TUNDRA OIL & GAS

PROPOSED BIRDTAIL UNIT No. 7

Application for Enhanced Oil Recovery (EOR) Project and Voluntary Unitization

Bakken Formation

Bakken-Torquay A Pool (15-62A)

Birdtail Area, Manitoba

This application includes forward looking statements. Statements other than statements of historical fact are forward-looking statements. Words such as “believe”, “will”, “may”, “may have”, “would”, “estimate”, “continues”, “anticipates”, “intends”, “plans”, “expects”, “budget”, “scheduled”, “forecasts”, and similar words identify estimates and forward-looking statements. Forward-looking statements are not guarantees and involve known and unknown risks, and uncertainties, including, but not limited to commodity price, price of purchased goods and services, global economic situation, quantity of oil and natural gas reserves, results of waterflood, individual well results, legal, political and environmental changes which may cause the actual results to vary materially from forecast.

Author(s):
Jessica McLeod, P. Eng., Senior Exploitation Engineer
Byron Howell, P. Geol, Senior Geologist

Addressee:
Officer of the Crown
Manitoba Government Regulatory Services (Oil and Gas)
c/o Leonardo.Leonen@gov.mb.ca

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INTRODUCTION

The Birdtail Field is located in Townships 16-17 Ranges 27-28 W1M (Figure 1 – "Birdtail Field Boundary"). Within the Birdtail Field, Bakken and Bakken-Torquay pools have been developed with the drilling of horizontal wells on primary recovery of reserves at various inter well spacings. There are 6 approved Units utilizing secondary recovery methods in the Bakken formation within the Birdtail Field Boundary.

Potential exists for incremental reserves to be recovered through an Enhanced Oil Recovery Waterflood Scheme in the Bakken formation through unitization (referred to as "Secondary Recovery") within a project area comprised of the NW ¼ of Section 17-016-27W1 (Figure 2 – Proposed Birdtail Unit No. 7 Boundary referred to as the "Application Area").

The Application Area proposed for unitization is within the existing designated pool ("Figure 3 – Bakken-Torquay A Birdtail Pool Map"). Tundra is operator of the lands within the Application Area currently comprised of 3.5 net producing horizontal wells. A well list including recent production statistics of the existing wells is attached as Table 1 – "Well List and Status". Tundra's contemplated development includes the conversion of one horizontal producer within the unit, pending results of the waterflood and conditions as circumstances unfold. The Future Unit Development Plan is laid out below and is subject to results of the waterflood and technical discretion of the unit operator taking into consideration factors such as production performance and associated economics among others.

Tundra seeks to initiate Secondary Recovery of the pool within the Application Area. If this application is approved by the Manitoba Petroleum Branch (the "Crown"), the proposed name for the unit would be Birdtail Unit No. 7 which follows Birdtail Unit No. 6 in sequence.

Tundra submits this application to establish Birdtail Unit No. 7 and implement an Enhanced Oil Recovery (EOR) Project by way of Secondary Recovery within the Bakken formation.

SUMMARY

1. The Application Area contains 3.5 net producing horizontal wells held by Tundra 100% of which 3 fall fully within the proposed Application Area and produce from the Bakken formation (the "Wells"). One well exists along the border of Birdtail Unit No. 2 and the proposed Birdtail Unit No. 7, with 42.39% of the well allocated to the Proposed Birdtail Unit No. 7. The Application Area is situated to the SE of Birdtail Unit No. 2 (Figure 2 – "Proposed Birdtail Unit No. 7 Boundary").

2. Total Net Original Oil in Place (OOIP) in the Application Area has been calculated to be 192.9 E^3m^3 (1,213.6 Mbbl) for an average of 48.2 net E^3m^3 (303.4 Mbbl) OOIP per 40 acre LSD. OOIP values were determined using a permeability cutoff of 0.5 mD using petrophysical analysis.

3. Cumulative production to the end of October 2024 from the Wells was 34.0 E^3m^3 (214.0 Mbbl) of oil, and 25.5 E^3m^3 (160.4 Mbbl) of water, representing a 17.6 % Recovery Factor (RF) of the Net OOIP.

4. Estimated Ultimate Recovery (EUR) based on primary recovery of production and reserves from the Wells has been calculated to be 59.7 E^3m^3 (375.4 Mbbl), with 25.7 E^3m^3 (161.4 Mbbl) remaining as of the end of October 2024.

5. Ultimate OOIP recovery within the Application Area under primary recovery is forecasted to be 30.9%.

6. Figure 4 – "Birdtail Unit No. 7 Historic Production" shows gross production from the Wells within the Application Area peaked in April 2014 at 16.2 m^3 of oil per day (OPD). As of October 2024, gross production from the Wells was 7.3 m^3 OPD, 13.4 m^3 of water per day (WPD) with an 64.8% watercut (WCT).

7. As of October 2024, average per well production has declined to 1.8 m^3 OPD per well. Decline analysis of the wells grouped together within the Application Area forecasts total oil production to continue declining at an annual rate of approximately 9.9% in aggregate under primary recovery.

8. The EUR of oil reserves under the implementation of Secondary Recovery within the Application Area has been calculated to be 70.1 E^3m^3 (440.9Mbbl), with 36.1 E^3m^3 (226.9 Mbbl) remaining. An incremental 10.4 E^3m^3 (65.5 Mbbl) in oil reserves, or 5.4%, are forecasted to be recovered under Secondary Recovery.

9. Total recovery factor under Secondary Recovery in the Application Area could be as high as 36.3% based on internal estimates.

10. Based on waterflood response in the adjacent units within the Birdtail Field, the Three Forks and Middle Bakken Formation in the proposed Application Area are believed to be analogous and therefore suitable reservoirs for secondary recovery based on proximity.

11. The strategy for development is expected to include existing open hole horizontal wells that could be converted to injection wells within the Application Area with the goal of setting up a 40-acre line drive waterflood congruent with existing developments in the Birdtail Field (Figure 12 – "Horizontal Injector Downhole Diagram – OH")

ENHANCED OIL RECOVERY (EOR) PROJECT APPLICATION

GEOLOGY

Stratigraphy

The Middle Bakken formation within the proposed Application Area can be seen on the cross section in Appendix 1. The Middle Bakken is conformably overlain by the Upper Bakken Shale, which is in turn overlain by the Basal Limestone unit of the Mississippian Lodgepole formation.

The Middle Bakken unconformably overlies the Devonian 'Torquay' or Devonian 'Three Forks Group', which is locally divided into the Lyleton C, Lyleton B, and Lyleton Shale formations (from oldest to youngest). The Bakken – Lyleton unconformity is angular, where the top Lyleton units wedge, or thin and subcrop, towards the northeast. The Lyleton formation is underlain by the Devonian Birdbear formation.

Sedimentology

The Middle Bakken within the Application Area has two main units: The Upper Middle Bakken and the Lower Middle Bakken.

The Upper Middle Bakken is composed of a very fine-grained dolomitic quartz siltstone that is bioturbated and has abundant small brachiopod fossils. It is considered non–reservoir in the area (supported by a lack of oil staining and poor porosity and permeability in core) and is interpreted to represent a lower shoreface to offshore transition facies within a restricted marine seaway. The Upper Middle Bakken gradationally overlies the Lower Middle Bakken.

The Lower Middle Bakken is the main reservoir section; composed of fine to very fine-grained quartz sandstone with minor amounts of dolomite, feldspar, and clays. In core it often has very thin low angle to horizontal laminae, with ripples, and sometimes some small rip up clasts of the underlying Lyleton at the base. The Lower Middle Bakken is thought to have been deposited in a foreshore facies within a restricted marine seaway locally with evidence of intertidal point bar and channel thalweg depositional environments. The reservoir quality of the underlying Lyleton, along with where on the foreshore the Bakken was deposited, influences the reservoir quality of the Middle Bakken greatly – resulting in a large range of reservoir quality within the Manson field.

Structure

Structure within the Application Area is generally consistent with southwest regional dip with bias towards a local low to the west. Please refer to Appendix 2 for Top Middle Bakken Subsea Structure map.

Reservoir

The Middle Bakken reservoir within the Application Area is continuous and of good quality. Net pay thickness ranges around 2.5m, shown in Appendix 3. Net oil pay is defined by logs with a limestone density porosity greater than 12% and resistivity higher than 3 ohm meters. While there are no vertical wells within the proposed unit, the surrounding well control gives insight into the net pay, porosity, and permeability trends within the proposed unit boundary. Appendix 4 and 5 show Phi*H and K*H maps, respectively. Phi.h is the average porosity of the reservoir multiplied by the pay height in vertical wells. K.h is the summation of the permeability multiplied by the pay height of the reservoir in vertical wells.

Original Oil in Place (OOIP)

The OOIP within the Application Area is calculated to be 1.2 million barrels of oil as shown in Table 2 – OOIP Calculation. The OOIP was calculated LSD by LSD estimating the net pay based on the surrounding vertical well logs. Sw was averaged for all LSD's at 0.35, porosity at 18.9% and the Boi used was 1.003. OOIP values were calculated using the following volumetric equation:

$$OOIP = \frac{Area * Net\ Pay * \ Porosity * (1 - Water\ Saturation)}{Initial\ Formation\ Volume\ Factor\ of\ Oil}$$

where

OOIP	= Original Oil in Place by LSD (Mbbl, or m3)
A	= Area (40 acres, or 16.187 hectares, per LSD)
h * Ø	= Net Pay * Porosity, or Phi * h (ft, or m)
Bo	= Formation Volume Factor of Oil (stb/rb, or sm3/rm3)
Sw	= Water Saturation (decimal)

Historical Production:

A historical group production history plot for the Wells contained within the Application Area is shown as Figure 4 - Birdtail Unit No. 7 Historic Production. Oil production commenced from Wells within the Application Area in July 2012 and peaked during April 2014 at 16.2 m^3 OPD. As of October 2024, gross production from the Wells was 7.3 m^3 of OPD, 13.4 m^3 of WPD and a 64.8% WCT.

Oil production from the Wells within the Application Area is currently declining at an annual rate of approximately **9.9**% under the current primary recovery method.

The production rates from the Wells within the Application Area indicate the need for pressure restoration and maintenance, and Secondary Recovery by way of waterflood is reasonably believed to be the most efficient means of re-introducing energy back into the reservoir system to provide areal sweep between wells that is anticipated to increase the reserves and potentially the associated production rates.

Technical Studies:

The waterflood performance predictions for the proposed Birdtail Unit No. 7 are based on internal engineering assessments. Internal reviews included analysis of available open-hole logs; core data; petro-physics; seismic; drilling information; completion information; and production information. These parameters were reviewed to develop a suite of geological maps and establish reservoir parameters to support the calculation of the proposed Birdtail Unit No. 7 OOIP (Table 3 – Rock Fluid Parameters).

If approved by the Crown, unitization and the pursuit of Secondary Recovery is anticipated to increase the estimated ultimate oil recovery. Analogous waterflood projects in the Birdtail Field (Figure 5 – "Birdtail Unit No. 2 Production Profile") suggests implementation of Secondary Recovery can lead to incremental oil being recovered from the Bakken-Three Forks formation.

As Tundra has a direct comparison of waterflood performance from existing units within the Birdtail Field, a simulation model for the proposed Birdtail Unit No. 7 has not been included in this application.

Future Unit Development Plan:

Primary recovery from existing horizontal wells in the Application Area has declined significantly from the peak rate indicating a need for additional pressure support under Secondary Recovery. To increase pressure support of the reservoir, subject to approval of this application, Tundra will convert one producing well to an injection well, noted as injector (see Figure 6 - "Birdtail Unit No. 7 Development Plan"). If results are in line with expectations, the development strategy could deliver a 40-acre spaced waterflood pattern between the wells within the Application Area.

Reserve Recovery Profile and Production Forecast:

The waterflood performance predictions for the proposed Birdtail Unit No. 7 is based on oil production decline curve analysis, and the Secondary Recovery predictions are based on internal engineering analysis performed by the Tundra reservoir engineering group.

Primary Recovery Production Forecast:

Cumulative production to the end of October 2024, from the 3.5 net producing wells within the Application Area was 34.0 E^3m^3 of oil, and 25.5 E^3m^3 of water, representing a 17.6% Recovery Factor (RF) of the calculated Net OOIP.

Ultimate Primary Proved Producing oil reserves recovery for the Application Area have been estimated to be 59.7 E^3m^3, or a 30.9% RF of OOIP. The remaining producing primary reserves have been estimated to be 25.7 E^3m^3 to the end of October 2024. The expected production decline and forecasted cumulative oil recovery under primary recovery is shown in Figures 7 and 8.

Timing for Conversion of Horizontal Wells to Water Injection:

Tundra anticipates converting to injection one existing well within the NW of Section 17. The water injection conversion schedule in the Application Area is subject to knowledge gained from previous conversions and results.

Criteria for Conversion to Water Injection Well:

Tundra currently anticipates converting one well to injection within the Application Area as demonstrated in Figure 6 – "Birdtail Unit No. 7 Development Plan".

To assess timing of horizontal well conversion from primary production to water injection service, Tundra will monitor the following parameters:

- Measured reservoir pressures at start of and/or through primary production
- Fluid production rates and changes in decline rate
- Any observed production interference effects with adjacent vertical and horizontal wells
- Pattern mass balance and/or oil recovery factor estimates
- Reservoir pressure relative to bubble point pressure

Monitoring these parameters will enable the proposed Birdtail Unit No. 7 to be developed efficiently and provide the greatest chance the waterflood will sweep oil from the reservoir with pressure support for the mutual benefit of Tundra and the mineral owners.

Secondary EOR Production Forecast:

The proposed Birdtail Unit No. 7 is planned to have 40 acre spacing which is consistent with previous units in the Birdtail Field. The oil production profile for the proposed Birdtail Unit No. 7 under secondary recovery has been developed based on predictions derived from conventional internal engineering analysis performed by the Tundra reservoir engineering group.

Secondary waterflood plots of the potential oil production forecast over time and the potential oil production vs. cumulative oil are plotted in Figures 9 and 10, respectively. Total primary plus secondary EUR within the Application Area is estimated to be 70.1 E^3m^3 with 36.1 E^3m^3 remaining representing a total recovery factor of 36.3%. An incremental 10.4 E^3m^3 of oil is forecasted to be recovered within the Application Area which represents an incremental 5.4% estimated by Secondary Recovery relative to the existing primary production method based on current information and estimates that could vary.

Estimated Fracture Gradient:

Completion data from the existing producing wells within the project area indicate a fracture pressure gradient range of 18.0-20.0 kPa/m true vertical depth (TVD). Tundra expects the fracture gradient encountered during completion of the proposed horizontal injection well will be somewhat lower than these values due to expected reservoir pressure depletion.

Waterflood Operating Strategy

Water Source

Injection water for the proposed Birdtail Unit No. 7 is anticipated to be sourced from the 09-30-016-27W1 Jurassic water source well. Jurassic-source water is produced from the 09-30-016-27W1 Water Source well and filtered at the Birdtail 09-30-016-27W1 battery, where it is distributed to the injection system. Diagrams of the anticipated water injection system are illustrated in Figure 11 and will not involve the injection of fresh water.

Tundra does not foresee injectivity issues when using Jurassic sourced water for the waterflood operations in the proposed Birdtail Unit No. 7.

Injection Wells

The water injection wells for the proposed Birdtail Unit No. 7 could be re-configured for downhole injection after approval for waterflood has been received. The horizontal injection wells are anticipated to be completed with an open hole design. An example of the downhole configuration can be seen in Figure 12 (Horizontal Injector Downhole Diagram – OH).

The water injection wells can be placed on injection after the approval to inject has been received from the Crown. Wellhead injection pressures should be maintained below the least value of either:

1. The area specific known and calculated fracture gradient, or
2. The licensed surface injection Maximum Operating Pressure (MOP)

Tundra has a thorough understanding of area fracture gradients. A management program will be utilized to set and routinely review injection target rates and pressures vs. surface MOP and the known area formation fracture pressures.

All new water injection wells will be surface equipped with injection volume metering. An operating procedure for monitoring water injection volumes and meter balancing can be utilized to monitor measurement of the entire system and associated integrity.

The proposed Birdtail Unit No. 7 horizontal water injection well rate is forecasted to average 10 – 40 m3 WPD, based on expected reservoir permeability and pressure.

Reservoir Pressure Management during Waterflood

Tundra has representative initial pressure surveys available for the horizontal producing wells within the proposed Birdtail Unit No. 7 project area in the Bakken formation (Appendix 6).

Upon injection, a 1–2-year reservoir re-pressurization period due to cumulative primary production voidage and pressure depletion is possible, but it could be longer or shorter. Initial monthly Voidage Replacement Ratio (VRR) is expected to be approximately 1.2 to 2.0 within the unit during the re-pressurization period. As the cumulative VRR approaches 1.0, target reservoir operating pressure for waterflood operations is forecasted to be 75-90% of original reservoir pressure.

Waterflood Surveillance and Optimization

EOR response and waterflood surveillance within the Application Area will consist of the following:

- Regular production well rate and watercut testing
- Daily water injection rate and pressure monitoring vs target rates
- Water injection rate/pressure/time vs. cumulative injection plot
- Reservoir pressure surveys as required to establish pressure trends
- Pattern VRR
- Potential use of chemical tracers to track water injector/producer responses
- Use of some or all of: Water Oil Ratio (WOR) trends, Log WOR vs Cum Oil, Hydrocarbon Pore Volumes Injected, Conformance Plots

The above surveillance methods should contribute to an ever-increasing understanding of reservoir performance and provide data to continually control and optimize the waterflood operation which should significantly reduce the potential for undesired water channeling.

Economic Life

Under the current primary recovery method, existing wells within the Application Area will be deemed uneconomic when the net oil price revenue stream becomes less than the producing operating costs. With positive oil production response under the proposed secondary recovery method, the economic life could be extended into the future.

Water Injection Facilities

The waterflood operation will utilize the 09-30-016-27W1 Jurassic sourced water. Injection wells will be connected to the existing high pressure water pipeline system supplying other Tundra-operated waterflood units.

A complete description of all planned system design and operational practices to prevent corrosion related failures is shown in Figure 13 (Planned Corrosion Control). All surface facilities and wellheads will have cathodic protection to prevent corrosion. All injection flowlines will be made of fiberglass so corrosion should not be an issue. Injectors will have a packer set above the Middle Bakken formation, and the annulus between the tubing and casing will be filled with inhibited fluid.

VOLUNTARY UNITIZATION APPLICATION

As noted previously, the Application Area is not yet unitized. However, unitization will permit the implementation of Secondary Recovery within the Application Area which is forecasted to increase overall recovery of OOIP to 36.3%. The basis for unitization is to develop the Application Area in an effective manner that will permit waterflooding. Unitization, and the implementation of an Enhanced Oil Recovery (EOR) Project, should increase the recoverable reserves via Secondary Recovery with pressure support. Additional drilling and water injection conversions to build and maintain reservoir pressure, at the discretion of the unit operator, should increase oil production and associated life of the reserves.

An approved unit is required by the Crown to permit the conversion of wells to water injection, initiate a waterflood and pursue Secondary Recovery through the execution of a formal Unit Agreement.

Proposed Unit Name:

Tundra proposes the official name of the new unit covering the Application Area to permit secondary recovery be Birdtail Unit No. 7.

Proposed effective date:

The proposed effective date is March 1, 2025, subject to Crown and mineral owner approvals.

Description of the unitized zone:

The unitized zone to be waterflooded shall be the Bakken / Three Forks formation.

Working interest owners & proposed operator for the unit:

Table 4 – Tract Participation outlines the working interest owners for the corresponding tract within Application Area. Tundra holds a 100% working interest ownership in all the proposed tracts and will therefore hold a 100% working interest ownership in the proposed Birdtail Unit No. 7. The proposed unit operator will be Tundra.

Proposed tract breakdown within the Application Area:

There is proposed to be four (4) tracts broken down as follows:

- 11-17-016-27W1
- 12-17-016-27W1
- 13-17-016-27W1
- 14-17-016-27W1

The lands included in the 40 acre tracts are outlined in Table 4 – Tract Participation.

Tract factor calculation & methodology:

Birdtail Unit No. 7 is proposed to consist of 4 tracts based on remaining OOIP using maps created internally by Tundra, as of October 2024, with the production from the horizontal wells being divided according to the existing production allocation agreements. The calculation of the tract factors is outlined in Table 5 – Tract Factor Calculation and has been rounded off to nine (9) decimal places.

The Tract Factor contribution for each of the tracts within the Application Area was calculated as follows:

- Gross OOIP by LSD, minus cumulative production to October 31, 2024, for the LSD as distributed by the LSD specific Production Allocation (PA) % in the applicable producing horizontal or vertical well (to yield Remaining Gross OOIP)

Tract Factor formula and associated tract factor calculations for all individual LSD's based on the above methodology are outlined in Table 5 – Tract Factor Calculation and included in spreadsheet format in the digital submission.

NOTIFICATION OF MINERAL AND SURFACE OWNERS

Tundra shall notify all surface and mineral owners of its intention to submit an application to form a new unit which will be known as Birdtail Unit No. 7. Copies of the Notices, and proof of service, to all surface and mineral owners will be forwarded to the Crown, when available, to complete the Birdtail Unit No. 7 application requirements.

Unitization and execution of the formal Birdtail Unit No. 7 Unit Agreement by the freehold mineral owners shall occur once the Crown has reviewed the tract factors and approved this Unit Application. The fully executed Unit Agreement will be forwarded to the Crown and complete the formation of Birdtail Unit No. 7.

Should the Crown have further questions or require more information, please contact:

Engineering:
Jessica McLeod – (587) 747-5365, jessica.mcleod@tundraoilandgas.com

Geology:
Byron Howell – (403) 910-1672, byron.howell@tundraoilandgas.com

Land:
Lindsay McGill – (403) 767-1231, lindsay.mcgill@tundraoilandgas.com

Yours truly,

TUNDRA OIL & GAS LIMITED

Jessica McLeod, P.Eng., Senior Exploitation Engineer

Proposed Birdtail Unit No. 7

Application for Enhanced Oil Recovery Waterflood Project

List of Figures

Figure 1: Birdtail Field Boundary

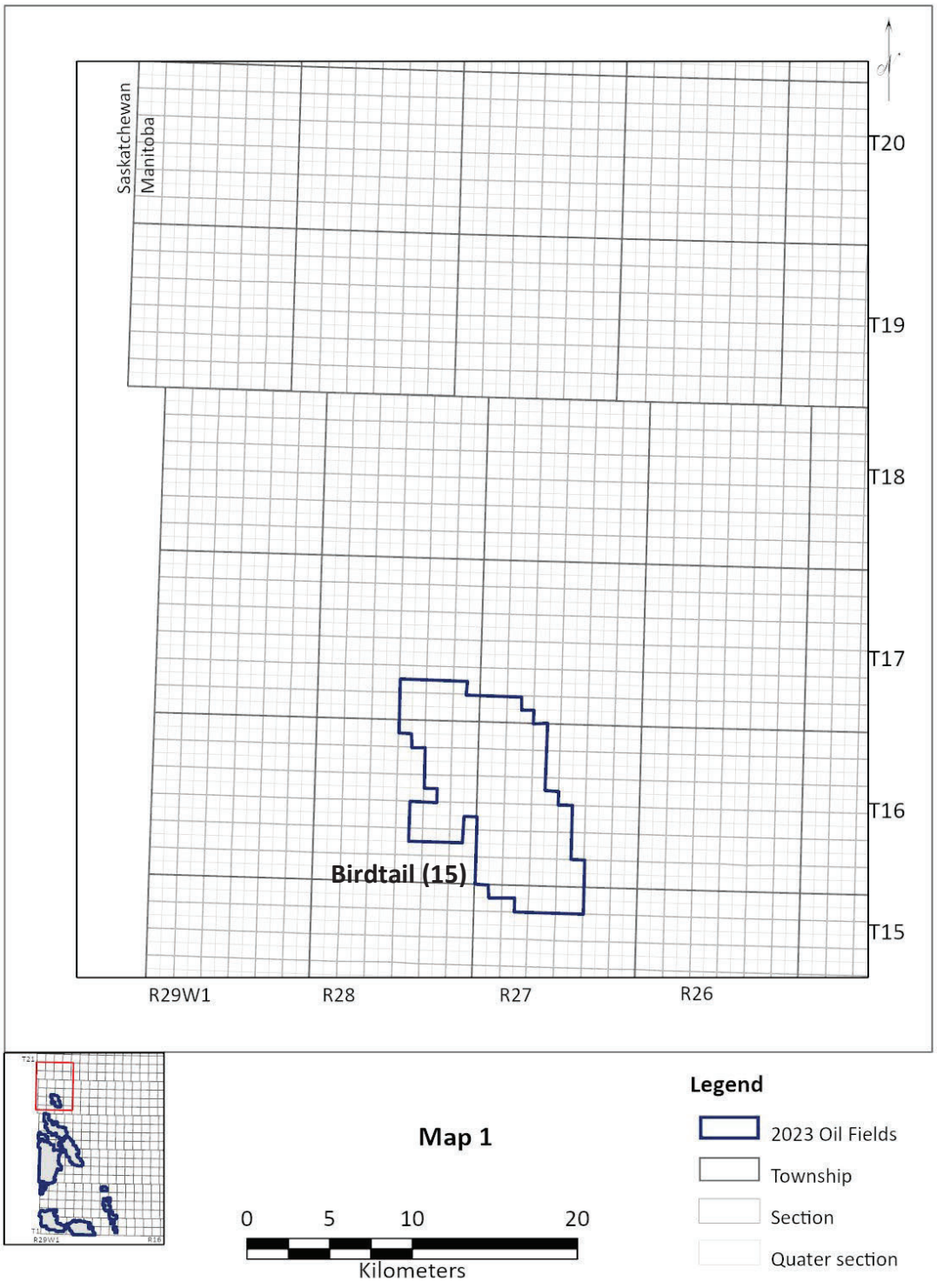

Figure 2: Proposed Birdtail Unit No. 7 Boundary

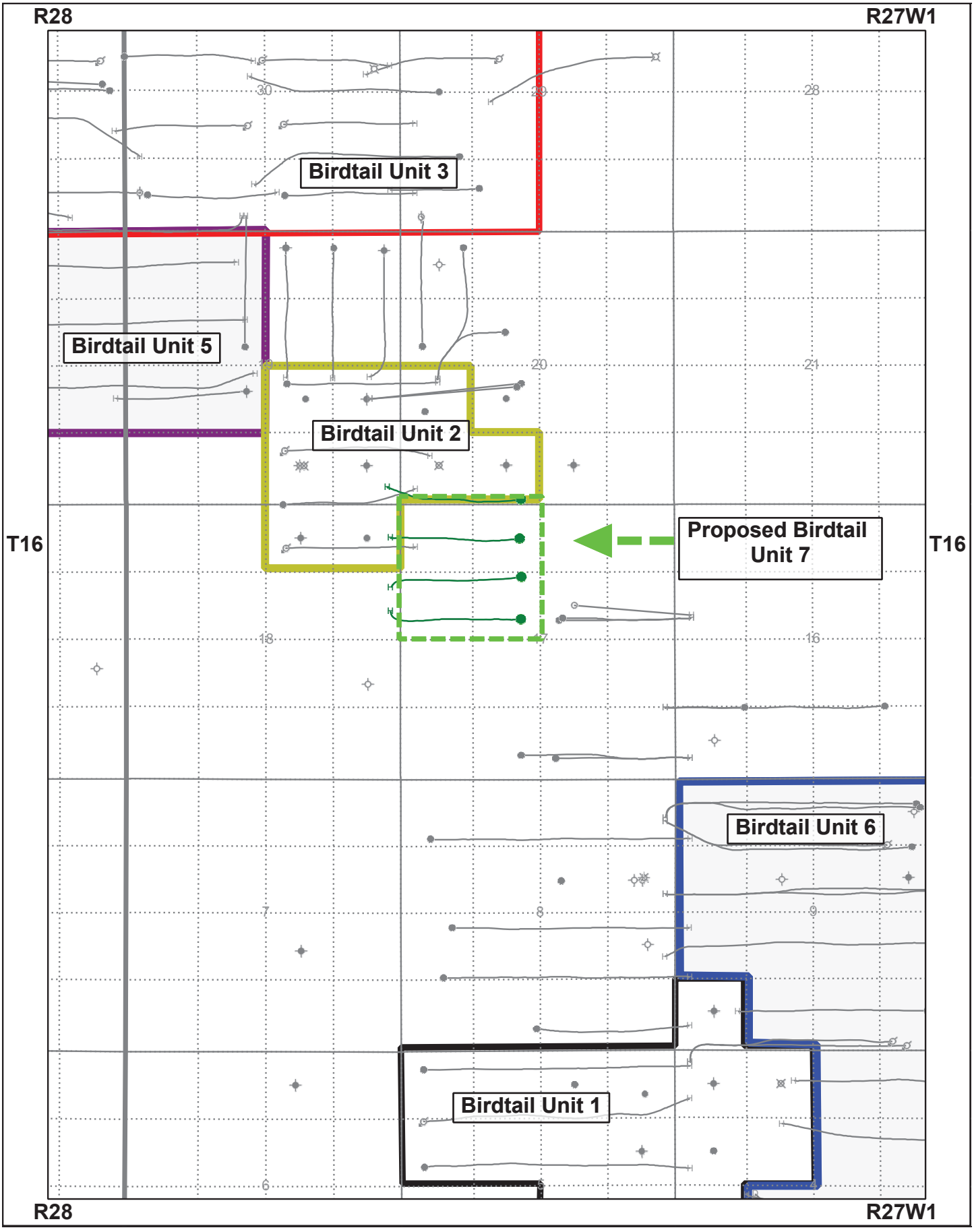

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Figure 3: Bakken-Torquay A Birdtail Pool Map

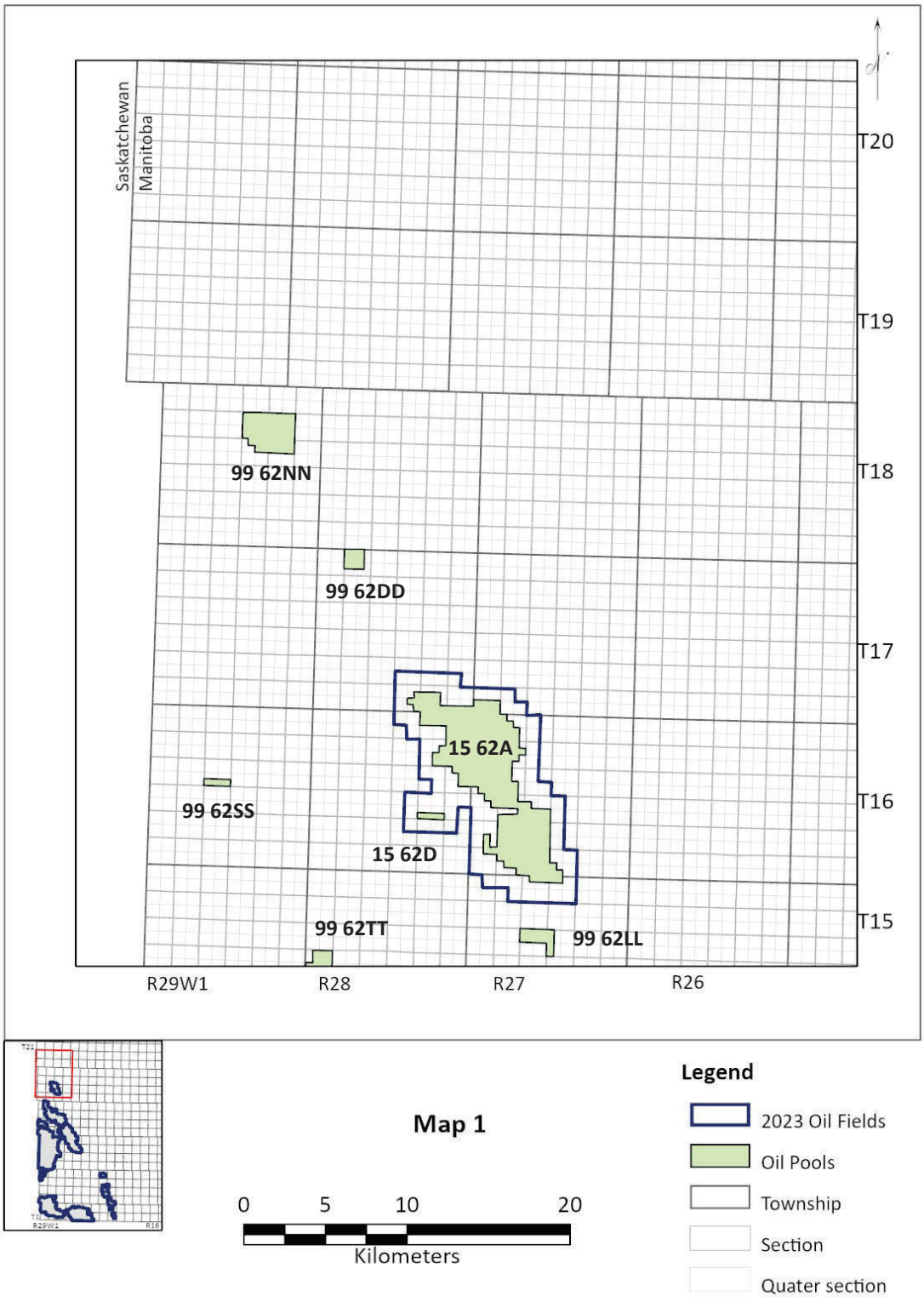

Figure 4: Birdtail Unit No. 7 Historic Production

Well Information as of 12/19/2024 - Group Well Report

Production Graph

Group:	Birdtail 07.lwell	On Prod:	2012-07 to 2024-10	Cum Oil:	36015.6 m3
# of Wells:	4	Prod Form:	BAKKENM; BAKKEN; THREEFK; TORQUAY	Cum Gas:	4.1 E3m3
Fluid:	Oil	Field:	BIRDTAIL (MB15)	Cum Wtr:	32244.1 m3
Mode:	Pumping	Pool Code:	MB001562A	Cum Inj Oil:	0.0 m3
		Unit Code:		Cum Inj Gas:	0.0 E3m3
				Cum Inj Wtr:	0.0 m3

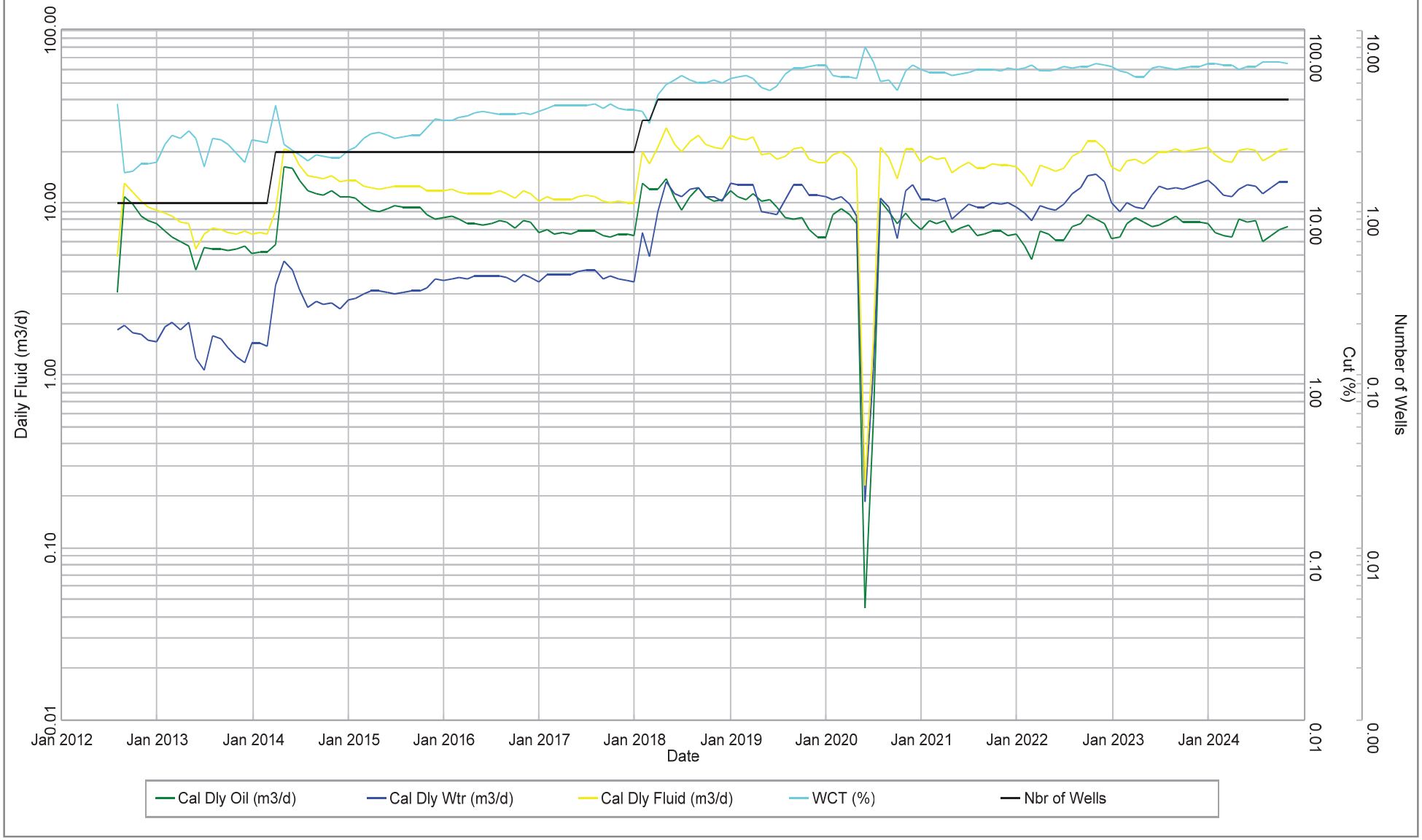

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Figure 5: Birdtail Unit No. 2 Production Profile

Unit BIRDTAIL UNIT NO. 2 Information as of 12/19/2024

Production Graph

Group:	BIRDTAIL UNIT NO. 2	On Prod:	1997-01 to 2024-10	Cum Oil:	62824.4 m3
# of Wells:	14	Prod Form:	BAKKEN; BAKKENM	Cum Gas:	0.0 E3m3
Fluid:	Oil; Water Injection	Field:	BIRDTAIL (MB15)	Cum Wtr:	141909.5 m3
Mode:	Abandoned; Pumping; Injection	Pool Code:	MB001562A	Cum Inj Oil:	0.0 m3
		Unit Code:	1562A2	Cum Inj Gas:	0.0 E3m3
				Cum Inj Wtr:	170442.9 m3

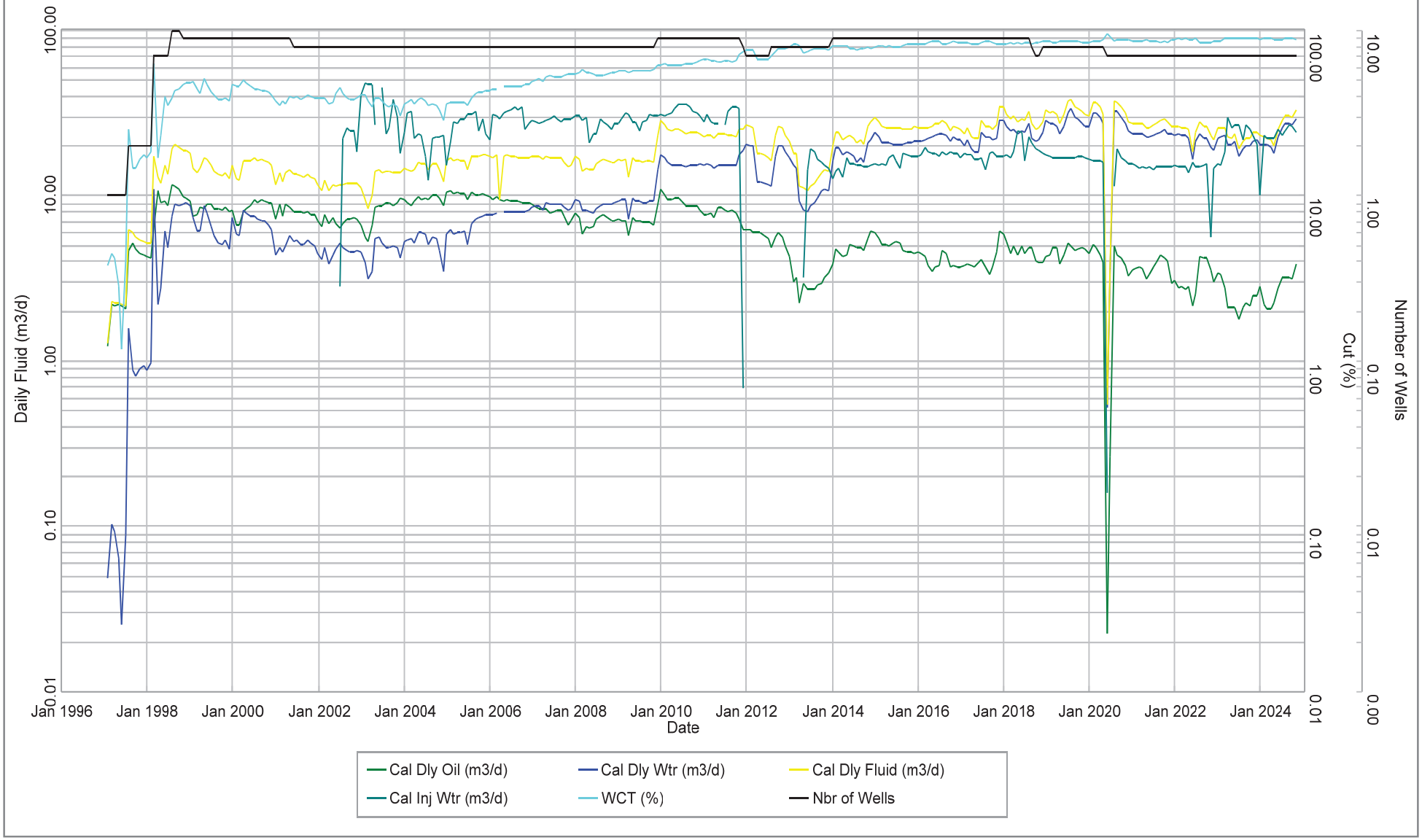

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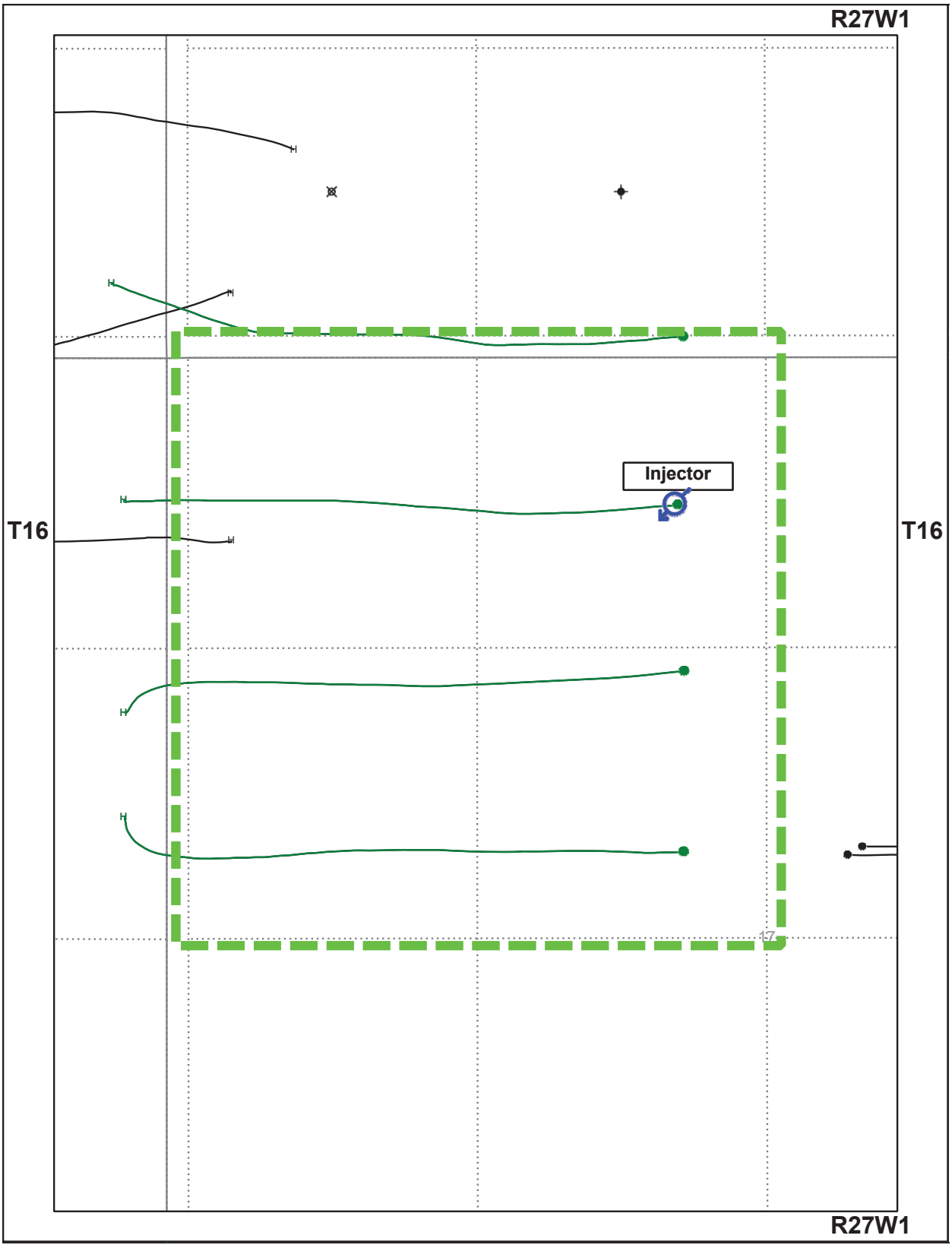
Figure 6: Birdtail Unit No. 7 Development Plan



Map Title

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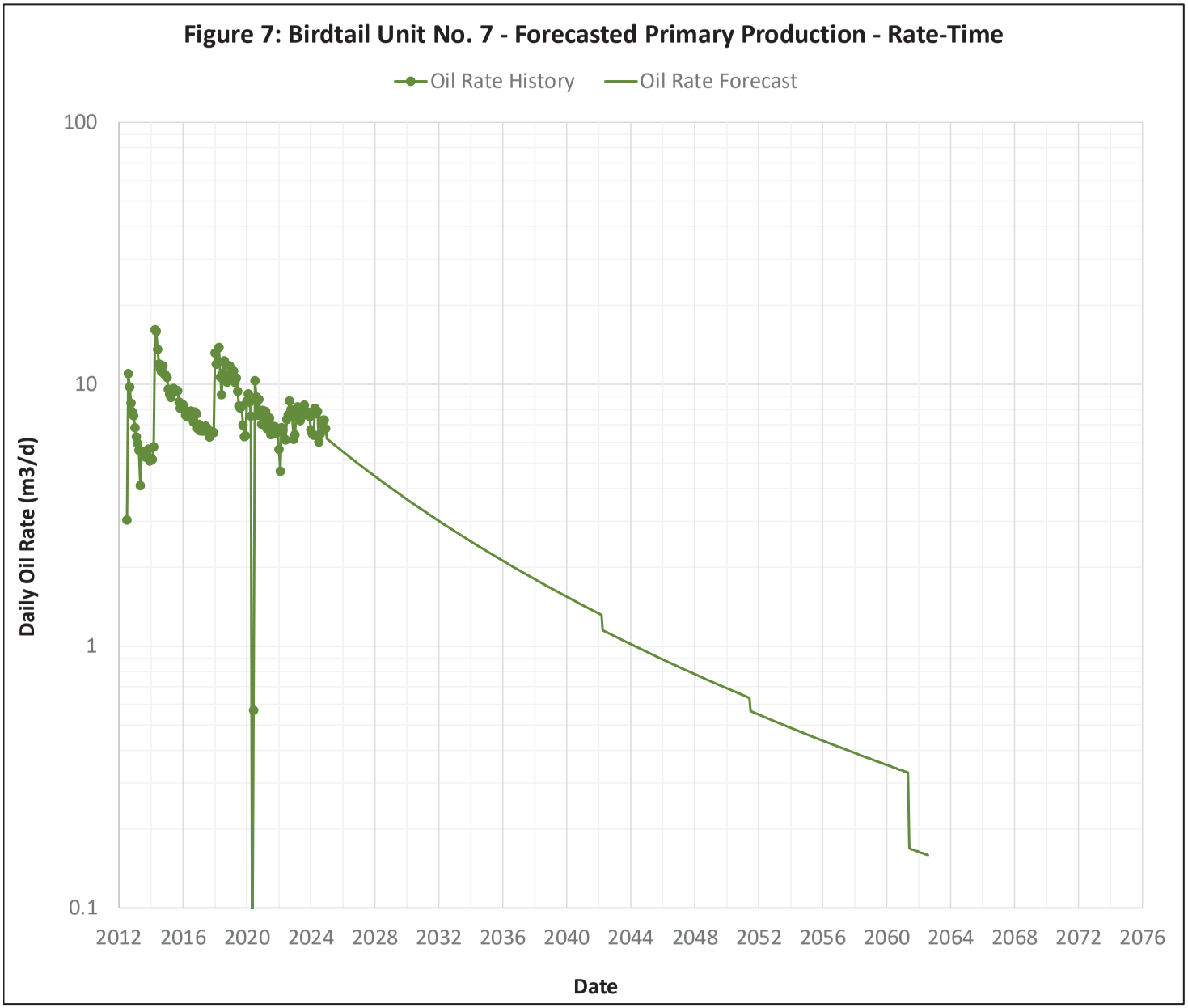
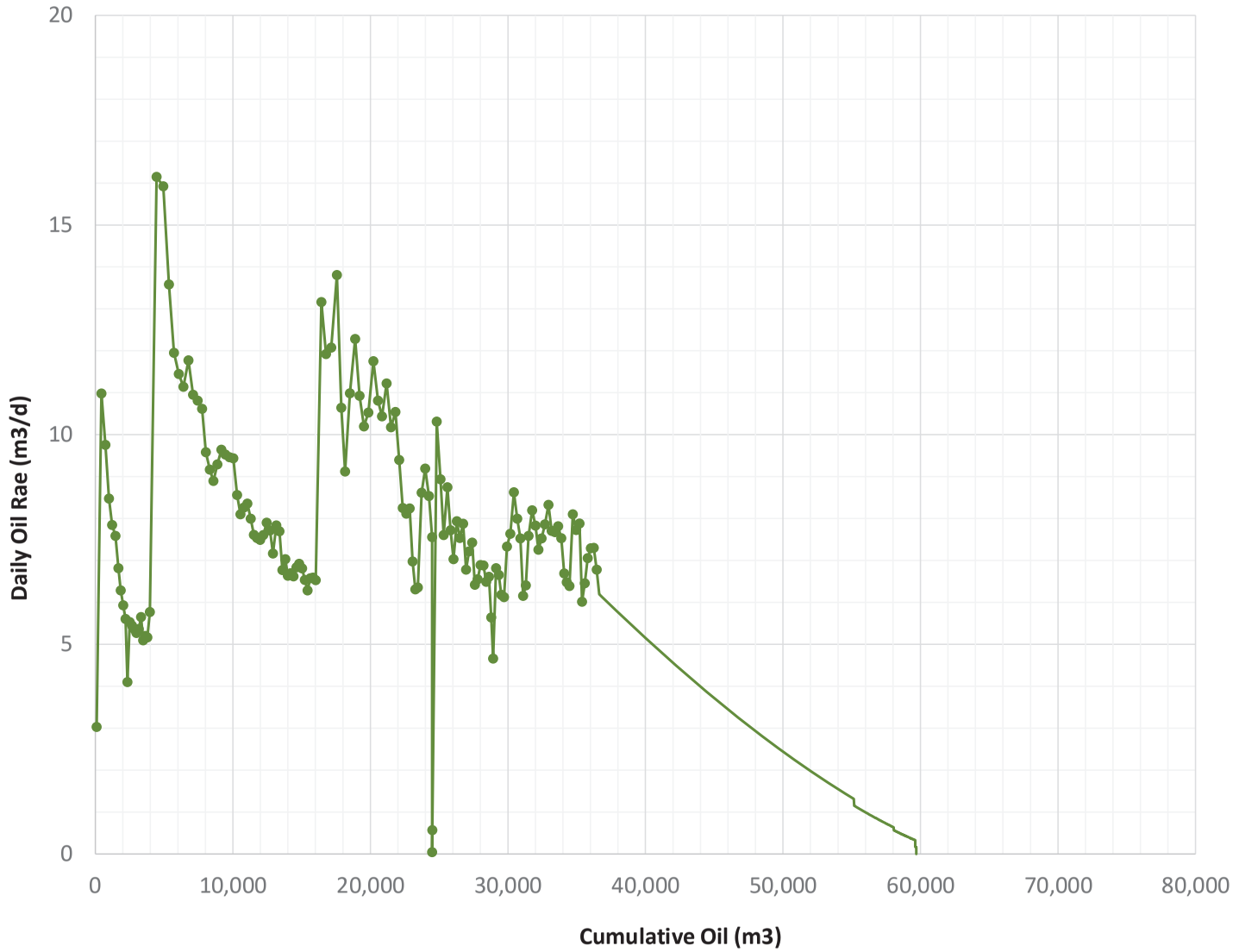
Figure 7: Birdtail Unit No. 7 - Forecasted Primary Production - Rate-Time



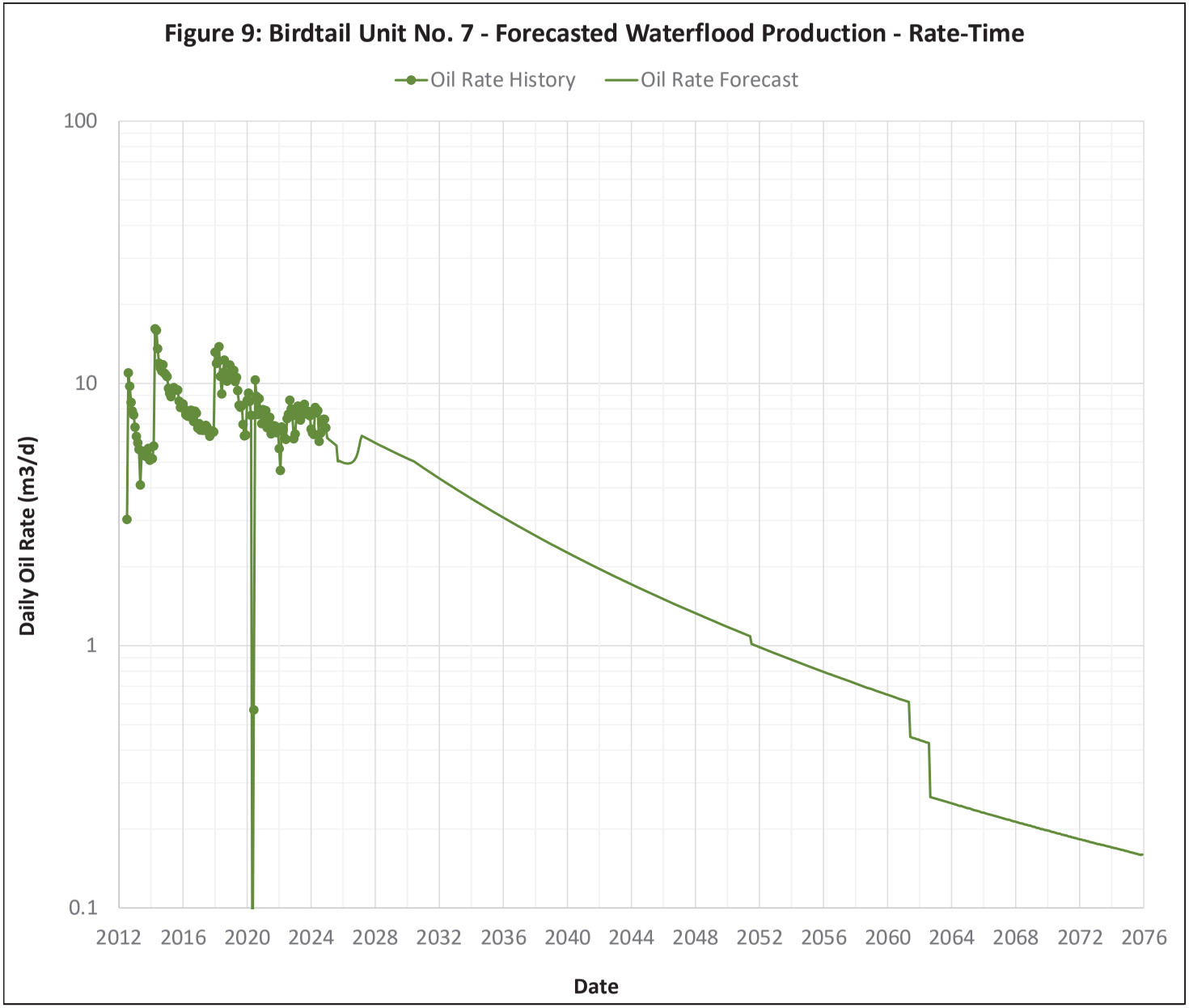
Volume Summary		
Oil	Cum (e3m3)	34.0
	Rem Rec (e3m3)	25.7
	Ult Rec (e3m3)	59.7
Gas	Cum (e3m3)	4.2
	Rem Rec (e3m3)	0
	Ult Rec (e3m3)	4.2
Water	Cum (e3m3)	25.5
	Rem Rec (e3m3)	48.4
	Ult Rec (e3m3)	73.9
Field	Cum (e3m3)	0
	Rem Rec (e3m3)	0
	Ult Rec (e3m3)	0
NGL	Cum (e3m3)	0
	Rem Rec (e3m3)	0
	Ult Rec (e3m3)	0

Figure 8: Birdtail Unit No. 7 - Forecasted Primary Production - Rate-Cumulative Oil



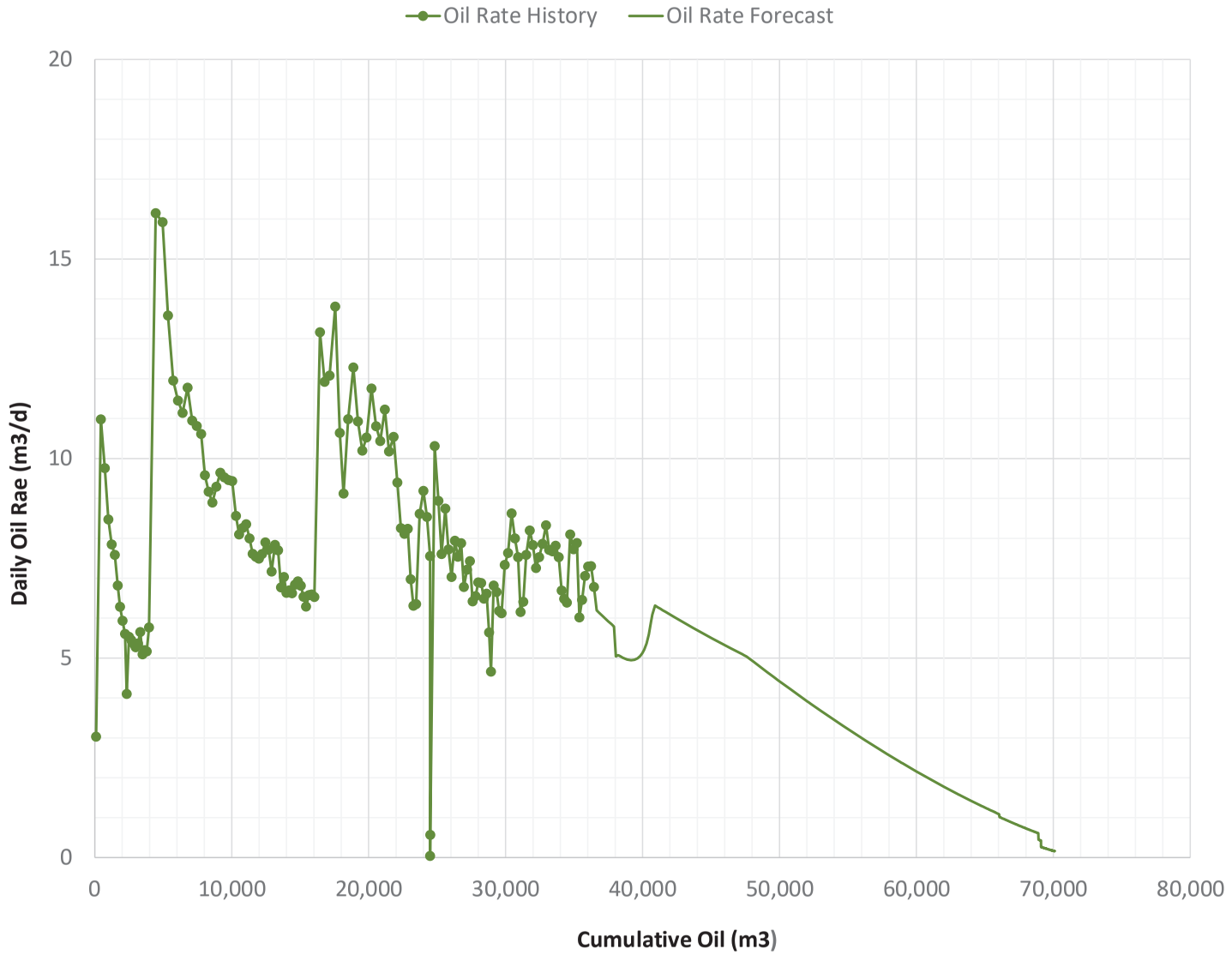
Volume Summary		
Oil	Cum (e3m3)	34.0
	Rem Rec (e3m3)	25.7
	Ult Rec (e3m3)	59.7
Gas	Cum (e3m3)	4.2
	Rem Rec (e3m3)	0
	Ult Rec (e3m3)	4.2
Water	Cum (e3m3)	25.5
	Rem Rec (e3m3)	48.4
	Ult Rec (e3m3)	73.9
Field	Cum (e3m3)	0
	Rem Rec (e3m3)	0
	Ult Rec (e3m3)	0
NGL	Cum (e3m3)	0
	Rem Rec (e3m3)	0
	Ult Rec (e3m3)	0

Figure 9: Birdtail Unit No. 7 - Forecasted Waterflood Production - Rate-Time



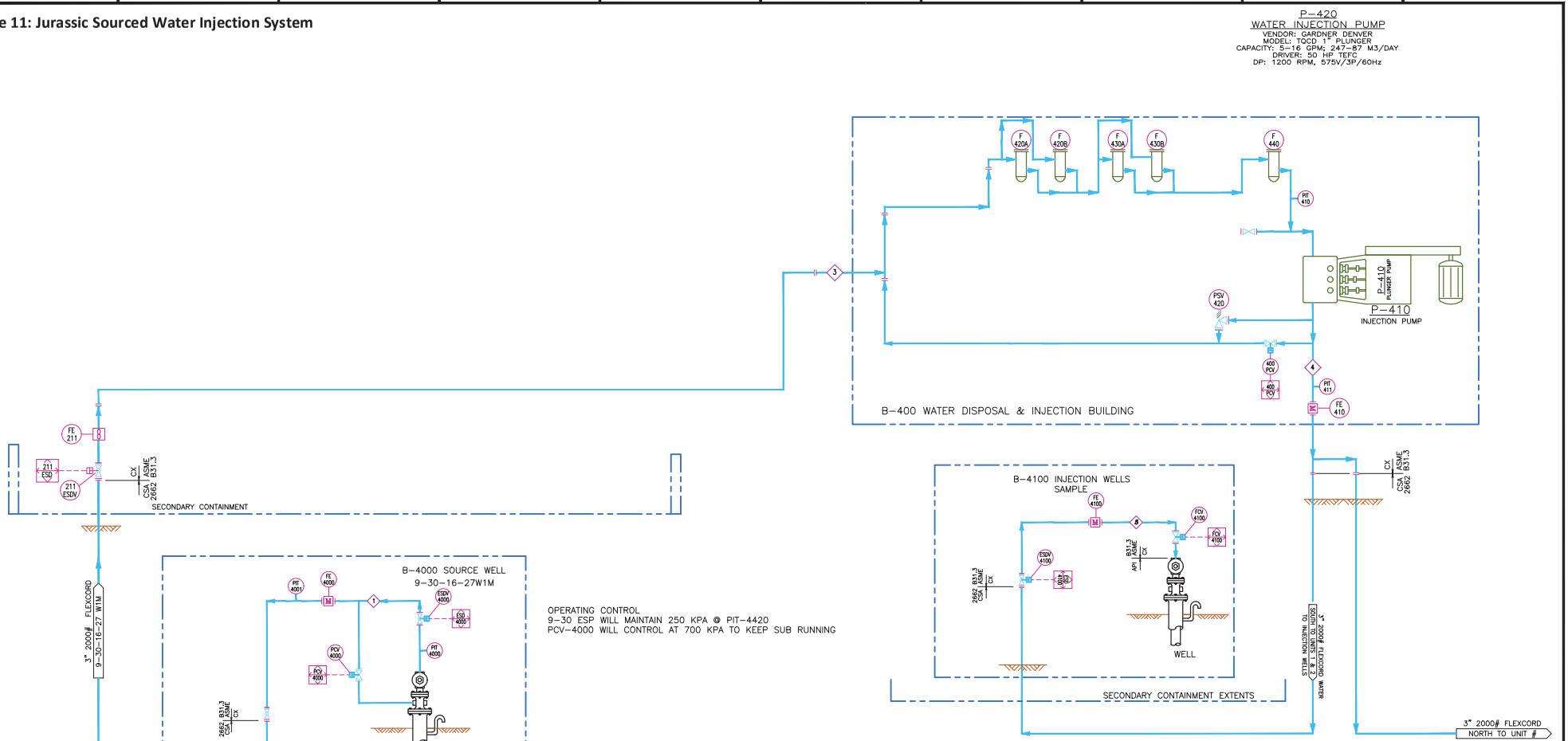
Volume Summary		
Oil	Cum (e3m3)	34.0
	Rem Rec (e3m3)	36.1
	Ult Rec (e3m3)	70.1
Gas	Cum (e3m3)	4.2
	Rem Rec (e3m3)	0
	Ult Rec (e3m3)	4.2
Water	Cum (e3m3)	25.5
	Rem Rec (e3m3)	83.3
	Ult Rec (e3m3)	108.8
Field	Cum (e3m3)	0
	Rem Rec (e3m3)	0
	Ult Rec (e3m3)	0
NGL	Cum (e3m3)	0
	Rem Rec (e3m3)	0
	Ult Rec (e3m3)	0

Figure 10: Birdtail Unit No. 7 - Forecasted Waterflood Production - Rate-Cumulative Oil



Volume Summary		
Oil	Cum (e3m3)	34.0
	Rem Rec (e3m3)	36.1
	Ult Rec (e3m3)	70.1
Gas	Cum (e3m3)	4.2
	Rem Rec (e3m3)	0
	Ult Rec (e3m3)	4.2
Water	Cum (e3m3)	25.5
	Rem Rec (e3m3)	83.3
	Ult Rec (e3m3)	108.8
Field	Cum (e3m3)	0
	Rem Rec (e3m3)	0
	Ult Rec (e3m3)	0
NGL	Cum (e3m3)	0
	Rem Rec (e3m3)	0
	Ult Rec (e3m3)	0

Figure 11: Jurassic Sourced Water Injection System



STREAM NUMBER		1		2		3		4		5	
COMPONENT		OPER.	DESIGN	OPER.	DESIGN	OPER.	DESIGN	OPER.	DESIGN	OPER.	DESIGN
OIL	m^3/DAY	–	–	–	–	–	–	–	–	–	–
WATER	m^3/DAY	150	300	–	–	150	300	150	300	25	40
PROD. EMULSION	m^3/DAY	–	–	–	–	–	–	–	–	–	–
PROD. GAS	$10^3 m^3$/DAY	–	–	–	–	–	–	–	–	–	–
PRESSURE	KPA	500	5100	–	–	300	1960	4000	9920	4000	9920
TEMPERATURE	°C	16	37	–	–	16	37	16	37	16	37
LINE SIZE	in.	3		–		4		3		1	

REV	DESCRIPTION	BY	DATE	CHK	APP
1	ADDITION WSW SUB, REMOVAL OF TANKS.	JO	06/21/2017	AB	
B	REVISIONS	AP	6–FEB–2013	JC	
A	ISSUED FOR REVIEW	RM	22–NOV–2012	AP	JC

REFERENCE DRAWING: –

NOTES:

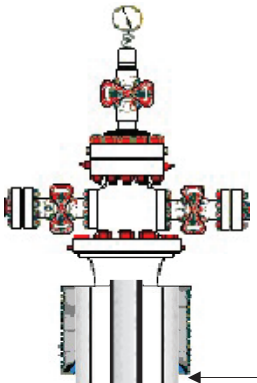
TUNDRA OIL & GAS

BIRDTAIL
8–30–16–27– W1M

WATER FLOOD
PROCESS FLOW DIAGRAM 3 OF 3

DRAWN BY:	SCALE:	AFE:	DRAWING NUMBER:	REV NO:
RM	NTS		8–30–16–27–PFD–PFD–1010	1

Figure 12: Horizontal Injector Downhole Diagram



1

Annulus inhibited with a non-corrosive fluid and tested yearly

2

3

Mechanical set ENC/Impreglon coated Injection Packer Set in cased hole within 15m TVD of producing Zone.

4

159mm (6.25" OH) TD Depths Varied

Downhole Well Profile					
WELL NAME	Birdtail Unit 7			DATE	
ELEVATIONS (meters)					
KB ELEV	GL ELEV	KB TO THF	KB TO SCF	KB TO GL	PBTD
CASING DESCRIPTION		OD (mm)	LANDED DEPTH	WEIGHT (kg/m)	TOP OF (mKB)
Surface		244.5	TBD	48.06	Surface
Production		177.8	TBD	29.76/34.23	Surface
Perf Date	Zones	Top Shot	Bottom Shot	Status	Gun Data
	Bakken				
DOWNHOLE DESCRIPTION FROM BOTTOM UP (Tubing String)					
ITEM #	DESCRIPTION			LENGTH	TOP OF (mKB)
1	Surface Casing set @ XXX.X m KB				-
2	Production Casing set @ XXX.X m KB				-
3	IC Injection Tubing String				-
4	156-159mm OH (Varied TD's)				-
	INJECTION PACKER TO BE SET WITHIN 15M TVD OF				-
	PRODUCING ZONE				-
	DUE TO JURASSIC SOURCE WATER BEING UTILIZED				-
	FOR INJECTION FLUID, D/HOLE EQUIPMENT TO BE ENC OR				-
	IMPREGLON COATED & TUBING INTERNALLY COATED.				-
	INJECTION WELLHEAD TO BE ENC COATED.				-
WEIGHT OF TUBING STRING (daN)			TOTAL STRING LENGTH		0.00
TENSION/COMPRESSION (+/- daN)			STRETCH/SLACKOFF (+/- m)		0.00
LANDED STRING WEIGHT (daN)			TUBING BOTTOM (mKB)		3.80

Figure 13: Planned Corrosion Control

Birdtail Unit No. 7
EOR Waterflood Project

Injection Wells

- Corrosion inhibitor in the annulus between tubing and casing.
- Surface freeze protection of annular fluids near surface.
- Corrosion-resistant valves on wellhead and flowline.
- Corrosion-resistant flowline equipment.
- Installation of cathodic protection to protect casing.
- Scale inhibitor protection as needed.
- Bacteria control chemical treatments when needed.
- Water injector packer will be coated for corrosion resistance.

Producing Wells

- Downhole corrosion inhibitor, either batch or daily injection, as needed.
- Scale inhibitor treatment daily injection as required for horizontal wells.
- Paraffin treatment daily injection if needed.
- Casing cathodic protection where required.

Pipelines

- The water source line will be Flexcord 2000# pipe.
- Injection lines will be a mix of Flexpipe 601 pipe and Centron 2000# pipe.
- Producing lines existing as per original flowline licenses.

Facilities

8-30-16-27W1 Water Plant

- Plant piping – internally coated, fiberglass or stainless steel.
- Filtration – stainless steel.
- Pumps – ceramic plungers, stainless steel disc valves.
- Tanks – fiberglass with stainless steel valves.

Proposed Birdtail Unit No. 7

Application for Enhanced Oil Recovery Waterflood Project

List of Tables

TABLE NO. 1 - BIRDTAIL UNIT NO. 7 WELL LIST AND STATUS AS OF OCTOBER 31, 2024 ACCUMAP DATA

UWI	*License Number*	*Type*	*Pool Name*	*Producing Zone*	*Mode*	*On Production Date*	*Last Production Date*	*Gross Cal Dly Oil (m3/d)*	*Gross Monthly Oil (m3)*	*Gross Cum Prd Oil (m3)*	*Gross Cal Dly Water (m3/d)*	*Gross Monthly Water (m3)*	*Gross Cum Prd Water (m3)*	*WCT (%)*
100/11-17-016-27W1/00	009312	Horizontal	BAKKEN-THREE FORKS A	BAKKEN,THREEFK	Pumping	3/28/2014	10/31/2024	3.19	99.00	14698.80	4.26	132.00	6846.30	57.14
102/11-17-016-27W1/00	010830	Horizontal	BAKKEN-THREE FORKS A	BAKKENM,TORQUAY	Pumping	1/3/2018	10/31/2024	1.87	58.00	7834.80	2.44	75.50	3623.40	56.55
100/14-17-016-27W1/00	008758	Horizontal	BAKKEN-THREE FORKS A	BAKKEN	Pumping	7/25/2012	10/31/2024	0.91	28.10	10028.00	2.69	83.50	10067.50	74.82
102/03-20-016-27W1/00	010901	Horizontal	BAKKEN-THREE FORKS A	BAKKENM	Pumping	3/19/2018	10/31/2024	1.32	40.90	3454.00	4.03	124.90	11706.90	75.33

TABLE NO. 2: OOIP CALCULATION

LSD	Total Area (m2)	Data Area (m2)	Isopach (m)	AVG Porosity	Sw	Bo	OOIP (m3)	OOIP (bbls)
11-17-16-27W1	162679	162679	2.2	0.189	0.30	1.00	43,789	275,426
12-17-16-27W1	162658	162658	2.6	0.189	0.30	1.00	51,744	325,462
13-17-16-27W1	162463	162463	2.6	0.189	0.30	1.00	51,682	325,072
14-17-16-27W1	162484	162484	2.3	0.189	0.30	1.00	45,725	287,601

Total **192,941 m3**

1,213,561 bbl

Por:	**0.189**
Sw:	**0.35**
Boi	**1.003**

UWI	Porosity (15% CO)
08-18-16-27	0.201
04-16-16-27	0.162
09-08-16-27	0.225
07-07-16-27	0.190
04-29-16-27	0.166
Average	**0.189**

Table No. 3

Proposed Birdtail Unit No. 7

BAKKEN FORMATION ROCK & FLUID PARAMETERS

			Source Well
Formation Pressure	3,226 kPa	Initial Average Reservoir Pressure	102/11-17-016-27W1/0
Formation Temperature	18.6 °C		102/11-17-016-27W1/0
Saturation Pressure	372 kPa	Bubble Point	100/03-31-016-27W1/0
GOR	0.4	Gas Oil Ratio	100/03-31-016-27W1/0
API Oil Gravity	30.4		100/03-31-016-27W1/0
Produced Water Specific Gravity	1.025		08-30-016-27W1 FWKO
Produced Water pH	7.6		08-30-016-27W1 FWKO
Produced Water TDS	34,562		08-30-016-27W1 FWKO

TABLE NO. 4: TRACT PARTICIPATION FOR PROPOSED BIRDTAIL UNIT NO. 7

Working Interest				Royalty Interest		Tract Participation:
Tract No.	Land Description	Owner	Share (%)	Owner	Share (%)	OOIP less Cumulative Production
1	11-17-016-27W1	**Tundra Oil & Gas Limited**	100%	**Nettle Patch Ltd.**	100%	21.818271745%
2	12-17-016-27W1	**Tundra Oil & Gas Limited**	100%	**Nettle Patch Ltd.**	100%	26.506725405%
3	13-17-016-27W1	**Tundra Oil & Gas Limited**	100%	**Nettle Patch Ltd.**	100%	27.709751654%
4	14-17-016-27W1	**Tundra Oil & Gas Limited**	100%	**Nettle Patch Ltd.**	100%	23.965251196%

100.000000000%

TABLE NO. 5: TRACT FACTOR CALCULATION FOR BIRDTAIL UNIT NO. 7

TRACT FACTOR BASED ON OIL-IN-PLACE (OOIP) - CUMULATIVE PRODUCTION TO OCTOBER 2024

LS-SE	Tract	*OOIP (m3)*	HZ Wells Alloc Prod (m3)	Vert Wells Cum Prodn (m3)	Sum Hz + Vert Alloc Cum Prodn	OOIP - Cum Prodn (m3)	Tract Factor (%)	Tract
11-17	11-17-016-27W1	43,789	9116.723591	0	9116.723591	34,673	21.818271745%	11-17-016-27W1
12-17	12-17-016-27W1	51,744	9621.171494	0	9621.171494	42,123	26.506725405%	12-17-016-27W1
13-17	13-17-016-27W1	51,682	7647.432179	0	7647.432179	44,035	27.709751654%	13-17-016-27W1
14-17	14-17-016-27W1	45,725	7640.530367	0	7640.530367	38,084	23.965251196%	14-17-016-27W1
	m3	**192,941**			34025.857631	**158,915**	100.000000000%	

Proposed Birdtail Unit No. 7

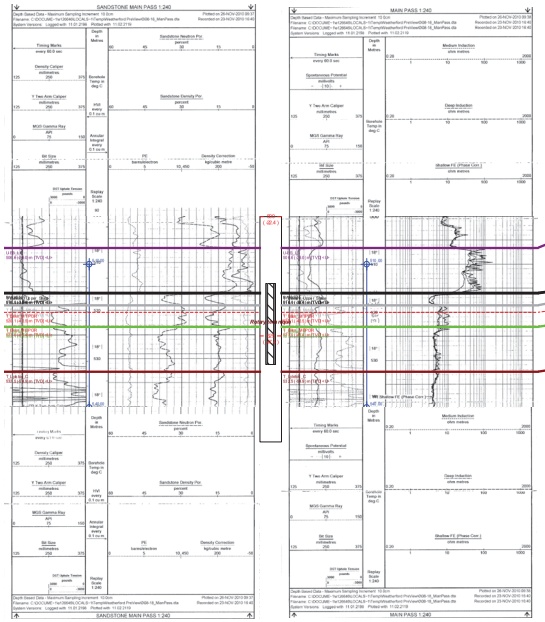
Application for Enhanced Oil Recovery Waterflood Project

List of Appendices

00/08-18-016-27W1/00

KB: 477.8 m | RR: 2010-11-25
TD: 555.0 m [TVD] | FormTD: BAKKEN
Mode: Abandoned | Fluid: N/A
007713

< 875.1m to previous well | 875.1m to next well >



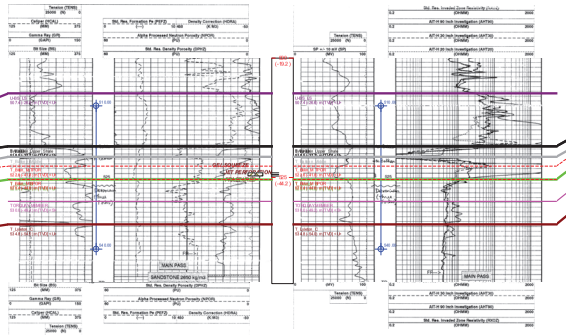
DST Information

Production	Oil+Cond (m3)	Gas (E3m3)	Water (m3)
Cumulative	0.0	0.0	0.0
Avg Daily (last month)	0.0	0.0	0.0

00/16-18-016-27W1/00

KB: 480.8 m | RR: 1998-06-05
TD: 546.0 m [TVD] | FormTD: TORQUAY MEMBER
Mode: Pumping | Fluid: Oil
004807

< 938.6m to previous well | 938.6m to next well >



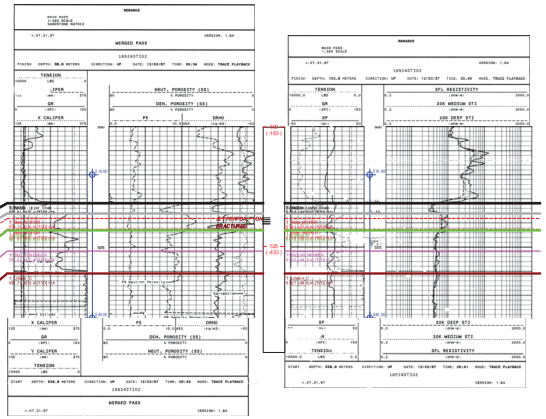
DST Information

Production	Oil+Cond (m3)	Gas (E3m3)	Water (m3)
Cumulative	6235.2	0.0	1852.5
Avg Daily (last month)	0.3	0.0	0.2

00/03-20-016-27W1/00

KB: 481.7 m | RR: 1997-12-02
TD: 549.0 m [TVD] | FormTD: TORQUAY MEMBER
Mode: Abandoned | Fluid: Oil
004755

< 938.6m to previous well



DST Information

Production	Oil+Cond (m3)	Gas (E3m3)	Water (m3)
Cumulative	9043.8	0.0	9659.3
Avg Daily (last month)	1.0	0.0	0.0

Legend

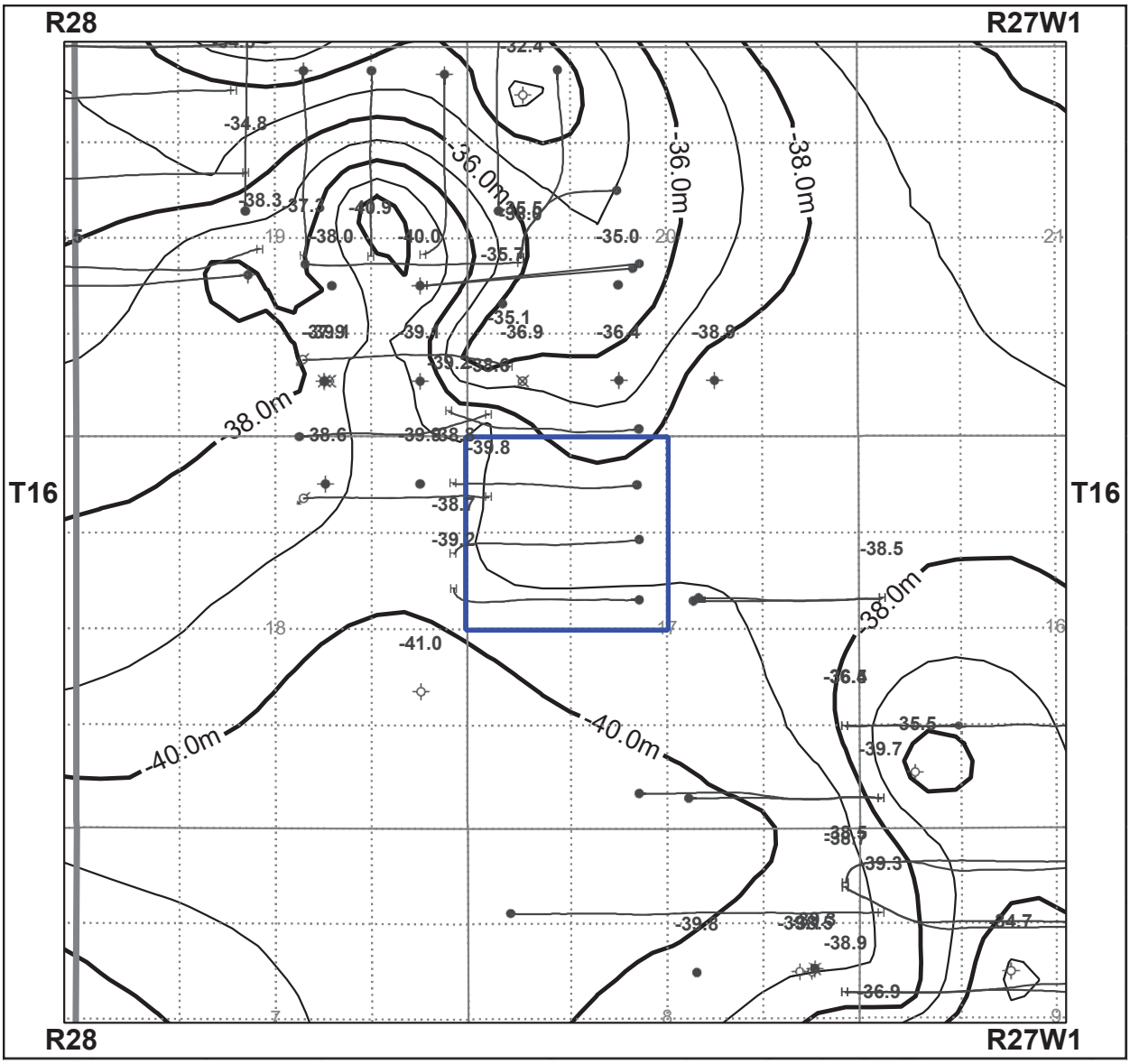
- Dry & Abandoned
- Oil
- Abandoned Oil
- Contact Type - Conformity
- Contact Type - Unconformity
- Contact Type - Time Equivalence
- Contact Type - Left Fault
- Contact Type - Right Fault

Depth Scale

APPENDIX 1

Birdtail Unit 7
Cross Section Through Unit Area

Author:
Modified On: Tuesday, July 30, 2024 03:17PM
Printed On: Tuesday, July 30, 2024 03:17PM
Start Formation: 15m above T_BAkn_Upr_Sh
End Formation: 20m below T_Bakn_M
Cross Section Name: BIRDTAILUDSC



APPENDIX 2 Datum: NAD27 Projection: Stereographic DLS Version AB: ATS 2.6, BC: PRB 2.0, SK: STS 2.5, MB: MLI07

APPENDIX 2
Birdtail Unit 7 Middle Bakken Structure (mSS)
24 July, 2024
M:\AccuMap\North Man.accumap

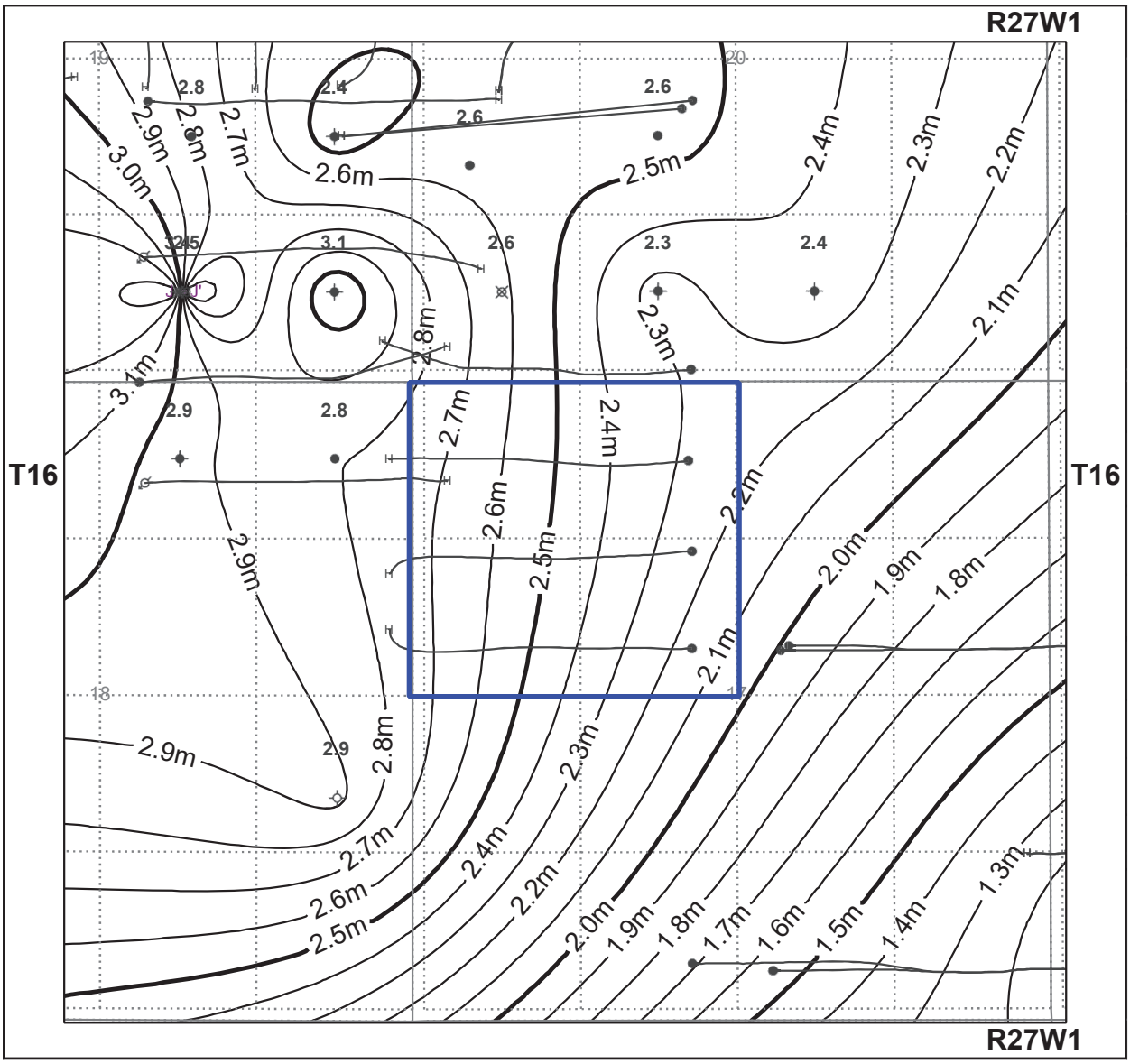
Center: 50.3695, -101.1708

Scale: 1:28,618

0 0.5 1 km

0 0.1 0.7 mi

N NW NE W E SW SE S



APPENDIX 3

Datum: NAD27 Projection: Stereographic DLS Version AB: ATS 2.6, BC: PRB 2.0, SK: STS 2.5, MB: MLI07

APPENDIX 3
Birdtail Unit 7 Middle Bakken Net Pay (m)
24 July, 2024
M:\AccuMap\North Man.accumap

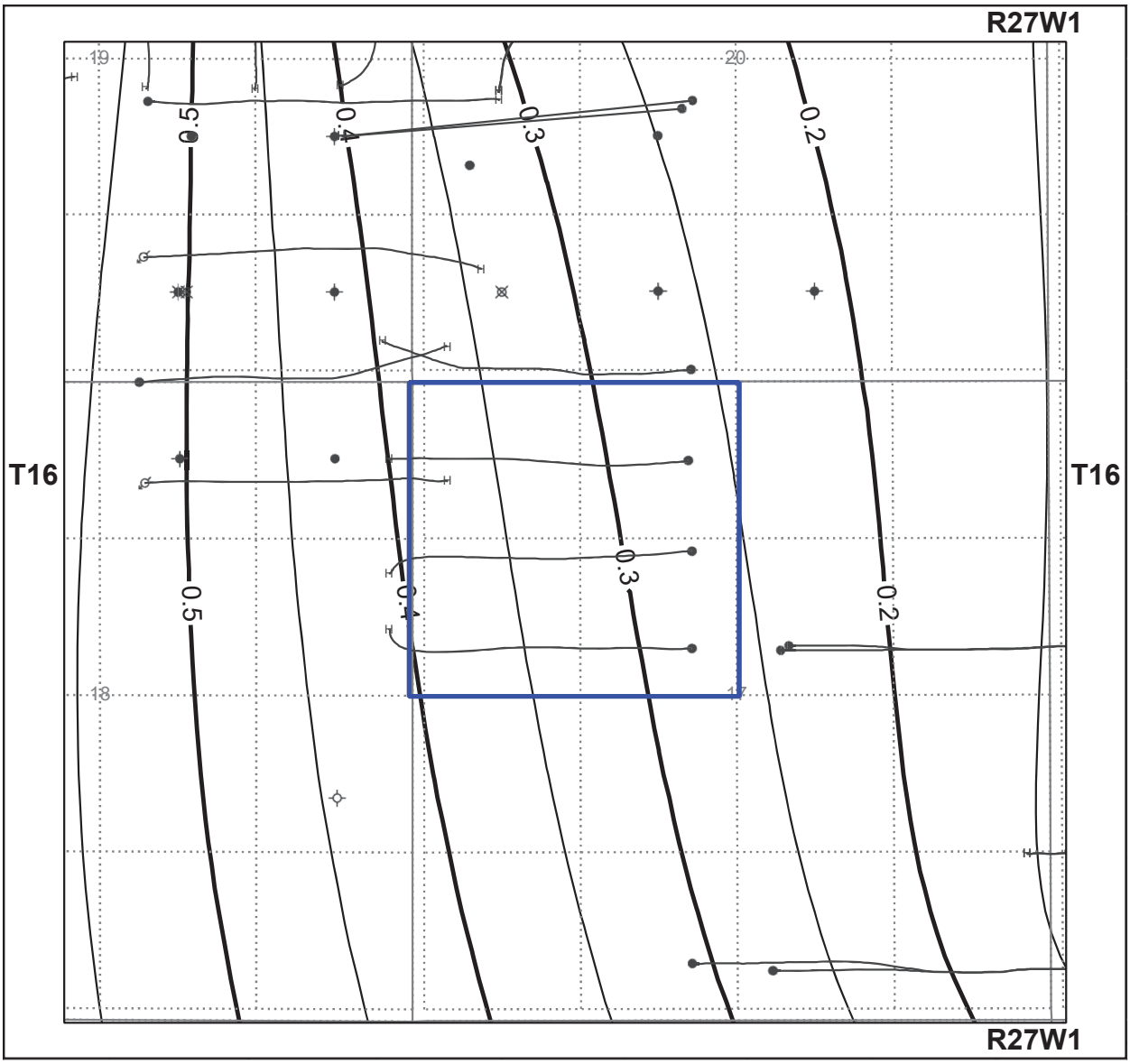
Center: 50.3696, -101.1710

Scale: 1:17,575

0 0.1 0.7 km

0 0.1 0.2 0.3 0.4 mi

N NW NE W E SW SE S



APPENDIX 4

Datum: NAD27 Projection: Stereographic DLS Version AB: ATS 2.6, BC: PRB 2.0, SK: STS 2.5, MB: MLI07

APPENDIX 4
Birdtail Unit 7 Middle Bakken Phi*H (%*m)
24 July, 2024
M:\AccuMap\North Man.accumap

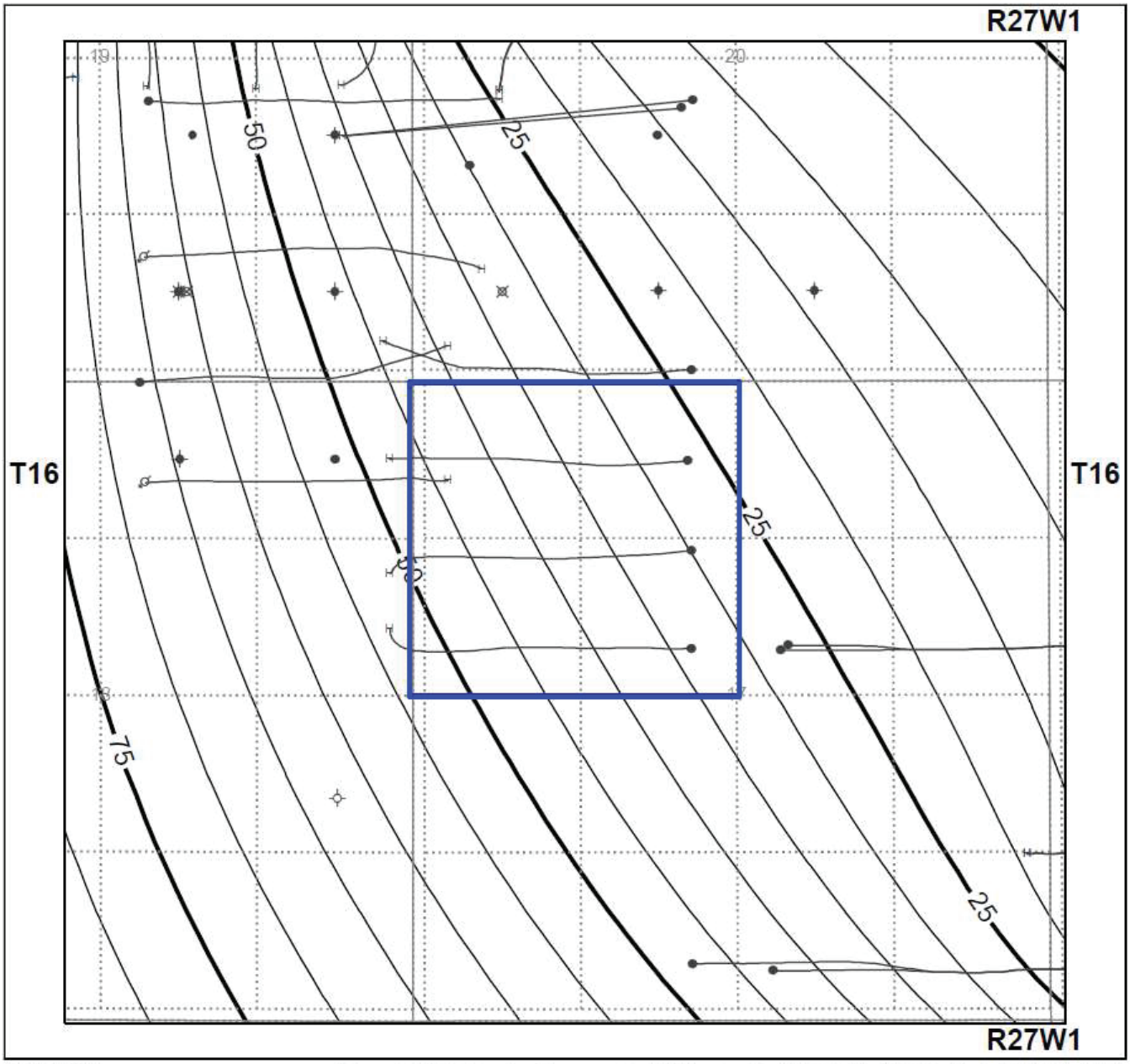
Center: 50.3696, -101.1710

Scale: 1:17,575

0 0.1 0.7 km

0 0.1 0.2 0.3 0.4 mi

N NE E SE S SW W NW



APPENDIX 4

Datum: NAD27 Projection: Stereographic DLS Version AB: ATS 2.6, BC: PRB 2.0, SK: STS 2.5, MB: MLI07

APPENDIX 5

Birdtail Unit 7 Middle Bakken k*H (mD*m)

24 July, 2024

M:\AccuMap\North Man.accumap

Center: 50.3696, -101.1710

Scale: 1:17,575

0 0.1 0.7 km

0 0.1 0.2 0.3 0.4 mi

N NE E SE S SW W NW

APPENDIX 6

Birdtail Unit No. 7 - Initial Pressure Summary

Location	Test Date	Final Pressure (kPa)
102/11-17-016-27W1/0	11/16/2017 - 12/01/2017	3,226.4
102/03-20-016-27W1/0	03/01/2018 - 03/12/2018	3,369.3