


EWART UNIT NO. 2
Waterflood Progress Report 2020

Prepared for:
Manitoba Industry, Economic Development and Mines
Petroleum Branch

Prepared by:
 **TUNDRA OIL & GAS**

Date: 2021-08-26

Introduction

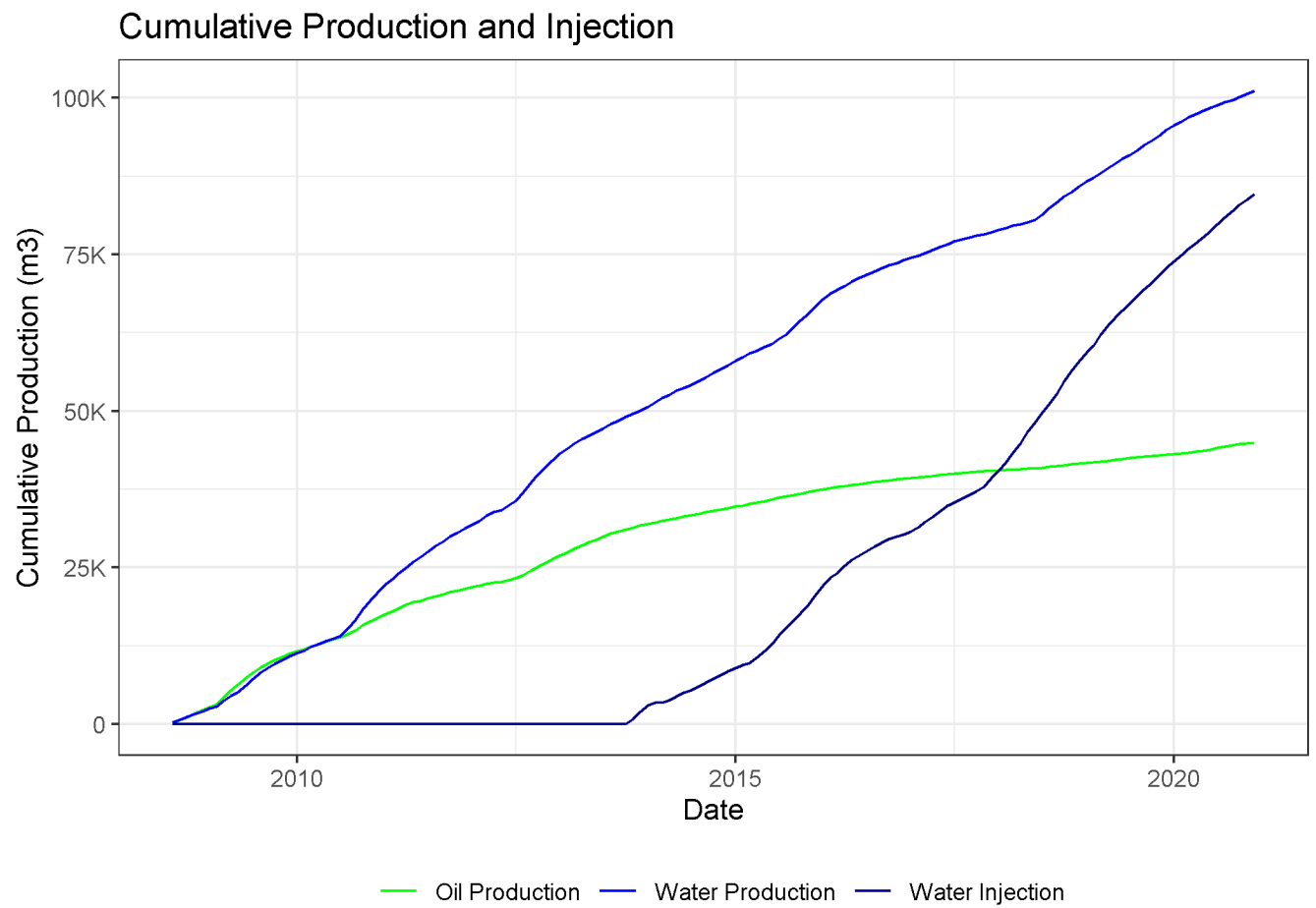
Ewart Unit No. 2 Enhance Oil Recovery (EOR) Waterflood Project was approved under Waterflood Order No. 29 effective August 1, 2013 with Tundra Oil and Gas (Tundra) as Operator. The Unit area contains wells in 16 LSDs in Township 7 Range 28 W1. The Unit contains 8 wells. 4 producers, 3 injectors, and 1 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	3.34	22.43	34.94	6.72	0
FEB 2020	3.26	21.20	32.52	6.50	0
MAR 2020	3.27	21.63	31.71	6.61	0
APR 2020	4.45	17.78	31.97	4.00	0
MAY 2020	5.08	17.06	29.90	3.36	0
JUN 2020	6.70	15.81	32.87	2.36	0
JUL 2020	8.02	13.79	33.94	1.72	0
AUG 2020	7.95	14.41	35.74	1.81	0
SEP 2020	7.92	13.24	35.10	1.67	0
OCT 2020	5.83	14.39	31.58	2.47	0
NOV 2020	4.04	15.48	27.93	3.83	0
DEC 2020	3.21	16.37	27.26	5.10	0
Average	5.26	16.97	32.12		

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

Categories	m3
Oil Production	1,925
Water Production	6,206
Gas Production	0
Water Injection	11,756
Cumulative Oil	45,000
Cumulative Water	101,110
Cumulative Injection	84,619



Monthly Wellhead Pressure

All readings are in kPa

UWI	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Average
100.05-29-007-28W1.00	2,979	2,894	2,983	2,980	2,981	2,990	2,990	3,379	3,980	3,980	3,985	3,982	3,342
100.12-29-007-28W1.00	6,065	5,929	5,976	4,783	4,798	5,966	6,081	6,123	6,115	6,248	6,543	6,608	5,936
102.05-29-007-28W1.00	5,842	5,766	5,947	5,966	5,964	5,907	5,942	5,949	5,959	6,036	4,629	4,174	5,673

Monthly Injected Volumes

All Volumes are in m3

UWI	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Total
100.05-29-007-28W1.00	269	226	210	201	193	254	238	315	313	277	253	247	2,996
100.12-29-007-28W1.00	369	323	337	328	317	318	373	364	345	384	400	402	4,260
102.05-29-007-28W1.00	445	394	436	430	417	414	441	429	395	318	185	196	4,500
Grand Total	1,083	943	983	959	927	986	1,052	1,108	1,053	979	838	845	11,756

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	103	695	1,083	43,176	95,600	73,946	1.345	0.521
FEB 2020	95	615	943	43,271	96,215	74,889	1.316	0.525
MAR 2020	101	671	983	43,372	96,886	75,872	1.262	0.529
APR 2020	133	533	959	43,505	97,419	76,831	1.420	0.534
MAY 2020	158	529	927	43,663	97,948	77,758	1.328	0.537
JUN 2020	201	474	986	43,864	98,422	78,744	1.430	0.542
JUL 2020	248	427	1,052	44,112	98,849	79,796	1.519	0.546
AUG 2020	246	447	1,108	44,358	99,296	80,904	1.560	0.551
SEP 2020	238	397	1,053	44,596	99,693	81,957	1.615	0.556
OCT 2020	181	446	979	44,777	100,139	82,936	1.530	0.560
NOV 2020	121	464	838	44,898	100,603	83,774	1.412	0.563
DEC 2020	100	507	845	44,998	101,110	84,619	1.376	0.567

Workovers

UWI	Date	Description
100.13-29-007-28W1.00	2020-12-17	Re-activation

Well List

UWI	Type	Status
100.01-29-007-28W1.00	Horizontal	Producing
100.05-29-007-28W1.00	Horizontal	Injection
102.05-29-007-28W1.00	Horizontal	Injection
100.08-29-007-28W1.00	Horizontal	Producing
102.09-29-007-28W1.00	Horizontal	Producing
100.10-29-007-28W1.00	Vertical	Drilled & Cased
100.12-29-007-28W1.00	Horizontal	Injection
100.13-29-007-28W1.00	Horizontal	Producing