

Waskada Unit No. 22

Waterflood Progress Report 2018

January 1st through December 31st 2018

Prepared for:

Manitoba Industry, Economic Development and Mines

Petroleum Branch

Prepared by:

Tundra Oil and Gas

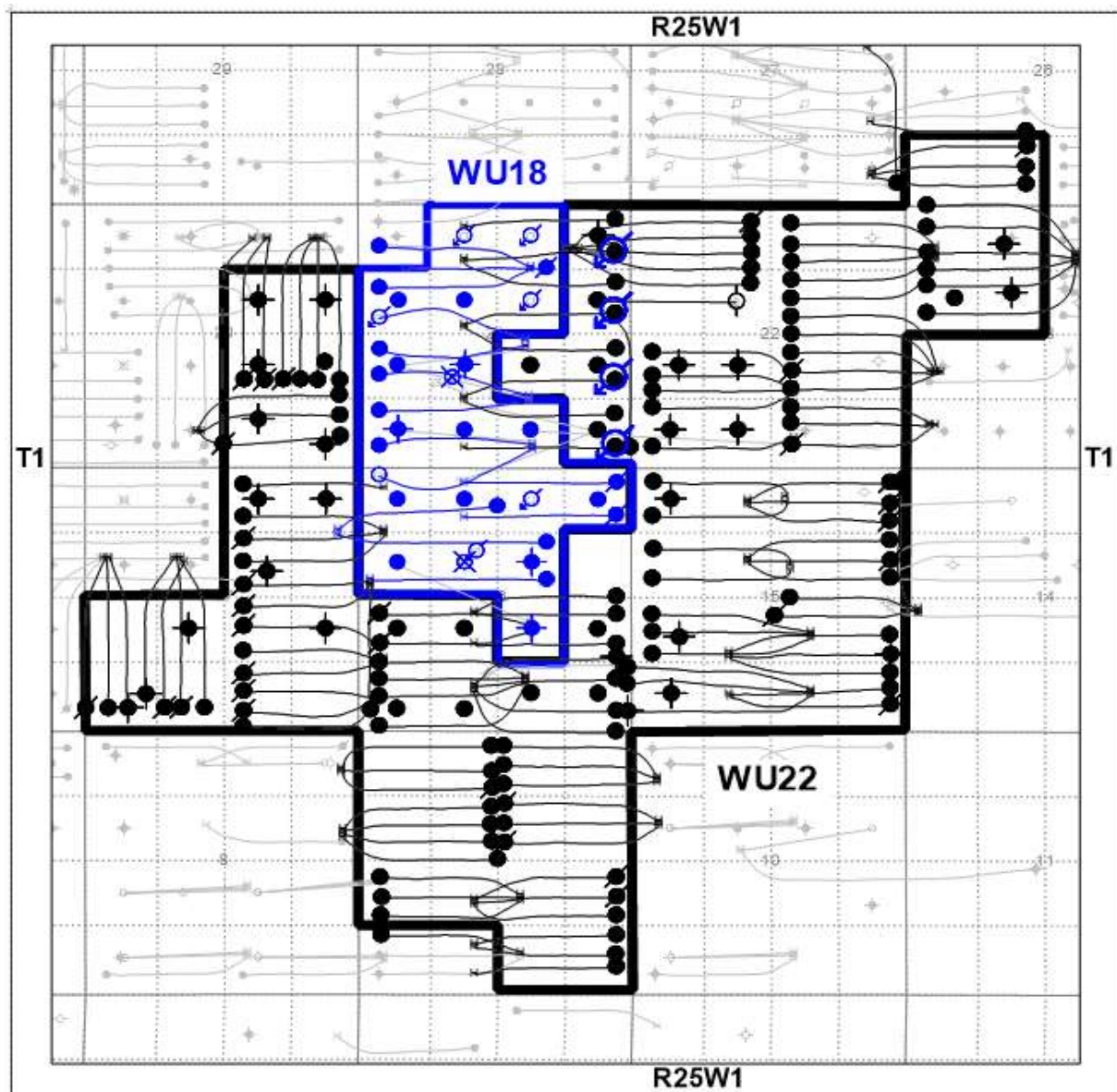
April 5, 2019

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 (20 abandoned, 13 producing) and 134 horizontal wells (36 abandoned/suspended, 97 producing, 1 waiting to be completed) 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 2018 EOR report as per section 73 of the Drilling and Production Regulations.

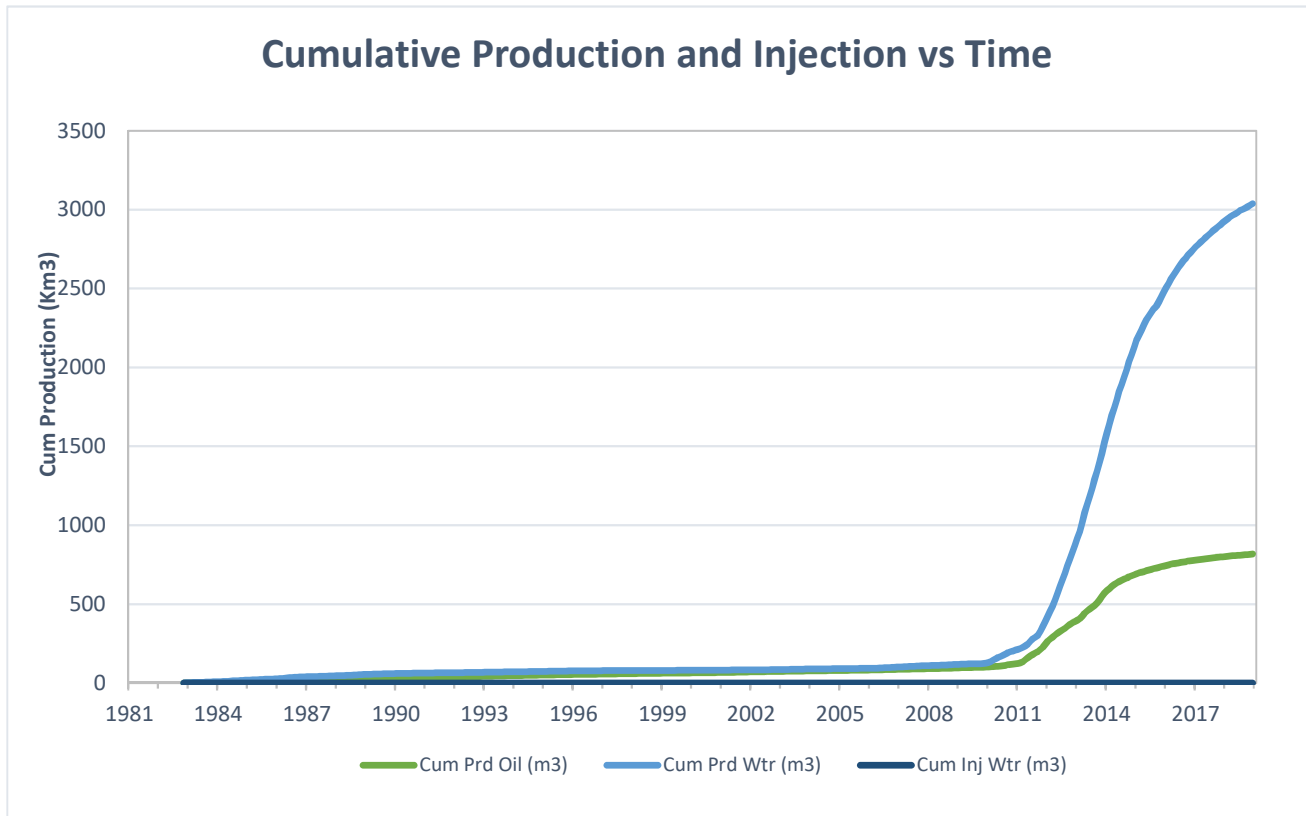
a) Monthly oil and water production rates, injection rate, GOR and WOR

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-2018	52.50	407.37	0.00	7.76	59.11
Feb-2018	53.40	423.75	0.00	7.93	55.17
Mar-2018	53.14	387.88	0.00	7.30	50.08
Apr-2018	48.05	336.15	0.00	7.00	55.71
May-2018	42.63	308.26	0.00	7.23	57.43
Jun-2018	43.87	340.16	0.00	7.75	56
Jul-2018	42.51	336.04	0.00	7.91	55.25
Aug-2018	31.51	229.34	0.00	7.28	73.29
Sep-2018	43.39	279.72	0.00	6.45	56.39
Oct-2018	42.79	281.81	0.00	6.59	57.9
Nov-2018	57.93	310.35	0.00	5.36	44.19
Dec-2018	59.45	313.44	0.00	5.27	40.37

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

2018 PRODUCTION	
Produced Oil (m ³)	17,353
Produced Gas (m ³)	31
Produced Water (m ³)	120,045
Fluid Injected (m ³)	0
CUMULATIVE PRODUCTION	
Produced Oil (m ³)	817,562
Produced Water (m ³)	3,038,125

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	-
103/04-09-001-25W1/0	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	-

c) Well List

Waskada Unit No. 22 Well List

<i>UWI</i>	<i>Type</i>	<i>Status</i>	<i>Future Plans</i>
103/16-15-001-25W1/0	Horizontal	Suspended	-
104/16-15-001-25W1/0	Horizontal	Suspended	-
105/16-15-001-25W1/0	Horizontal	Producing	-
100/01-16-001-25W1/0	Vertical	Producing	-
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	Pumping	-
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	-

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Waskada Unit No. 22 Well List

<i>UWI</i>	<i>Type</i>	<i>Status</i>	<i>Future Plans</i>
103/15-17-001-25W1/0	Horizontal	Suspended	-
104/15-17-001-25W1/0	Horizontal	Producing	-
100/16-17-001-25W1/0	Vertical	Abandoned	-
104/01-18-001-25W1/0	Horizontal	Suspended	-
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	Producing	-
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	Producing	-
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	Abandoned Zone	-
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	Producing	-
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	-
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	-
104/05-22-001-25W1/0	Horizontal	Producing	-
100/06-22-001-25W1/2	Vertical	Abandoned	-

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<i>UWI</i>	<i>Type</i>	<i>Status</i>	<i>Future Plans</i>
100/07-22-001-25W1/0	Horizontal	Producing	-
102/07-22-001-25W1/0	Horizontal	Producing	-
103/07-22-001-25W1/0	Horizontal	Suspended	-
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	Drilled & Cased	-
100/14-22-001-25W1/0	Horizontal	Suspended	-
102/14-22-001-25W1/0	Horizontal	Producing	-
103/14-22-001-25W1/0	Horizontal	Producing	-
104/14-22-001-25W1/0	Horizontal	Producing	-
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	-
100/06-26-001-25W1/0	Horizontal	Producing	-