

SINCLAIR UNIT NO. 18

Waterflood Progress Report 2020

Prepared for:

Manitoba Industry, Economic Development and Mines

Petroleum Branch

Prepared by:



TUNDRA OIL & GAS

Date: 2021-08-26

Introduction

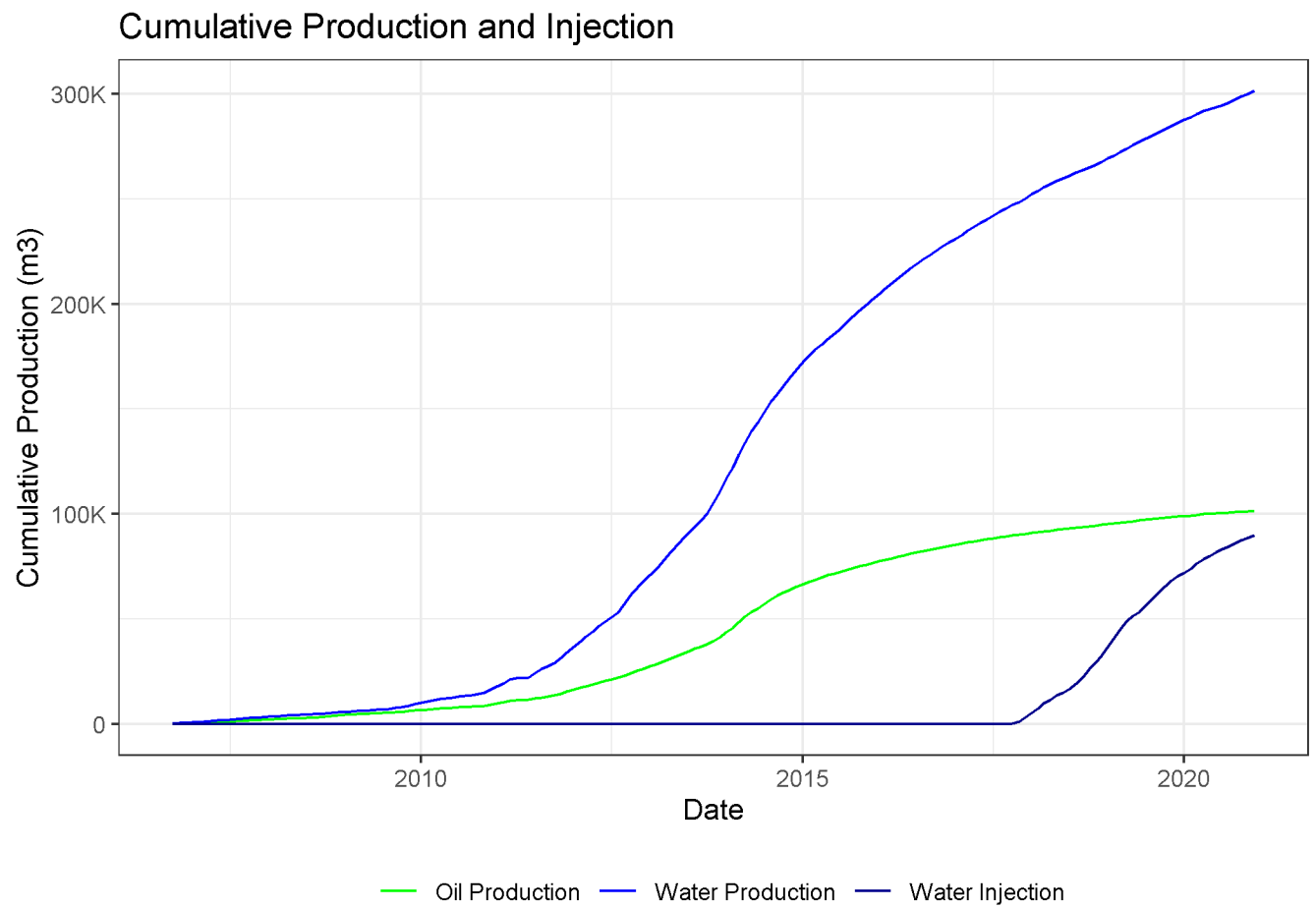
Sinclair Unit No. 18 Enhanced Oil Recovery (EOR) Waterflood Project was approved under Waterflood Order No. 59 effective September 1, 2017 with Tundra Oil and Gas (Tundra) as Operator. The EOR project area contains wells in 2 Sections in Township 7, Range 29 W1. The Unit contains 19 wells. 12 producers, 4 injectors, and 3 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	8.01	44.75	45.45	5.59	0
FEB 2020	8.75	45.95	70.59	5.25	0
MAR 2020	9.46	47.56	77.32	5.03	0
APR 2020	12.85	45.14	69.70	3.51	0
MAY 2020	7.13	37.45	56.16	5.25	0
JUN 2020	6.06	23.29	52.20	3.84	0
JUL 2020	5.44	31.49	48.23	5.79	0
AUG 2020	5.34	34.10	45.65	6.39	0
SEP 2020	6.64	50.96	46.40	7.67	0
OCT 2020	6.88	47.04	44.81	6.84	0
NOV 2020	6.96	46.37	41.33	6.66	0
DEC 2020	7.32	42.55	40.52	5.81	0
Average	7.57	41.39	53.20		

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

Categories	m3
Oil Production	2,766
Water Production	15,138
Gas Production	0
Water Injection	19,438
Cumulative Oil	101,539
Cumulative Water	301,278
Cumulative Injection	89,912



Monthly Wellhead Pressure

All readings are in kPa

UWI	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Average
100.06-23-007-29W1.00	6,308	2,064	6,331	7,329	7,206	6,567	6,569	6,572	6,566	6,569	6,569	6,568	6,268
100.11-23-007-29W1.00	6,467	6,469	6,467	6,458	6,460	6,473	6,475	6,427	6,473	6,472	6,466	6,484	6,466
102.07-21-007-29W1.00	3,323	3,327	3,977	3,985	3,983	3,973	3,925	3,976	3,963	3,970	3,980	4,021	3,867
102.10-21-007-29W1.00	1,730	697	2,316	2,577	2,641	2,972	2,978	2,982	2,983	2,971	2,985	2,975	2,567

Monthly Injected Volumes

All Volumes are in m3

UWI	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Total
100.06-23-007-29W1.00	325	552	566	484	450	427	432	414	388	389	364	370	5,161
100.11-23-007-29W1.00	411	335	308	260	249	212	199	188	177	178	164	116	2,797
102.07-21-007-29W1.00	329	598	659	552	519	536	494	472	438	437	409	563	6,006
102.10-21-007-29W1.00	344	562	864	795	523	391	370	341	389	385	303	207	5,474
Grand Total	1,409	2,047	2,397	2,091	1,741	1,566	1,495	1,415	1,392	1,389	1,240	1,256	19,438

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	248	1,388	1,409	99,019	287,531	71,883	0.852	0.183
FEB 2020	254	1,332	2,047	99,273	288,863	73,930	1.276	0.187
MAR 2020	293	1,474	2,397	99,566	290,337	76,327	1.341	0.192
APR 2020	385	1,354	2,091	99,951	291,691	78,418	1.184	0.197
MAY 2020	221	1,161	1,741	100,172	292,852	80,159	1.246	0.200
JUN 2020	182	698	1,566	100,354	293,550	81,725	1.754	0.204
JUL 2020	169	976	1,495	100,523	294,526	83,220	1.292	0.207
AUG 2020	166	1,057	1,415	100,689	295,583	84,635	1.146	0.210
SEP 2020	199	1,528	1,392	100,888	297,111	86,027	0.799	0.212
OCT 2020	214	1,458	1,389	101,102	298,569	87,416	0.823	0.215
NOV 2020	209	1,392	1,240	101,311	299,961	88,656	0.767	0.217
DEC 2020	227	1,319	1,256	101,538	301,280	89,912	0.804	0.219

Workovers

UWI	Date	Description
-----	------	-------------

Well List

UWI	Type	Status
100.02-21-007-29W1.00	Horizontal	Producing
100.07-21-007-29W1.00	Vertical	Producing
102.07-21-007-29W1.00	Horizontal	Injection
100.10-21-007-29W1.00	Vertical	Producing
102.10-21-007-29W1.00	Horizontal	Injection
103.10-21-007-29W1.00	Horizontal	Producing
100.15-21-007-29W1.00	Vertical	Producing
102.15-21-007-29W1.00	Horizontal	Producing
100.02-22-007-29W1.00	Horizontal	Producing
100.03-23-007-29W1.00	Horizontal	Producing
100.04-23-007-29W1.00	Vertical	Producing
100.06-23-007-29W1.00	Horizontal	Injection
100.11-23-007-29W1.00	Horizontal	Injection
102.11-23-007-29W1.00	Horizontal	Producing
100.12-23-007-29W1.00	Vertical	Producing
100.14-23-007-29W1.00	Horizontal	Producing
100.08-06-009-28W1.00	Horizontal	Producing
100.01-01-009-29W1.00	Horizontal	Producing
100.08-01-009-29W1.00	Horizontal	Producing