

Waskada Unit No. 22

Waterflood Progress Report 2019

January 1st through December 31st 2019

Prepared for:

Manitoba Industry, Economic Development and Mines

Petroleum Branch

Prepared by:

Tundra Oil and Gas

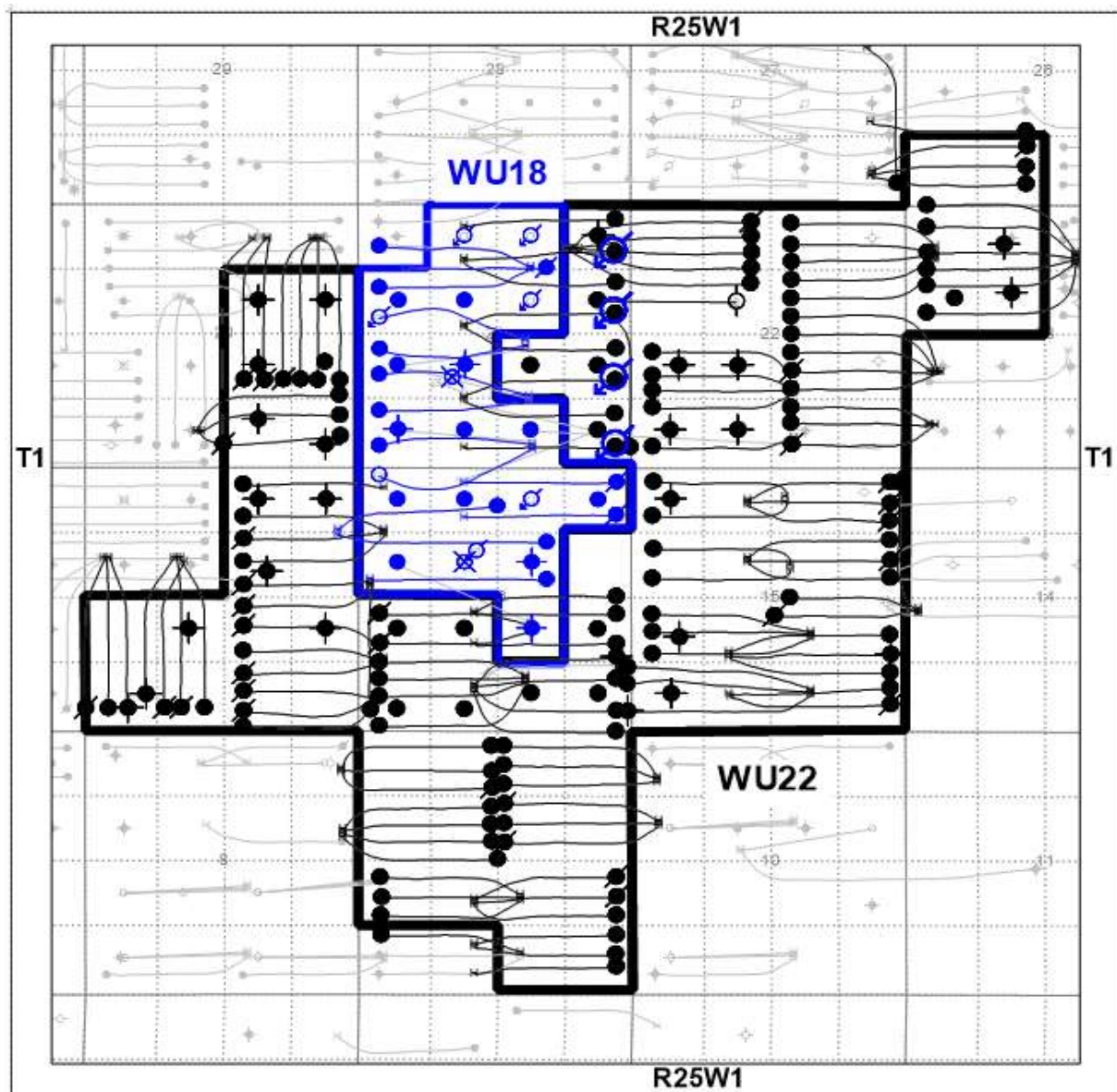
March 19, 2020

INTRODUCTION

Waskada Unit No. 22 Enhanced Oil Recovery (EOR) Waterflood Project was approved October 1, 2017. Waskada Unit No. 22 area contains 33 vertical wells (22 abandoned, 11 producing/inactive) and 130 horizontal wells (35 abandoned/suspended, 91 producing and 4 injection wells) in 83 Legal Sub Divisions (LSD) in Township 1, Range 25 W1 as shown in the figure below.

This unit is currently not on injection. The 4 inter-unit horizontal wells at 02/01-21, 02/08-21, 02/09-21 and 02/16-21-001-25W1 were converted to injectors in 2018 to support Waskada Unit No. 18.

Figure 1: Waskada Unit No. 22 Area Outline



Waskada Unit No. 22

Tundra Oil and Gas (Tundra), as the operator of the Waskada Unit No. 22 Enhanced Oil Recovery (EOR) project hereby submits the 2019 EOR report as per section 73 of the Drilling and Production Regulations.

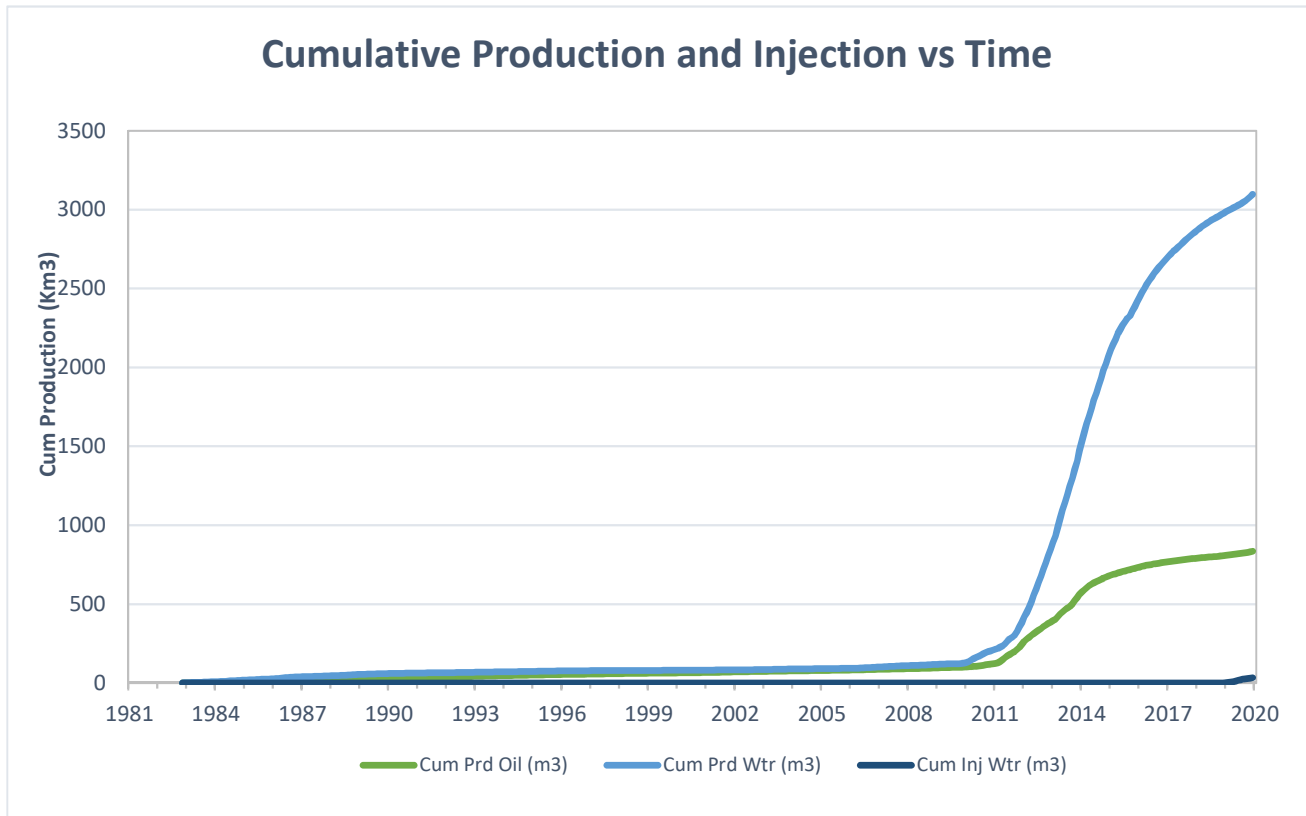
a) Monthly oil and water production rates, injection rate, GOR and WOR

MONTH	Cal Dly Oil m ³ /day	Cal Dly Wtr m ³ /day	Cal Inj Wtr m ³ /day	WOR m ³ /m ³	GOR m ³ /m ³
Jan-2019	50.63	282.43	41.05	5.58	45.88
Feb-2019	68.81	284.26	79.31	4.13	36.75
Mar-2019	82.35	290.59	64.79	3.53	27.73
Apr-2019	77.15	285.69	105.69	3.70	31.63
May-2019	70.27	266.35	118.21	3.79	0
Jun-2019	58.29	257.71	138.18	4.42	0
Jul-2019	61.60	272.53	141.91	4.42	0
Aug-2019	57.26	291.91	109.47	5.10	0
Sep-2019	64.58	330.03	83.32	5.11	0
Oct-2019	109.52	416.07	66.64	3.80	0
Nov-2019	111.34	469.65	65.42	4.22	0
Dec-2019	112.87	478.52	75.92	4.24	0

b) Cumulative volume of oil, gas and water produced and fluid injected

2019 PRODUCTION	
Produced Oil (m ³)	28,147
Produced Gas (m ³)	287
Produced Water (m ³)	119,502
Fluid Injected (m ³)	33,157
CUMULATIVE PRODUCTION	
Produced Oil (m ³)	835,252
Produced Water (m ³)	3,097,774

Waskada Unit No. 22



c) Well List

Waskada Unit No. 22 Well List

<i>UWI</i>	<i>Type</i>	<i>Status</i>	<i>Future Plans</i>
100/01-09-001-25W1/0	Horizontal	Producing	-
102/01-09-001-25W1/0	Horizontal	Producing	-
103/01-09-001-25W1/0	Horizontal	Producing	-
100/05-09-001-25W1/0	Horizontal	Producing	-
102/05-09-001-25W1/0	Horizontal	Producing	-
103/05-09-001-25W1/0	Horizontal	Producing	-
100/08-09-001-25W1/0	Horizontal	Producing	-
102/08-09-001-25W1/0	Horizontal	Suspended	-
103/08-09-001-25W1/0	Horizontal	Suspended	-
100/10-09-001-25W1/0	Horizontal	Suspended	-
102/10-09-001-25W1/0	Horizontal	Producing	-
103/10-09-001-25W1/0	Horizontal	Suspended	-
100/11-09-001-25W1/0	Horizontal	Producing	-
102/11-09-001-25W1/0	Horizontal	Producing	-
103/11-09-001-25W1/0	Horizontal	Producing	-
104/11-09-001-25W1/0	Horizontal	Producing	-
100/14-09-001-25W1/0	Horizontal	Suspended	-
102/14-09-001-25W1/0	Horizontal	Producing	-
103/14-09-001-25W1/0	Horizontal	Producing	-
100/15-09-001-25W1/0	Horizontal	Producing	-
102/15-09-001-25W1/0	Horizontal	Producing	-
103/15-09-001-25W1/0	Horizontal	Producing	-
100/16-09-001-25W1/0	Horizontal	Producing	-
100/01-15-001-25W1/0	Horizontal	Producing	-
102/01-15-001-25W1/0	Horizontal	Suspended	-
103/01-15-001-25W1/0	Horizontal	Producing	-
100/04-15-001-25W1/0	Vertical	Abandoned Zone	-
100/05-15-001-25W1/0	Vertical	Abandoned	-
102/05-15-001-25W1/0	Horizontal	Producing	-
103/05-15-001-25W1/0	Horizontal	Producing	-
104/05-15-001-25W1/0	Horizontal	Producing	-
100/07-15-001-25W1/0	Horizontal	Suspended	-
102/07-15-001-25W1/2	Horizontal	Producing	-
100/08-15-001-25W1/0	Horizontal	Abandoned Zone	-
102/08-15-001-25W1/0	Horizontal	Producing	-
100/09-15-001-25W1/0	Horizontal	Producing	-
102/09-15-001-25W1/0	Horizontal	Suspended	-
103/09-15-001-25W1/0	Horizontal	Producing	-
100/12-15-001-25W1/0	Horizontal	Producing	-
102/12-15-001-25W1/0	Horizontal	Producing	-
100/13-15-001-25W1/0	Vertical	Abandoned	-
102/13-15-001-25W1/0	Horizontal	Producing	-
103/13-15-001-25W1/0	Horizontal	Producing	-
102/16-15-001-25W1/0	Horizontal	Suspended	-
103/16-15-001-25W1/0	Horizontal	Suspended	-

c) Well List

Waskada Unit No. 22 Well List

<i>UWI</i>	<i>Type</i>	<i>Status</i>	<i>Future Plans</i>
104/16-15-001-25W1/0	Horizontal	Suspended	-
105/16-15-001-25W1/0	Horizontal	Producing	-
100/01-16-001-25W1/0	Vertical	Abandoned Zone	-
102/01-16-001-25W1/0	Horizontal	Abandoned Zone	-
103/01-16-001-25W1/0	Horizontal	Producing	-
104/01-16-001-25W1/0	Horizontal	Producing	-
105/01-16-001-25W1/0	Horizontal	Producing	-
106/01-16-001-25W1/0	Horizontal	Producing	-
107/01-16-001-25W1/3	Horizontal	Abandoned Zone	-
100/02-16-001-25W1/0	Vertical	Producing	-
100/03-16-001-25W1/0	Vertical	Producing	-
100/04-16-001-25W1/0	Vertical	Producing	-
102/04-16-001-25W1/0	Horizontal	Producing	-
103/04-16-001-25W1/0	Horizontal	Producing	-
104/04-16-001-25W1/0	Horizontal	Producing	-
105/04-16-001-25W1/0	Horizontal	Producing	-
106/04-16-001-25W1/0	Horizontal	Producing	-
100/05-16-001-25W1/0	Vertical	Pumping	-
102/05-16-001-25W1/0	Horizontal	Suspended	-
103/05-16-001-25W1/0	Horizontal	Suspended	-
100/06-16-001-25W1/0	Vertical	Abandoned Zone	-
100/08-16-001-25W1/0	Vertical	Producing	-
102/08-16-001-25W1/0	Horizontal	Producing	-
103/08-16-001-25W1/0	Horizontal	Producing	-
104/08-16-001-25W1/0	Horizontal	Producing	-
100/02-17-001-25W1/0	Horizontal	Producing	-
102/02-17-001-25W1/0	Horizontal	Suspended	-
103/02-17-001-25W1/0	Horizontal	Suspended	-
104/02-17-001-25W1/0	Horizontal	Suspended	-
100/03-17-001-25W1/0	Horizontal	Suspended	-
102/03-17-001-25W1/0	Horizontal	Producing	-
103/03-17-001-25W1/0	Horizontal	Suspended	-
100/04-17-001-25W1/0	Horizontal	Producing	-
102/04-17-001-25W1/0	Horizontal	Abandoned Zone	-
103/04-17-001-25W1/0	Horizontal	Abandoned Zone	-
100/06-17-001-25W1/0	Vertical	Abandoned	-
100/07-17-001-25W1/0	Horizontal	Producing	-
102/07-17-001-25W1/0	Horizontal	Suspended	-
103/07-17-001-25W1/0	Horizontal	Suspended	-
100/08-17-001-25W1/0	Vertical	Abandoned	-
100/10-17-001-25W1/0	Vertical	Abandoned	-
102/10-17-001-25W1/0	Horizontal	Suspended	-
103/10-17-001-25W1/0	Horizontal	Producing	-
100/15-17-001-25W1/0	Vertical	Abandoned	-
102/15-17-001-25W1/0	Horizontal	Producing	-
103/15-17-001-25W1/0	Horizontal	Suspended	-

c) Well List

Waskada Unit No. 22 Well List

<i>UWI</i>	<i>Type</i>	<i>Status</i>	<i>Future Plans</i>
104/15-17-001-25W1/0	Horizontal	Producing	-
100/16-17-001-25W1/0	Vertical	Abandoned	-
100/01-20-001-25W1/0	Vertical	Abandoned	-
102/01-20-001-25W1/0	Horizontal	Producing	-
103/01-20-001-25W1/0	Horizontal	Producing	-
100/02-20-001-25W1/2	Vertical	Abandoned	-
102/03-20-001-25W1/0	Horizontal	Suspended	-
100/07-20-001-25W1/0	Vertical	Abandoned	-
102/07-20-001-25W1/0	Horizontal	Suspended	-
103/07-20-001-25W1/0	Horizontal	Suspended	-
104/07-20-001-25W1/0	Horizontal	Suspended	-
100/08-20-001-25W1/0	Vertical	Producing	-
102/08-20-001-25W1/0	Horizontal	Producing	-
103/08-20-001-25W1/0	Horizontal	Producing	-
104/08-20-001-25W1/0	Horizontal	Producing	-
105/08-20-001-25W1/0	Horizontal	Producing	-
100/09-20-001-25W1/0	Vertical	Abandoned Zone	-
100/10-20-001-25W1/0	Vertical	Abandoned Zone	-
100/01-21-001-25W1/0	Vertical	Producing	-
102/01-21-001-25W1/0	Horizontal	Inter-Unit Injector	-
103/01-21-001-25W1/0	Horizontal	Producing	-
104/01-21-001-25W1/0	Horizontal	Inter-Unit Injector	-
100/07-21-001-25W1/0	Vertical	Pumping	-
100/08-21-001-25W1/0	Vertical	Producing	-
102/08-21-001-25W1/0	Horizontal	Inter-Unit Injector	-
103/08-21-001-25W1/0	Horizontal	Producing	-
100/09-21-001-25W1/0	Vertical	Inter-Unit Injector	-
102/09-21-001-25W1/0	Horizontal	Inter-Unit Injector	-
103/09-21-001-25W1/0	Horizontal	Producing	-
100/16-21-001-25W1/0	Vertical	Inter-Unit Injector	-
102/16-21-001-25W1/0	Horizontal	Inter-Unit Injector	-
103/16-21-001-25W1/0	Horizontal	Producing	-
102/02-22-001-25W1/0	Horizontal	Inter-Unit Injector	-
103/02-22-001-25W1/0	Horizontal	Producing	-
104/02-22-001-25W1/0	Horizontal	Suspended	-
100/03-22-001-25W1/0	Vertical	Abandoned	-
100/04-22-001-25W1/0	Vertical	Abandoned	-
102/04-22-001-25W1/0	Horizontal	Producing	-
103/04-22-001-25W1/0	Horizontal	Producing	WIW Conversion
100/05-22-001-25W1/0	Vertical	Abandoned Zone	-
102/05-22-001-25W1/0	Horizontal	Producing	-
103/05-22-001-25W1/0	Horizontal	Producing	WIW Conversion
104/05-22-001-25W1/0	Horizontal	Producing	-
100/06-22-001-25W1/2	Vertical	Abandoned	-
100/07-22-001-25W1/0	Horizontal	Producing	WIW Conversion
102/07-22-001-25W1/0	Horizontal	Producing	-

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<i>UWI</i>	<i>Type</i>	<i>Status</i>	<i>Future Plans</i>
103/07-22-001-25W1/0	Horizontal	Suspended	WIW Conversion
104/07-22-001-25W1/0	Horizontal	Producing	-
100/10-22-001-25W1/0	Horizontal	Producing	-
102/10-22-001-25W1/0	Horizontal	Producing	-
103/10-22-001-25W1/0	Horizontal	Producing	-
100/11-22-001-25W1/0	Horizontal	Producing	-
102/11-22-001-25W1/0	Horizontal	Producing	-
100/14-22-001-25W1/0	Horizontal	Suspended	-
102/14-22-001-25W1/0	Horizontal	Producing	WIW Conversion
103/14-22-001-25W1/0	Horizontal	Producing	-
104/14-22-001-25W1/0	Horizontal	Producing	WIW Conversion
100/15-22-001-25W1/0	Horizontal	Producing	-
102/15-22-001-25W1/0	Horizontal	Producing	-
103/15-22-001-25W1/0	Horizontal	Producing	-
100/11-23-001-25W1/0	Vertical	Abandoned Zone	-
102/12-23-001-25W1/0	Vertical	Commingled	-
103/12-23-001-25W1/0	Horizontal	Producing	-
104/12-23-001-25W1/0	Horizontal	Producing	-
105/12-23-001-25W1/0	Horizontal	Producing	-
100/13-23-001-25W1/0	Horizontal	Producing	-
102/13-23-001-25W1/0	Horizontal	Producing	-
103/13-23-001-25W1/0	Horizontal	Producing	-
102/14-23-001-25W1/2	Vertical	Abandoned Zone	-
100/03-26-001-25W1/0	Horizontal	Producing	-
102/03-26-001-25W1/0	Horizontal	Producing	-
103/03-26-001-25W1/0	Horizontal	Suspended	-