Daly Unit #13

2016 Annual EOR Report

2016 Update

Figure 1 shows the production history of Daly Unit #13.

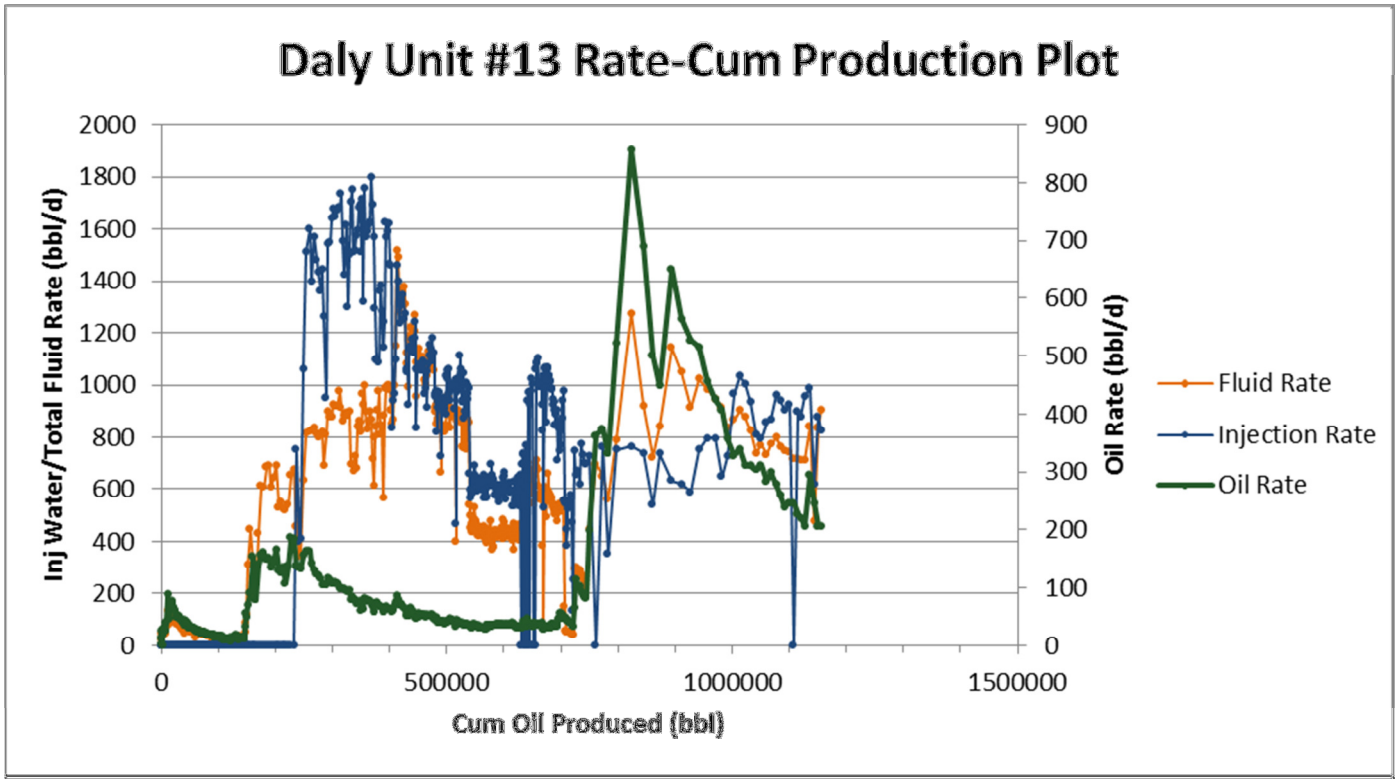

Figure 1: Daly Unit #13 – Production History

In 2016 oil production from the Daly Unit #13 was 36.4 m^3/d (229 bbl/d), totaling 13.3 10^3m^3 (83.7 mbbl). Annual production declined 29.7% from 2015 to 2016, it is hoped that implementing a waterflood will reduce the unit decline. Cumulative oil production from the Daly Unit #13 was 182.9 10^3m^3 (1.15 mmbbl) at the end of 2016. In December 2016, there were 20 active oil producers and one disposal well.

Historically, the unit produced through vertical wells completed in the Lodgepole formation. The first well was drilled in 1964, then in 1965 another two wells were drilled. Further development did not occur until 1984, and between 1984 and 1986 14 additional vertical wells had been drilled. In 1986 a disposal well was implemented to handle the water production in the unit. Over time some of the wells were deepened to the Bakken formation, some of the Lodgepole zones being abandoned, others commingled with the Bakken. In 2013 and 2014, Corex continued to develop the unit

through horizontal multistage fractured wells. Currently, the unit has twelve horizontal wells producing out of the Lodgepole formation. After several years of primary production and pressure depletion it was deemed beneficial to implement a waterflood. The first injector conversions are slated for 2017.

Water disposal in 2016 in the Daly Unit #13 was 130.7 m^3/d (822 bbl/d), totaling 783 10^3m^3 (4,925 mbbl). Water was disposed into one well (100/08-36-009-29W1/00). The producing WOR of the unit is 2.4 m^3/m^3.

2016 Reservoir Pressure Surveys

In 2016, no pressure surveys were conducted in Daly Unit #13. Recent pressures taken within the unit are below:

Unit	UWI	License	Test Type	Date of Pressure	Duration of SI (days)	Datum BHP (kPaa)
Daly Unit #13	103/04-25-009-29W1/00	9660	BH BU	3/3/2014	27	7,575
Daly Unit #13	100/08-36-009-29W1/00	3616	Surface Recorder	8/23/2014	1	8,396

The estimated initial reservoir pressure for the Lodgepole is 8,200 kPaa, which is slightly over pressure. As the Lodgepole formation is quite large, with multiple oil bearing zones the pressures could vary with depth within the Lodgepole. However, the majority of the production out of the Lodgepole is out of only one member, as are the pressures that were taken. The pressures taken in 2014 are close to the estimated initial reservoir pressure. Due to the inter well spacing and the length of the production period it is likely that the current reservoir pressure has been depleted and is lower than the initial reservoir pressure. Due to the low permeability of the reservoir rock, obtaining representative buildup pressures is quite challenging and unlikely to be accurate in any way.

2016 Well Servicing

UWI	Unit	Licence	Operation	Date	Objective
102/01-36-009-29W1/00	DU #13	9437	Install Compressor	3-Aug-16	
102/12-25-009-29W1/00	DU #13	9714	Bridge Plug	2-Sep-16	
102/04-25-009-29W1/00	DU #13	9659	Pump Repair	29-Sep-16	
103/01-36-009-29W1/00	DU #13	9438	Pipelines	15-Nov-16	
103/01-36-009-29W1/00	DU #13	9438	Injection Conversion	1-Dec-16	
103/08-36-009-29W1/00	DU #13	9781	Pump Repair	5-Dec-16	
103/13-25-009-29W1/00	DU #13	9712	Injection Conversion	1-Dec-16	
103/05-25-009-29W1/00	DU #13	9716	Install Compressor	3-Aug-16	
103/04-25-009-29W1/00	DU #13	9660	Pump Repair	5-Aug-16	
103/04-25-009-29W1/00	DU #13	9660	Install Compressor	9-Aug-16	Install Compressor
103/12-25-009-29W1/00	DU #13	9715	Pump Repair	14-Nov-16	
103/12-25-009-29W1/00	DU #13	9715	Injection Conversion	1-Dec-16	

Waterflood Development

Present plans are to convert two wells to injection in late Q1 2017, with a third well being converted in Q3 2017. The implementation of the waterflood with these conversions will be monitored and managed, with potential future injector conversions down the road. Injection water will be sourced from 100/03-32-009-28W1/00 then filtered and treated prior to injection.

Pending success of the first phase of development further horizontal wells will be converted to injection and a full field waterflood will be underway.