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DIVISION OF OIL AND GAS

January 31, 2018

Ms. Chantal Walsh, Director Alaska Division of Oil and Gas 550 W. 7<sup>th</sup> Ave., Suite 1100 Anchorage, AK 99501-3560

Re: Submittal of West McArthur River Unit 27<sup>th</sup> Plan of Development and Redoubt Unit 18<sup>th</sup> Plan of Development

Ms. Walsh:

Cook Inlet Energy, LLC, a Glacier Oil and Gas company ("GLA") hereby provides its Unit Plans of Development as required under 11 AAC 83.343 to the Division of Oil and Gas ("Division").

A technical meeting with Division staff will be scheduled for GLA to present technical information to support the operations proposed in the enclosed plans.

GLA has been diligently working to meet its obligations under its leases and unit agreements.

Sincerely,

Tim Jones Land Manager

CC: Ken Diemer, Unit Manager

### Redoubt Unit

# 18th Plan of Development

#### Overview

The 18<sup>th</sup> Plan of Development ("POD") shall cover the period from May 1, 2018 through April 30, 2019.

By letter dated April 4, 2017, the Division approved the 17<sup>th</sup> POD submitted by Cook Inlet Energy, LLC ("GLA") as Operator of the Redoubt Unit. The 17<sup>th</sup> POD approval was for the period May 1, 2017 through April 30, 2018.

# **Annual Report**

The following is GLA's annual report under 11 AAC 83.343 (d).

The development plans contained in the 17<sup>th</sup> POD consisted of:

- GLA plans to drill and hydraulically fracture a sidetrack of the RU 3 well and use it as a waterflood injection well to enhance production.
- GLA plans to change out the failed ESP's in RU 1A and RU 5B. GLA is awaiting final results of the hydraulic fracture stimulation of RU 7B. If the stimulation technique produces satisfactory results in the RU 7B well, GLA may complete similar hydraulic fracture stimulations of 1A and 5B to enhance production.
- (1) the extent to which the requirements of the previously approved plan were achieved
  - GLA completed the sidetrack and stimulation of the depleted RU 3 gas well as RU 3A.
  - GLA began waterflood injection in the RU 3A well to enhance production from the field.
  - GLA replaced several failed ESPs. In October 2017, the ESP in RU 7B and RU 1A coincidentally failed within several days of each other, after a few months of production. Both ESPs were replaced in December 2017. GLA also replaced the RU 5B ESP.
  - GLA submitted an application to contract the Redoubt Unit and create a new South Step Out Participating Area. GLA is awaiting the Decision of the Director regarding this application.

- (2) actual operations that deviated from or did not comply with the previously approved plan and an explanation of the deviation or noncompliance
  - GLA completed all operations discussed in the previously approved 17<sup>th</sup> Plan.

## **Updated Plan of Development**

The following components of the 18<sup>th</sup> POD follow the outline contained in 11 AAC 83.343 (a) and incorporate all planned development activities anticipated based on all data reasonably available at this time. The following components of the 18<sup>th</sup> POD meet the requirements contained in 11 AAC 83.343 (c).

- (1) long-range proposed development activities for the unit, including plans to delineate all underlying oil or gas reservoirs, bring the reservoirs into production, and maintain and enhance production once established
  - GLA plans to continue drilling operations, including further delineation and development drilling within the Central, Southern and Northern FBs.
  - GLA intends to examine the results of its current and planned enhanced recovery waterflood efforts, and if appropriate, convert additional nonproducing wells to water injection wells.
- (2) plans for the exploration or delineation of any land in the unit not included in a participating area
  - GLA hopes to evaluate the oil and gas potential of the areas north of the Northern FB with exploration wells to test these areas. GLA is still working on plans for these wells. When favorable economic conditions warrant, GLA intends to resume plans to drill wells into these areas.
  - GLA intends to change out the failed ESP in the RU 9 well. GLA may stimulate the RU 9 well using hydraulic fracturing.
- (3) details of the proposed operations for at least one year following submission of the plan
  - GLA plans to drill and stimulate a sidetrack of the RU 4A well and use it as a waterflood injection well to further enhance production.
  - GLA is considering plans for additional produced water disposal. Redoubt is a mature field and we are reaching the practical limit for water disposal using currently available methods. GLA is considering alternatives to allow continued production to the economic limit of the field.

(4) the surface location of proposed facilities, drill pads, roads, docks, causeways, material sites, base camps, waste disposal sites, water supplies, airstrips, and any other operation or facility necessary for unit operations

GLA has no plans for additional facilities, etc. at this time.

# **Statement of Operator**

Cook Inlet Energy, LLC, a Glacier Oil and Gas company, as Redoubt Unit Operator, submits this annual report and update to the Redoubt Unit Plan of Development under 11 AAC 83.343. The Operator believes that this 18<sup>th</sup> POD satisfies the requirements of 11 AAC 83.343, including compliance with the provisions of 11 AAC 83.303.

**Leland Tate** 

**Chief Operating Officer** 

Attachments: Redoubt Unit Production

Well Status

CURRENT WELL STATUS - Redoubt					
WELL	STATUS	DATE	REASON		
RU #1A	Producing	12/2017	Hemlock PA - Oil		
RU #2A	Producing	6/2013	Hemlock PA - Oil		
<del>RU #3</del>	Inactive	3/2017	sidetracked to RU 3A		
RU #3A	In Service	6/2017	Waterflood		
RU #4A	Shut-in	9/2014	Water loading issues		
RU #5B	Producing	3/2015	Hemlock PA - Oil		
RU #6 WF	In Service	12/2014	Waterflood		
RU #7A	Inactive	11/2014	sidetracked to RU 7B		
RU #7B	Producing	1/2017	Hemlock PA - Oil		
RU #9	Shut-in	11/2014	ESP failure		
RU #D1	In Service	4/2011	Class 1 Disposal		

Redoubt					
Date	Produced Oil (bbls)	Produced Water (bbls)	Produced Gas (MMCF)		
Jan-17	24,838	13,807	4,786		
Feb-17	18,889	19,178	3,930		
Mar-17	26,380	22,011	4,461		
Apr-17	25,011	18,290	4,959		
May-17	26,918	45,303	7,983		
Jun-17	27,750	27,647	8,284		
Jul-17	61,369	44,015	12,123		
Aug-17	54,534	47,220	13,921		
Sep-17	51,070	41,233	11,778		
Oct-17	36,587	30,701	5,144		
Nov-17	24,813	32,874	4,359		
Dec-17	31,335	55,963	5,353		
TOTALS	409,494	398,242	87,081		