


DALY UNIT NO. 4 - PM 53
Waterflood Progress Report 2020

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

Prepared by:

The logo for Tundra Oil & Gas features a stylized circular emblem on the left. This emblem is composed of several concentric, curved lines in shades of gold and black, creating a sense of motion or a stylized 'C' shape. To the right of this emblem, the words "TUNDRA OIL & GAS" are written in a dark blue, serif, all-caps font.

TUNDRA OIL & GAS

Date: 2021-08-26

Introduction

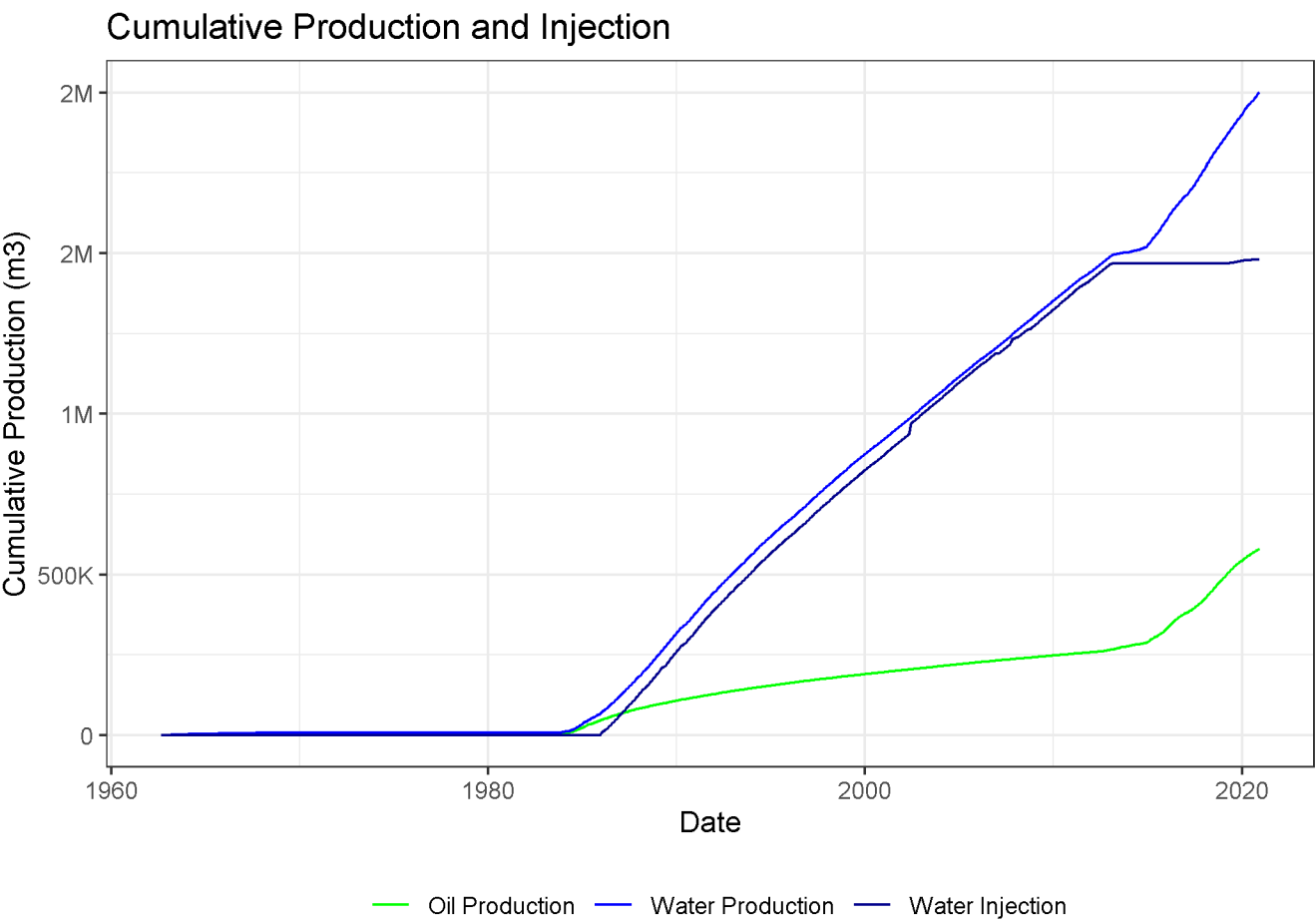
Daly Unit No.4 Enhanced Oil Recovery (EOR) Waterflood Project was approved under Board Order No. PM 65. Daly Unit No. 4 was acquired from Zargon Oil & Gas Ltd. on June 1, 2012 with Tundra Oil and Gas as the new Operator. The EOR project area contains wells over 52 LSDs in Township 9 and 10, Range 28W1. The Unit contains 86 wells. 40 producers, 1 injectors, and 45 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	121.73	222.90	33.98	1.83	0
FEB 2020	116.35	241.51	36.27	2.08	0
MAR 2020	128.81	266.56	21.84	2.07	0
APR 2020	126.02	228.71	10.21	1.81	0
MAY 2020	116.33	162.31	9.55	1.40	0
JUN 2020	109.87	156.79	9.33	1.43	0
JUL 2020	102.70	184.94	9.58	1.80	0
AUG 2020	103.93	182.62	9.94	1.76	0
SEP 2020	97.93	190.12	9.84	1.94	0
OCT 2020	104.56	226.86	9.80	2.17	0
NOV 2020	94.06	195.62	9.70	2.08	0
DEC 2020	91.89	173.41	9.91	1.89	0
Average	109.52	202.70	15.00		

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

Categories	m3
Oil Production	40,081
Water Production	74,148
Gas Production	0
Water Injection	5,467
Cumulative Oil	580,328
Cumulative Water	2,000,222
Cumulative Injection	1,480,532



Monthly Wellhead Pressure

All readings are in kPa

UWI	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Average
104.09-26-009-28W1.00	-93	-92	-92	-89	-92	-92	-65	-71	-86	-85	-30	-80	-81

Monthly Injected Volumes

All Volumes are in m3

UWI	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Total
104.09-26-009-28W1.00	1,054	1,052	677	306	296	280	297	308	295	304	291	307	5,467
Grand Total	1,054	1,052	677	306	296	280	297	308	295	304	291	307	5,467

Voidage

All Volumes are in m3 Oil Formation Volume Factor (Rm3/Sm3) = 1.05								
MONTH	Oil	Water	Injection	Cumulative Oil	Cumulative Water	Cumulative Injection	VRR	Cumulative VRR
JAN 2020	3,774	6,910	1,054	544,020	1,932,999	1,476,120	0.097	0.589
FEB 2020	3,375	7,005	1,052	547,395	1,940,004	1,477,172	0.100	0.587
MAR 2020	3,993	8,262	677	551,388	1,948,266	1,477,849	0.054	0.585
APR 2020	3,781	6,861	306	555,169	1,955,127	1,478,155	0.028	0.582
MAY 2020	3,606	5,032	296	558,775	1,960,159	1,478,451	0.034	0.580
JUN 2020	3,296	4,704	280	562,071	1,964,863	1,478,731	0.034	0.579
JUL 2020	3,183	5,733	297	565,254	1,970,596	1,479,028	0.033	0.577
AUG 2020	3,222	5,662	308	568,476	1,976,258	1,479,336	0.034	0.575
SEP 2020	2,938	5,704	295	571,414	1,981,962	1,479,631	0.034	0.573
OCT 2020	3,242	7,032	304	574,656	1,988,994	1,479,935	0.029	0.571
NOV 2020	2,822	5,869	291	577,478	1,994,863	1,480,226	0.033	0.569
DEC 2020	2,849	5,376	307	580,327	2,000,239	1,480,533	0.037	0.567

Workovers

UWI	Date	Description
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Well List

UWI	Type	Status
100.02-25-009-28W1.00	Vertical	Abandoned Zone
100.03-25-009-28W1.00	Vertical	Abandoned Zone
100.06-25-009-28W1.00	Vertical	Abandoned Zone
100.07-25-009-28W1.00	Vertical	Abandoned Zone
100.10-25-009-28W1.00	Vertical	Abandoned Zone
100.11-25-009-28W1.00	Vertical	Abandoned Zone
100.12-25-009-28W1.00	Vertical	Abandoned Zone
100.13-25-009-28W1.00	Vertical	Abandoned Zone
100.09-26-009-28W1.00	Vertical	Abandoned Zone
103.09-26-009-28W1.00	Horizontal	Producing
104.09-26-009-28W1.00	Horizontal	Injection
100.10-26-009-28W1.00	Vertical	Producing
100.15-26-009-28W1.00	Vertical	Producing
100.16-26-009-28W1.00	Vertical	Producing
103.16-26-009-28W1.00	Horizontal	Producing
104.16-26-009-28W1.00	Horizontal	Producing
105.16-26-009-28W1.00	Horizontal	Producing
100.07-27-009-28W1.00	Vertical	Abandoned
100.08-27-009-28W1.00	Vertical	Abandoned Zone
100.09-27-009-28W1.00	Vertical	Producing
100.10-27-009-28W1.00	Vertical	Abandoned Zone
100.11-27-009-28W1.00	Vertical	Producing
100.14-27-009-28W1.00	Vertical	Abandoned Zone
100.15-27-009-28W1.00	Vertical	Abandoned Zone
102.15-27-009-28W1.00	Vertical	Injection
100.16-27-009-28W1.00	Vertical	Producing
100.01-34-009-28W1.00	Vertical	Producing
100.02-34-009-28W1.00	Vertical	Producing
100.03-34-009-28W1.00	Vertical	Abandoned Zone
102.03-34-009-28W1.00	Horizontal	Producing
103.03-34-009-28W1.00	Horizontal	Producing
100.06-34-009-28W1.00	Vertical	Abandoned Zone
102.06-34-009-28W1.00	Horizontal	Producing
100.07-34-009-28W1.00	Vertical	Producing
100.09-34-009-28W1.00	Vertical	Abandoned Zone
100.01-35-009-28W1.00	Vertical	Abandoned Zone
102.01-35-009-28W1.00	Vertical	Abandoned
100.02-35-009-28W1.00	Vertical	Producing
102.02-35-009-28W1.00	Horizontal	Producing
100.03-35-009-28W1.00	Vertical	Abandoned Zone
100.04-35-009-28W1.00	Vertical	Producing
100.05-35-009-28W1.00	Vertical	Abandoned
100.05-35-009-28W1.02	Vertical	Abandoned Zone

UWI	Type	Status
100.06-35-009-28W1.00	Vertical	Abandoned
100.07-35-009-28W1.00	Vertical	Injection
102.07-35-009-28W1.00	Horizontal	Producing
100.08-35-009-28W1.00	Vertical	Abandoned Zone
100.09-35-009-28W1.00	Vertical	Producing
102.09-35-009-28W1.00	Horizontal	Suspended
100.10-35-009-28W1.00	Vertical	Producing
103.10-35-009-28W1.00	Horizontal	Producing
104.10-35-009-28W1.00	Horizontal	Producing
105.10-35-009-28W1.00	Horizontal	Producing
100.11-35-009-28W1.00	Vertical	Abandoned Zone
100.12-35-009-28W1.00	Vertical	Abandoned
100.12-35-009-28W1.02	Vertical	Abandoned Zone
100.13-35-009-28W1.00	Vertical	Producing
102.13-35-009-28W1.00	Horizontal	Producing
100.14-35-009-28W1.00	Vertical	Producing
102.14-35-009-28W1.00	Dir/Dev	Injection
100.15-35-009-28W1.00	Vertical	Producing
102.15-35-009-28W1.00	Horizontal	Producing
103.15-35-009-28W1.00	Horizontal	Producing
100.16-35-009-28W1.00	Vertical	Producing
102.16-35-009-28W1.00	Dir/Dev	Injection
100.05-36-009-28W1.00	Vertical	Abandoned Zone
102.05-36-009-28W1.00	Horizontal	Producing
100.11-36-009-28W1.00	Vertical	Abandoned Zone
100.12-36-009-28W1.00	Vertical	Producing
100.13-36-009-28W1.00	Vertical	Abandoned Zone
102.01-05-009-29W1.02	Horizontal	Producing
103.01-05-009-29W1.00	Horizontal	Producing
102.08-05-009-29W1.00	Horizontal	Producing
103.08-05-009-29W1.02	Horizontal	Producing
103.09-05-009-29W1.00	Horizontal	Producing
104.09-05-009-29W1.00	Horizontal	Producing
102.16-05-009-29W1.00	Horizontal	Producing
103.16-05-009-29W1.00	Horizontal	Producing
100.04-01-010-28W1.00	Vertical	Abandoned Zone
100.01-02-010-28W1.00	Vertical	Producing
102.01-02-010-28W1.00	Horizontal	Producing
100.02-02-010-28W1.00	Vertical	Producing
102.02-02-010-28W1.00	Horizontal	Producing
103.02-02-010-28W1.00	Horizontal	Producing
100.03-02-010-28W1.00	Vertical	Abandoned Zone
100.04-02-010-28W1.00	Vertical	Producing