

SINCLAIR UNIT NO. 13

Waterflood Progress Report 2020

Prepared for:

Manitoba Industry, Economic Development and Mines

Petroleum Branch

Prepared by:



TUNDRA OIL & GAS

Date: 2021-08-26

Introduction

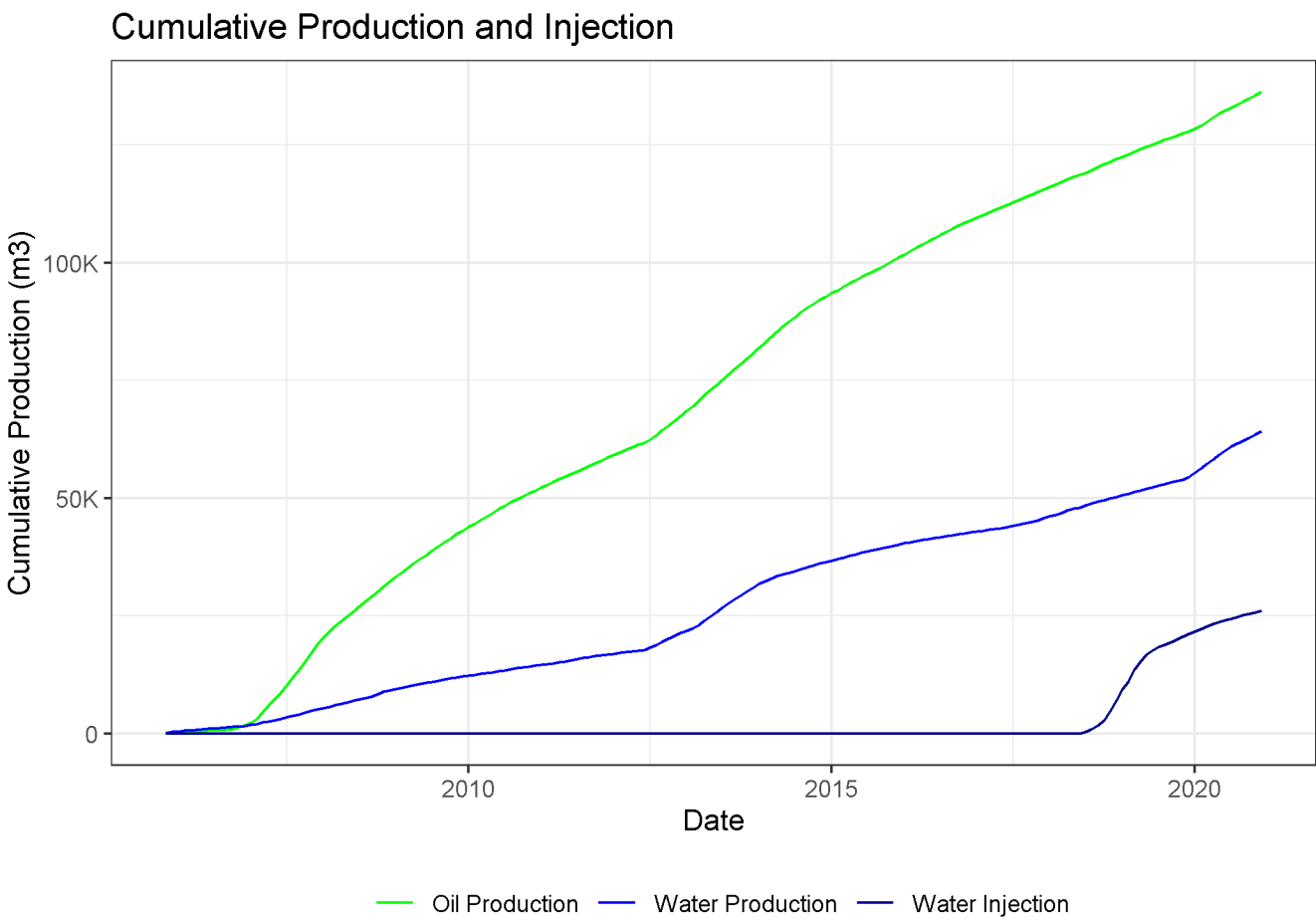
Sinclair Unit No. 13 Enhanced Oil Recovery (EOR) Waterflood Project was approved on March 1, 2015 with Tundra Oil and Gas (Tundra) as Operator. The EOR Unit area contains wells in 24 LSDs in Township 8 & 9 Range 29 W1. The Unit contains 23 wells. 20 producers, 1 injectors, and 2 abandoned/suspended/other.

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

MONTH	Cal Day Oil m3/d	Cal Day Water m3/d	Cal Day Injection m3/d	WOR	GOR
JAN 2020	17.02	27.40	18.45	1.61	0
FEB 2020	22.96	34.99	19.20	1.52	0
MAR 2020	27.92	31.43	17.21	1.13	0
APR 2020	29.23	29.47	14.80	1.01	0
MAY 2020	26.31	31.44	13.68	1.19	0
JUN 2020	20.59	30.66	12.40	1.49	0
JUL 2020	19.48	25.33	11.94	1.30	0
AUG 2020	21.36	21.91	12.06	1.03	0
SEP 2020	22.30	21.37	11.40	0.96	0
OCT 2020	21.98	21.89	11.03	1.00	0
NOV 2020	21.47	21.93	10.33	1.02	0
DEC 2020	21.57	21.73	12.26	1.01	0
Average	22.68	26.63	13.73		

Year summary of produced oil, gas, water and fluid injected

Categories	m3
Oil Production	8,299
Water Production	9,730
Gas Production	0
Water Injection	5,020
Cumulative Oil	136,194
Cumulative Water	64,229
Cumulative Injection	26,178



Monthly Wellhead Pressure

All readings are in kPa

UWI	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Average
102.04-04-009-29W1.00	2,620	3,128	3,400	3,375	3,388	3,436	3,389	3,374	3,371	3,366	3,382	3,630	3,322

Monthly Injected Volumes

All Volumes are in m3

UWI	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Total
102.04-04-009-29W1.00	286	278	267	222	212	186	185	187	171	171	155	190	2,510
Grand Total	286	278	267	222	212	186	185	187	171	171	155	190	2,510

Voidage

All Volumes are in m3 Oil Formation Volume Factor (Rm3/Sm3) = 1.071

MONTH	Oil	Water	Injection	Cumulative Oil	Cumulative Water	Cumulative Injection	VRR	Cumulative VRR
JAN 2020	528	850	572	128,419	55,345	21,731	0.404	0.113
FEB 2020	666	1,014	557	129,085	56,359	22,288	0.322	0.115
MAR 2020	866	973	533	129,951	57,332	22,821	0.280	0.116
APR 2020	878	884	444	130,829	58,216	23,265	0.243	0.117
MAY 2020	816	974	424	131,645	59,190	23,689	0.229	0.118
JUN 2020	618	920	372	132,263	60,110	24,061	0.235	0.119
JUL 2020	604	785	370	132,867	60,895	24,431	0.258	0.120
AUG 2020	662	679	374	133,529	61,574	24,805	0.269	0.121
SEP 2020	669	641	342	134,198	62,215	25,147	0.252	0.122
OCT 2020	681	678	342	134,879	62,893	25,489	0.243	0.123
NOV 2020	644	657	310	135,523	63,550	25,799	0.230	0.124
DEC 2020	670	673	380	136,193	64,223	26,179	0.273	0.125

Workovers

UWI	Date	Description
102.12-33-008-29W1.00	2020-12-19	Rigless Acid Stimulation

Well List

UWI	Type	Status
100.01-33-008-29W1.00	Vertical	Producing
100.02-33-008-29W1.00	Vertical	Producing
100.03-33-008-29W1.00	Vertical	Producing
100.04-33-008-29W1.00	Vertical	Producing
102.04-33-008-29W1.00	Horizontal	Producing
100.05-33-008-29W1.00	Horizontal	Producing
100.07-33-008-29W1.02	Vertical	Producing
100.08-33-008-29W1.00	Vertical	Producing
100.09-33-008-29W1.00	Vertical	Producing
100.10-33-008-29W1.02	Vertical	Producing
100.12-33-008-29W1.00	Vertical	Producing
102.12-33-008-29W1.00	Horizontal	Producing
102.13-33-008-29W1.00	Horizontal	Producing
100.15-33-008-29W1.02	Vertical	Producing
100.16-33-008-29W1.00	Vertical	Commingled
100.01-04-009-29W1.00	Vertical	Producing
100.02-04-009-29W1.00	Vertical	Producing
100.04-04-009-29W1.00	Vertical	Producing
102.04-04-009-29W1.00	Horizontal	Injection
102.05-04-009-29W1.00	Horizontal	Producing
103.05-04-009-29W1.00	Horizontal	Producing
100.07-04-009-29W1.00	Vertical	Producing
100.08-04-009-29W1.00	Vertical	Producing