PROPOSED EWART UNIT NO. 13

Application for Enhanced Oil Recovery Waterflood Project

Lodgepole Formation

Lodgepole A (01 59A)

Daly Sinclair Field, Manitoba

January 13th, 2017
Tundra Oil and Gas Partnership

INTRODUCTION

The Daly Sinclair oilfield is located in Townships 8, 9, 10 and 11, of Ranges 27, 28 & 29 WPM (Figure 1). Within the Daly Sinclair oilfield, most Lodgepole reservoirs have been developed with vertical producing wells on Primary Production and 40 acre spacing. Horizontal producing Lodgepole wells have recently been drilled by Tundra Oil and Gas (Tundra) in the southern part of the Daly Sinclair field.

Within the area, potential exists for incremental production and reserves from a Waterflood Enhanced Oil Recovery (EOR) project in the Lodgepole oil reservoir. The following represents an application by Tundra Oil and Gas (Tundra) to establish Ewart Unit No. 13 (LSDs 13-16 Sec 30-008-28W1, Sec 31-008-28W1) and implement a Secondary Waterflood EOR scheme within the Lodgepole formation as outlined on Figure 2.

The proposed project area falls within the existing designated Lodgepole A Pool of the Daly Sinclair Oilfield (Figure 3).

SUMMARY

1. The proposed Ewart Unit No. 13 consists of 8 horizontal producing Lodgepole wells and 2 vertical Bakken wells waiting to be re-completed in the Lodgepole. The area of the proposed Ewart Unit No. 13 comprises 20 Legal Sub Divisions (LSD), and is located northwest of Ewart Unit No. 9 (Figure 2).

2. Total Original Oil in Place (OOIP) in the project area is estimated to be **2,627** e^3m^3 (16,524 Mbbl) for an average of **131.3** e^3m^3 (826.2 Mbbl) OOIP per 40 acre LSD. OOIP values were estimated by contouring phi*h values and applying volumetric methods.

3. Cumulative production to the end of September 2016 from the 8 producing Lodgepole wells within the proposed Ewart Unit No. 13 project area is 51.96 e^3m^3 (326.9 Mbbl) of oil and 18.64 e^3m^3 (117.3 Mbbl) of water, representing a **1.97%** Recovery Factor (RF) of the OOIP.

4. Figure 4 shows that the oil production rate in the Ewart Unit No. 13 area peaked during January 2016 at 111.0 m^3 (259 bbl) of oil per day (OPD). As of September 2016, production was 37.1 m^3 (233.3 bbl) OPD, 8.25 m^3 (51.9 bbl) water per day (WPD) and an 18.2% water cut (WCUT).

5. In January 2016, production averaged 13.9 m^3 (87.3 bbl) OPD per well in the proposed Ewart Unit No. 13. As of September 2016, average per well production has declined to 4.63 m^3 (29.2 bbl) OPD. Decline analysis of the group primary production data forecasts total oil to continue declining at an annual rate of approximately **20%** in the project area.

6. Estimated Ultimate Recovery (EUR) of Primary producing oil reserves in the proposed Ewart Unit No. 13 project area is estimated to be 148.5 e^3m^3 (934 Mbbl), with 96.5 e^3m^3 (607 Mbbl) remaining as of the end of September 2016. Infill drilling 4 horizontal wells and recompleting 2 vertical wells is estimated to increase the Primary EUR to 219.2 e^3m^3 (1379 Mbbl) with 167.2 e^3m^3 (1052 Mbbl) remaining.

7. Ultimate oil recovery of the proposed Ewart Unit No. 13 OOIP, under the current Primary production method, is forecasted to be **8.3%**.

8. Estimated Ultimate Recovery (EUR) of oil under Secondary Waterflood EOR for the proposed Ewart Unit No. 13 is estimated to be 294.7 e^3m^3 (1854 Mbbl), with 242.7 e^3m^3 (1526 Mbbl) remaining. An incremental 75.5 e^3m^3 (475 Mbbl) of proved oil reserves is forecasted to be recovered under the proposed Unitization and Secondary EOR production, versus the existing Primary production method.

9. Total RF under Secondary WF in the proposed Ewart Unit No. 13 is estimated to be **11.2%**.

10. There are no nearby Lodgepole Dolomite waterflood analogues with enough waterflood history at this time. However, based on simulation, results of Primary production and successful waterfloods in the Permian basin of carbonate reservoirs with similar reservoir characteristics, the proposed project area is thought to be suitable reservoir for successful EOR trial.

11. Horizontal producers with multi-stage hydraulic fractures, will be converted to injectors (Figure 5) and will result in a mix of Horizontal to Horizontal waterflood patterns at both 200m and 100m inter-well spacing.

DISCUSSION

The proposed Ewart Unit No. 13 project area is located within Township 8, Range 28 W1 of the Daly Sinclair oilfield (Figure 1). The proposed Ewart Unit No. 13 currently consists of 8 producing horizontal Lodgepole wells and 2 vertical wells which will be recompleted within an area covering LSDs 13-16 of Sec 30-008-28W1 and Section 31-008-28W1M (Figure 2). A project area well list complete with recent production statistics is attached as Table 3.

Within the proposed Unit, potential exists for incremental production and reserves from a Waterflood EOR project in the Lodgepole oil reservoir.

Geology

Stratigraphy:

The proposed Ewart Unit 13 (Appendix 1) is located on the carbonate slope of the Mississippian Lodgepole Formation on the Eastern edge of the Williston Basin. The stratigraphy of the reservoir section in Ewart Unit 13 is shown in the structural cross section (Appendix 2). The cross section A – A' runs from West to East through the proposed unit.

The Lodgepole section is subdivided into 7 units. In ascending order these are: the Basal Lodgepole Limestone, the Cromer Shale, the Cruickshank Crinoidal, the Cruickshank Shale, the Middle Daly, the Upper Daly and the Unnamed. A Dolomitic facies can be found over the Daly Sinclair area and is present predominantly in the Unnamed, however can extend as deep as the Middle Daly formation. Of the seven members, only the Dolomite facies is productive, the lower limestone units are considered wet. All of the Mississippian horizontal wells in the proposed unit area are drilled and completed in the Lodgepole Dolomite facies.

The Triassic-Jurassic aged Watrous Red Beds Formation overlays the Lodgepole Formation and consists of red argillaceous siltstones and anhydrites which form an effective seal for the Lodgepole dolomite reservoir. The structural cross-section (Appendix 2) shows the correlations of the various units in the Lodgepole section as well as the overlying Watrous Red Beds and Watrous Evaporite.

Sedimentology:

The whole of the Lodgepole Formation in the Daly Sinclair area consists of a single shallowing upward cycle which begins with the Upper Bakken transgressive cycle and continues to the Lodgepole Dolomite facies, which represents the shallowest part of the cycle preserved. The Unnamed unit (which is most often dolomitized) consists of a series of "brining upward" cycles, comprised of 1-2 m sequences that begin at an erosional base with coarser grained carbonate grainstones which rapidly grade upward into fine-grained dolomitic mudstones that characterize the bulk of the cycle. The dolomite facies contains anhydrite bands of variable thickness, as well as stringers and disseminated anhydrite. The coarser grained grainstones at the base of each cycle generally consist of fossil fragments which are often replaced by chert or are tightly cemented. The fine grained dolomitic mudstones bear rare fossils, generally fragmental, consisting of bryozoans, corals, brachiopods and crinoids. The intimate association of the anhydrites with the dolomitized part of the Upper Lodgepole suggests dolomitization by seepage reflux with the magnesium rich brines provided by the deposition of the anhydrites which cap each cycle. Other diagenetic processes include mobilization and re-precipitation of silica in the form of chert which is present in the form of nodules of massive, dense grey chert or as white "chalky" chert. The "chalky" chert can have considerable micro-porosity but is non-reservoir as these features are isolated and not connected to the main reservoir. The presence of the anhydrite beds within the Lodgepole Dolomite suggests deposition on the proximal part of a shallow carbonate ramp.

Reservoir development within the above mentioned cycles is largely due to secondary processes as most of the primary reservoir was likely cemented during deposition and early diagenesis. These secondary processes include: dolomitization, conversion of anhydrite to gypsum and leaching of fossils, grains and cements. These processes occurred while the Lodgepole was exhumed and eroded, but prior to deposition of the Watrous Red Beds.

The Lodgepole Limestone facies lies between the Cromer Shale and the Lodgepole Dolomite. Similar to the Dolomite facies, the Limestone facies displays evidence of cyclic deposition. The depositional cycles within the Limestone facies generally contain more grainstones at the base of each cycle and grade up into finer grained wackestones or mudstones. Grainstone beds, particularly the crinoidal grainstones, are frequently tightly cemented by chert. The lack of anhydrite beds and the presence of significantly more grainstones suggest deposition on a more distal and open marine part of the carbonate ramp than the overlying Lodgepole Dolomite facies. Within the Ewart Unit 13 area, the Lodgepole Limestone is considered wet and non-reservoir.

The Cromer Shale is an argillaceous carbonate that appears as a higher gamma ray unit on logs and lies between the Lodgepole Limestone and the Basal Limestone. The Cromer Shale is considered non-reservoir.

The Basal Lodgepole Limestone lies between the Cromer Shale and the Upper Bakken Shale. Where cored, the Basal Limestone consists of a nodular lime mudstone to wackestone with numerous fossil fragments including crinoids, corals and brachiopods. The Basal Limestone is thought to represent deeper water conditions following the Upper Bakken transgression. The Basal Lodgepole Limestone is also considered non-reservoir.

An Isopach map is provided for the Lodgepole Dolomite facies as Appendix 3.

Structure:

A structure contour map is provided for the top of the Lodgepole Dolomite reservoir (Appendix 4). Structure on the top of the Lodgepole Formation reflects the erosional relief at the Mississippian Unconformity. A South West trending dip exists over the proposed unit.

Reservoir Quality:

Reservoir quality within the Lodgepole Dolomite facies is highly variable both laterally and vertically. Due to the heterolithic nature of the Lodgepole Dolomite reservoir and the inherent challenges in determining reservoir properties from petro-physical logs in carbonates, high resolution pressure-decay profile permeameter (PDPK) core data was used to determine an average net to gross ratio. A permeability cutoff of 0.5 md was applied to differentiate reservoir from non-reservoir. The gross thickness of the Lodgepole Dolomite is represented by the Dolomite Isopach (Appendix 3). The top and base of the Lodgepole Dolomite facies was determined using openhole wireline logs. An average net to gross ratio, calculated to be 40.8%, was applied to the gross thickness of the Lodgepole Dolomite facies to determine a net pay thickness.

An average porosity value was derived from routine core analysis using a 0.5mD cutoff. The average porosity of net pay was calculated to be 11.5%.

Fluid Contacts:

No oil-water contact is found within the Lodgepole formation in the area local to the proposed unit.

OOIP Estimates

Total volumetric OOIP for the Dolomite facies within the proposed unit has been calculated to be **2,627** e^3m^3 (**16,524** Mbbl). Tundra generated maps integrate both open hole wireline logs and core data when available (Appendices 1-6).

OOIP values were calculated using the following volumetric equation:

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

or

$$OOIP(m3) = \frac{A * h * \emptyset * (1 - Sw)}{Bo} * \frac{10{,}000m2}{ha}$$

or

$$OOIP(Mbbl) = \frac{A * h * \emptyset * (1 - Sw)}{Bo} * 3.28084\frac{ft}{m} * 7{,}758.367\frac{bbl}{acre * ft} * \frac{1Mbbl}{1{,}000bbl}$$

where

OOIP	=Original Oil in Place by LSD	= 16,524 Mbbl (total)
A	=Area	= 40 acres/LSD
h * Ø	=Net Pay * Porosity, or Phi * h	= 11.5% * 40.8% * Dolo Gross h(m)
Bo	=Formation Volume Factor of Oil	= 1.1 stb/rb
Sw	=Water Saturation	= 25%

The initial oil formation volume factor (Boi) was adopted from historical PVT information taken from the Sinclair Daly area and is representative of the fluid characteristics in the reservoir.

Historical Production

A historical group production plot for the proposed Ewart Unit No. 13 is shown as Figure 4. The oil production rate in the Ewart Unit No. 13 area peaked during January 2016 at 111.0 m^3 (698 bbl) of oil per day (OPD) when developed with horizontal wells at mostly 200m inter-well spacing. As of September 2016, production was 37.1 m^3 (233 bbl) OPD, 8.25 m^3 (51.9 bbl) water per day (WPD) and an 18.2% water cut (WCUT).

From peak production in January 2016 to date, oil production has declined by 67% under the current Primary Production method. Decline analysis of the group primary production data forecasts total oil to continue declining at an annual rate of approximately **20%** in the project area.

The remainder of the field's production and decline rates indicate the need for pressure restoration and maintenance. Waterflooding is deemed to be the most efficient means of secondary recovery to introduce energy back into the system and provide areal sweep between wells.

UNITIZATION

Unitization and implementation of a Waterflood EOR project is forecasted to increase overall recovery of OOIP from the proposed project area by 35% (from a recovery factor of 8.3% to 11.2%). The basis for unitization is to develop the lands in an effective manner that will be conducive to waterflooding. Unitizing will enable the reservoir to have a higher recovery of oil by allowing the development of additional drilling and injector conversions over time. In addition, Unitizing will facilitate a pressure maintenance scheme, and overall will increase oil production over time.

Unit Name

Tundra proposes that the official name of the new Unit shall be Ewart Unit No. 13.

Unit Operator

Tundra Oil and Gas (Tundra) will be the Operator of record for Ewart Unit No. 13.

Unitized Zone

The unitized zone(s) to be waterflooded in Ewart Unit No. 13 will be the Lodgepole formation.

Unit Wells

The 10 wells to be included in the proposed Ewart Unit No. 13 are outlined in Table 3.

Unit Lands

Ewart Unit No. 13 will consist of 20 LSDs as follows:

LSDs 13-16 Section 30, of Township 8, Range 28, W1M
Section 31, of Township 8, Range 28, W1M

The lands included in the 40 acre tracts are outlined in Table 1.

Tract Factors

The Tract Factor contribution for each of the LSD's within the proposed Ewart Unit No. 13 was calculated as follows:

- OOIP by LSD, minus cumulative production to date for the LSD as distributed by the LSD specific Production Allocation (PA) % in the applicable producing horizontal well (to yield Remaining OOIP)
- Tract Factor by LSD = The product of Remaining OOIP by LSD as a % of total proposed Unit Remaining OOIP

Tract Factor calculations for all individual LSD's based on the above methodology are outlined within Table 2.

Working Interest Owners

Table 1 outlines the working interest % (WI) for each recommended Tract within the proposed Ewart Unit No. 13.

Tundra Oil and Gas will have a 100% working interest in the proposed Ewart Unit No. 13.

WATERFLOOD EOR DEVELOPMENT

The waterflood performance predictions for the proposed Ewart Unit No. 13 Lodgepole project are based on internal engineering assessments. Project area specific reservoir and geological parameters were used to guide the overall Secondary Waterflood recovery factor.

Based on the geological descriptions, primary production decline rate, and positive waterflood response in the analog Clearfork formation in the Permian Basin of West Texas, the Lodgepole formation in the project area is deemed to be a suitable trial for waterflood EOR operations.

Pre-Production of New Horizontal Injection Wells

Five (5) of the existing producing horizontal wells and one proposed future horizontal well will be converted to horizontal injection wells as shown in Figure 5. This will result in a mix of Horizontal to Horizontal waterflood patterns at both 200m and 100m inter-well spacing within Ewart Unit No. 13.

Placing new horizontal wells immediately on water injection in areas without significant reservoir pressure depletion has been problematic in similar low permeability formations, and has a negative impact on the ultimate total recovery factor of OOIP. Considering the expected reservoir pressures and reservoir lithology described, Tundra believes an initial period of producing horizontal wells prior to placing them on permanent water injection is essential and all Unit mineral owners will benefit.

Tundra monitors reservoir pressure, fluid production and decline rates in each pattern to determine when the well will be converted to water injection.

Reserves Recovery Profiles and Production Forecasts

The primary waterflood performance predictions for the proposed Ewart Unit No. 13 are based on oil production decline curve analysis, and the secondary predictions are based on internal engineering analysis performed by the Tundra reservoir engineering group using numerical simulation in combination with analogue studies of successful waterfloods in the Clearfork formation.

Primary Production Forecast

Cumulative production to the end of September 2016 from the 8 producing Lodgepole horizontal wells within the proposed Ewart Unit No. 13 project area is 51.96 e^3m^3 of oil and 18.64 e^3m^3 of water for a recovery factor of 1.97% of the total OOIP.

Based on decline curve analysis of the wells currently on production, the estimated ultimate recovery (EUR) for the proposed Unit with no further development is estimated to be 148.5 e^3m^3, representing a recovery factor of **5.7%** of the total OOIP (Figures 6 & 7).

Infill drilling 4 horizontal wells and recompleting 2 vertical wells is estimated to increase the Primary EUR for the proposed unit to 219.2 e^3m^3, representing a primary recovery factor of **8.3%** of the total OOIP. Production plots of the forecasted oil rate v. time and oil rate v. cumulative oil produced are shown in Figures 8 & 9, respectively.

Pre-Production Schedule/Timing for Conversion of Horizontal Wells to Water Injection

Tundra will plan an injection conversion schedule to allow for the most expeditious development of the waterflood within the proposed Ewart Unit No. 13, while maximizing reservoir knowledge.

Criteria for Conversion to Water Injection Well

Six (6) water injection wells are required for this proposed unit as shown in Figure 5.

Tundra will monitor the following parameters to assess the best timing for each individual horizontal well to be converted from primary production to water injection service.

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

The above schedule allows for the proposed Ewart Unit No. 13 project to be developed equitably, efficiently, and moves the project to the best condition for the start of waterflood as quickly as possible. It also provides the Unit Operator flexibility to manage the reservoir conditions and response to help ensure maximum ultimate recovery of OOIP.

Secondary EOR Production Forecast

The proposed Ewart Unit No. 13 Secondary Waterflood oil production forecast over time is plotted on Figure 10. Total EOR recoverable volumes in the proposed Ewart Unit No. 13 project under Secondary WF has been estimated at 294.7 e^3m^3, resulting in an **11.2%** overall RF of calculated Net OOIP.

An incremental 75.5 e^3m^3 of oil is forecast to be recovered under the proposed Unitization and Secondary EOR production scheme vs. the Primary Production method. This relates to an incremental **2.9%** recovery factor as a result of secondary EOR implementation.

Estimated Fracture Pressure

The estimated fracture gradient for the Lodgepole is 21 kPa/m based on DFIT ISIP data in the area. The horizontal wells in this area are ~ 790mTVD. Therefore, the estimated frac pressure would be 16.6MPa.

WATERFLOOD OPERATING STRATEGY

Water Source

The injection water for the proposed Ewart Unit No. 13 will be supplied from the existing source and injection water system at the Sinclair 04-01-008-29 Water Filtration Plant. All existing injection water is obtained from the Mannville formation in the 102/14-30-007-28W1 licensed water source well. Mannville water from the 102/14-30 source well is pumped to the main Water Plant at 4-1-8-29W1, filtered, and pumped up to injection system pressure. A diagram of the Daly Sinclair water injection system and new pipeline connection to the proposed Ewart Unit No. 13 project area is shown as Figure 12.

Produced water is not currently used for any water injection in the Tundra-operated Daly Sinclair Units and there are no plans to use produced water as a source supply for Ewart Unit No. 13.

Injection Wells

The water injection wells for the proposed Ewart Unit No. 13 have been drilled, are currently producing and plans are in progress to re-configure the wells for downhole injection after approval for waterflood has been received (Figure 13). The horizontal injection wells have been stimulated by multiple hydraulic fracture treatments to obtain suitable injection. Tundra has extensive experience with horizontal fracturing in the area, and all jobs are rigorously programmed and monitored during execution. This helps ensure optimum placement of each fracture stage to prevent, or minimize, the potential for out-of-zone fracture growth and thereby limit the potential for future out-of-zone injection.

The new water injection wells will be placed on injection after the pre-production period and approval to inject. Wellhead injection pressures will be maintained below the least value of either:

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

Tundra has a thorough understanding of area fracture gradients. A management program will be implemented 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 and rate/pressure control. An operating procedure for monitoring water injection volumes and meter balancing will also be utilized to monitor the entire system measurement and integrity on a daily basis.

The proposed Ewart Unit No. 13 horizontal water injection well rate is estimated to average 10 – 25 m^3 WPD, based on expected reservoir permeability and pressure.

Reservoir Pressure

There is no initial pressure measurement available for the area within the proposed Ewart Unit No. 13 however it is estimated to be approximately 8.5 MPa. All reservoir pressures surveys conducted in the area of the proposed unit are shown in the table below. Since production from the area had already occurred from previously drilled wells, the measured pressures shown below are lower than the initial reservoir pressure.

UWI	Date	Depth (mTVD)	Pressure (kPaa)	Temp (°C)
00/01-31-008-28W1/2 VT Re-completed in Lodgepole	Nov 25 – Dec 9, 2016	803.00	5896.81	29.21
00/13-31-008-28W1/2 VT Re-completed in Lodgepole	Nov 5 – Nov 19, 2016	809.00	4738.35	29.48
03/08-31-008-28W1/0 HZ	March 10 – June 13, 2015	797.75	6883.11	28.53
03/09-31-008-28W1/0 HZ	March 12 – June 15, 2015	802.20	6910.87	27.58
04/09-31-008-28W1/3 HZ	March 12 - June 16, 2015	816.00	6058.00	28.65

Reservoir pressure measurements for the infill wells are planned to be collected prior to production. These pressures along with any subsequent pressures will be submitted in the annual progress reports.

Reservoir Pressure Management during Waterflood

Tundra expects to inject water for a minimum 2 – 4 year period to re-pressurize the reservoir due to cumulative primary production voidage and pressure depletion. Initial Voidage Replacement Ratio (VRR) is expected to be approximately 1.25 to 1.75 within the pattern during the fill up period. As the cumulative VRR approaches 1, target reservoir operating pressure for waterflood operations will be 75 – 90 % of original reservoir pressure.

Waterflood Surveillance and Optimization

Ewart Unit No. 13 EOR response and waterflood surveillance will consist of the following:

- Regular production well rate and WCT testing
- Daily water injection rate and pressure monitoring vs target
- 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 will provide an ever increasing understanding of reservoir performance, and provide data to continually control and optimize the Ewart Unit No. 13 waterflood operation. Controlling the waterflood operation will significantly reduce or eliminate the potential for out-of-zone injection, undesired channeling or water breakthrough, or out-of-Unit migration. The monitoring and surveillance will also provide early indicators of any such issues so that waterflood operations may be altered to maximize ultimate secondary reserves recovery from the proposed Ewart Unit No. 13.

Economic Limits

Under the current Primary recovery method, existing wells within the proposed Ewart Unit No. 13 will be deemed uneconomic when the net oil rate and net oil price revenue stream becomes less than the current producing operating costs. With any positive oil production response under the proposed Secondary recovery method, the economic limit will be significantly pushed out into the future. The actual economic cut off point will then again be a function of net oil price, the magnitude and duration of production rate response to the waterflood, and then current operating costs. Waterflood projects generally become uneconomic to operate when Water Oil Ratios (WOR's) exceed 100.

WATER INJECTION FACILITIES

The Ewart Unit No. 13 waterflood operation will utilize the existing Tundra operated source well supply and water plant (WP) facilities located at 4-1-8-29 W1M Battery. 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 on Figure 14.

NOTIFICATION OF MINERAL AND SURFACE RIGHTS OWNERS

Tundra will notify all mineral rights and surface rights owners of the proposed EOR project and formation of Ewart Unit No. 13. Copies of the Notices, and proof of service, to all surface rights owners will be forwarded to the Petroleum Branch when available to complete the Ewart Unit No. 13 Application.

Ewart Unit No. 13 Unitization, and execution of the formal Ewart Unit No. 13 Agreement by affected Mineral Owners, is expected during Q1 2017. Copies of same will be forwarded to the Petroleum Branch, when available, to complete the Ewart Unit No. 13 Application.

Should the Petroleum Branch have further questions or require more information, please contact Abhy Pandey at 403.767.1247 or by email at abhy.pandey@tundraoilandgas.com.

TUNDRA OIL & GAS PARTNERSHIP

Original Signed by Abhy Pandey, January 13th, 2017, in Calgary, AB

Proposed Ewart Unit No. 13

Application for Enhanced Oil Recovery Waterflood Project

List of Figures

Figure No. 1

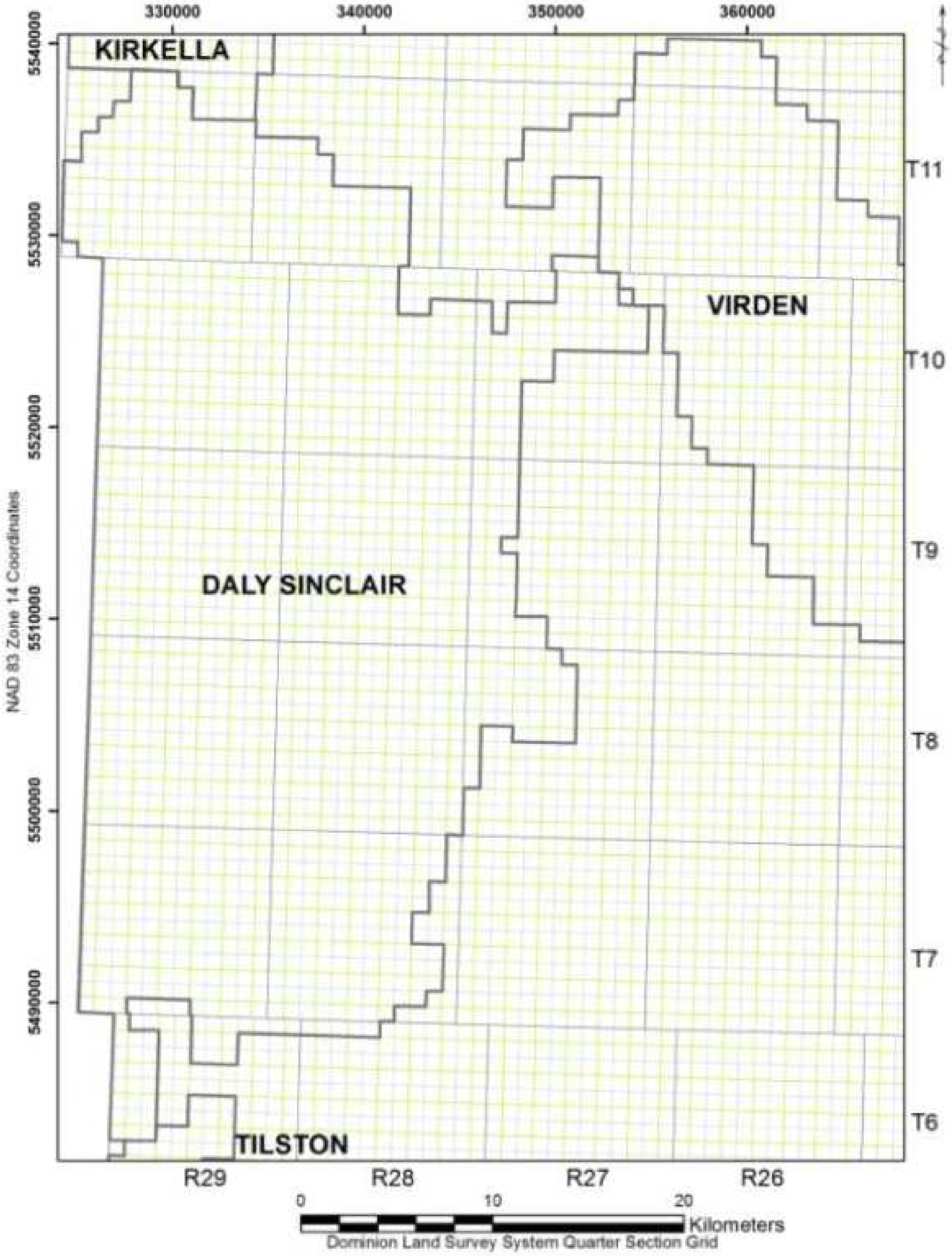
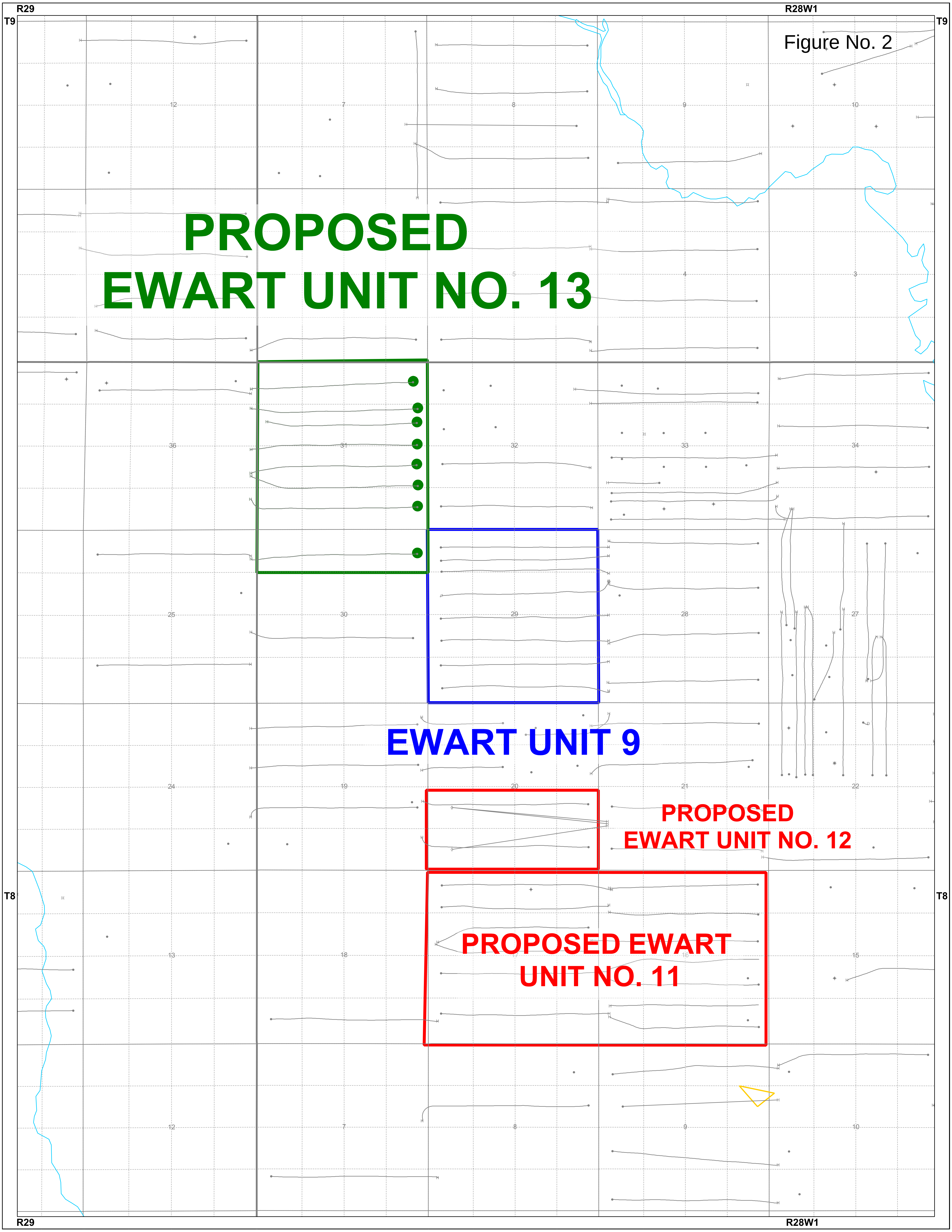


Figure 2 - Daly Sinclair (01)


R29
R28W1
T9
T9
Figure No. 2
PROPOSED
EWART UNIT NO. 13
EWART UNIT 9
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EWART UNIT NO. 12
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UNIT NO. 11
T8
T8
R29
R28W1

Figure No. 3

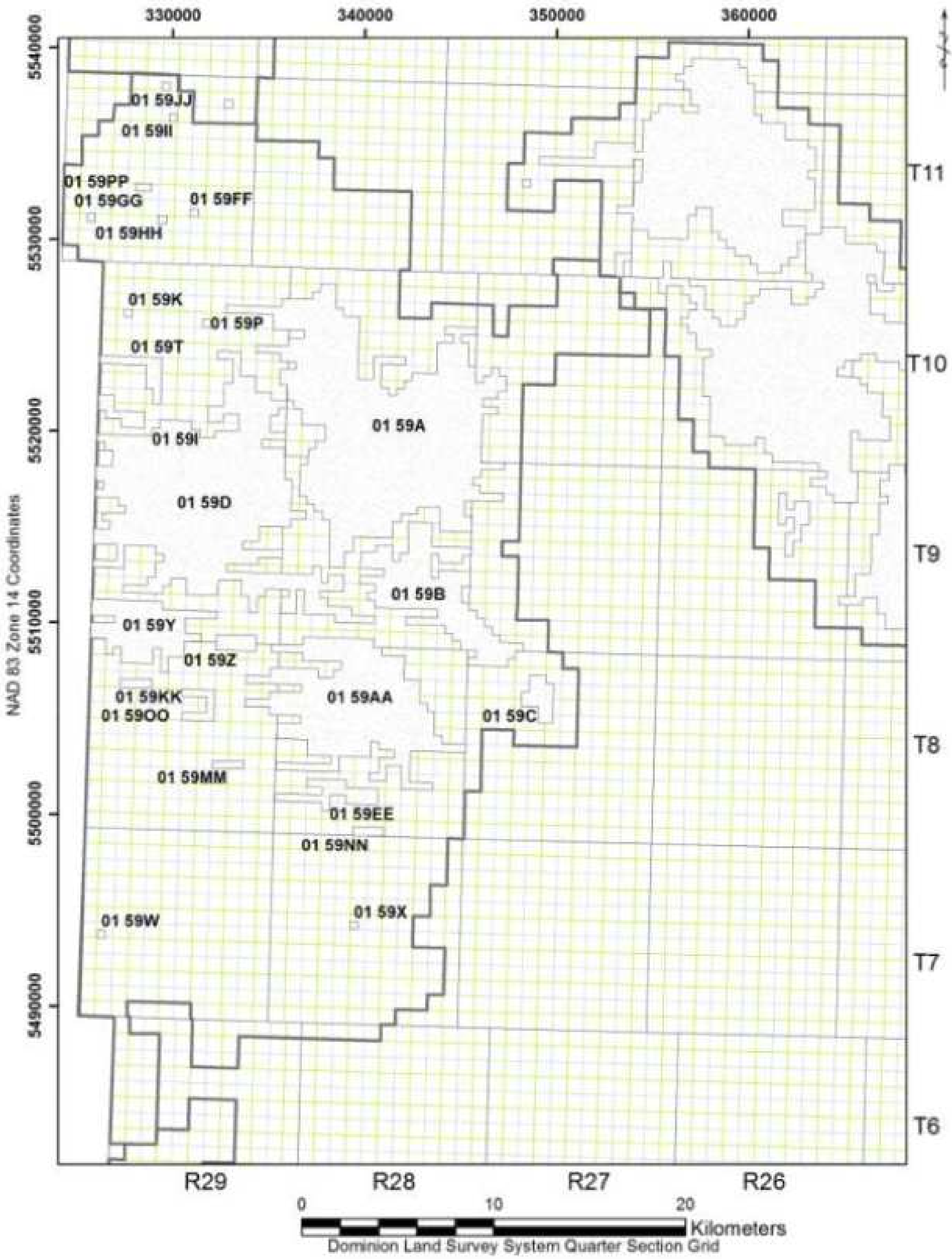


Figure 12 - Daly Sinclair Lodgepole Pools (01 59A, B, C, D, I, K, P, T, W, X, Y, Z, AA, EE, FF, GG, HH, II, JJ, KK, MM, NN, OO & PP)

Figure No. 4

Production Graph

Group:	proposed ewart unit 13 well list.lwell	**On Prod:**	2013-03 to 2016-09	**Cum Oil:**	51956.4 m3
# of Wells:	8	**Prod Form:**	LODGEPOL	**Cum Gas:**	0.0 E3m3
Fluid:	Oil	**Field:**	DALY (1)	**Cum Wtr:**	18642.3 m3
Mode:	Producing	**Pool Code:**	59A	**Cum Inj Oil:**	0.0 m3
		Unit Code:		**Cum Inj Gas:**	0.0 E3m3
				Cum Inj Wtr:	0.0 m3

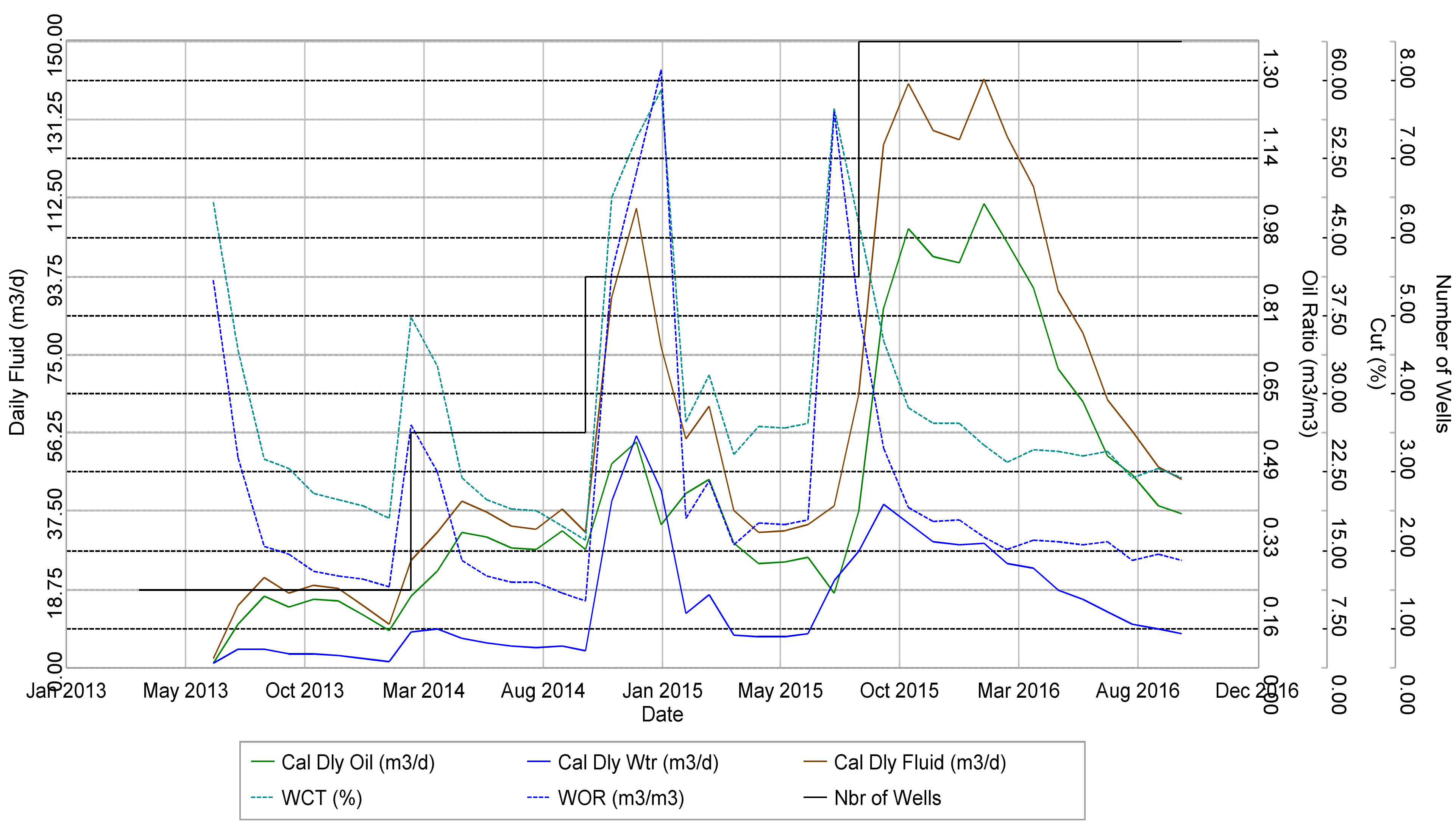


Figure No. 5

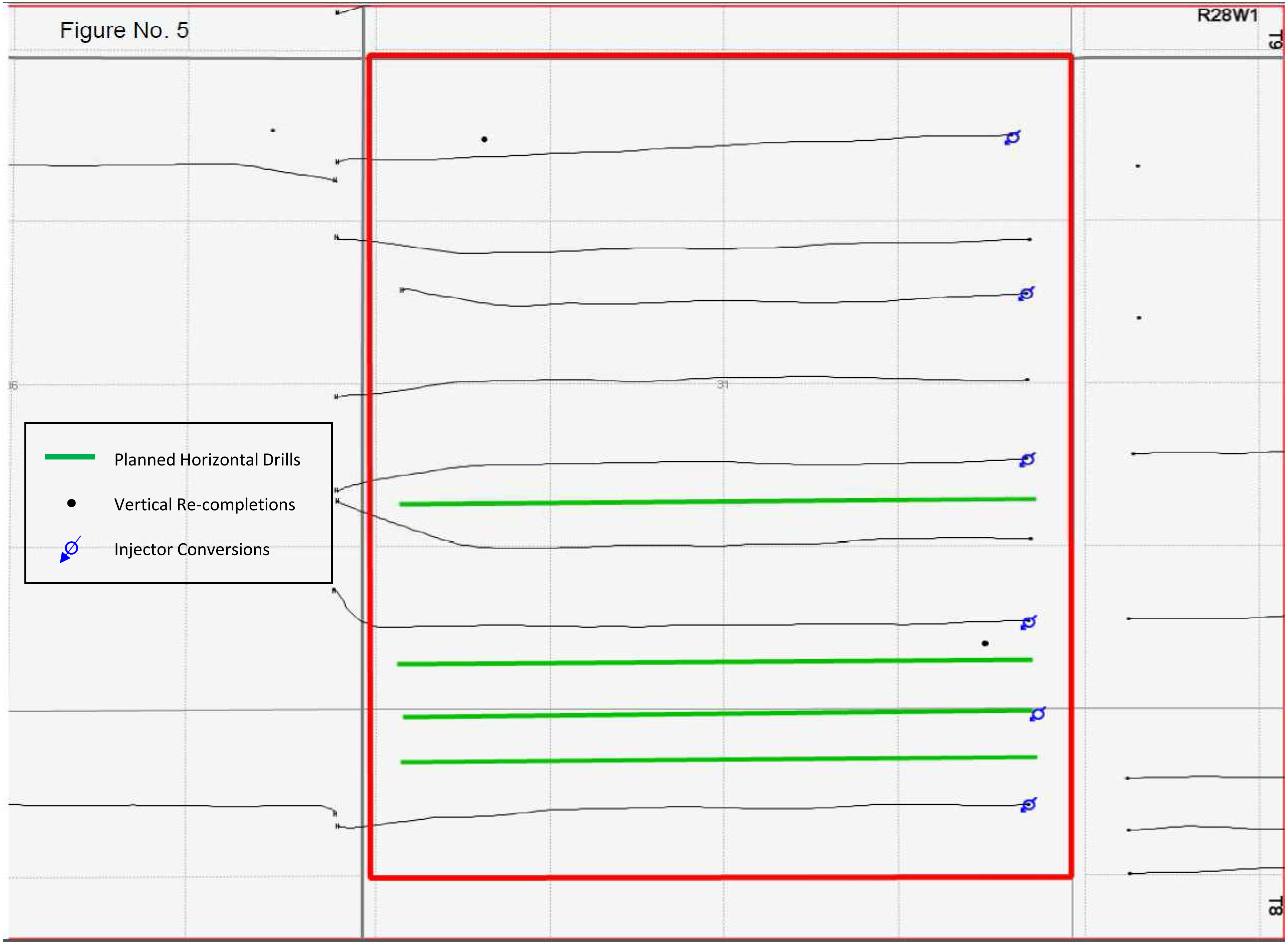
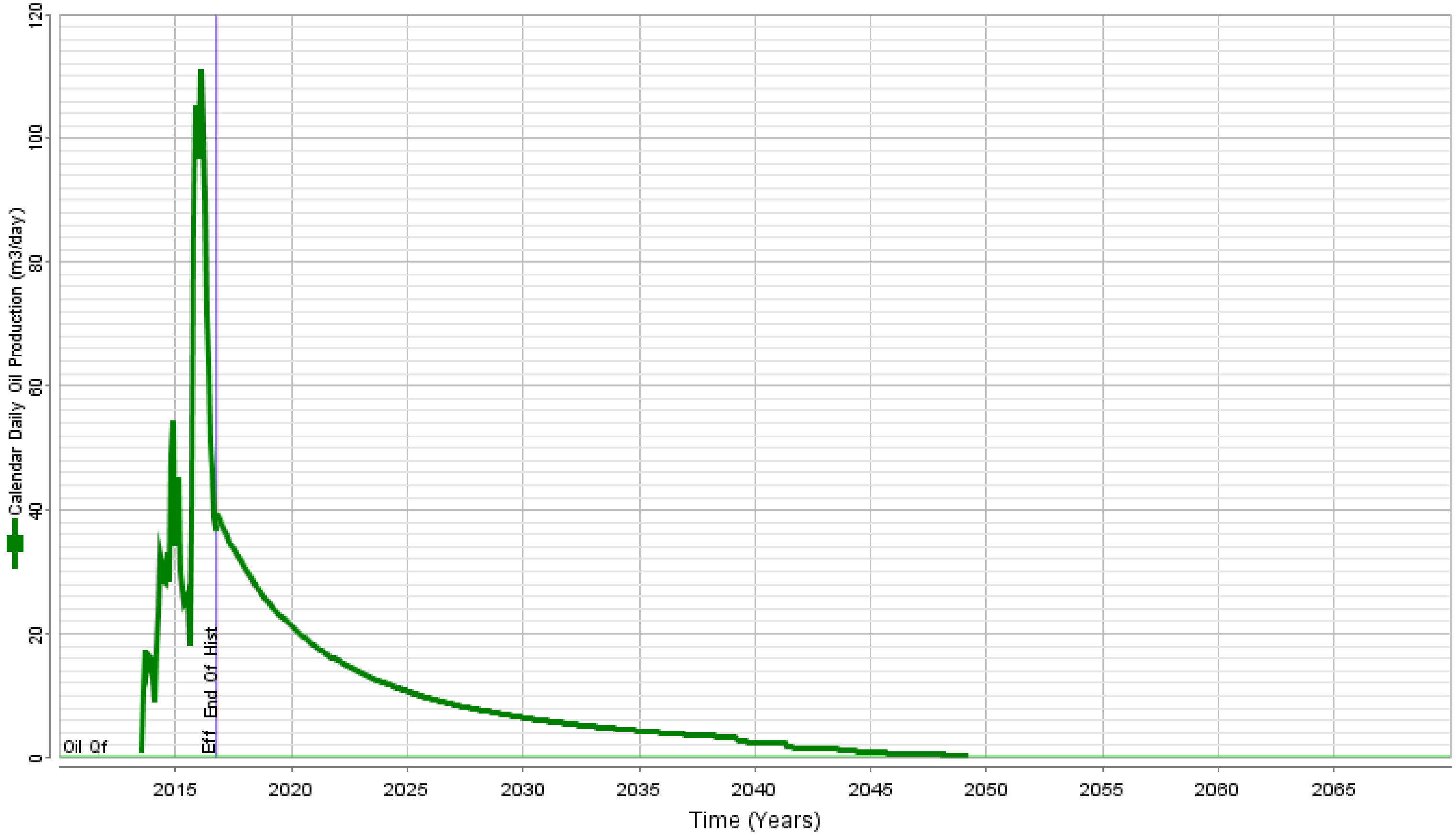

R28W1
T9
T8
31
Planned Horizontal Drills
Vertical Re-completions
Injector Conversions

Figure No. 6

Primary Existing (without infills)

Province:	Manitoba
Field:	multi zone (2)
Pool:	multi zone (3)
Unit:	multi zone (11)
Status:	n/a
Operator:	TUNDRA OIL & GAS LIMITED

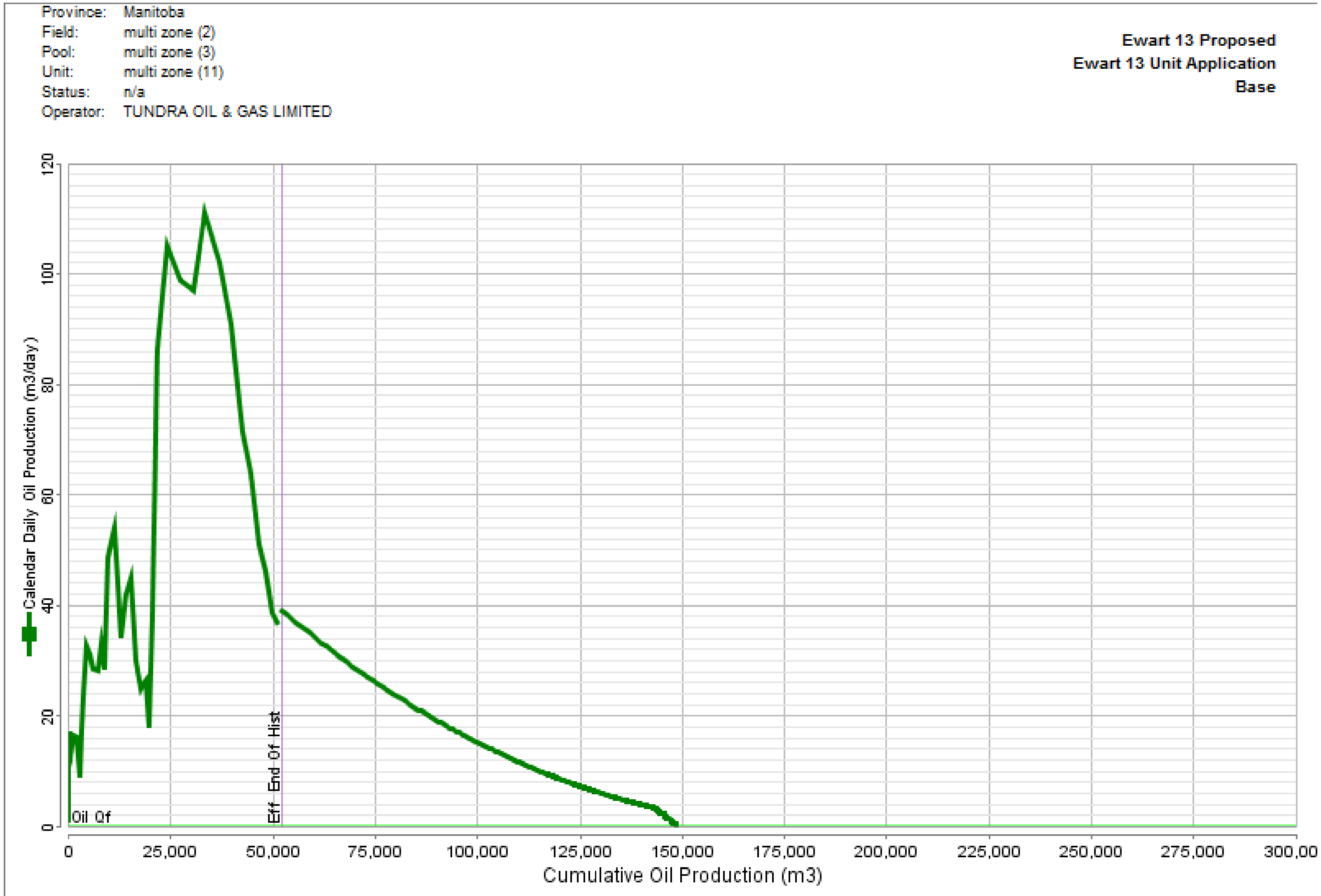
Ewart 13 Proposed
Ewart 13 Unit Application
Base



Cum Oil(m3):	51,956	Cum Gas(E3m3):	0	Cum Water(m3):	18,642	Cum Cond(m3):	0
Forecast Start:	10/01/2016	Calculation Type:	Undefined	Est. Cum Prod (m3):	51,956	Decline Exponent:	0.000
Forecast End:	01/31/2049	OVIP (m3):	0	Remaining (m3):	96,537	Initial Decline (%/yr):	0.0
Initial Rate (m3):	39.2	Recovery Factor:	0.000				
Final Rate (m3):	0.3	Ult. Recoverable (m3):	148,494				

Figure No. 7

Primary Existing (without infills)



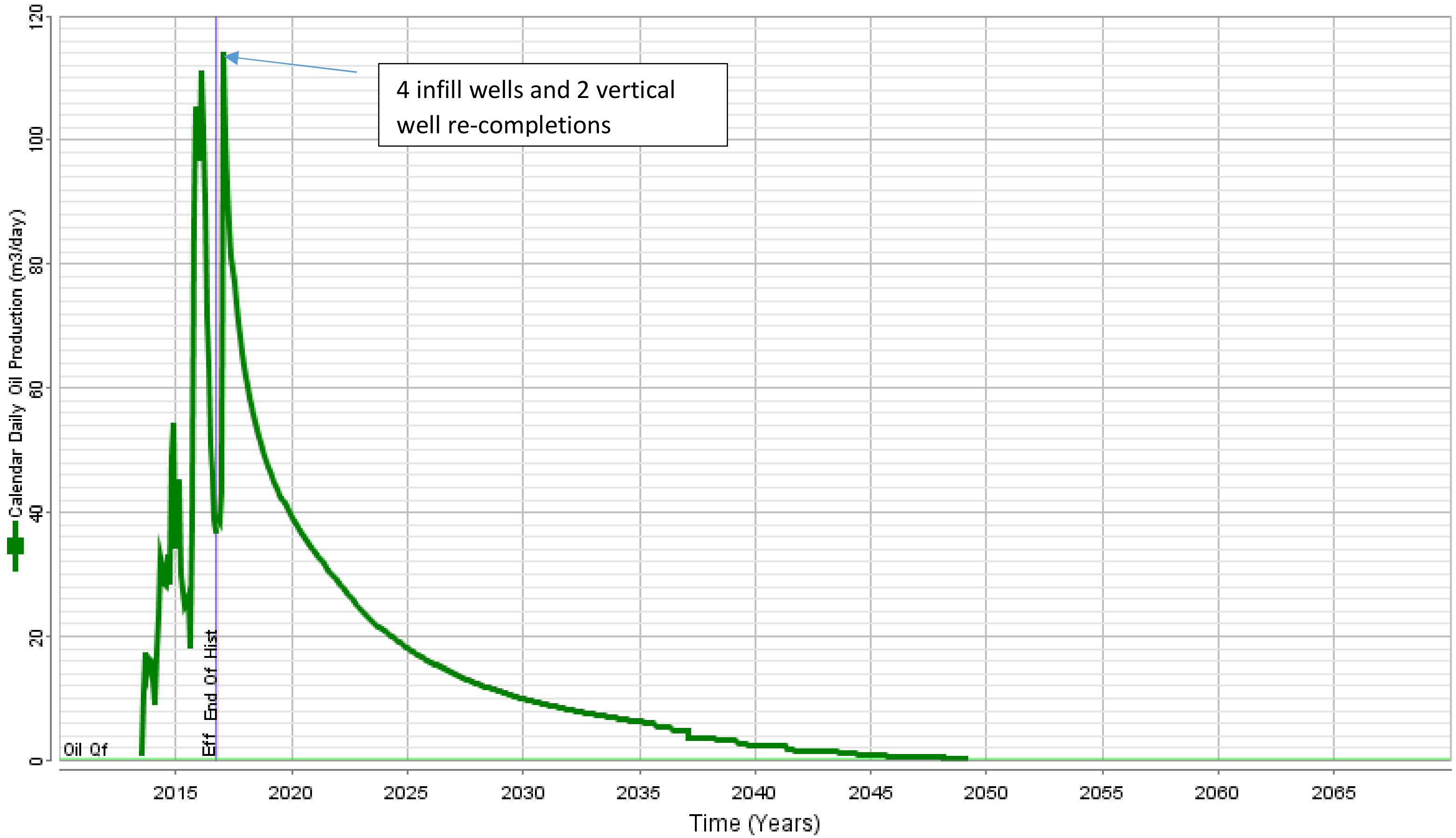
Cum Oil(m3):	51,956	Cum Gas(E3m3):	0	Cum Water(m3):	18,642	Cum Cond(m3):	0
Forecast Start:	10/01/2016	Calculation Type:	Undefined	Est. Cum Prod (m3):	51,956	Decline Exponent:	0.000
Forecast End:	01/31/2049	OVIP (m3):	0	Remaining (m3):	96,537	Initial Decline (%/yr):	0.0
Initial Rate (m3):	39.2	Recovery Factor:	0.000				
Final Rate (m3):	0.3	Ult. Recoverable (m3):	148,494				

Figure No. 8

Primary (with 4 New Drills & 2 Vertical Well Re-completions

Province:	Manitoba
Field:	multi zone (2)
Pool:	multi zone (3)
Unit:	multi zone (11)
Status:	n/a
Operator:	TUNDRA OIL & GAS LIMITED

Ewart 13 Proposed
Ewart 13 Unit Application
Base + Growth 1



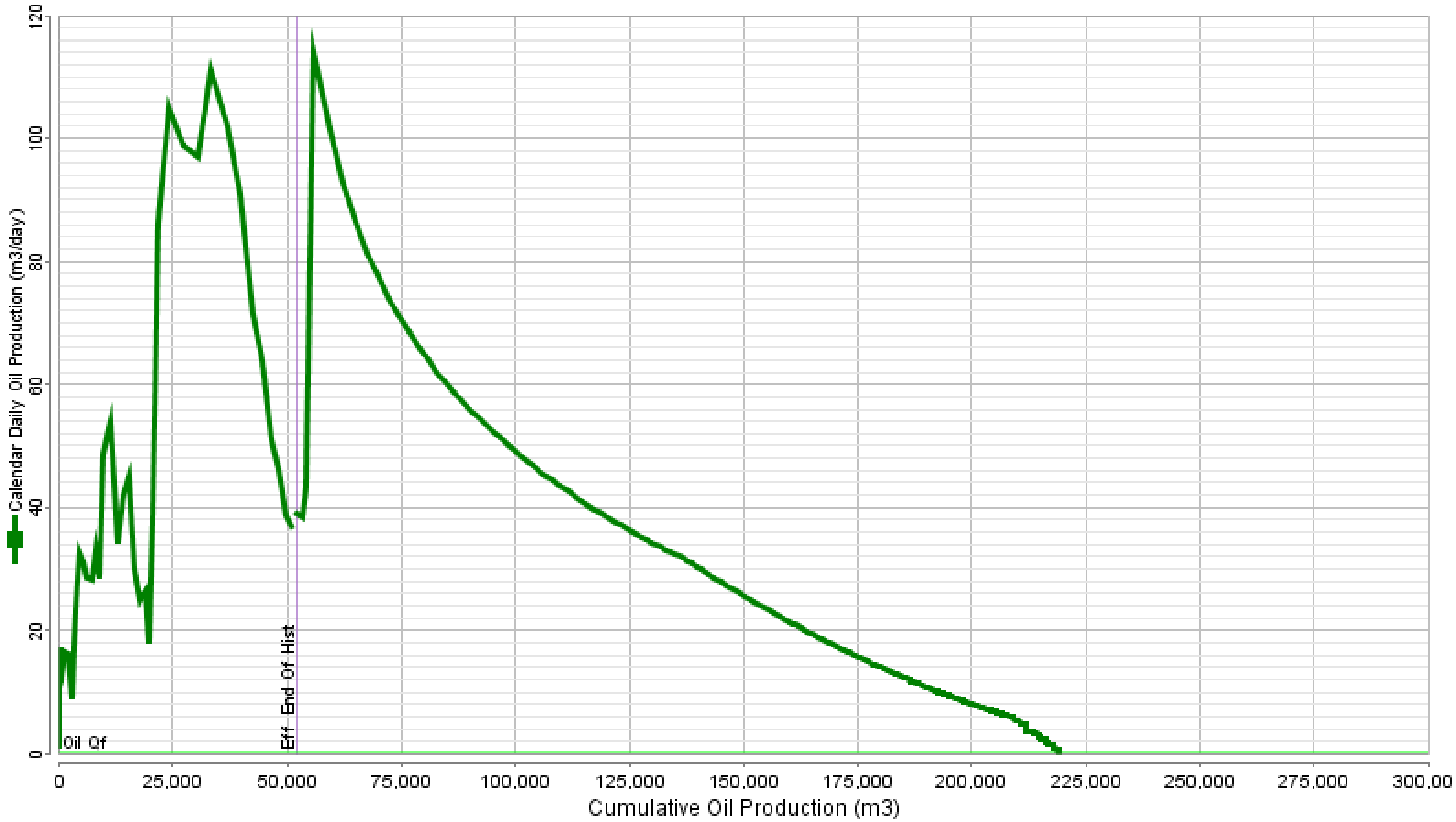
Cum Oil(m3):	51,956	Cum Gas(E3m3):	0	Cum Water(m3):	18,642	Cum Cond(m3):	0
Forecast Start:	10/01/2016	Calculation Type:	Undefined	Est. Cum Prod (m3):	51,956	Decline Exponent:	0.000
Forecast End:	01/31/2049	OVIP (m3):	0	Remaining (m3):	167,237	Initial Decline (%/yr):	0.0
Initial Rate (m3):	39.2	Recovery Factor:	0.000				
Final Rate (m3):	0.3	Ult. Recoverable (m3):	219,193				

Figure No. 9

Primary (with 4 New Drills & 2 Vertical Well Re-completions

Province:	Manitoba
Field:	multi zone (2)
Pool:	multi zone (3)
Unit:	multi zone (11)
Status:	n/a
Operator:	TUNDRA OIL & GAS LIMITED

Ewart 13 Proposed
Ewart 13 Unit Application
Base + Growth 1



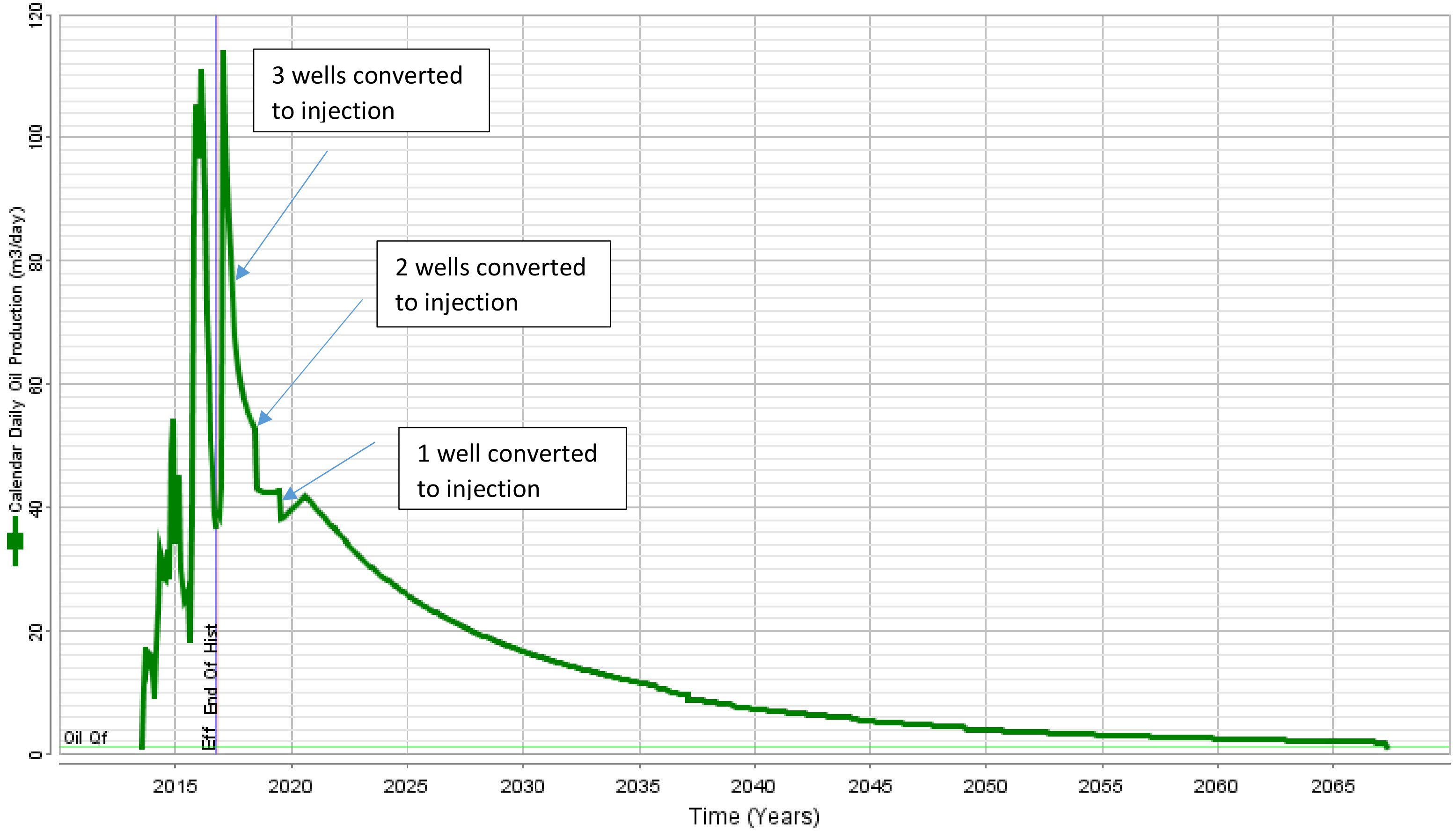
Cum Oil(m3):	51,956	Cum Gas(E3m3):	0	Cum Water(m3):	18,642	Cum Cond(m3):	0
Forecast Start:	10/01/2016	Calculation Type:	Undefined	Est. Cum Prod (m3):	51,956	Decline Exponent:	0.000
Forecast End:	01/31/2049	OVIP (m3):	0	Remaining (m3):	167,237	Initial Decline (%/yr):	0.0
Initial Rate (m3):	39.2	Recovery Factor:	0.000				
Final Rate (m3):	0.3	Ult. Recoverable (m3):	219,193				

Figure No. 10

Waterflood

Province:	Manitoba
Field:	multi zone (2)
Pool:	multi zone (3)
Unit:	multi zone (11)
Status:	n/a
Operator:	TUNDRA OIL & GAS LIMITED

Ewart 13 Proposed
Ewart 13 Unit Application
Base+G1+G2



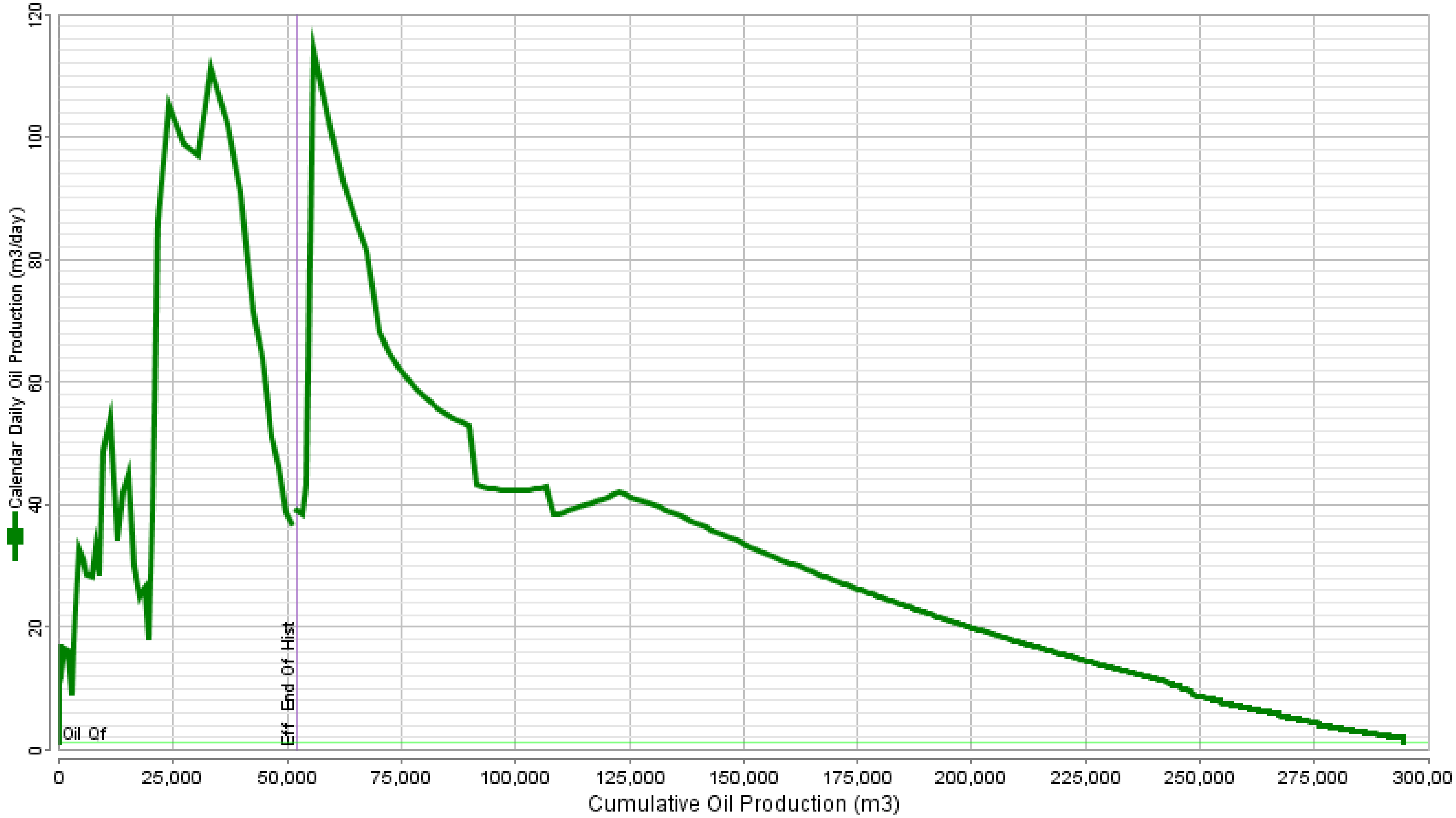
Cum Oil(m3):	51,956	Cum Gas(E3m3):	0	Cum Water(m3):	18,642	Cum Cond(m3):	0
Forecast Start:	10/01/2016	Calculation Type:	Undefined	Est. Cum Prod (m3):	51,956	Decline Exponent:	0.000
Forecast End:	04/30/2067	OVIP (m3):	0	Remaining (m3):	242,707	Initial Decline (%/yr):	0.0
Initial Rate (m3):	39.2	Recovery Factor:	0.000				
Final Rate (m3):	1.3	Ult. Recoverable (m3):	294,664				

Figure No. 11

Waterflood

Province: Manitoba
Field: multi zone (2)
Pool: multi zone (3)
Unit: multi zone (11)
Status: n/a
Operator: TUNDRA OIL & GAS LIMITED

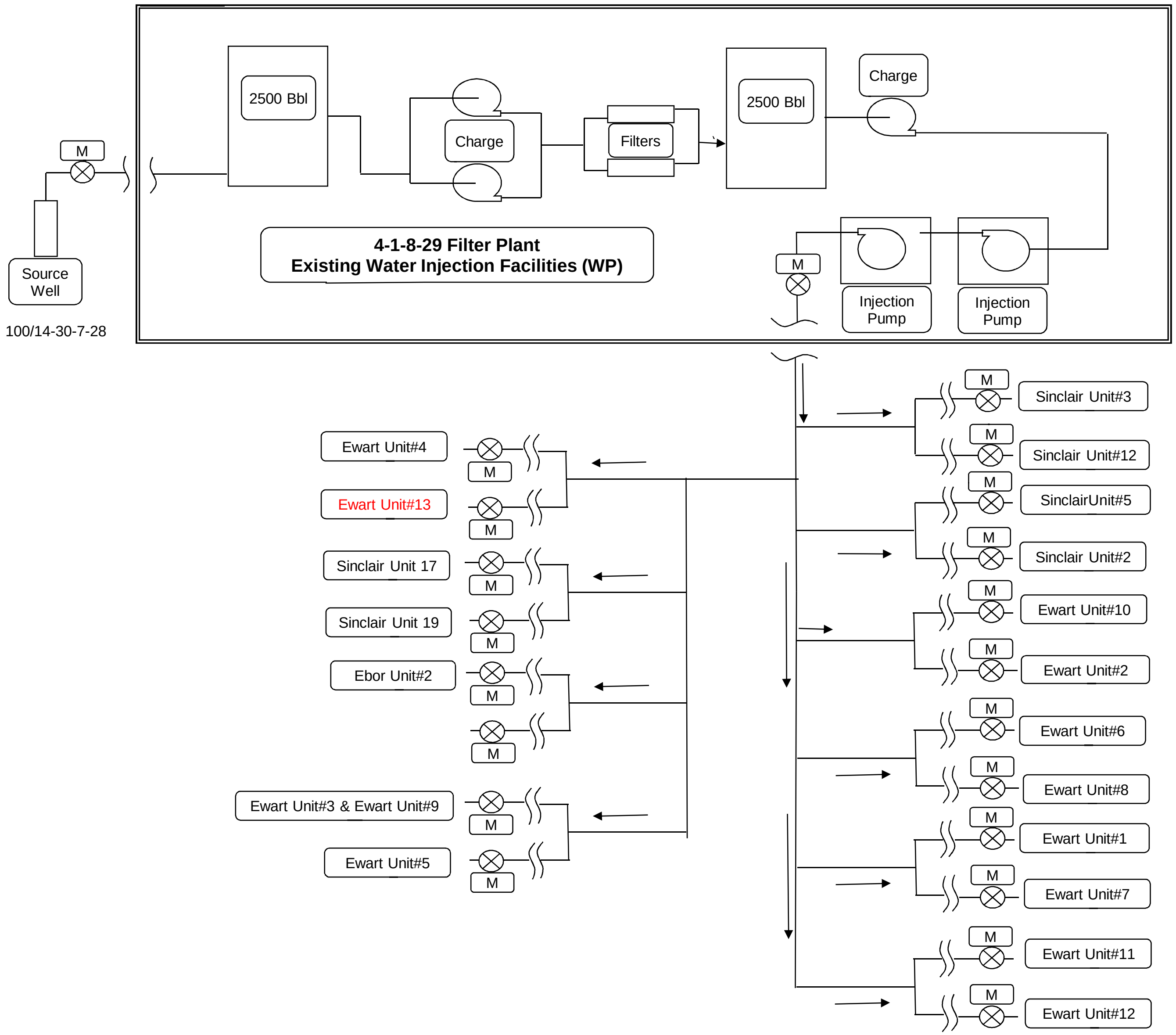
Ewart 13 Proposed
Ewart 13 Unit Application
Base+G1+G2



Cum Oil(m3):	51,956	Cum Gas(E3m3):	0	Cum Water(m3):	18,642	Cum Cond(m3):	0
Forecast Start:	10/01/2016	Calculation Type:	Undefined	Est. Cum Prod (m3):	51,956	Decline Exponent:	0.000
Forecast End:	04/30/2067	OVIP (m3):	0	Remaining (m3):	242,707	Initial Decline (%/yr):	0.0
Initial Rate (m3):	39.2	Recovery Factor:	0.000				
Final Rate (m3):	1.3	Ult. Recoverable (m3):	294,664				

FIGURE NO. 12

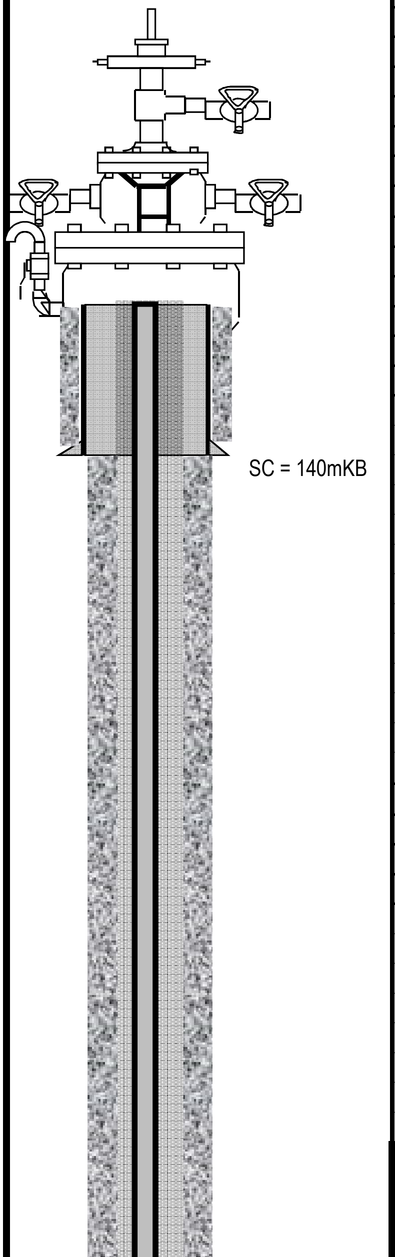
Sinclair Water Injection System



Tundra Oil And Gas Partnership

Figure No. 13

TYPICAL CEMENTED LINER WATER INJECTION WELL (WIW) DOWNHOLE DIAGRAM



WELL NAME:	Tundra Ewart Unit 13 HZNTL Cemented Liner WIW			**WELL LICENCE:**		
Prepared by	CP	(average depths)		Date:	2016	
Elevations :						
KB [m]		KB to THF [m]			TD [m]	2400.0
GL [m]		CF (m)			PBTD [m]	
Current Perfs:	**Cemented Casing / Liner**			950.0	to	2400.0
Current Perfs:					to	
KOP:	600 m MD		Total Interval		to	
Tubulars	**Size [mm]**	**Wt - Kg/m**	**Grade**	**Landing Depth [mKB]**		
Surface Casing	244.5	48.06	H-40 - ST&C	Surface	to	140.0
Intermed Csg (if run)	139.7	34.23 & 29.76	J-55 - LT&C	Surface	to	900.0
Production Liner	114.3	17.26	L-80	Surf or from Intermed Csg to		2400.0
Tubing	60.3 or 73.0 - TK-99	6.99 or 9.67	J-55	Surface	to	900.0

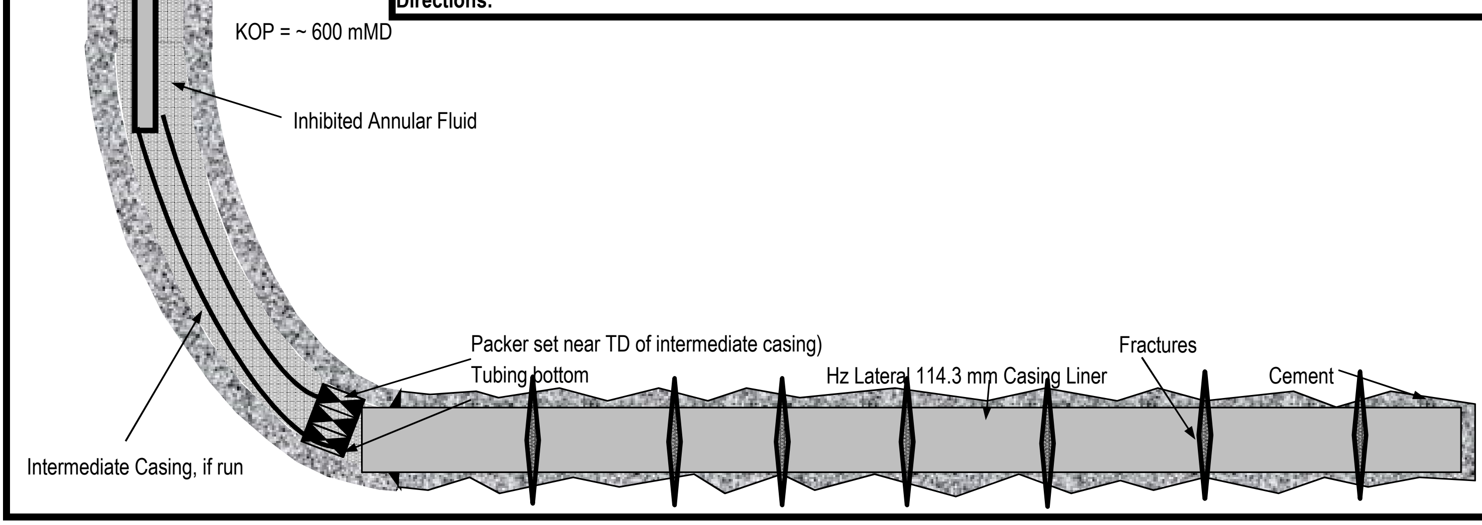
Date of Tubing Installation:			Length	Top @
Item	Description	K.B.--Tbg. Flg.	0.00	m KB
	Corrosion Protected ENC Coated Packer (set near TD of intermediate casing, if run)			
	60.3 mm or 73 mm TK-99 Internally Coated Tubing			
	TK-99 Internally Coated Tubing Pup Jt			
	Coated Split Dognut			
	Annular space above injection packer filled with inhibited fresh water			
	Bottom of Tubing mKB			

Rod String :

Date of Rod Installation:

Bottomhole Pump:

Directions:



Ewart Unit No. 13

EOR Waterflood Project

<u>Planned Corrosion Control Program </u>**

Source Well
- Continuous downhole corrosion inhibition
- Continuous surface corrosion inhibitor injection
- Downhole scale inhibitor injection
- Corrosion resistant valves and internally coated surface piping

Pipelines
- Source well to 4-1-8-29 Water Plant - Fiberglass
- New High Pressure Pipeline to injection well – 2000 psi high pressure Fiberglass

Facilities
- 4-1-8-29 Water Plant and New Injection Pump Station
    - Plant piping – 600 ANSI schedule 80 pipe, Fiberglass or Internally coated
    - Filtration – Stainless steel, HDPE Poly, fiberglass materials
    - Pumping – Ceramic plungers, stainless steel disc valves
    - Tanks – Fiberglass shell, corrosion resistant valves

Injection Wellhead / Surface Piping
- Corrosion resistant valves and internally coated surface piping

Injection Well
- Casing cathodic protection where required
- Wetted surfaces coated downhole packer
- Corrosion inhibited water in the annulus between tubing / casing
- Internally coated tubing surface to packer
- Surface freeze protection of annular fluid
- Corrosion resistant master valve
- Corrosion resistant pipeline valve

Producing Wells
- Casing cathodic protection where required
- Downhole batch corrosion inhibition as required
- Downhole scale inhibitor injection as required

FIGURE 14

** subject to final design and engineering

Proposed Ewart Unit No. 13

Application for Enhanced Oil Recovery Waterflood Project

List of Tables

TABLE NO. 1: TRACT PARTICIPATION FOR PROPOSED EWART UNIT NO. 13

Working Interest				Royalty Interest		
Tract No.	**Land Description**	**Owner**	**Share (%)**	**Owner**	**Share (%)**	**Tract Participation (%)**
1	100/13-30-008-28W1M	Tundra Oil & Gas Partnership	100%	Smeltz Royalties Inc.	100%	5.073153498
2	100/14-30-008-28W1M	Tundra Oil & Gas Partnership	100%	Smeltz Royalties Inc.	95.000%	4.862116719
				University of Manitoba	5.000%	
3	100/15-30-008-28W1M	Tundra Oil & Gas Partnership	100%	Minister of Finance - Manitoba	100%	4.737951662
4	100/16-30-008-28W1M	Tundra Oil & Gas Partnership	100%	Minister of Finance - Manitoba	100%	4.676119862
5	100/01-31-008-28W1M	Tundra Oil & Gas Partnership	100%	Tundra Oil & Gas Partnership	25%	5.018165866
				Computershare Trust Company of Canada	25%	
				Computershare Trust Company of Canada	50%	
6	100/02-31-008-28W1M	Tundra Oil & Gas Partnership	100%	Tundra Oil & Gas Partnership	25%	4.922930204
				Computershare Trust Company of Canada	25%	
				Computershare Trust Company of Canada	50%	
7	100/03-31-008-28W1M	Tundra Oil & Gas Partnership	100%	Tundra Oil & Gas Partnership	23.05625%	4.898863426
				Minister of Finance - Manitoba	7.77500%	
				Computershare Trust Company of Canada	23.05625%	
				Computershare Trust Company of Canada	46.11250%	
8	100/04-31-008-28W1M	Tundra Oil & Gas Partnership	100%	Tundra Oil & Gas Partnership	24.63750%	4.944927573
				Minister of Finance - Manitoba	1.45000%	
				Computershare Trust Company of Canada	24.63750%	
				Computershare Trust Company of Canada	49.27500%	
9	100/05-31-008-28W1M	Tundra Oil & Gas Partnership	100%	Tundra Oil & Gas Partnership	22.51875%	5.041104329
				Minister of Finance - Manitoba	9.92500%	
				Computershare Trust Company of Canada	22.51875%	
				Computershare Trust Company of Canada	45.03750%	
10	100/06-31-008-28W1M	Tundra Oil & Gas Partnership	100%	Tundra Oil & Gas Partnership	25.000%	5.001159008
				Computershare Trust Company of Canada	50.000%	
				Computershare Trust Company of Canada	25.000%	
11	100/07-31-008-28W1M	Tundra Oil & Gas Partnership	100%	Tundra Oil & Gas Partnership	25.000%	4.777192039
				Computershare Trust Company of Canada	50.000%	
				Computershare Trust Company of Canada	25.000%	
12	100/08-31-008-28W1M	Tundra Oil & Gas Partnership	100%	Tundra Oil & Gas Partnership	25.000%	4.419637326
				Computershare Trust Company of Canada	50.000%	
				Computershare Trust Company of Canada	25.000%	
13	100/09-31-008-28W1M	Tundra Oil & Gas Partnership	100%	Tundra Oil & Gas Partnership	25.000%	4.606219329
				Computershare Trust Company of Canada	50.000%	
				Computershare Trust Company of Canada	25.000%	
14	100/10-31-008-28W1M	Tundra Oil & Gas Partnership	100%	Tundra Oil & Gas Partnership	25.000%	4.866710368
				Computershare Trust Company of Canada	50.000%	
				Computershare Trust Company of Canada	25.000%	
15	100/11-31-008-28W1M	Tundra Oil & Gas Partnership	100%	Tundra Oil & Gas Partnership	25.000%	5.249756199
				Computershare Trust Company of Canada	50.000%	
				Computershare Trust Company of Canada	25.000%	
16	100/12-31-008-28W1M	Tundra Oil & Gas Partnership	100%	Tundra Oil & Gas Partnership	24.88125%	5.459682043
				Minister of Finance - Manitoba	0.47500%	
				Computershare Trust Company of Canada	24.88125%	
				Computershare Trust Company of Canada	49.76250%	
17	100/13-31-008-28W1M	Tundra Oil & Gas Partnership	100%	Tundra Oil & Gas Partnership	25.000%	5.919476952
				Computershare Trust Company of Canada	50.000%	
				Computershare Trust Company of Canada	25.000%	
18	100/14-31-008-28W1M	Tundra Oil & Gas Partnership	100%	Tundra Oil & Gas Partnership	25.000%	5.635402068
				Computershare Trust Company of Canada	50.000%	
				Computershare Trust Company of Canada	25.000%	
19	100/15-31-008-28W1M	Tundra Oil & Gas Partnership	100%	Tundra Oil & Gas Partnership	25.000%	5.051336232
				Computershare Trust Company of Canada	50.000%	
				Computershare Trust Company of Canada	25.000%	
20	100/16-31-008-28W1M	Tundra Oil & Gas Partnership	100%	Tundra Oil & Gas Partnership	25.000%	4.838095298
				Computershare Trust Company of Canada	50.000%	
				Computershare Trust Company of Canada	25.000%	
						100.000000000

TABLE NO. 2: TRACT FACTOR CALCULATIONS

TRACT FACTORS BASED ON OIL-IN-PLACE (OOIP) LESS CUMULATIVE OIL PRODUCED METHOD

PROPOSED EWART UNIT NO. 13

LSD-SEC	*TWP-RGE*	*UWI*	*OOIP (m3)*	*Hz Allocated Cum Prodn Sept 2016 (m3)*	*OOIP - Cum Oil Prodn (m3)*	*Tract Factor (%)*	*UWI*
13-30	008-28W1M	100/13-30-008-28W1M	132,896	2253.6	130,642	5.073153498	100/13-30-008-28W1M
14-30	008-28W1M	100/14-30-008-28W1M	127,560	2352.6	125,208	4.862116719	100/14-30-008-28W1M
15-30	008-28W1M	100/15-30-008-28W1M	124,355	2344.8	122,010	4.737951662	100/15-30-008-28W1M
16-30	008-28W1M	100/16-30-008-28W1M	122,621	2202.6	120,418	4.676119862	100/16-30-008-28W1M
01-31	008-28W1M	100/01-31-008-28W1M	131,497	2270.6	129,226	5.018165866	100/01-31-008-28W1M
02-31	008-28W1M	100/02-31-008-28W1M	129,247	2473.4	126,774	4.922930204	100/02-31-008-28W1M
03-31	008-28W1M	100/03-31-008-28W1M	128,684	2530.3	126,154	4.898863426	100/03-31-008-28W1M
04-31	008-28W1M	100/04-31-008-28W1M	129,573	2232.8	127,340	4.944927573	100/04-31-008-28W1M
05-31	008-28W1M	100/05-31-008-28W1M	132,699	2881.8	129,817	5.041104329	100/05-31-008-28W1M
06-31	008-28W1M	100/06-31-008-28W1M	131,904	3115.5	128,788	5.001159008	100/06-31-008-28W1M
07-31	008-28W1M	100/07-31-008-28W1M	126,158	3137.3	123,021	4.777192039	100/07-31-008-28W1M
08-31	008-28W1M	100/08-31-008-28W1M	116,889	3075.9	113,813	4.419637326	100/08-31-008-28W1M
09-31	008-28W1M	100/09-31-008-28W1M	121,605	2986.7	118,618	4.606219329	100/09-31-008-28W1M
10-31	008-28W1M	100/10-31-008-28W1M	128,579	3253.4	125,326	4.866710368	100/10-31-008-28W1M
11-31	008-28W1M	100/11-31-008-28W1M	138,430	3240.2	135,190	5.249756199	100/11-31-008-28W1M
12-31	008-28W1M	100/12-31-008-28W1M	143,219	2622.9	140,596	5.459682043	100/12-31-008-28W1M
13-31	008-28W1M	100/13-31-008-28W1M	154,598	2161.1	152,437	5.919476952	100/13-31-008-28W1M
14-31	008-28W1M	100/14-31-008-28W1M	147,480	2358.7	145,121	5.635402068	100/14-31-008-28W1M
15-31	008-28W1M	100/15-31-008-28W1M	132,471	2391.0	130,080	5.051336232	100/15-31-008-28W1M
16-31	008-28W1M	100/16-31-008-28W1M	126,660	2071.3	124,589	4.838095298	100/16-31-008-28W1M
			2,627,125	**51,956.4**	**2,575,169**	**100.000000000**	

TABLE NO. 3

Proposed Ewart Unit 13 Well List

UWI	*License Number*	*Type*	*Pool Name*	*Producing Zone*	*Mode*	*On Production Date*	*Prod Date*	*Cal Dly Oil (m3/d)*	*Monthly Oil (m3)*	*Cum Prd Oil (m3)*	*Cal Dly Water (m3/d)*	*Monthly Water (m3)*	*Cum Prd Water (m3)*	*WCT (%)*	
102/16-30-008-28W1/0	009685	Horizontal	LODGEPOLE A	LODGEPOL	Producing	2/14/2014	Sep-2016	8.3	248.8	9153.6	2.2	66.5	1941.9	21.09	
100/01-31-008-28W1/0	006639	Vertical	BAKKEN-THREE FORKS A	BAKKEN	Producing	5/28/2008	Sep-2016	0.3	9.3		0.3	8.6		48.04	Bkkn will be abn, recompleted in LP
103/01-31-008-28W1/0	009730	Horizontal	LODGEPOLE A	LODGEPOL	Producing	2/12/2014	Sep-2016	2.3	69.7	6908.0	1.0	29.8	2231.8	29.95	
102/08-31-008-28W1/0	009752	Horizontal	LODGEPOLE A	LODGEPOL	Producing	10/11/2014	Sep-2016	3.6	109.2	6699.0	0.7	22.2	5896.1	16.89	
103/08-31-008-28W1/0	010317	Horizontal	LODGEPOLE A	LODGEPOL	Producing	8/10/2015	Sep-2016	3.6	106.6	5655.4	0.5	16.0	1419.0	13.05	
102/09-31-008-28W1/0	009753	Horizontal	LODGEPOLE A	LODGEPOL	Producing	10/17/2014	Sep-2016	6.5	195.8	5790.4	2.5	74.5	3553.1	27.56	
103/09-31-008-28W1/0	010333	Horizontal	LODGEPOLE A	LODGEPOL	Producing	8/27/2015	Sep-2016	3.8	112.8	5359.0	0.3	9.8	1164.4	7.99	
104/09-31-008-28W1/3	010329	Horizontal	LODGEPOLE A	LODGEPOL	Producing	8/12/2015	Sep-2016	5.6	167.7	5464.9	0.6	18.3	1208.6	9.84	
100/13-31-008-28W1/0	006631	Vertical	BAKKEN-THREE FORKS A	BAKKEN	Producing	5/28/2008	Sep-2016	0.1	3.6		0.2	5.3		59.55	Bkkn will be abn, recompleted in LP
103/16-31-008-28W1/0	009289	Horizontal	LODGEPOLE A	LODGEPOL	Producing	3/23/2013	Sep-2016	3.4	101.8	6926.1	0.3	10.3	1227.4	9.19	
										51956.4	**only LP completions**				

TABLE NO. 4: OOIP Calculation

UWI	Average Thickness (m)	OOIP (m3)	OOIP (bbls)
100/13-30-008-28W1M	10.4292	132,896	835,890
100/14-30-008-28W1M	10.0087	127,560	802,330
100/15-30-008-28W1M	9.7559	124,355	782,170
100/16-30-008-28W1M	9.6174	122,621	771,260
100/01-31-008-28W1M	10.3382	131,497	827,090
100/02-31-008-28W1M	10.1634	129,247	812,940
100/03-31-008-28W1M	10.1099	128,684	809,400
100/04-31-008-28W1M	10.1826	129,573	814,990
100/05-31-008-28W1M	10.4258	132,699	834,650
100/06-31-008-28W1M	10.3603	131,904	829,650
100/07-31-008-28W1M	9.9353	126,158	793,510
100/08-31-008-28W1M	9.2036	116,889	735,210
100/09-31-008-28W1M	9.5885	121,605	764,870
100/10-31-008-28W1M	10.1392	128,579	808,740
100/11-31-008-28W1M	10.8683	138,430	870,700
100/12-31-008-28W1M	11.2491	143,219	900,820
100/13-31-008-28W1M	12.1401	154,598	972,390
100/14-31-008-28W1M	11.5763	147,480	927,620
100/15-31-008-28W1M	10.4618	132,471	833,220
100/16-31-008-28W1M	10.0022	126,660	796,670
		2,627,125	**16,524,120**

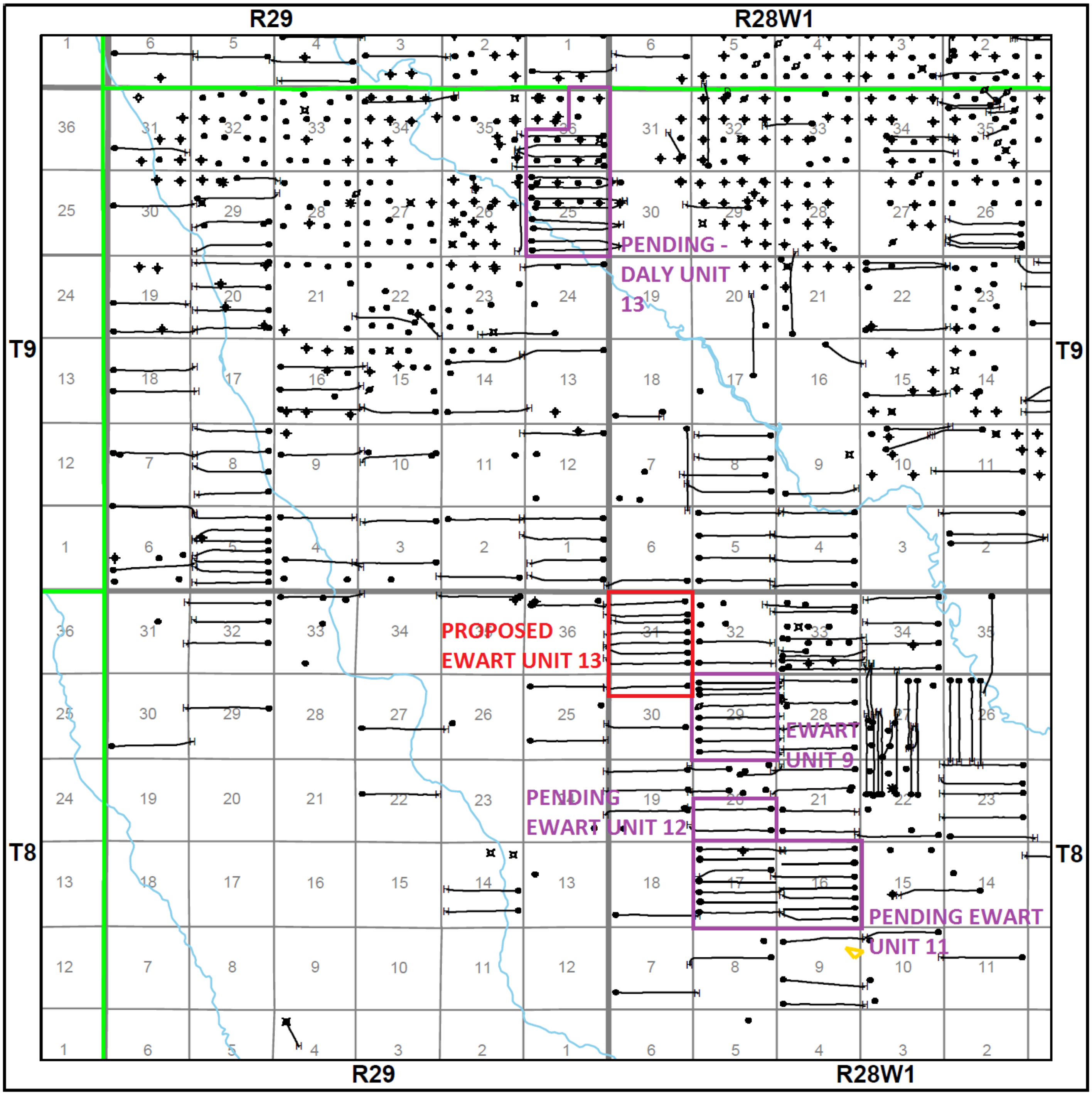
Parameters	
Net:Gross	0.408
Core Porosity	11.50%
Bo	1.1
Sw	25%

Proposed Ewart Unit No. 13

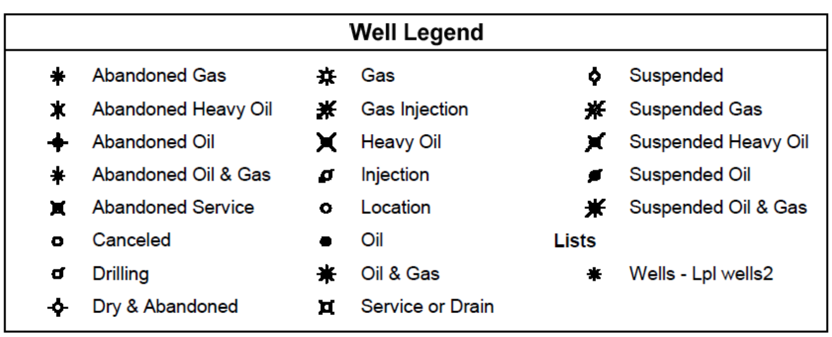
Application for Enhanced Oil Recovery Waterflood Project

LIST OF APPENDICES

APPENDIX 1

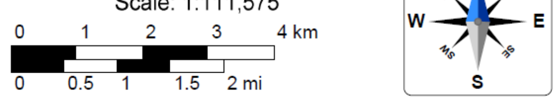


Datum: NAD27 Projection: Stereographic DLS Version AB: ATS 2.6, BC: PRB 2.0, SK: STS 2.5, MB: MLI07



Center: 49.7173, -101.2981

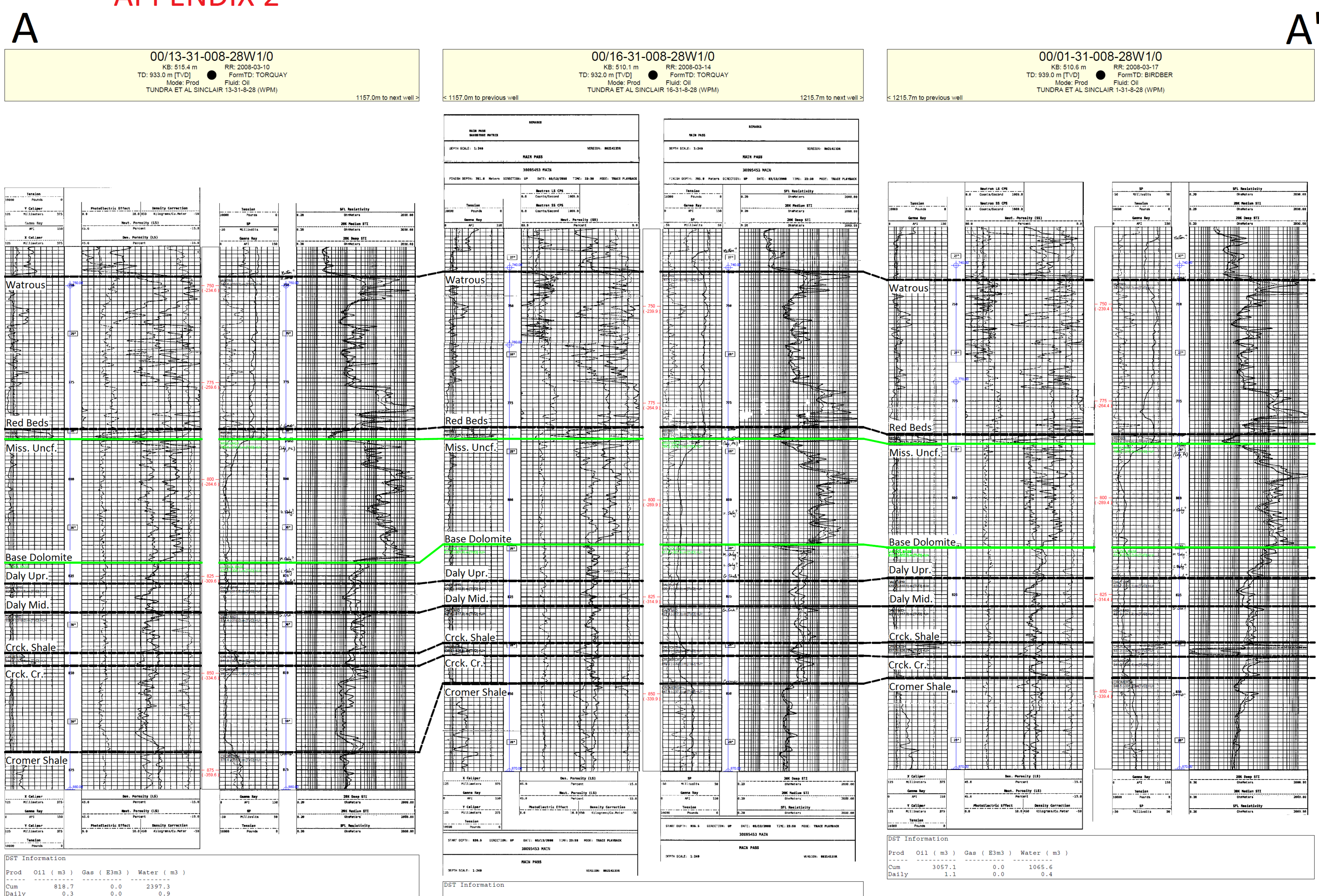
Scale: 1:111,575



Sinclair Daly Dolomite Unit Overview

Map Showing Only Lodgepole Producing Wells

APPENDIX 2



Proposed Ewart Unit 13

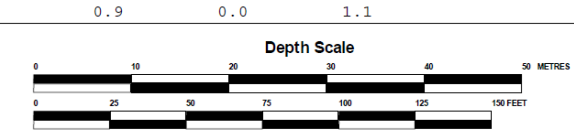
Structural Cross Section
-North West to South East-
Through Proposed Unit Area

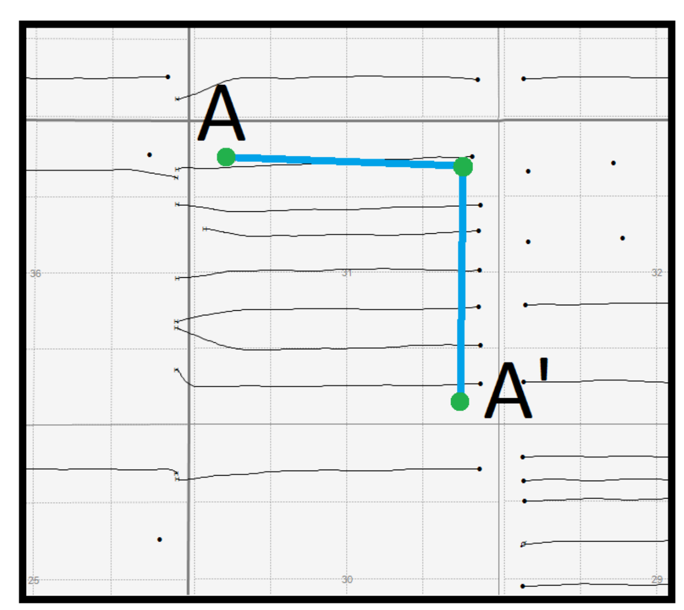
Produced by :
AccuLogs
Version 8.2.1.178546
Datum: NAD27

Author:
Modified On: Tuesday, October 11, 2016 02:56PM
Printed On: Tuesday, October 11, 2016 03:00PM
Start Formation: 5m. above WATRS
End Formation: 10m. below CROMERSH
Cross Section Name: E12AA

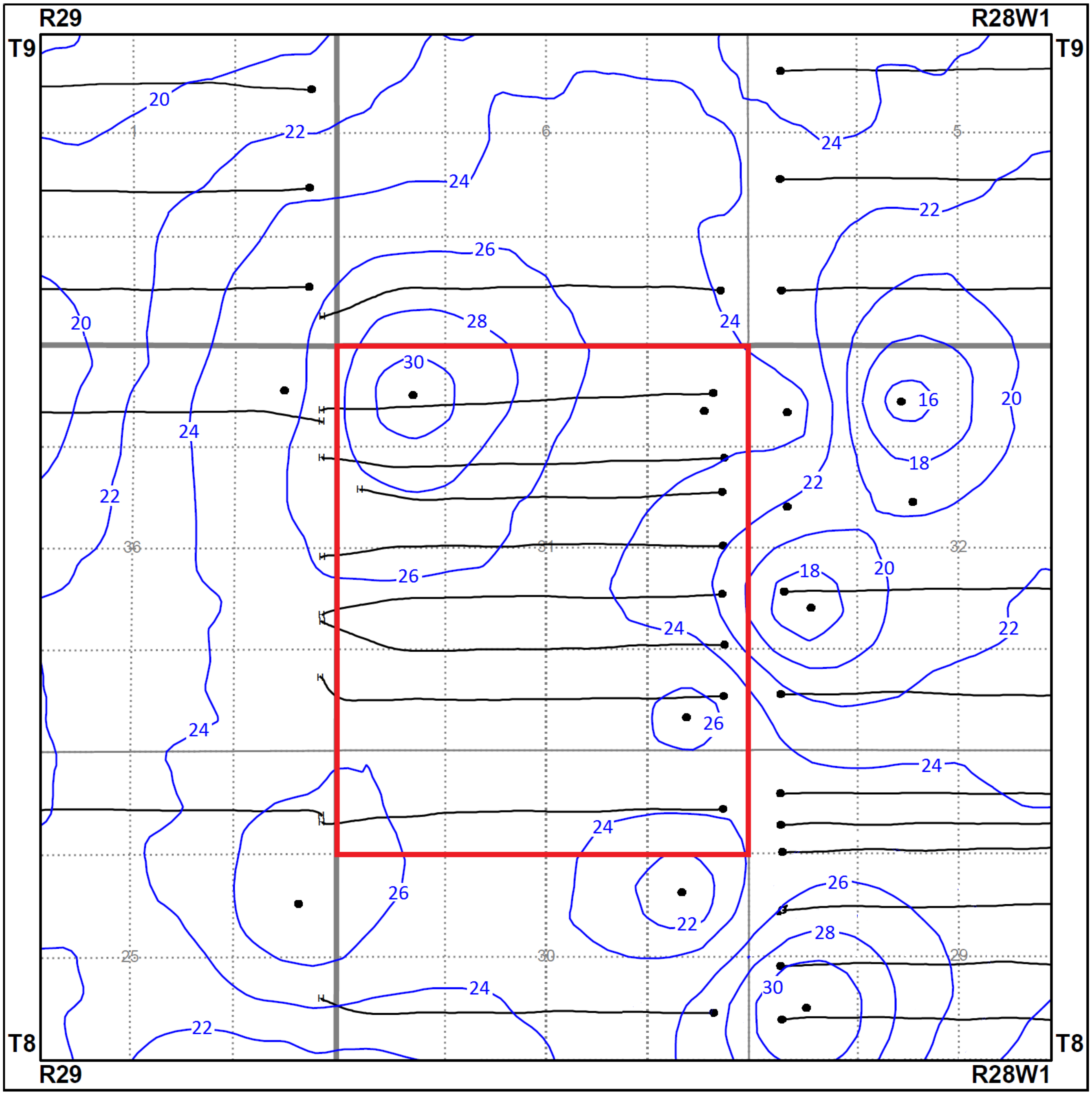
Legend

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





APPENDIX 3



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

Lodgepole Dolomite Isopach (2m CI)
Map Showing Vertical Wells and Lodgepole Producing Horizontal Wells

Center: 49.6994, -101.2695

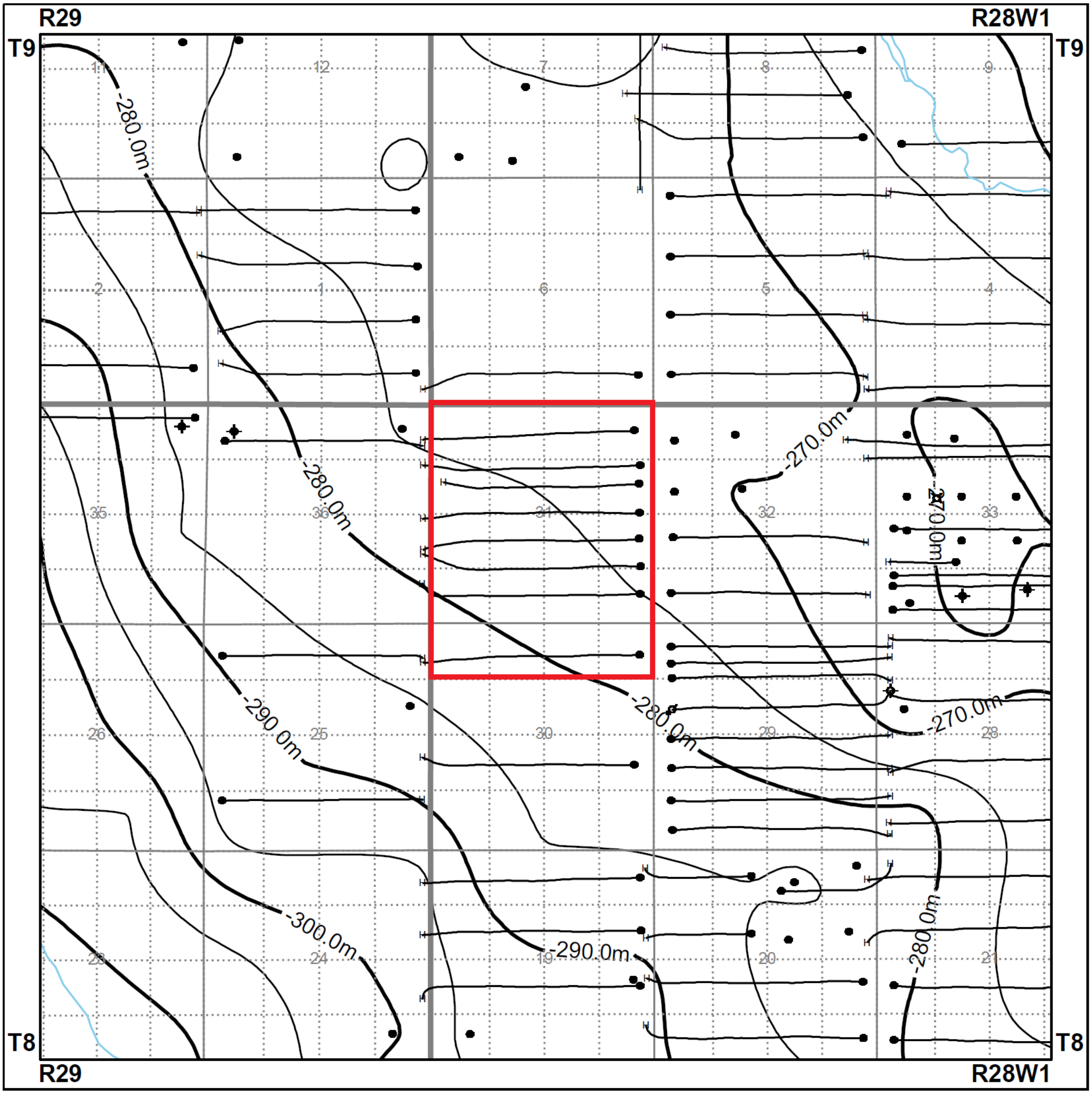
Scale: 1:23,421

0 0.3 0.6 0.9 km

0 0.1 0.2 0.3 0.4 0.5 mi

N
W E
S

APPENDIX 4



Well Legend

- Abandoned Gas
- Abandoned Heavy Oil
- Abandoned Oil
- Abandoned Oil & Gas
- Abandoned Service
- Canceled
- Drilling
- Dry & Abandoned
- Gas
- Gas Injection
- Heavy Oil
- Injection
- Location
- Oil
- Oil & Gas
- Service or Drain
- Suspended
- Suspended Gas
- Suspended Heavy Oil
- Suspended Oil
- Suspended Oil & Gas

Lists

- Wells - Lodgepole producing wells

Center: 49.6684, -101.2406

Scale: 1:56,165

0 0.5 1 1.5 2 km

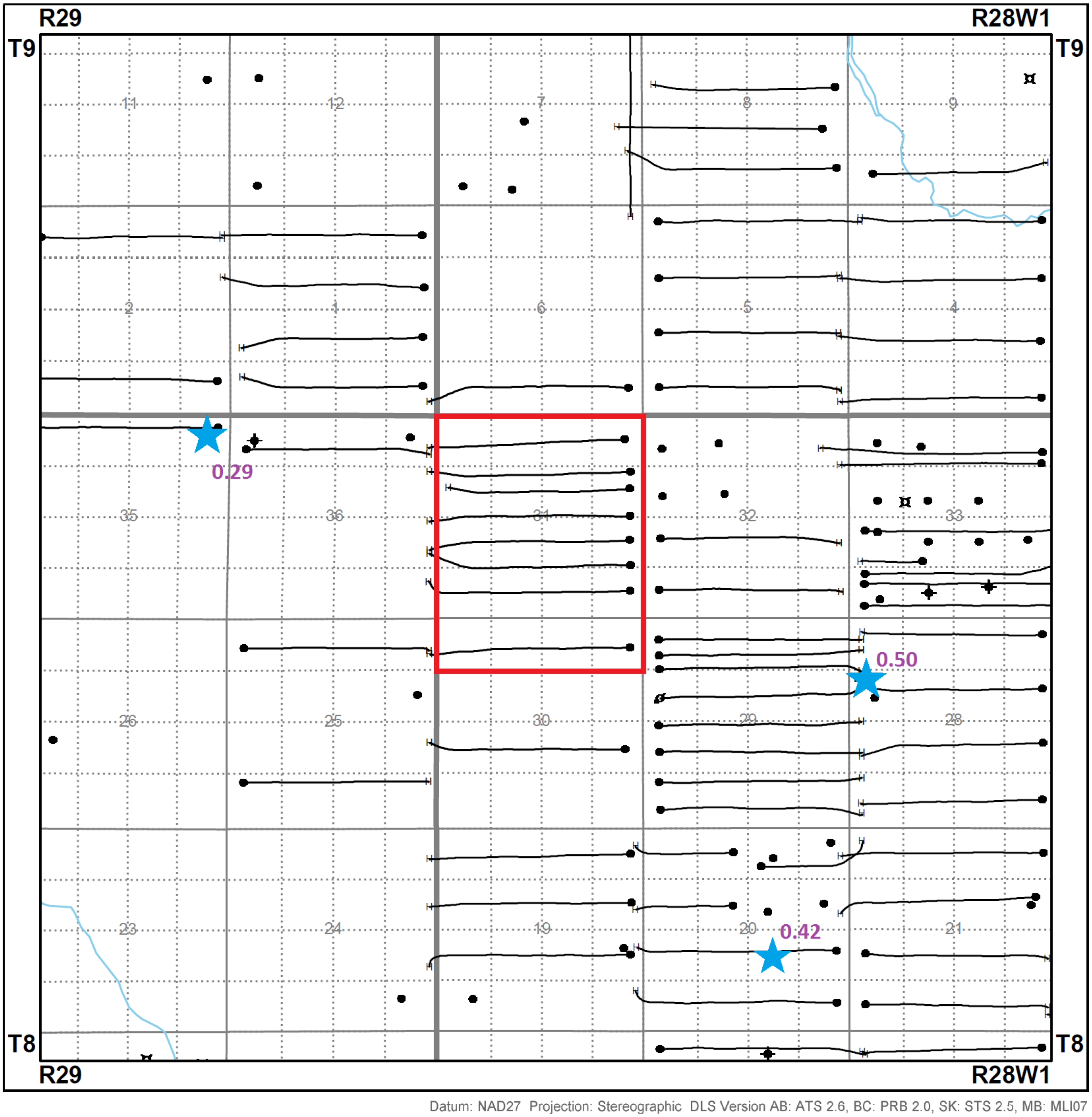
0 0.5 1 mi

N W E S

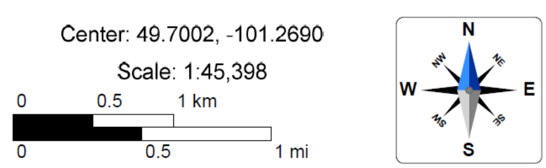
Top Lodgepole Structure (5m CI)

Map Showing Only Lodgepole Producing Wells

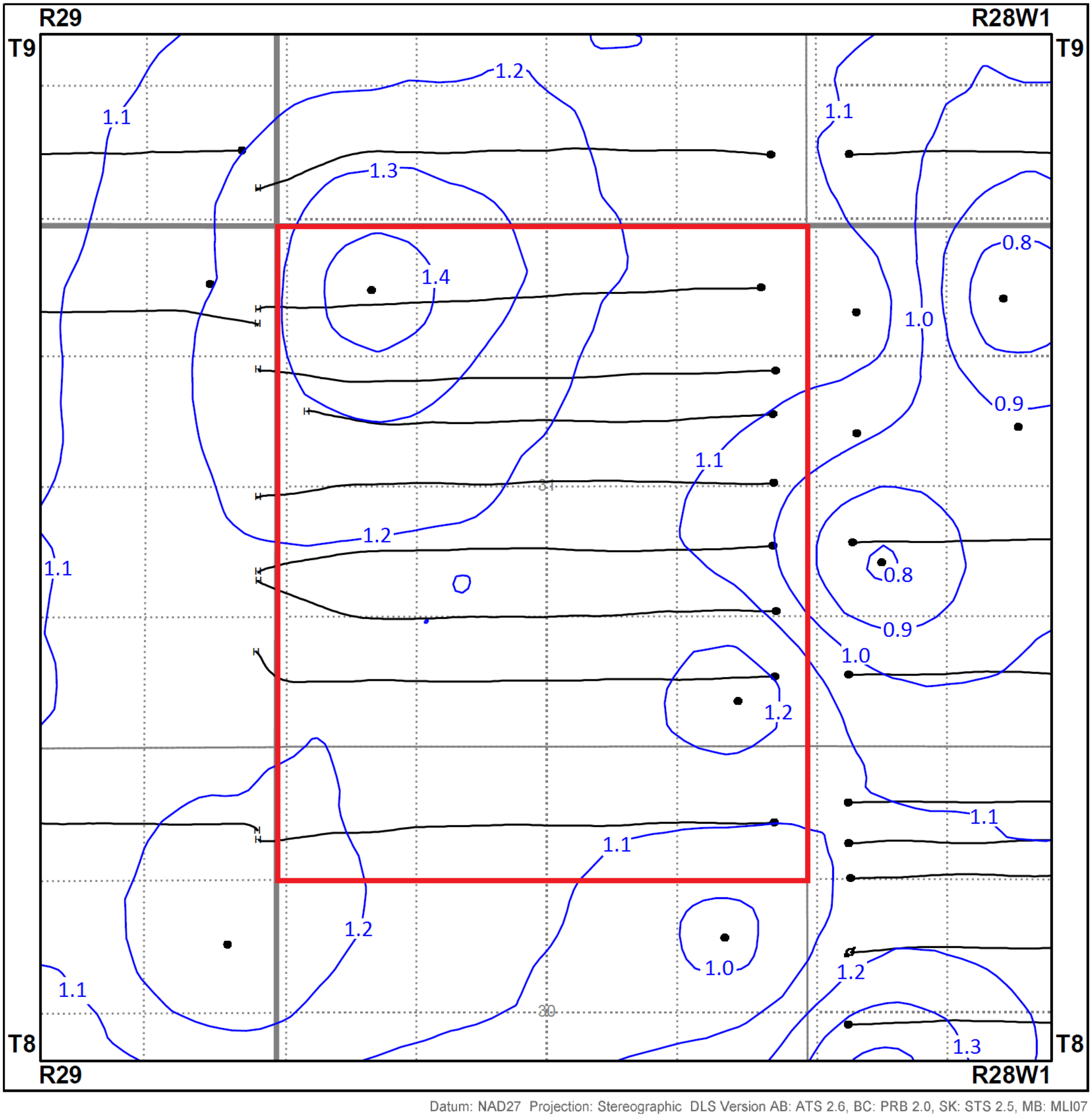
APPENDIX 5



Proposed Ewart Unit 13 - Core Data
Core PDPK Points Used for OOIP - N/G Values Posted



APPENDIX 6



Lodgepole Dolomite Phi-h (0.1phi*m ci)
Map Showing Vertical Wells and Lodgepole Producing Horizontal Wells