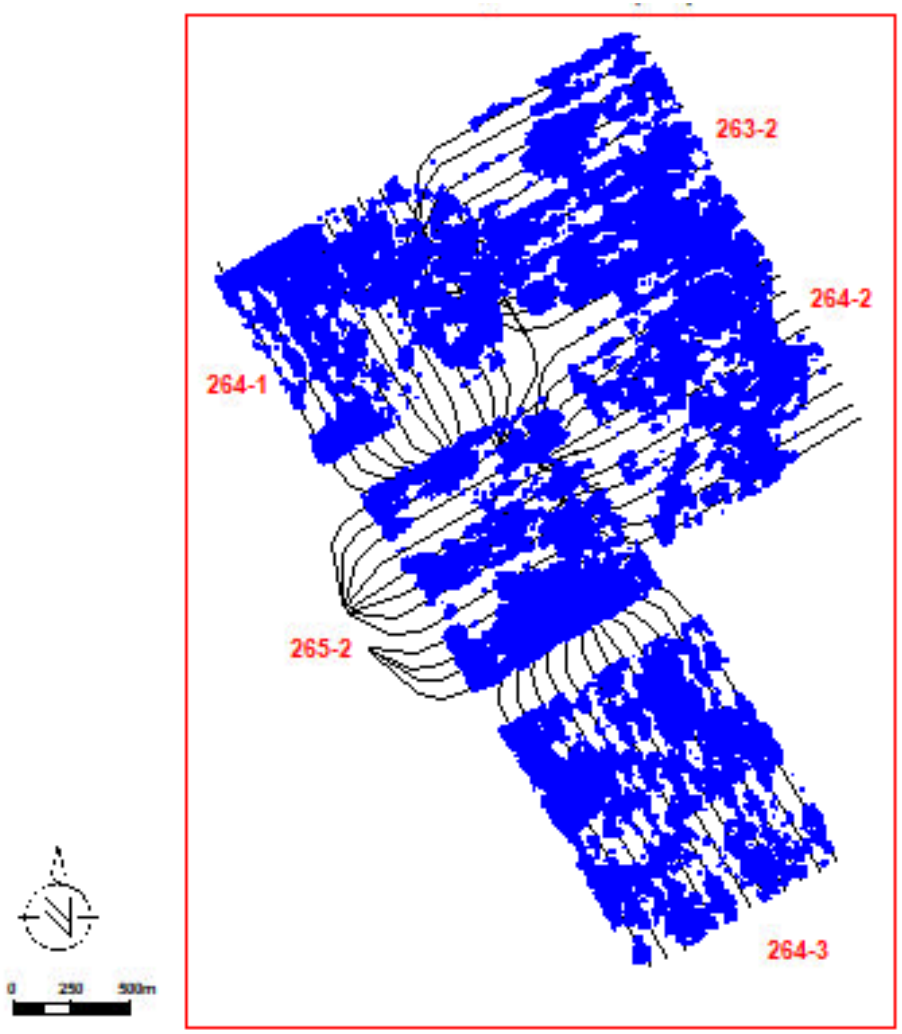
(*) Average # Monitor per DA in S2

Development Area Maps: Seismic Acquisition (4D) 2019

103 4D Monitor - Fall 2019



S2 4D Monitor – Fall 2019

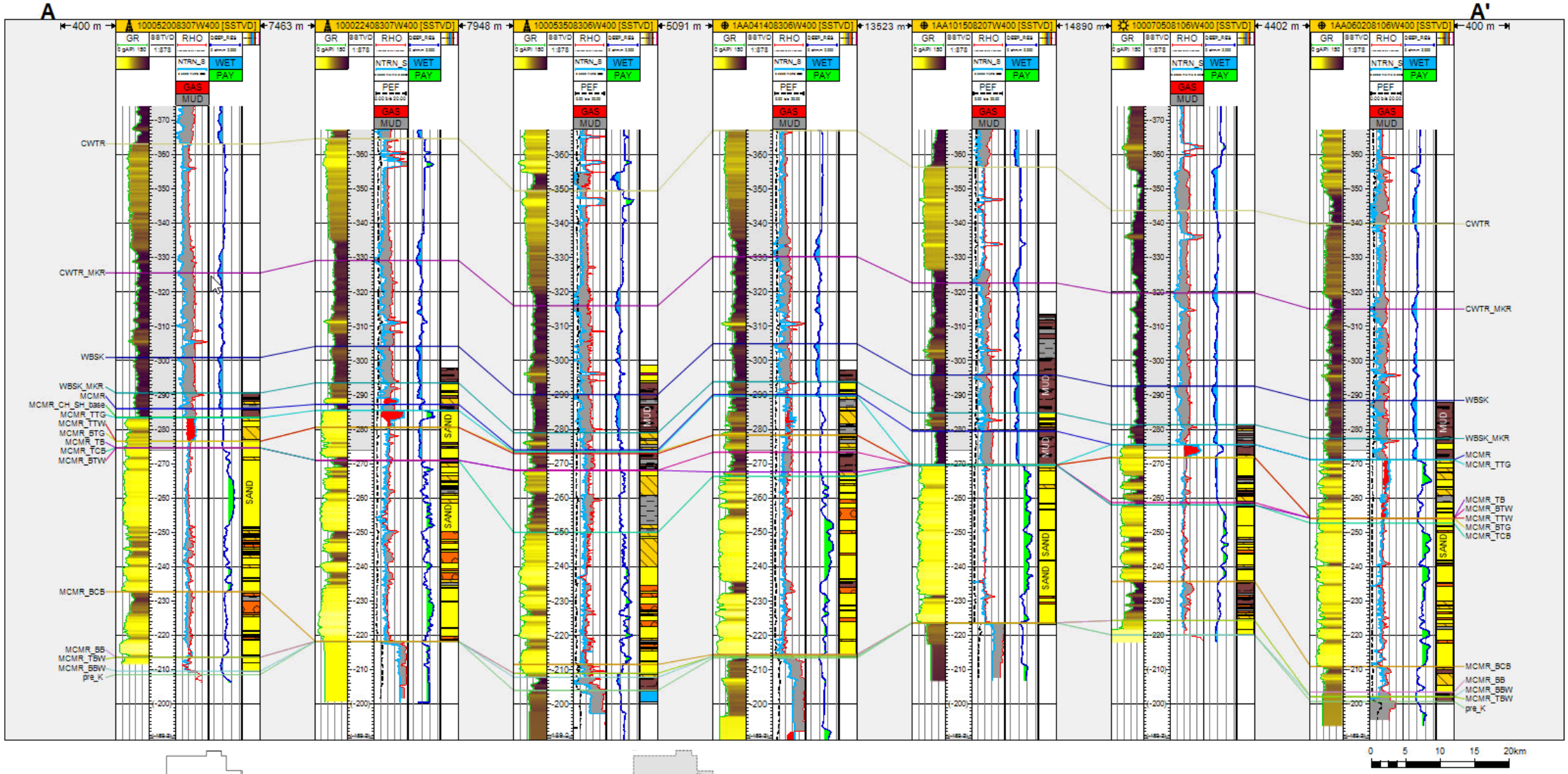


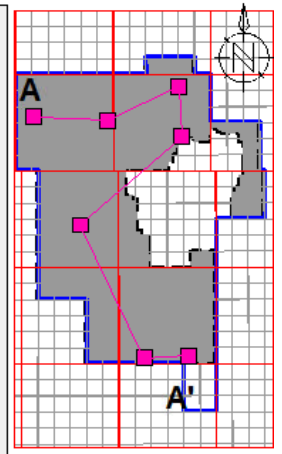
4D SEISMIC AT SURMONT

4D Monitors Fall 2019

4D	S-R	# Monitors
103	20x20	4th
S2 / 264-1	20x20	3rd
S2 /265-2	20x20	3rd
S2 /264-3	20x20	3rd
S2 /263-2	20x20	2nd
S2 /264-2	20x20	

Representative Well Cross-Section A - A`

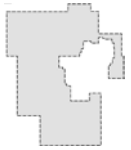




Well Section A-A' Tops	
CWTR	CLEAR WATER FM
CWTR_MKR	CLEAR WATER MARKER
WBSK	WABISKAW FM
WBSK_MKR	WABISKAW MARKER
MCMR	MCMURRAY FM
MCMR_BTG	MCMURRAY TOP GAS
MCMR_BTG	MCMURRAY BASE OF TOP GAS
MCMR_TTW	MCMURRAY TOP WATER
MCMR_BTW	MCMURRAY BASE OF TOP WATER
MCMR_TCB	MCMURRAY TOP CONTINUOUS BITUMEN
MCMR_TB	MCMURRAY TOP BITUMEN
MCMR_BCB	MCMURRAY BASE CONTINUOUS BITUMEN
MCMR_BB	MCMURRAY BASE BITUMEN
MCMR_TBW	MCMURRAY TOP OF BASE WATER
MCMR_BBW	MCMURRAY BASE WATER
pre_K	DEVONIAN UNCONFORMITY

ConocoPhillips
Surmont Project
TOTAL

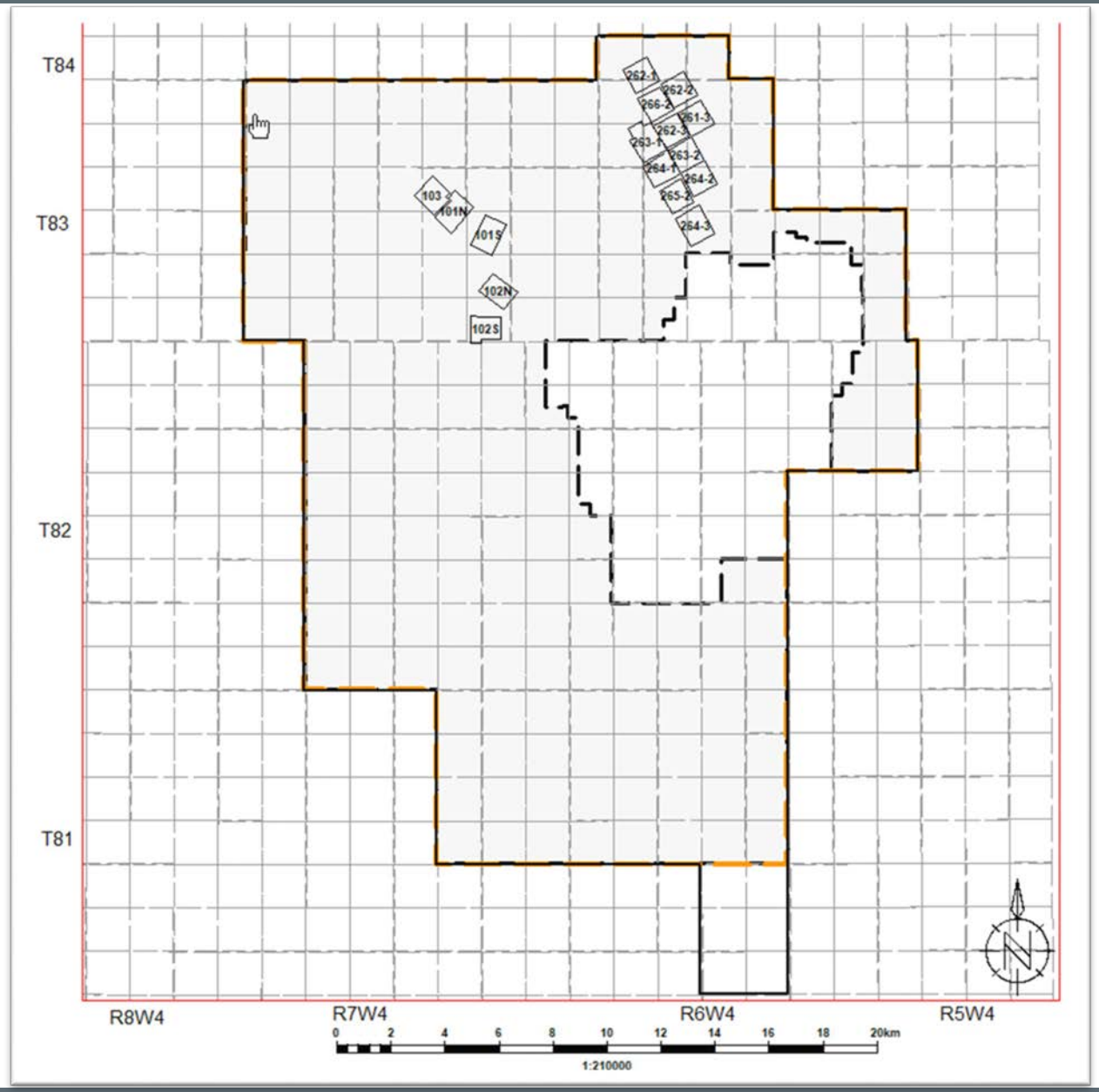
Surmont Project Area



Development Area

ConocoPhillips

Original Bitumen in Place



Surmont Lease

Project Area

Development Area

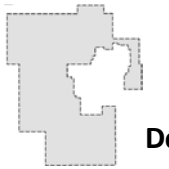
Drainage Areas

Region	MMBBLs
Surmont Lease	20815.64
Project Area	20594.05
Development Area	16255.30
101N	64.52
102N	50.56
103	71.36
101S	66.89
102S	51.04
261-3	69.67
262-1	63.42
262-2	61.82
262-3	67.49
263-1	75.18
263-2	65.00
264-1	67.21
264-2	68.03
264-3	69.09
265-2	55.97
266-2	67.83

Well Patterns, Bitumen Recovery & Reservoir Parameters

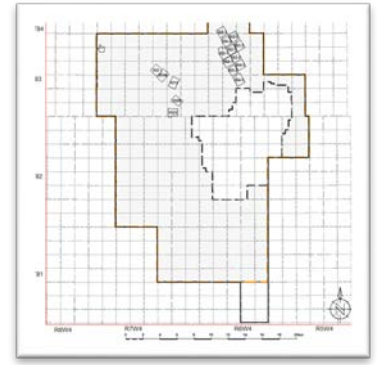
Properties	Depth (masl)	Area (m2)	Thickness NCB (m)	Phie in NCB %	So in NCB %	KH in NCB (mD)	KV in NCB (mD)	Initial Pressure (KPa)	Original Bitumen in Place (MMBBLS)	Producible Oil in Place (MMBBLS)	Expected RF	Current RF
Project Area	~256	561632100	23.45	31.86%	76.91%	4158	3459		20594.05	16867.31	50%	1.11%
Dev Area	~255	457757230	22.84	31.81%	76.56%	4107	3415		16255.29	13216.11	50%	1.41%
101N	277.52 - 212.11	1090775	35.53	32.58%	82.40%	4350	3614	1690	64.52	53.45	50%	30.30%
101S	272.96 - 218.47	1064692	37.43	33.19%	80.41%	5482	4604	1684	66.89	60.85	50%	43.70%
102N	276.39 - 223.91	975251	31.14	32.71%	80.29%	4636	3877	1735	50.56	43.97	50%	37.10%
102S	285.02 - 223.61	1019252	34.17	31.32%	74.33%	4001	3290	1800	51.04	45.06	58%	55.10%
103	272.82 - 211.40	1022239	42.80	32.21%	78.62%	4441	3691	1691	71.35	66.06	50%	12.90%
261-3	271.02 - 201.80	1000542	44.77	32.00%	78.07%	4342	3562	1328	69.67	50.76	50%	5.90%
262-1	273.64 - 206.15	996252	39.59	31.74%	80.05%	4195	3471	1307	63.42	49.45	50%	8.80%
262-2	271.89 - 212.60	974291	38.63	33.13%	78.56%	5239	4420	1296	61.82	52.11	50%	4.60%
262-3	271.57 - 208.64	943213	44.28	32.76%	78.21%	4968	4140	1368	67.49	59.40	50%	4.00%
263-1	272.12 - 211	1271315	36.14	32.98%	79.36%	4966	4170	1404	75.18	55.68	50%	12.10%
263-2	275.41 - 212.90	998219	40.90	32.44%	78.06%	4769	3979	1397	65.00	56.46	50%	8.60%
264-1	271.18 - 213.54	1033834	39.45	32.89%	79.71%	5148	4338	1444	67.21	55.98	50%	6.40%
264-2	269.27 - 213.75	1011337	42.08	32.65%	78.22%	4763	3965	1437	68.03	62.01	50%	4.50%
264-3	281.29 - 207.61	1209485	37.51	31.97%	75.58%	4446	3683	1564	69.09	61.65	50%	9.20%
265-2	271.50 - 215.59	917433	38.75	32.54%	76.83%	4917	4101	1496	55.97	43.46	50%	12.20%
266-2	276.26 - 210.21	949974	42.99	32.83%	80.08%	4925	4121	1337	67.83	56.85	50%	5.30%

Project Area



Development Area

Drainage Areas



Co-Injection

- Non-Condensable Gas (NCG) co-injection has been deployed in Surmont in the wells indicated on slide 24.
- NCG has been injected at an average of 20,000-43,000 Sm^3/d on a per subsurface pad basis.
- NCG has been used as a means of pressure support in the steam chambers as well as mitigation for top water thief zones where pressure balance and steam loss can be a challenge. In both scenarios, NCG has proven to be a successful technology yielding optimization of SOR where applied.
- Reservoir pressure targets have been maintained with NCG co-injection for mid-life pressure support application.

Co-Injection

- Wells with Non-Condensable Gas (NCG) co-injection during the reporting period

WELL	ALIAS	LICENSE_ID	WELL	ALIAS	LICENSE_ID
104141408307W400	101-I08(02)	AB0399990	103020108307W400	102-I12	AB0314311
102141408307W400	101-I09(01)	AB0399937	104020108307W400	102-I13	AB0314354
102022308307W400	101-I10(03)	AB0399938	103030108307W400	102-I14	AB0314294
104022308307W400	101-I11(04)	AB0400009	105030108307W400	102-I15	AB0328630
106022308307W400	101-I12(05)	AB0400064	102163508207W400	102-I16	AB0390414
108022308307W400	101-I13(06)	AB0400121	104163508207W400	102-I17	AB0390797
106072308307W400	101-I16(07)	AB0328331	100050108307W400	102-I18	AB0390890
105072308307W400	101-I17(08)	AB0328330	107092208306W400	265-2-I01	AB0464357
104072308307W400	101-I18(09)	AB0328329	108092208306W400	265-2-I02	AB0464521
103071208307W400	102-I01	AB0314299	109092208306W400	265-2-I03	AB0464662
102071208307W400	102-I02	AB0314298	1W2122308306W400	265-2-I04	AB0462186
108081208307W400	102-I03	AB0328625	114052308306W400	265-2-I05	AB0465299
105081208307W400	102-I04	AB0314296	108052308306W400	265-2-I06	AB0464358
104081208307W400	102-I05	AB0314295	109052308306W400	265-2-I07	AB0464520
110081208307W400	102-I06	AB0390773	110052308306W400	265-2-I08	AB0464833
102050708306W400	102-I07	AB0390760	111052308306W400	265-2-I09	AB0464990
104040708306W400	102-I08	AB0390889	104042308306W400	265-2-I10	AB0465144
106040708306W400	102-I09	AB0390972	103042308306W400	265-2-I11	AB0464621
102010108307W400	102-I10RD	AB0409083	106092208306W400	265-2-I12	AB0464258
109020108307W402	102-I11RD	AB0409082			

Surface

Directive 054: Section 4.3
OSCA Report: Table 1 (3)

2019 Surmont Operations

GENERAL

- Facility throughput guided by AER curtailment
- No changes have materially altered the energy and/or material balances of the Surmont Project
- No new surface technologies were trialed during the reporting period

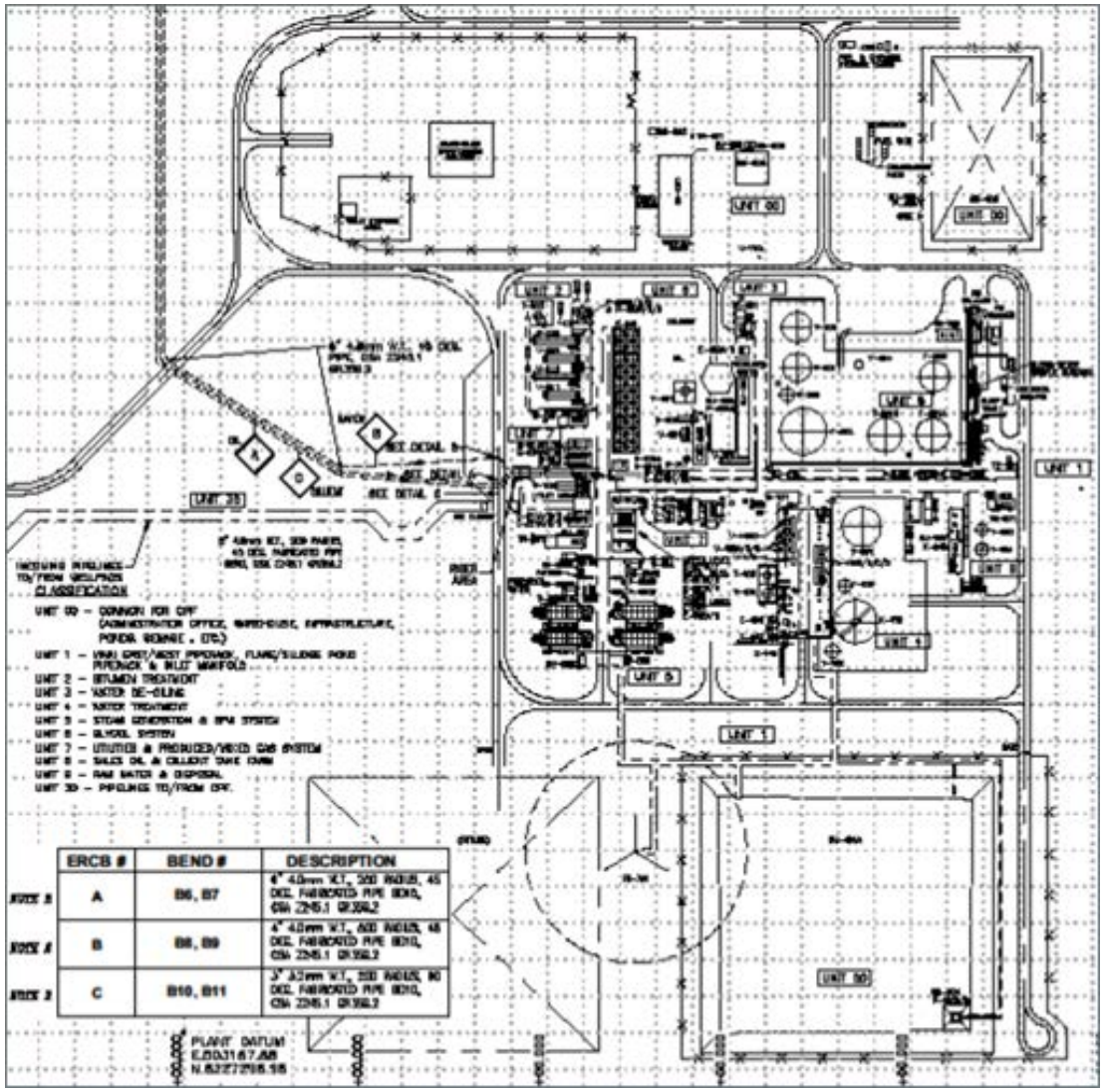
SURMONT PHASE 1

- No major modifications in 2019
- Steady production throughout the year

SURMONT PHASE 2

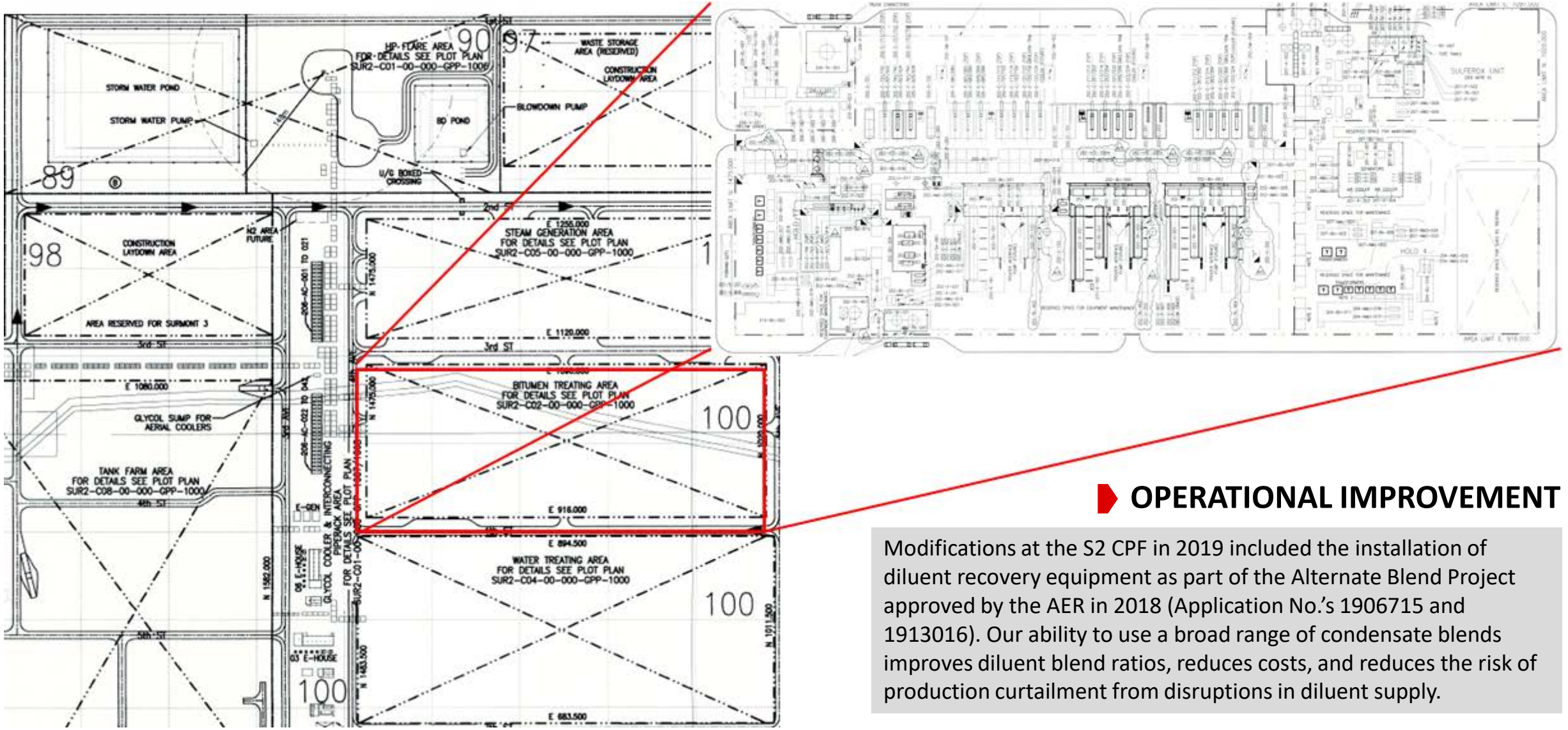
- Full plant outage May 8 - May 24 (planned maintenance)
- Partial plant outage September 22 - October 11 (planned maintenance)
- Construction and commissioning of Alternate Blend Project (AER approval in 2018)

Surmont Phase 1 Plot Plan: CPF



No modifications to the S1 CPF during the 2019 reporting period required an AER application approval.

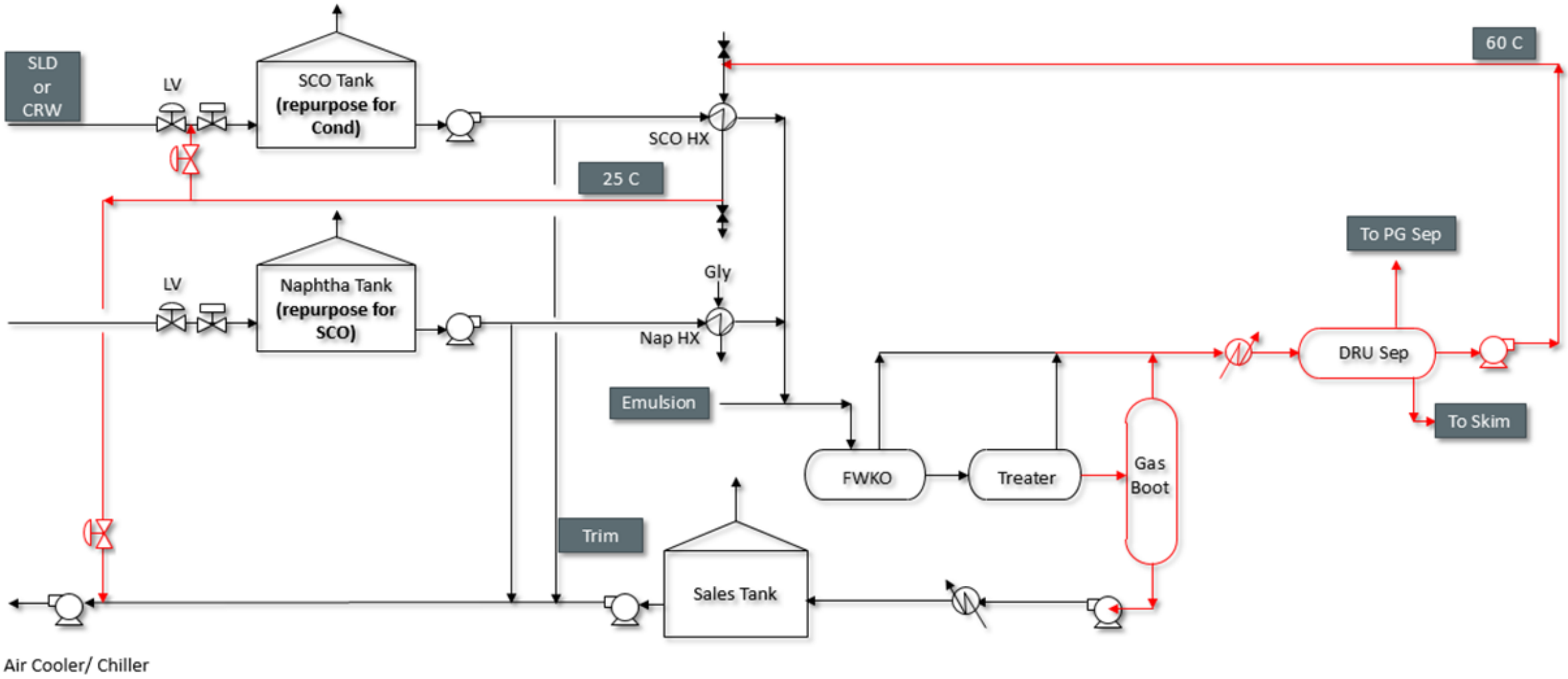
Surmont Phase 2 Plot Plan: CPF



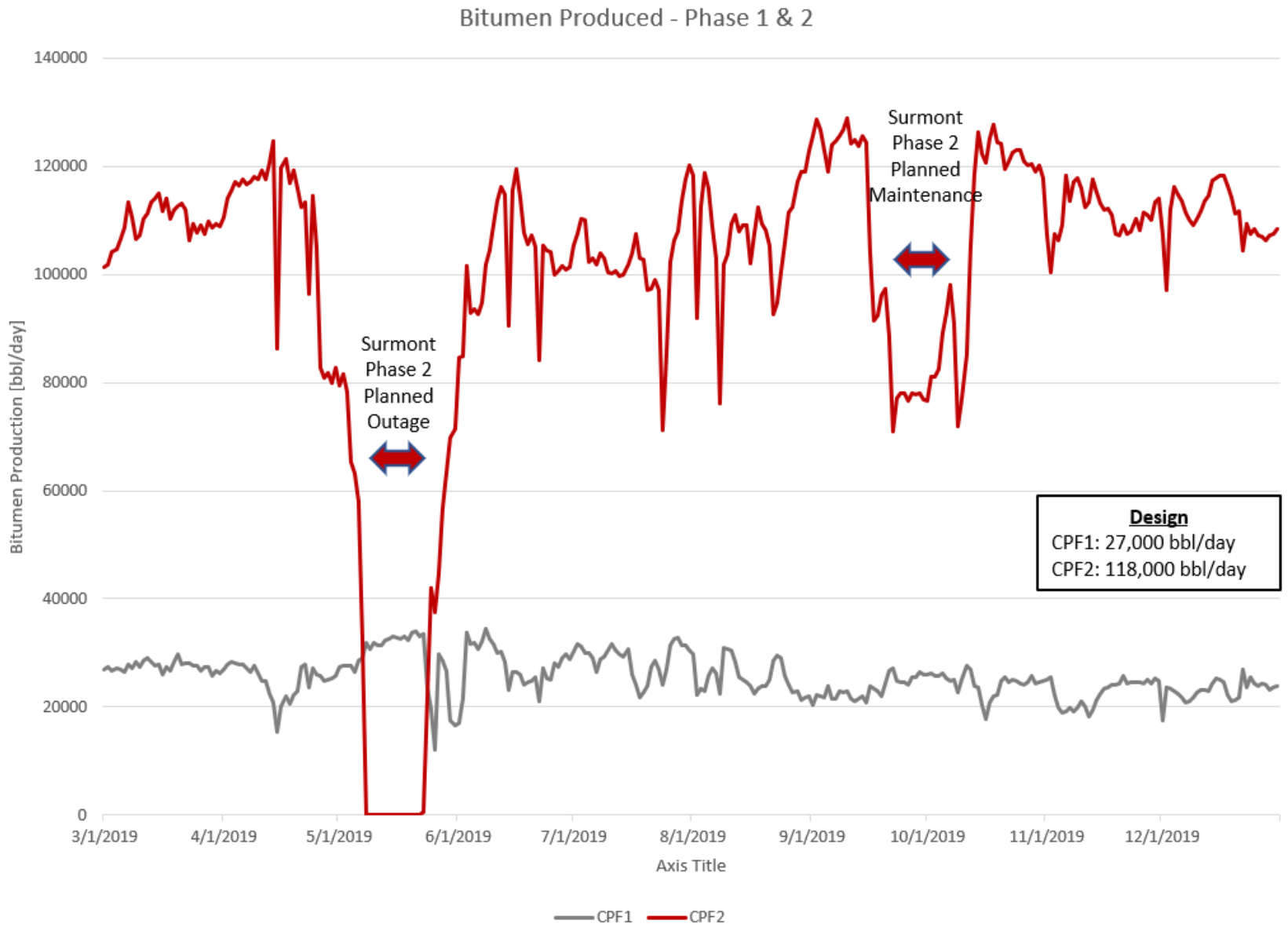
OPERATIONAL IMPROVEMENT

Modifications at the S2 CPF in 2019 included the installation of diluent recovery equipment as part of the Alternate Blend Project approved by the AER in 2018 (Application No.'s 1906715 and 1913016). Our ability to use a broad range of condensate blends improves diluent blend ratios, reduces costs, and reduces the risk of production curtailment from disruptions in diluent supply.

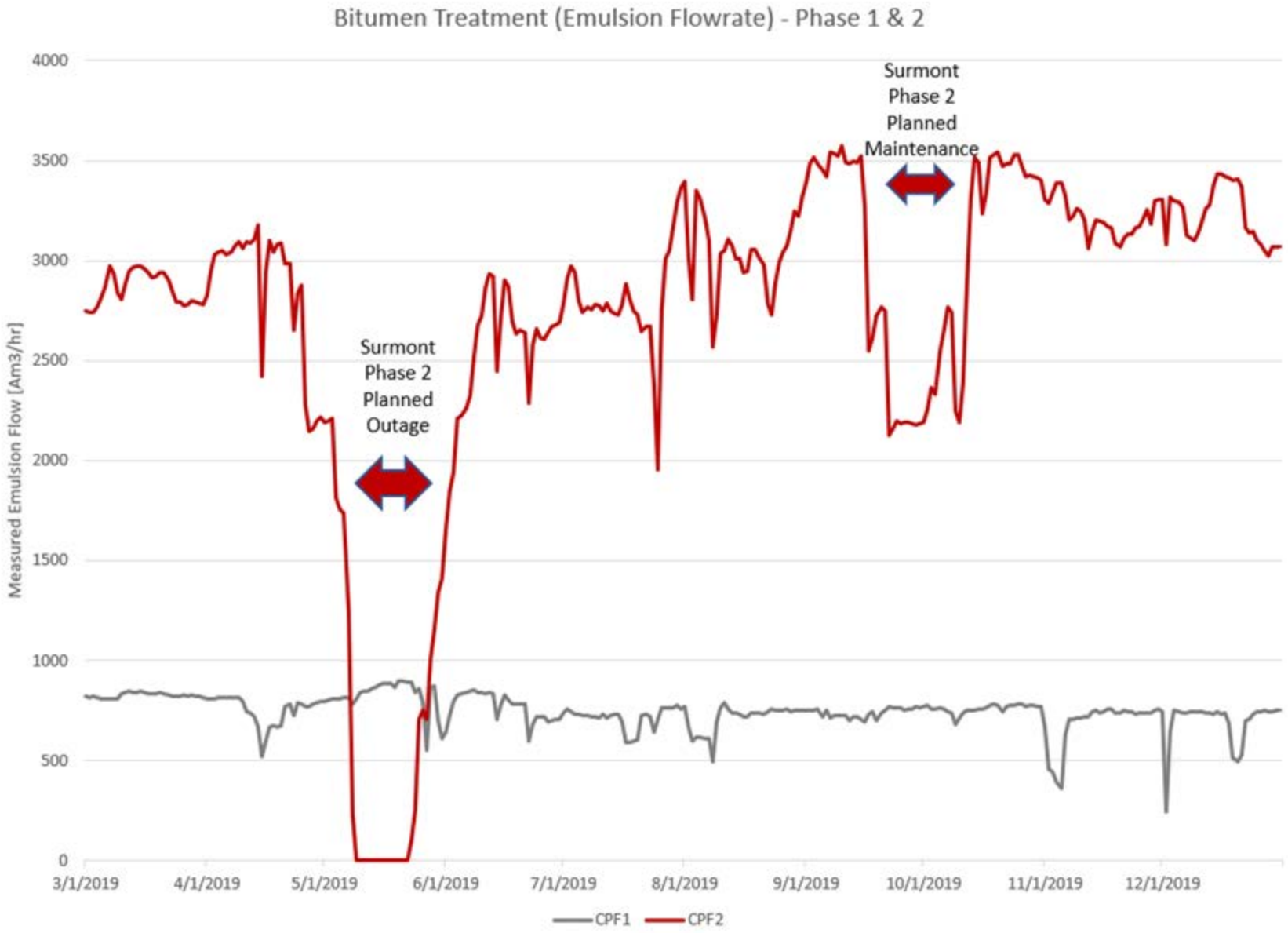
Alternate Blend Project – Surmont Phase 2: Bitumen Recovery, Gas Boots & Diluent Recovery Unit



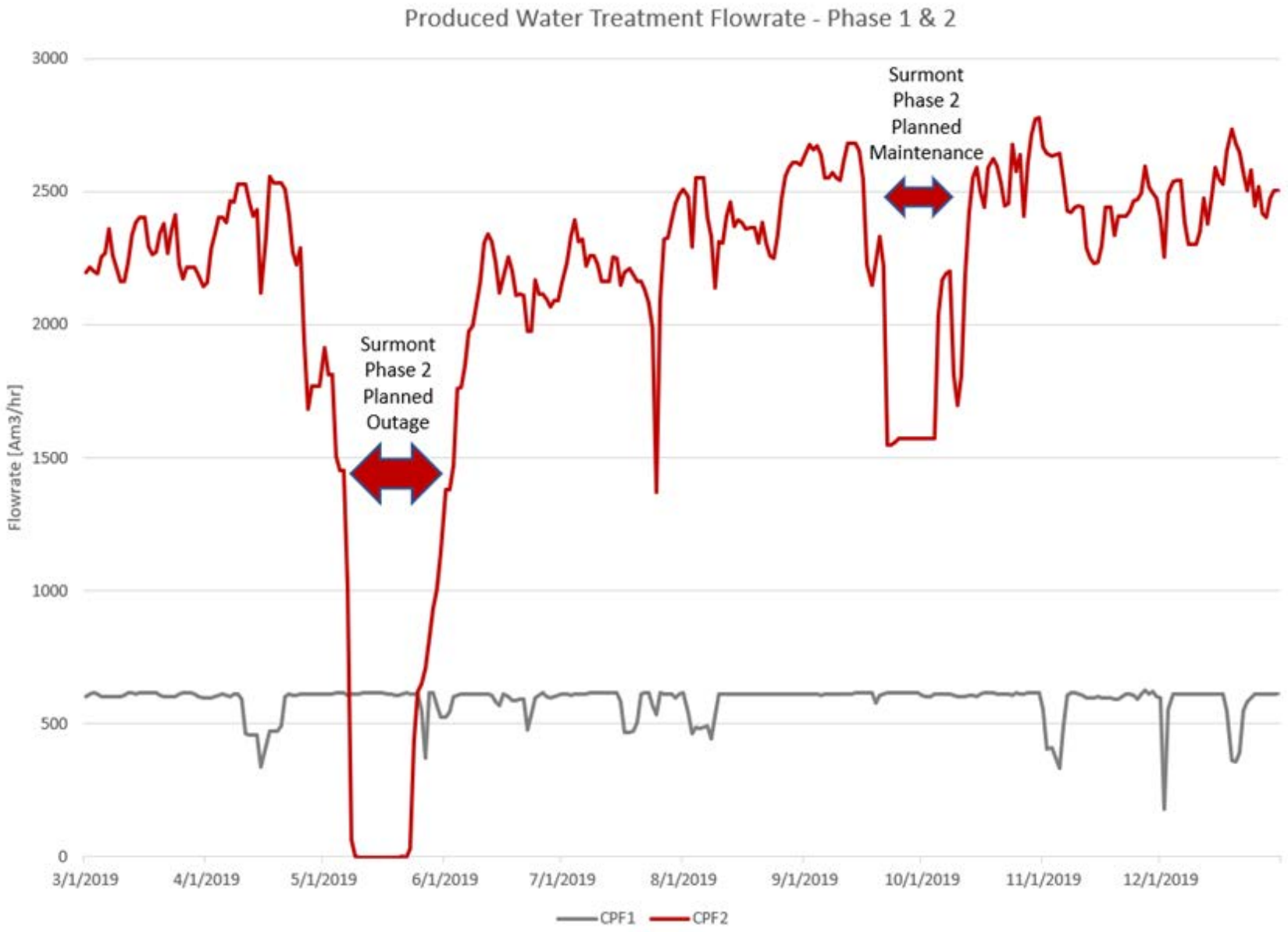
Facility Performance: Bitumen Production by CPF



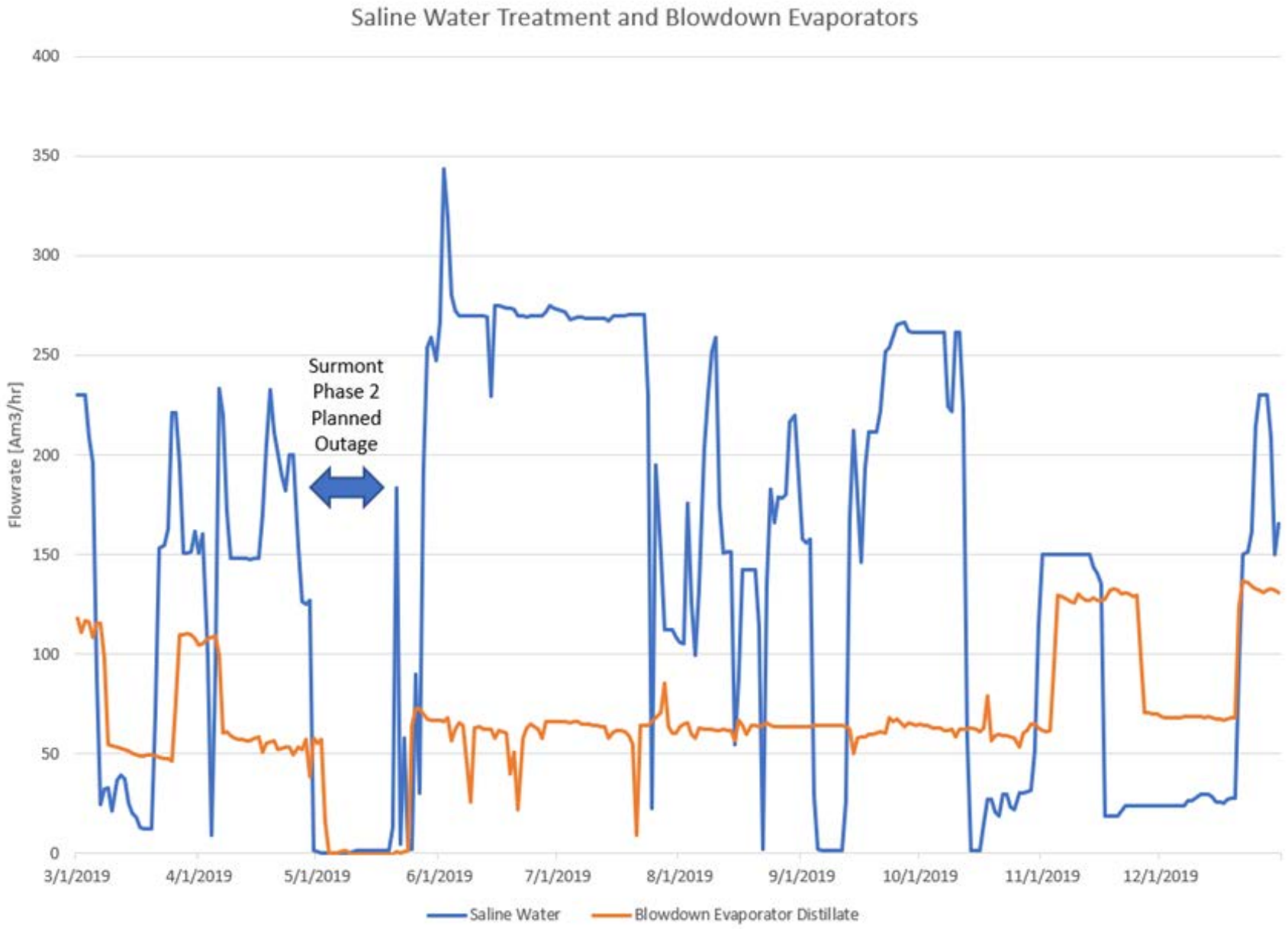
Facility Performance: Bitumen Treatment by CPF



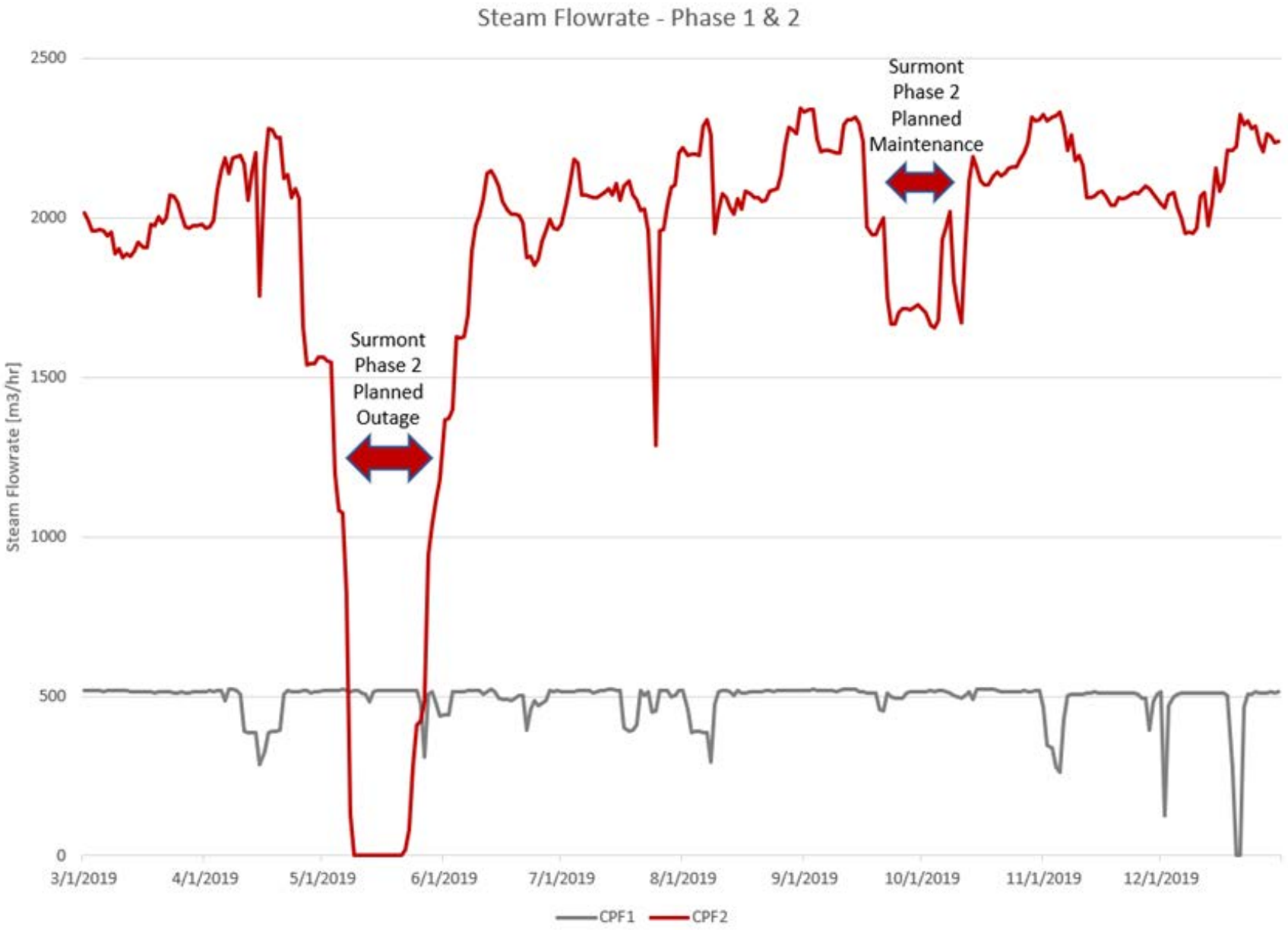
Facility Performance: Water Treatment by CPF



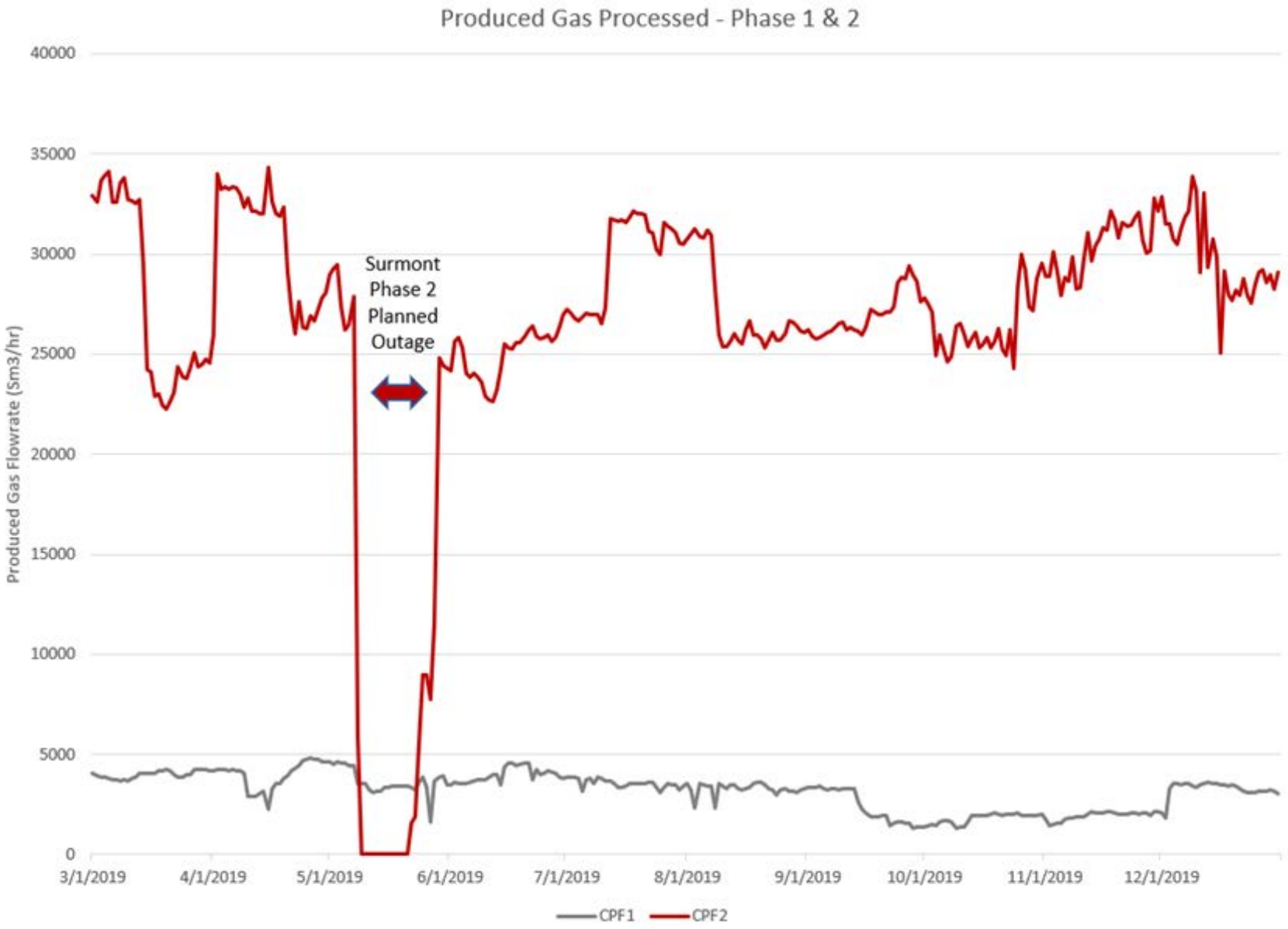
Facility Performance: Saline Water Treatment and Blowdown Evaporators



Facility Performance: Steam Production by CPF



Facility Performance: Produced Gas Production by CPF

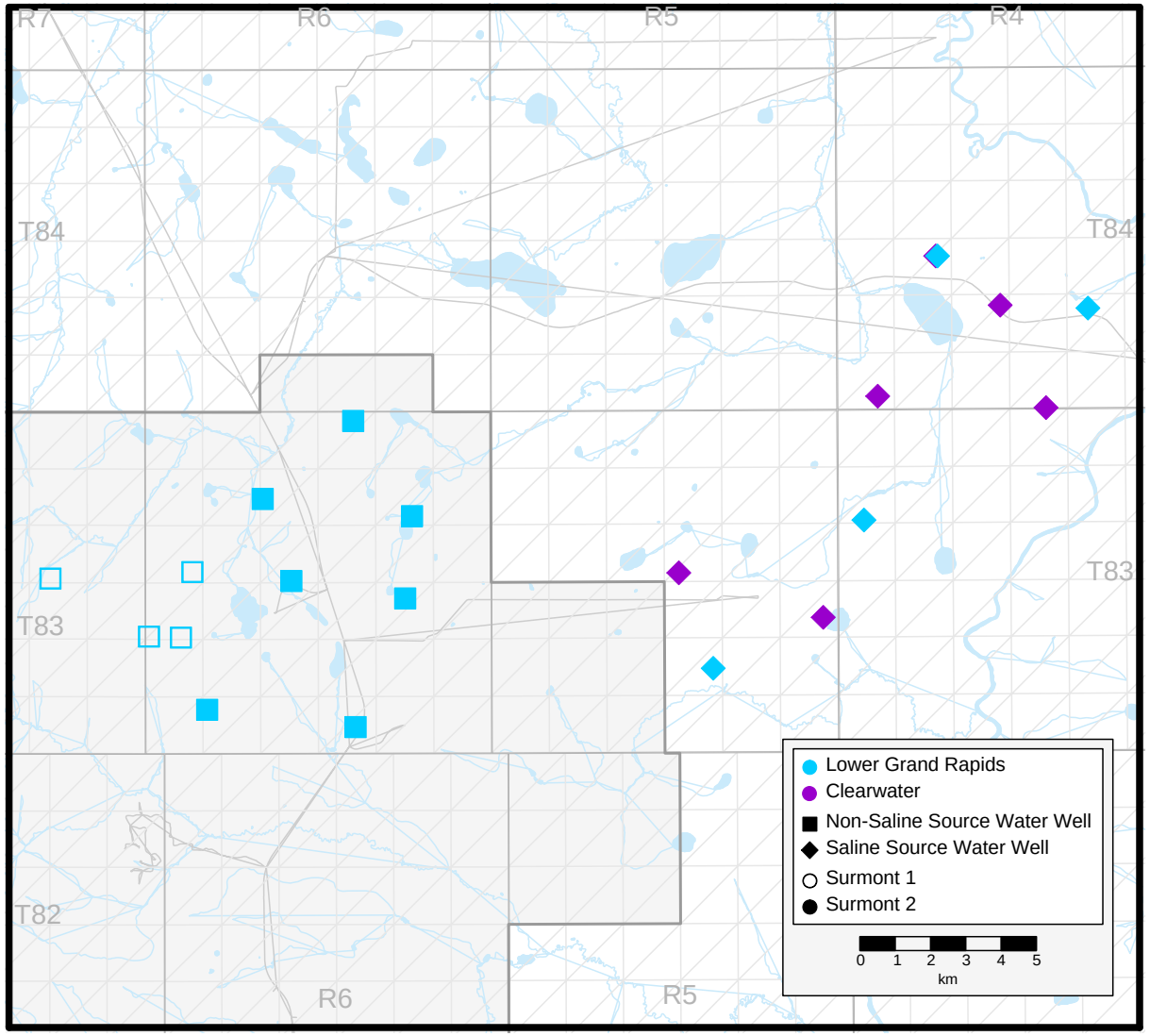


Surmont Phase 1 and Phase 2: Existing Water Source Wells

Surmont Phase 1 Non-Saline Water Source Wells			
Source Well	**Observation Well**	**Formation**	**Water Act Licence No.**
1F1/02-18-083-06W400	1F2/02-18-083-06W400	Lower Grand Rapids	00253532-02-00
1F1/04-18-083-06W400	102/04-18-083-06W400	Lower Grand Rapids	00253532-02-00
1F1/01-19-083-06W400	100/01-19-083-06W400	Lower Grand Rapids	00253532-02-00
1F1/03-23-083-07W400	100/03-23-083-07W400	Lower Grand Rapids	00253532-02-00

Surmont Phase 2 Non-Saline Water Source Wells			
Source Well	**Observation Well**	**Formation**	**Water Act Licence No.**
1F1/02-21-083-06W400	100/02-21-083-06W400	Lower Grand Rapids	00312463-02-00
1F1/02-26-083-06W400	100/02-26-083-06W400	Lower Grand Rapids	00312463-02-00
1F1/05-28-083-06W40	100/05-28-083-06W400	Lower Grand Rapids	00312463-02-00
1F1/07-03-083-06W400	1F2/07-03-083-06W400	Lower Grand Rapids	00312463-02-00
1F1/10-14-083-06W400	1F1/11-14-083-06W400	Lower Grand Rapids	00312463-02-00
1F1/13-05-083-06W400	100/13-05-083-06W400	Lower Grand Rapids	00312463-02-00
1F1/15-34-083-07W400	1F2/15-34-083-07W400	Lower Grand Rapids	00312463-02-00

Surmont Phase 2 Saline Water Source Wells	
Source Well	**Formation**
1F1/02-03-084-04W400	Clearwater
1F1/02-06-084-04W400	Clearwater
1F1/03-30-083-04W400	Lower Grand Rapids
1F1/04-22-083-05W400	Clearwater
1F1/07-13-083-05W400	Clearwater
1F1/08-10-083-05W400	Lower Grand Rapids
1F1/10-17-084-04W400	Clearwater
1F1/16-09-084-04W400	Clearwater
1F2/09-17-084-04W400	Lower Grand Rapids
1F2/14-11-084-04W400	Lower Grand Rapids



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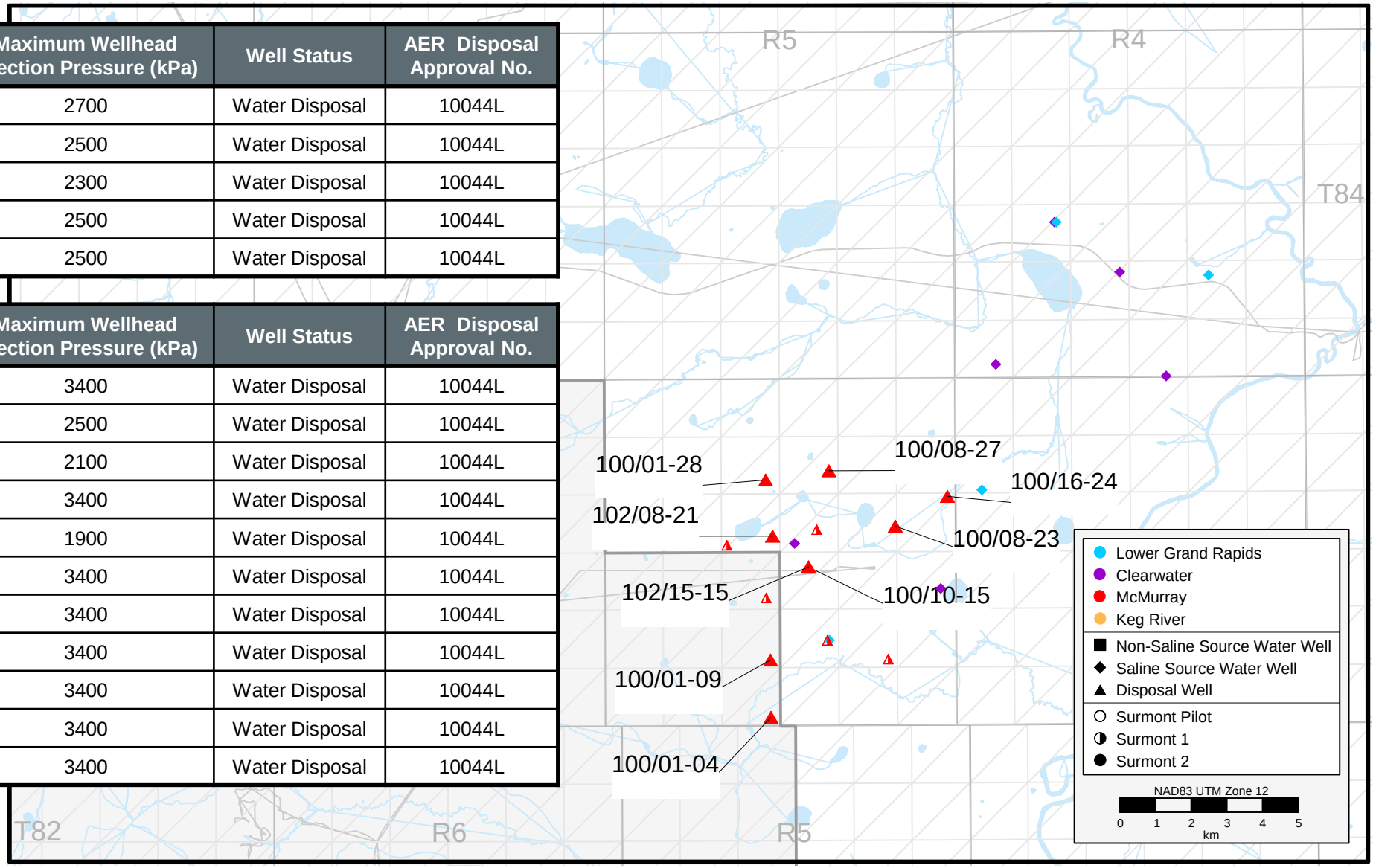
Surmont Phase 1 and Phase 2: Existing Water Disposal Wells

Well	Zone Approved for Disposal	Maximum Wellhead Injection Pressure (kPa)	Well Status	AER Disposal Approval No.
100/01-16-083-05W4/0	McMurray	2700	Water Disposal	10044L
100/07-22-083-05W4/0	McMurray	2500	Water Disposal	10044L
100/08-10-083-05W4/0	McMurray	2300	Water Disposal	10044L
100/04-21-083-05W4/0	McMurray	2500	Water Disposal	10044L
100/01-11-083-05W4/0	McMurray	2500	Water Disposal	10044L

Well	Zone Approved for Disposal	Maximum Wellhead Injection Pressure (kPa)	Well Status	AER Disposal Approval No.
100/01-09-083-05W4/0	McMurray	3400	Water Disposal	10044L
100/01-04-083-05W4/0	McMurray	2500	Water Disposal	10044L
100/01-21-083-05W4/0	McMurray	2100	Water Disposal	10044L
102/08-21-083-05W4/0	McMurray	3400	Water Disposal	10044L
103/08-21-083-05W4/0	McMurray	1900	Water Disposal	10044L
100/01-28-083-05W4/0	McMurray	3400	Water Disposal	10044L
100/10-15-083-05W4/0	McMurray	3400	Water Disposal	10044L
102/15-15-083-05W4/0	McMurray	3400	Water Disposal	10044L
100/08-27-083-05W4/0	McMurray	3400	Water Disposal	10044L
100/08-23-083-05W4/0	McMurray	3400	Water Disposal	10044L
100/16-24-083-05W4/0	McMurray	3400	Water Disposal	10044L



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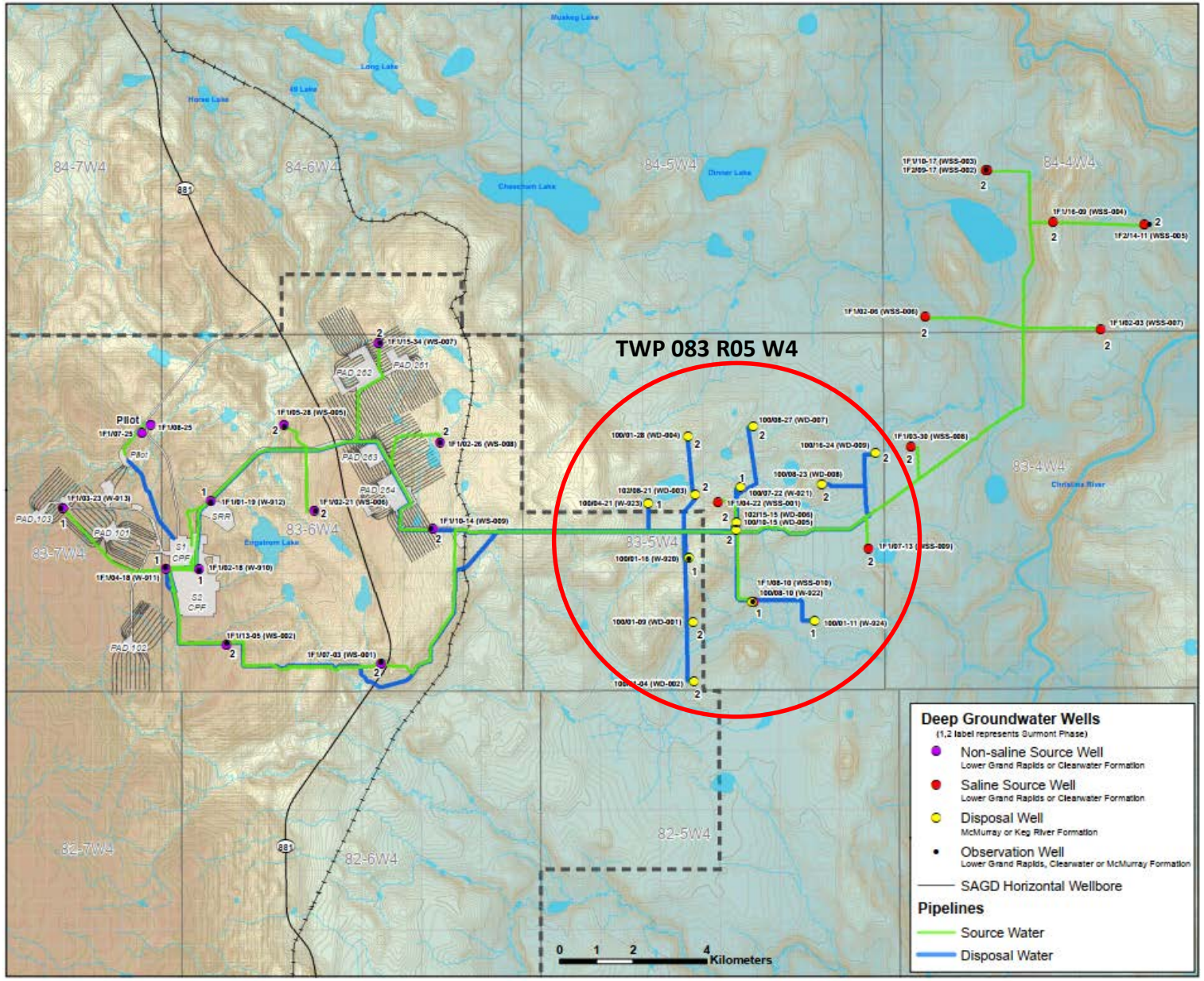
Surmont Disposal Field



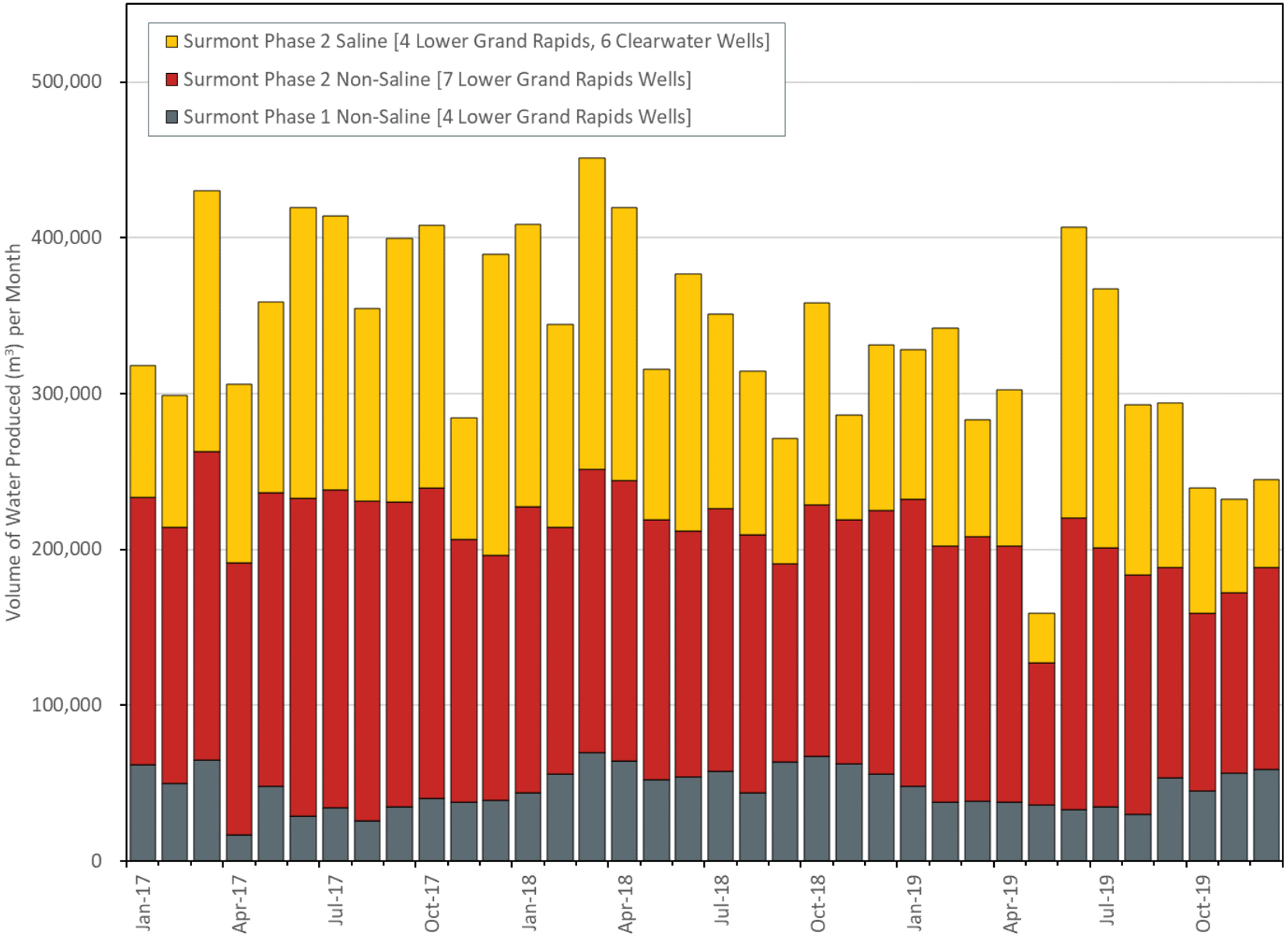
SURMONT PHASE 1

- 5 disposal wells

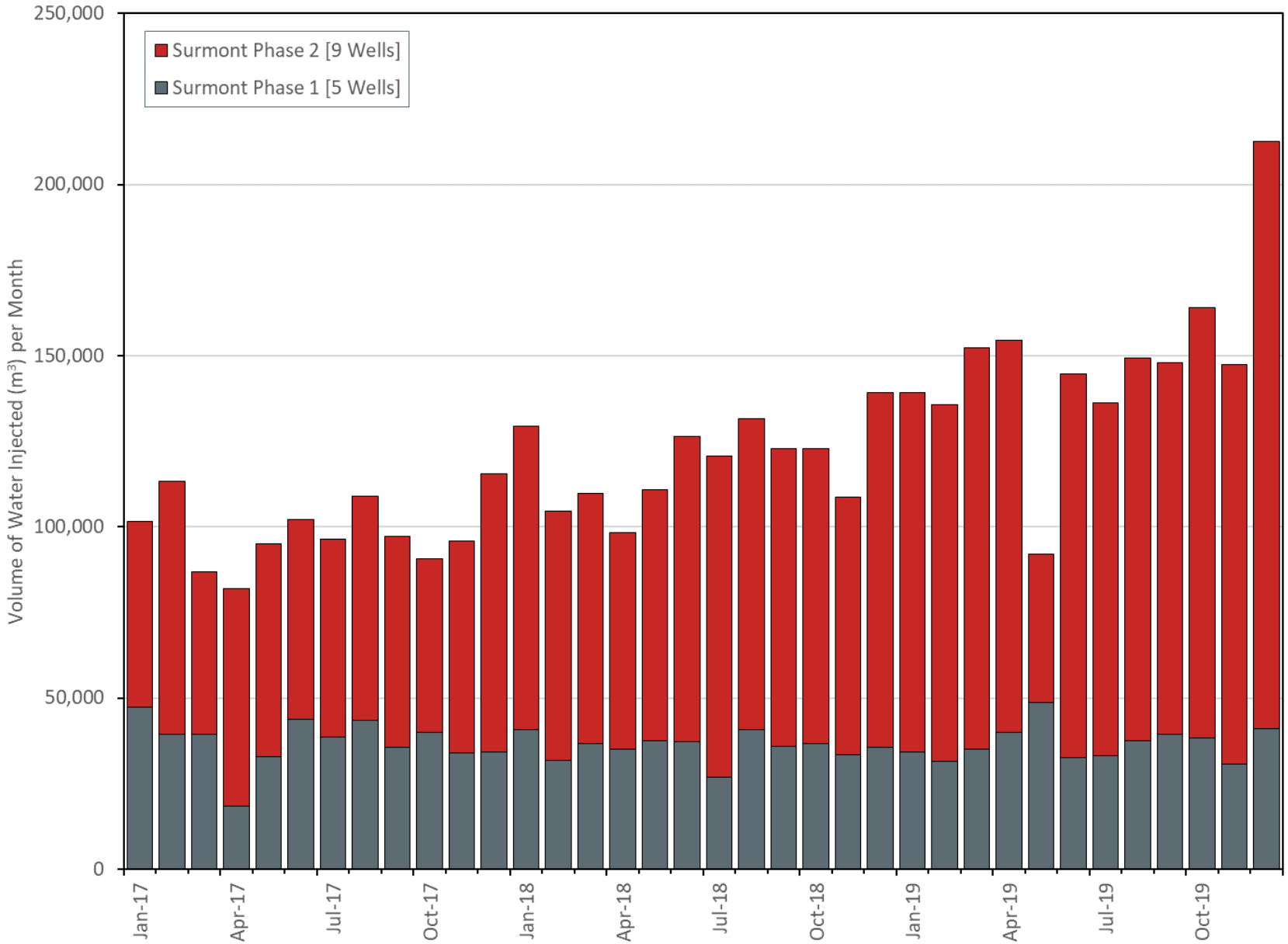
SURMONT PHASE 2

- 10 disposal wells
  - 8 active
  - 2 in construction
  - 1 abandoned

Surmont Non-Saline and Saline Water Source Wells: Production Volumes



Surmont Water Disposal Wells: Injection Rates (McMurray)



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Historical & Upcoming Activity

Directive 054: Subsection 4.4
OSCA Report: Table 1 (1, 5, 6)

Regulatory Approvals & Lifecycle Activities: 2019 Reporting Period

Application No./Date	Description	Approval Date/No.
1922683 **July 12, 2019**	**Surmont Lifecycle Pilot** - A category 2 amendment application for the approval of multiple routine and low risk project activities/modifications related to the recovery of crude bitumen for the life of the Surmont Project including: • expanding the development area • adding subsurface drainage areas, sustaining well pads, and SAGD wells • applying well design and co-injection alternatives • optimizing facilities • end of life blowdown The application proposed an outcomes-based approach to the management of project impacts and risks. Accompanying this, is the ability to submit additional technical information at different stages in the Project's lifecycle to satisfy regulatory requirements.	September 20, 2019 9426QQ
1924512 **September 30, 2019**	**Surmont Lifecycle Pilot** - AER initiated proceeding to correct errors in Approval No. 9426QQ.	October 1, 2019 9426RR
Lifecycle Activity **October 2019**	**2019 Multilateral Program** - A dual leg (multilateral) recovery well drilled at Pad 263-2-P02 to replace a failed producer on October 2nd and 3rd.	Executed pursuant to our Lifecycle Project Approval (Application No. 1922683)
1924412 **August 8, 2019**	**ID 2001-03 Exemption Request** - A category 2 amendment application requesting an exemption from ID 2001-03 Sulphur recovery requirements for 2019.	November 27, 2019 9426SS

No suspension and abandonment activities took place during the reporting period.

Operational Changes: Technical Innovations

STEAM ADDITIVES PILOT *- Lifecycle Activity*

- ConocoPhillips is currently developing a pilot project for the injection of steam additives into the reservoir, with the objective to reduce the viscosity of emulsion at downhole SAGD conditions and accelerate the flow of emulsion drainage in the reservoir. This pilot is expected to start in Q1/Q2 2021.

MULTILATERAL WELLS PROGRAM *- Lifecycle Activity*

- ConocoPhillips will continue to pursue the trial of the Multilateral (MLT) Wellbores Technology. One MLT was drilled and completed in Pad 263-2, and the plan to drill and complete two more MLT's has been postponed to 2021.

Compliance History

Incident	Reference Number	Date of Occurrence	Detail/Action
SO^2 limit exceedance	20191416	March 31, 2019	CEMS recorded intermittent periods of increased temperature values. Inconsistent temperature values were due to loose wiring at the CEMS stack temperature thermocouple. Because temperature values could not be used, a calculation was applied to the SO^2 numbers at the end of the month showing that SO^2 limits had been exceeded. This issue was fixed and did not reoccur.
Steam condensate release	20191381	May 4, 2019	Release of 2.5 m^3 from condensate station; the release was contained inside a berm and cleaned up via vacuum truck. AER satisfied on May 22, 2019.
Steam condensate release	20191590	May 25, 2019	Release of 0.010 m^3 from condensate station; the release was contained in the building and cleaned up via vac truck. AER satisfied on June 28, 2019.
Produced water release	20191662	June 2, 2019	Release of 150 m^3 from warm lime softener; the release was contained inside the tank farm secondary containment and was cleaned up via vac truck and sump pump. AER satisfied on June 14, 2019.
Gas condensate release	20192565	August 27, 2019	Release of 3 m^3 from condensate station; the release was contained in the building and cleaned up via vac truck immediately. Remediation completed by ConocoPhillips. Not closed by AER at the time of this report.
Process water release	20192601	August 31, 2019	Release of 3.5 m^3 from warm lime softener; the release was contained in secondary containment and cleaned up via vac truck immediately. AER satisfied on September 10, 2019.
Disposal water release	20192975	October 3, 2019	Release of 112 m^3 from water filter inside evaporator building spilling from primary containment. Booms were installed and a dam was built to prevent spill from getting into storm drains and storm water pond. The spill was cleaned up immediately. AER satisfied on November 7, 2019.
Unplanned flaring	2019366	December 3, 2019	ATCO power outage caused all Surmont Phase 1 steam generators to trip and go offline. This triggered an emergency flaring event of produced gas until the facility was back online. AER satisfied on December 12, 2019.
Steam condensate release	20193609	December 5, 2019	Release of 0.02 m^3 from condensate station; the release was contained inside a berm and frozen condensate was shoveled and properly disposed of. AER satisfied on December 12, 2019.
Produced gas condensate	20193770	December 27, 2019	Release of 0.075 m^3 from condensate station; the release was contained in building and cleaned up via vac truck. AER satisfied on January 16, 2020.

Compliance History

Incident	Reference Number	Date of Occurrence	Detail/Action
Emulsion pipeline valve release	20181702	May 26, 2018	• A 2-inch valve located on a Surmont emulsion pipeline failed causing a small release (>1L). ConocoPhillips committed to replace the leaking valve, as well as an additional similar valve, during the scheduled 2019 plant turnaround. • The contractor was unable to replace the valve under 'live' conditions and a temporary solution was implemented - to bolster the integrity of the valve by installing strongback clamps (C-clamps) on the valve body. This solution was disclosed to the AER. • On July 5, 2020 ConocoPhillips executed repairs to replace both emulsion pipeline vent valves.
Unplanned hydrocarbon venting	10689	May 7, 2018	Voluntary self-disclosure (VSD) • Unplanned hydrocarbon venting events exceeding 4 hours in duration were reported on May 7th and June 17th, 2018. • ConocoPhillips' VSD (July 24, 2018) was accepted by the AER with conditions to provide quarterly updates on venting until a new educator vapor recovery unit (VRU) could be installed during the 2019 plant turnaround. The system was in full operation on August 26, 2019.
Compromised interstitial space in building sumps	10764	September 24, 2018	Voluntary self-disclosure (VSD) • Seventeen building sumps were identified as having compromised interstitial space. The primary layer failed in these sumps, but the secondary liner barrier was functioning, and the environment was not being impacted. • A VSD was submitted to the AER on September 24, 2018. • An extension was granted by the AER to complete repair work by December 2020.
Erosion, causing sedimentation into the watercourse	493533	September 17, 2019	Field inspection deficiency • A watercourse crossing at 4-23-083-07W4M was experiencing erosion, causing sedimentation into the watercourse. This was identified as a low risk noncompliance and addressed to the satisfaction of the AER on November 7, 2019.

Future Plans: Overview

SURMONT PHASE 1

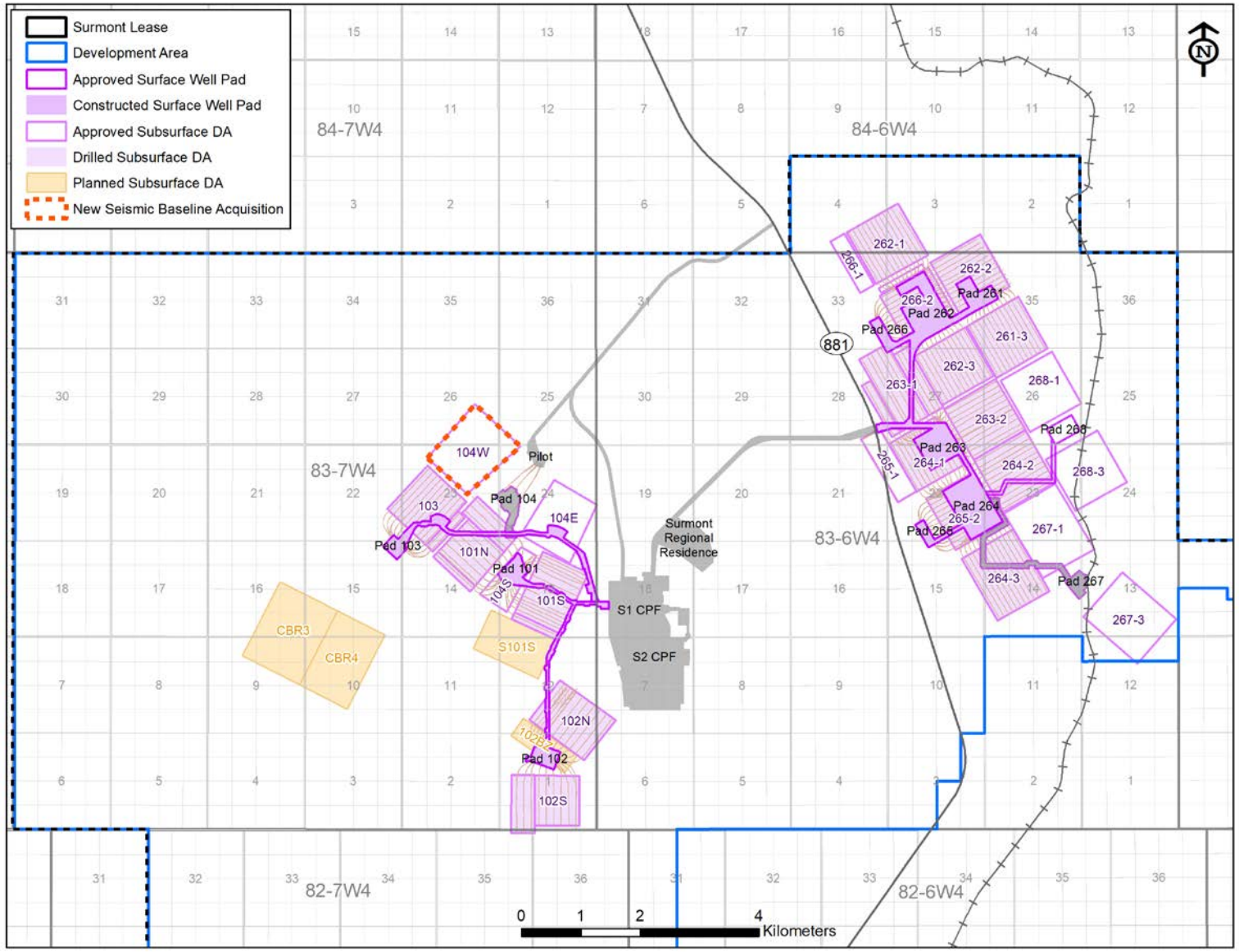
- Alternate blend project planned for 2020/2021 (construction/commissioning) – *Lifecycle Activity*
- Full plant outage in August 2020 (planned maintenance)
- Potential 2021 multilateral well program – *Lifecycle Activity*

SURMONT PHASE 2

- No major modifications planned for 2020
- Potential 2021 multilateral well program – *Lifecycle Activity*
- Steam additives trial in 2021 – *Lifecycle Activity*
- Single outboard fishbone producer well in drainage area 265-2 in 2021 – *Lifecycle Activity*

No planned activities are expected to significantly alter performance, or the energy or material balance of the scheme.

Future Plans: Five Year Development & Delineation Outlook



FUTURE PAD DEVELOPMENT OPTIONS

- Approved Drainage Areas (pre-Lifecycle)
  - 104S • 267-1 • 268-1
  - 265-1 • 267-3 • 268-3
- Lifecycle Approved Drainage Areas
  - CBR3 • S101S • 102BZ
  - CBR4

DELINEATION & OBSERVATION WELLS

- Proposed baseline seismic at 104W: 2022/23

Year	Observation Wells	Delineation Wells	Target Drainage Areas for Delineation
2020	0	7	CBR 3/4/5
2021	4	3	267-3, 104S, CBR 2/3/4
2022	7	7	TBD
2023	6	3	TBD
2024	6	4	TBD
2025	6	2	TBD