

SINCLAIR UNIT NO. 5 - WATERFLOOD NO. 21

Waterflood Progress Report 2020

Prepared for:

Manitoba Industry, Economic Development and Mines

Petroleum Branch

Prepared by:



TUNDRA OIL & GAS

Date: 2021-08-26

Introduction

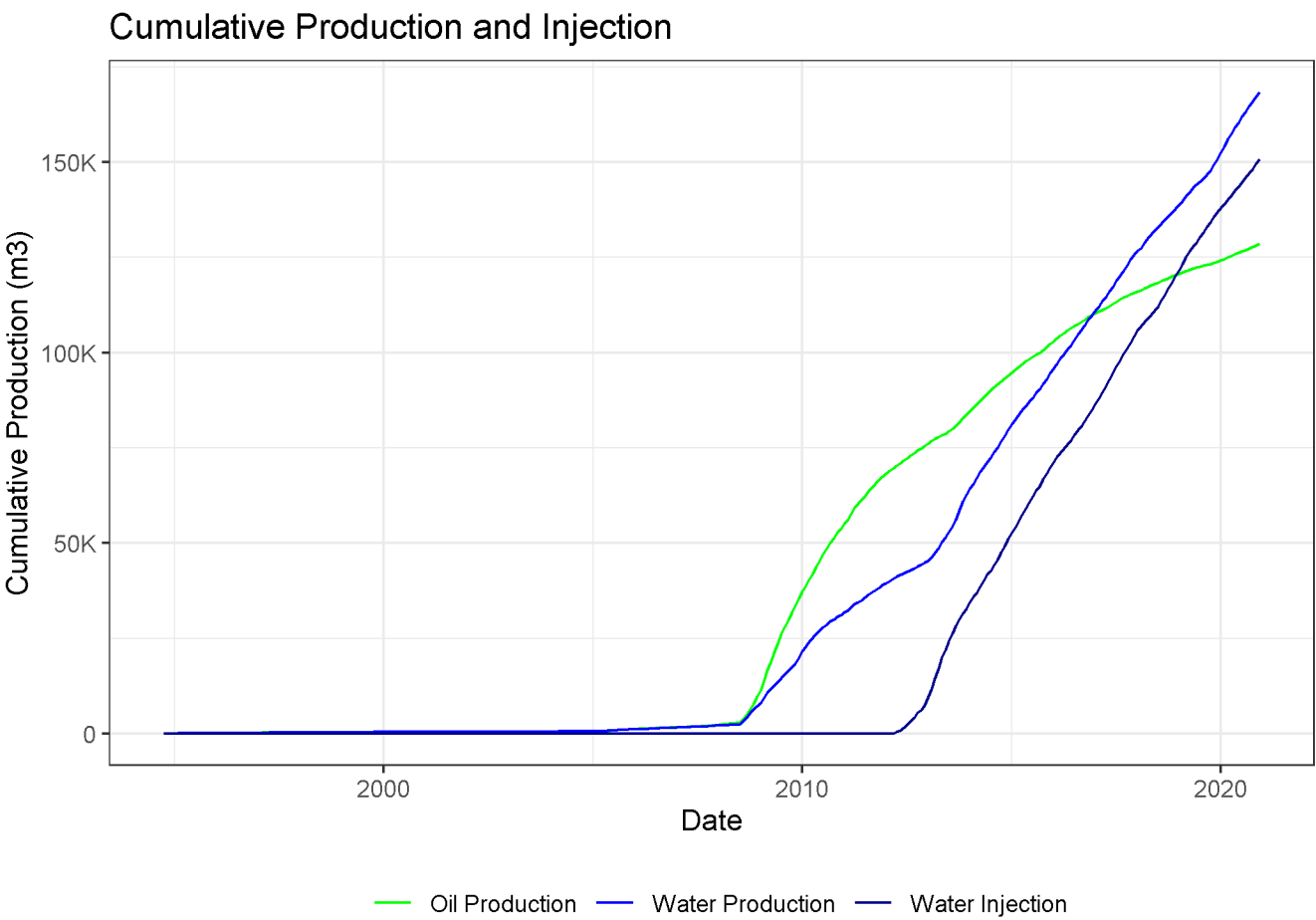
Sinclair Unit No. 5 Enhanced Oil Recovery (EOR) Waterflood Project was approved under Waterflood Order No. 21 effective October 1, 2010 with Tundra Oil and Gas (Tundra) as Operator. The EOR project area contains wells within Section 6 in Township 8, Range 28 W1. The Unit contains 15 wells. 9 producers, 3 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	9.80	52.79	34.74	5.39	0
FEB 2020	15.18	62.42	36.48	4.11	0
MAR 2020	14.90	56.07	37.39	3.76	0
APR 2020	12.54	49.77	37.87	3.97	0
MAY 2020	12.52	48.30	36.26	3.86	0
JUN 2020	12.04	47.18	36.07	3.92	0
JUL 2020	11.95	45.46	37.52	3.80	0
AUG 2020	12.54	47.79	39.13	3.81	0
SEP 2020	11.96	40.59	37.27	3.39	0
OCT 2020	13.18	42.57	38.06	3.23	0
NOV 2020	13.06	42.55	41.17	3.26	0
DEC 2020	13.09	39.79	42.87	3.04	0
Average	12.73	47.94	37.90		

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

Categories	m3
Oil Production	4,657
Water Production	17,528
Gas Production	0
Water Injection	13,874
Cumulative Oil	128,509
Cumulative Water	168,337
Cumulative Injection	150,772



Monthly Wellhead Pressure

All readings are in kPa

UWI	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Average
102.01-06-008-28W1.00	3,889	3,740	3,827	3,910	3,497	3,502	3,375	3,657	3,703	3,584	4,358	5,104	3,846
102.08-06-008-28W1.00	6,543	6,544	6,557	6,536	6,403	6,466	6,517	6,444	6,482	6,407	6,544	6,531	6,498
102.16-06-008-28W1.00	2,168	768	576	275	49	20	-57	-9	205	17	265	24	358

Monthly Injected Volumes

All Volumes are in m3

UWI	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Total
102.01-06-008-28W1.00	601	568	611	593	583	558	595	621	582	607	683	760	7,362
102.08-06-008-28W1.00	213	217	244	246	250	251	271	283	246	271	260	268	3,020
102.16-06-008-28W1.00	263	273	304	297	291	273	297	309	290	302	292	301	3,492
Grand Total	1,077	1,058	1,159	1,136	1,124	1,082	1,163	1,213	1,118	1,180	1,235	1,329	13,874

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	304	1,636	1,077	124,154	152,443	137,975	0.549	0.483
FEB 2020	440	1,810	1,058	124,594	154,253	139,033	0.464	0.483
MAR 2020	462	1,738	1,159	125,056	155,991	140,192	0.519	0.484
APR 2020	376	1,493	1,136	125,432	157,484	141,328	0.599	0.484
MAY 2020	388	1,498	1,124	125,820	158,982	142,452	0.587	0.485
JUN 2020	361	1,415	1,082	126,181	160,397	143,534	0.601	0.486
JUL 2020	370	1,409	1,163	126,551	161,806	144,697	0.644	0.487
AUG 2020	389	1,482	1,213	126,940	163,288	145,910	0.639	0.488
SEP 2020	359	1,217	1,118	127,299	164,505	147,028	0.698	0.489
OCT 2020	409	1,319	1,180	127,708	165,824	148,208	0.672	0.490
NOV 2020	392	1,276	1,235	128,100	167,100	149,443	0.728	0.491
DEC 2020	406	1,234	1,329	128,506	168,334	150,772	0.796	0.493

Workovers

UWI	Date	Description
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Well List

UWI	Type	Status
100.01-06-008-28W1.00	Horizontal	Producing
102.01-06-008-28W1.00	Horizontal	Injection
103.01-06-008-28W1.00	Vertical	Producing
100.08-06-008-28W1.00	Horizontal	Producing
102.08-06-008-28W1.00	Horizontal	Injection
100.09-06-008-28W1.00	Vertical	Suspended
102.09-06-008-28W1.00	Horizontal	Producing
100.12-06-008-28W1.00	Vertical	Suspended
100.15-06-008-28W1.00	Horizontal	Producing
100.16-06-008-28W1.00	Horizontal	Producing
102.16-06-008-28W1.00	Horizontal	Injection
100.01-34-008-28W1.00	Horizontal	Producing
100.16-34-008-28W1.00	Horizontal	Producing
100.08-26-009-28W1.00	Horizontal	Producing
100.12-28-009-28W1.02	Vertical	Producing