



California
**Department of
Conservation**
California Geological Energy
Management Division (CalGEM)

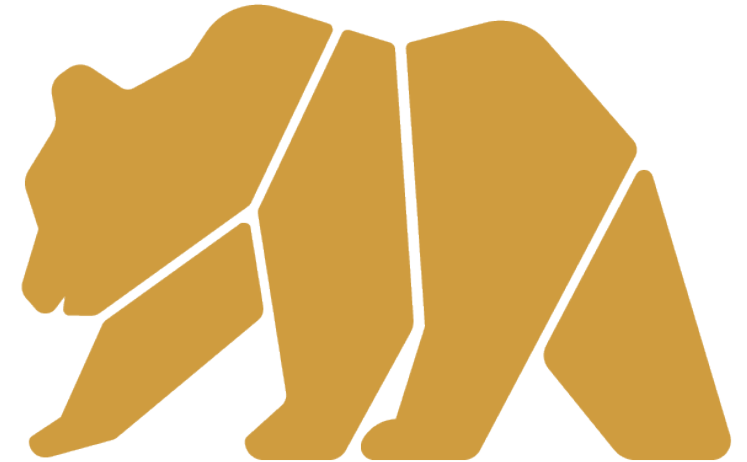
Inglewood Oil Field Overview

Baldwin Hills Conservancy – July 17, 2020

Uduak-Joe Ntuk
State Oil & Gas Supervisor
California Geological Energy Management Division

Presentation Overview

- State Oil & Gas Supervisor
- COVID-19 Updates
- Inglewood Oilfield Overview
- CARB SNAPS Study
- Questions & Answers



State Oil and Gas Supervisor

Uduak-Joe Ntuk is the 17th California State Oil and Gas Supervisor responsible for managing the California Geologic Energy Management Division. He was appointed by Governor Newsom in October 2019.

Ntuk directs a statewide regulatory, technical, and field operations organization designed to emphasize the safe development of oil and natural gas conservation, which includes: protecting public health and safety, environmental quality, and the reduction and mitigation of greenhouse gas emissions associated with the development of hydrocarbon and geothermal resources in a manner that meets the energy needs of the state.

Full Biography: <https://www.conservation.ca.gov/index/Pages/About-Us/Uduak-Joe-Ntuk.aspx>



MS, Petroleum Engineering
University of Southern California

BS, Chemical Engineering
California State University, Long Beach

State Oil & Gas Supervisor's Priorities

1. **Strengthening our regulatory program** to protect public health, safety, and the environment.
2. **Consistent implementation** of our regulations and processes across the state.
3. **Enhanced public transparency** and digitization for the public interest.
4. Ensure that operators **safely decommission wells and infrastructure**.
5. **Build and train our workforce** to rise to the challenges ahead.
6. **Using science-based approach grounded in sound engineering practices** to make decisions and inform our policies.



State Oil & Gas Initiatives

- High Pressure Cyclic Steam Moratorium
- Well Stimulation Scientific Review
- Oil & Gas Public Health Rulemaking
- Carbon Neutrality Study



CalGEM COVID-19 Impacts

COVID-19 Operational Impacts

Safety First

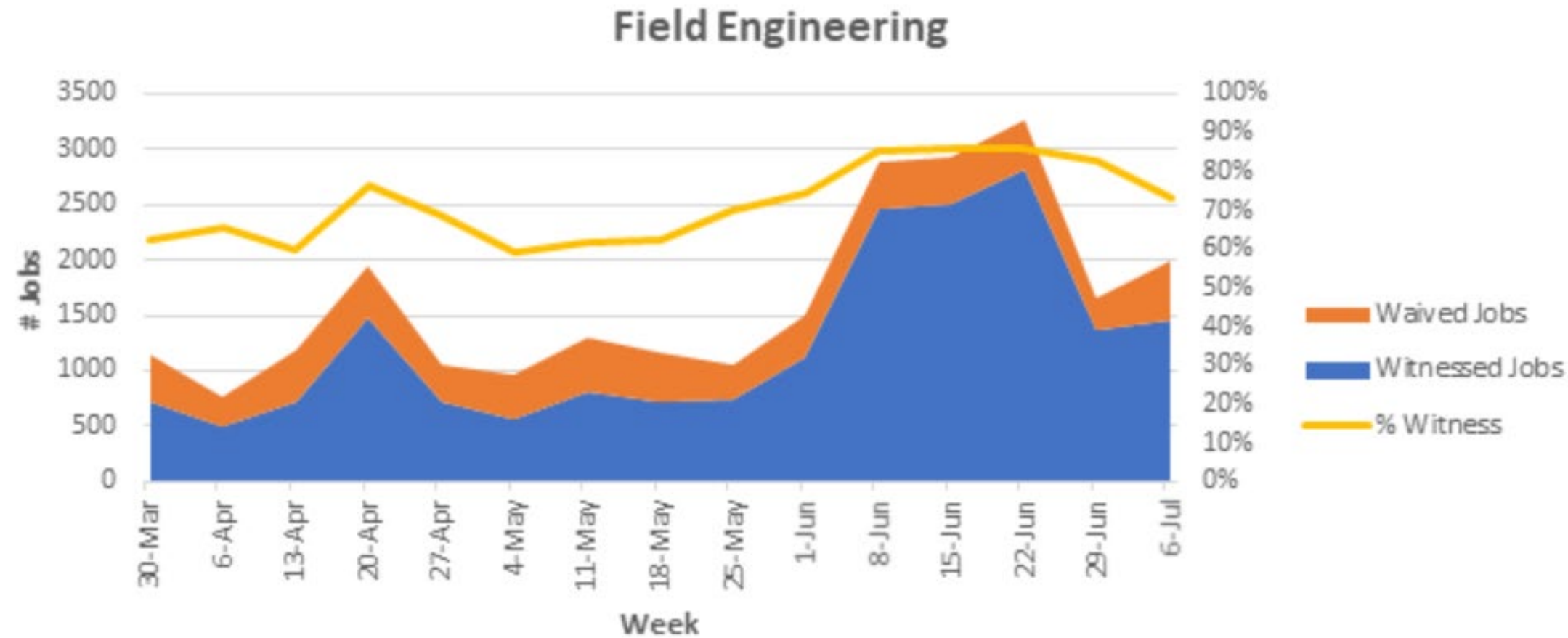


COVID-19 CalGEM Update

- Permitting
- Administration
- Field Engineering

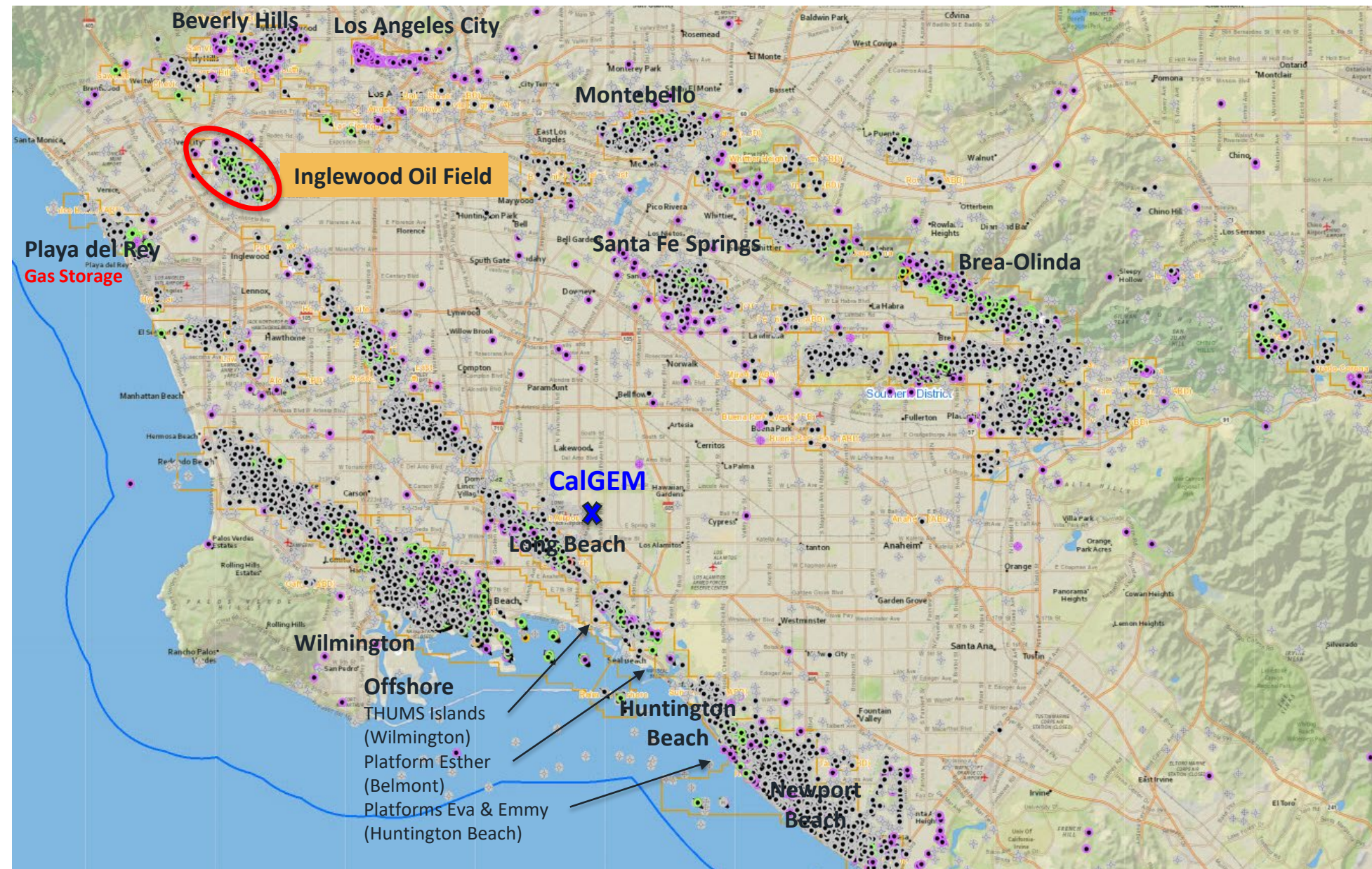


COVID-19 Impacts in the Field



Inglewood Oil Field Overview

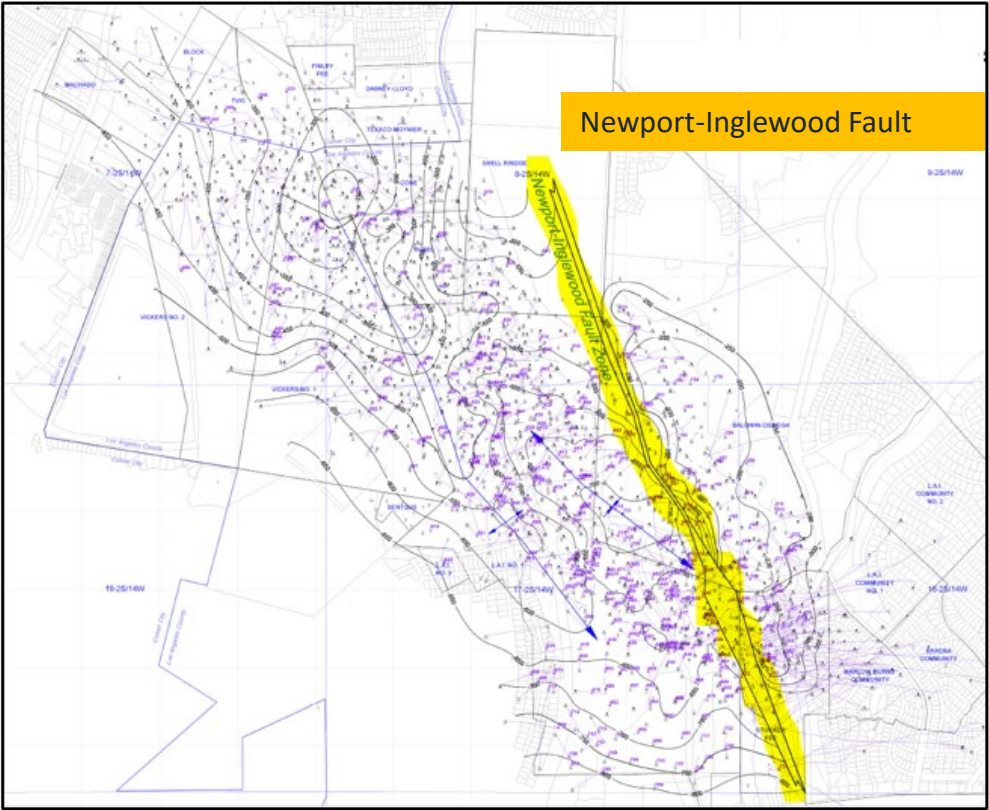
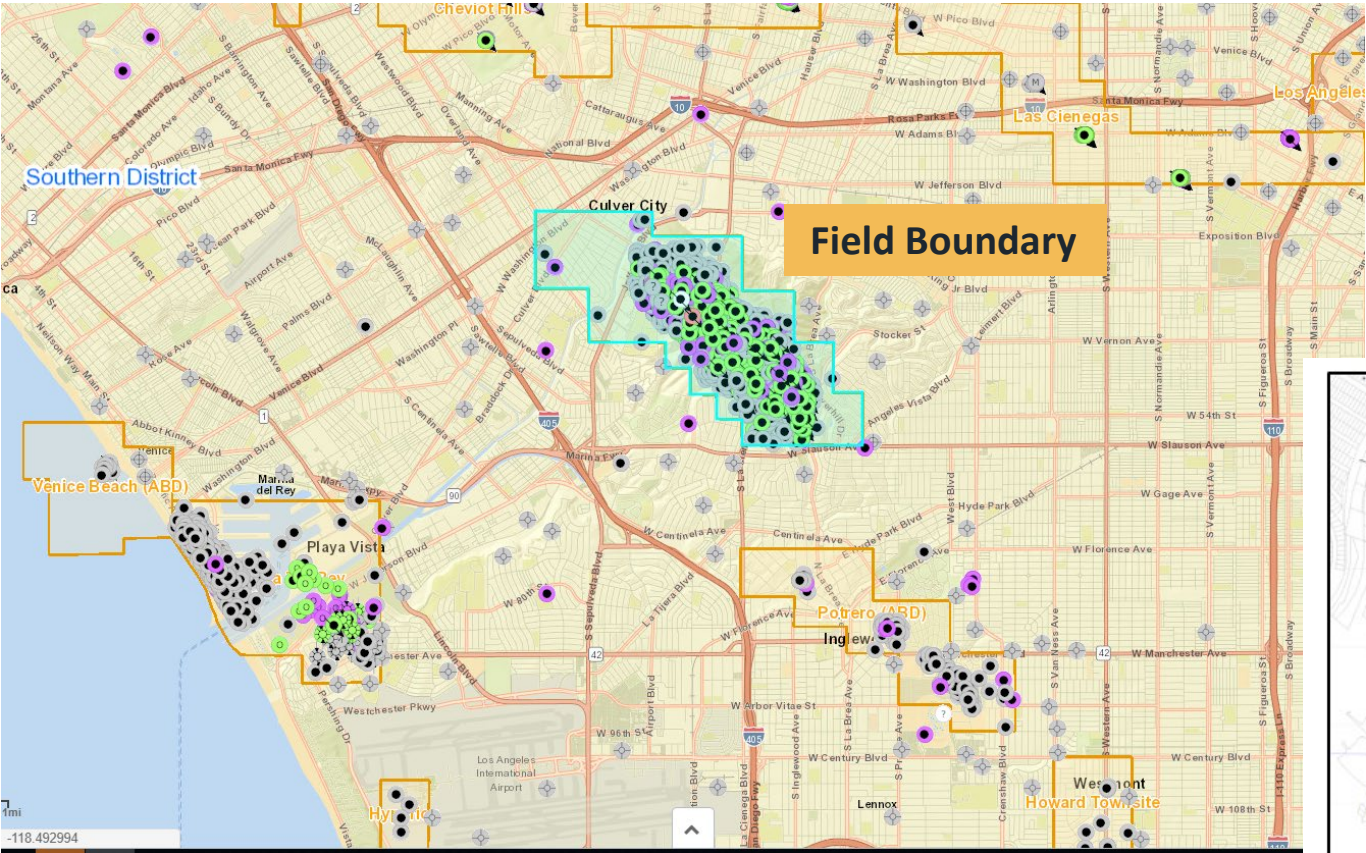
Los Angeles Basin Oil Fields



Inglewood Oil Field

- Discovered in 1924
- Operated by Sentinel Peak Resources since 2016
- Segmented by the Newport-Inglewood fault
- 2 UIC projects on either side of the fault (West and East unit)

Inglewood Oil Field Boundary



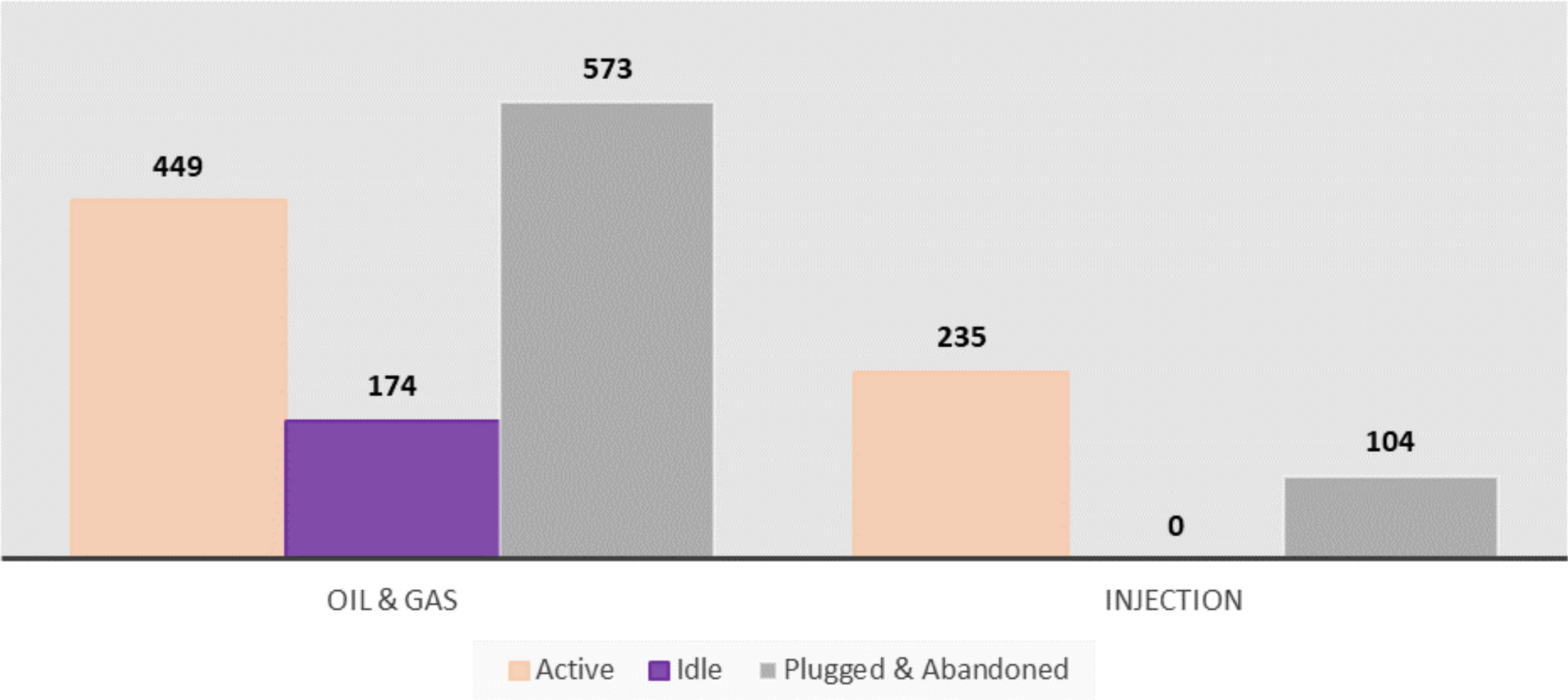
Inglewood Oil Field Productive Zone

Reservoir Characteristics



Reservoir Zone Properties	Vickers-Rindge	Rubel	Moynier
Depth, ft	1,400-3,500	3,500-4,300	4,300-5,300
Thickness, ft	10-150	50-150	100-500
API Gravity, degrees	18-28	25-28	25-28
Porosity, %	25-32	26	18-22
Permeability, mD	465-750	200-250	40
Initial Oil Saturation, %	70	65-70	65-70
Est. Residual Oil Saturation, %	38	45-55	60-63
Initial Reservoir Pressure, psia	570-1150	1,500	2,800
Current Reservoir Pressure, psia	470-535	520-1,100	584-2,475
Current Reservoir Temperature, deg F	130	145	160
Water TDS, ppm	23,000	30,000	24,000

Inglewood Oil Field - API Wellhead Count



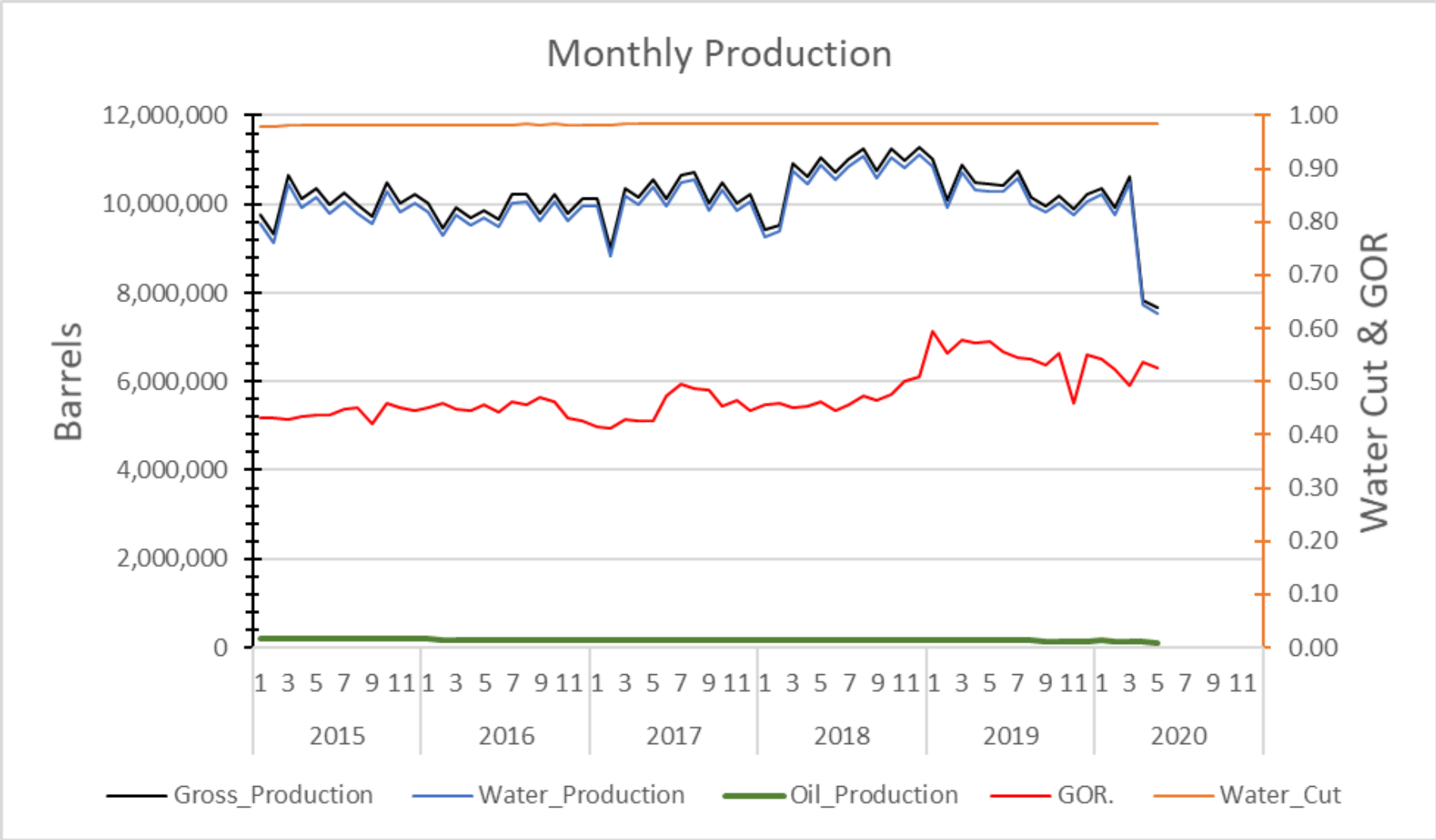
Inglewood Oil Field - Recent CalGEM Permits Issued



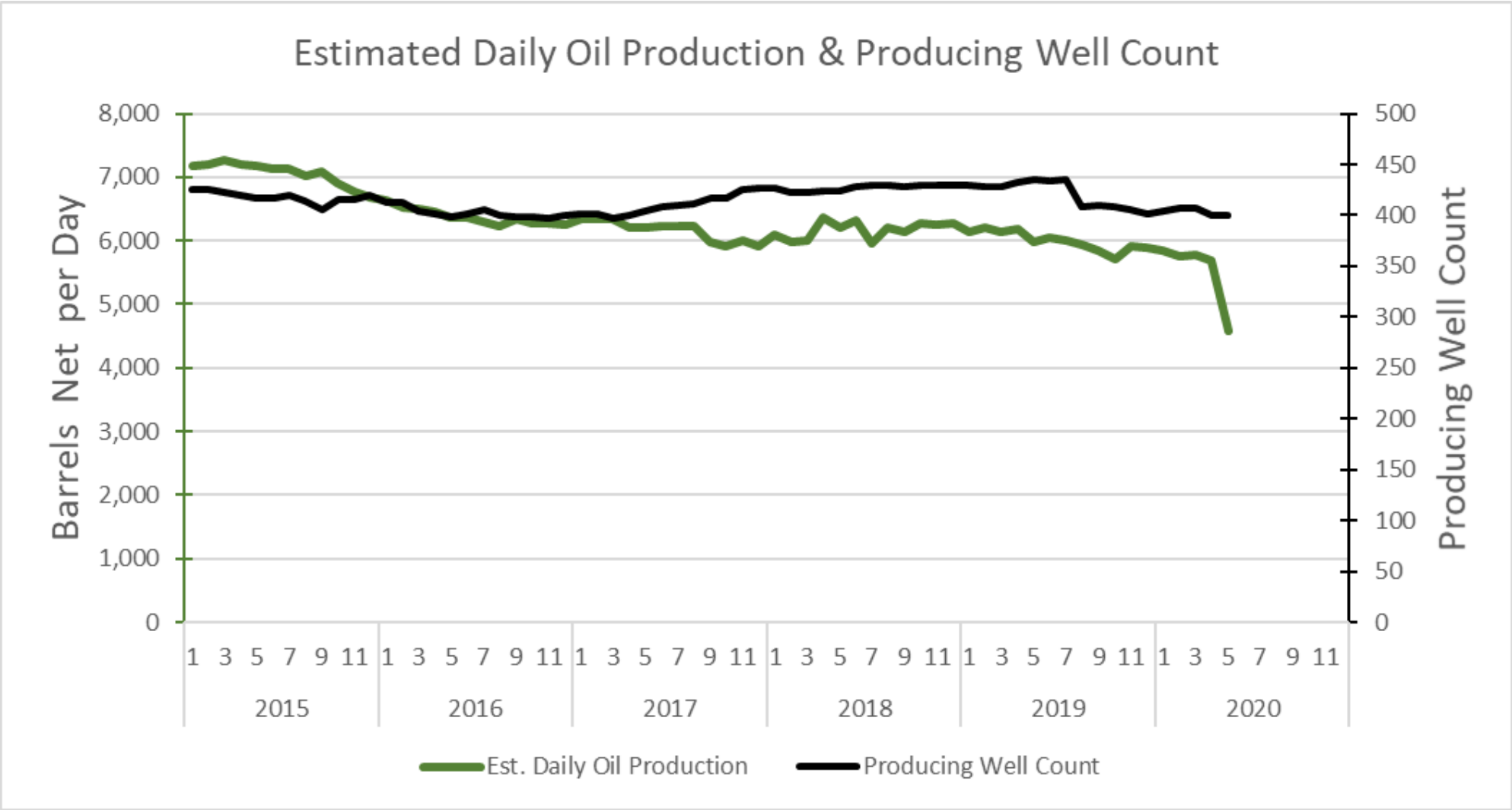
Well	API	Permit Issued	Permit Type	Work Completed	Completion Date
Rubel 30	03708287	7/16/2019	Abandon	Yes	September 2019
BC 5581	03730250	7/23/2019	Rework	Yes	September 2019
LAI1 2067	03726687	10/10/2019	Rework	Yes	November 2019
Cone 742	03726560	10/16/2019	Rework	No	
Vickers 1 790	03726579	1/22/2020	Rework	Yes	February 2020
BC 6522	03727208	1/27/2020	Rework	Yes	March 2020
BC 442	03707766	1/31/2020	Abandon	No	
BC 50	03707665	2/21/2020	Abandon	Yes	March 2020
BC 332	03707753	3/4/2020	Abandon	No	
LAI 1 151	03708055	3/10/2020	Abandon	No	
Vickers 2 30	03708768	4/3/2020	Abandon	No	
Vickers 2 32	03708769	4/8/2020	Abandon	No	
Vickers 2 35	03720190	4/10/2020	Abandon	No	
LAI 1 279	03700527	6/25/2020	Rework	No	
BC 318A	03700203	7/2/2020	Abandon	No	

*Permits valid for 24 months from the issue date

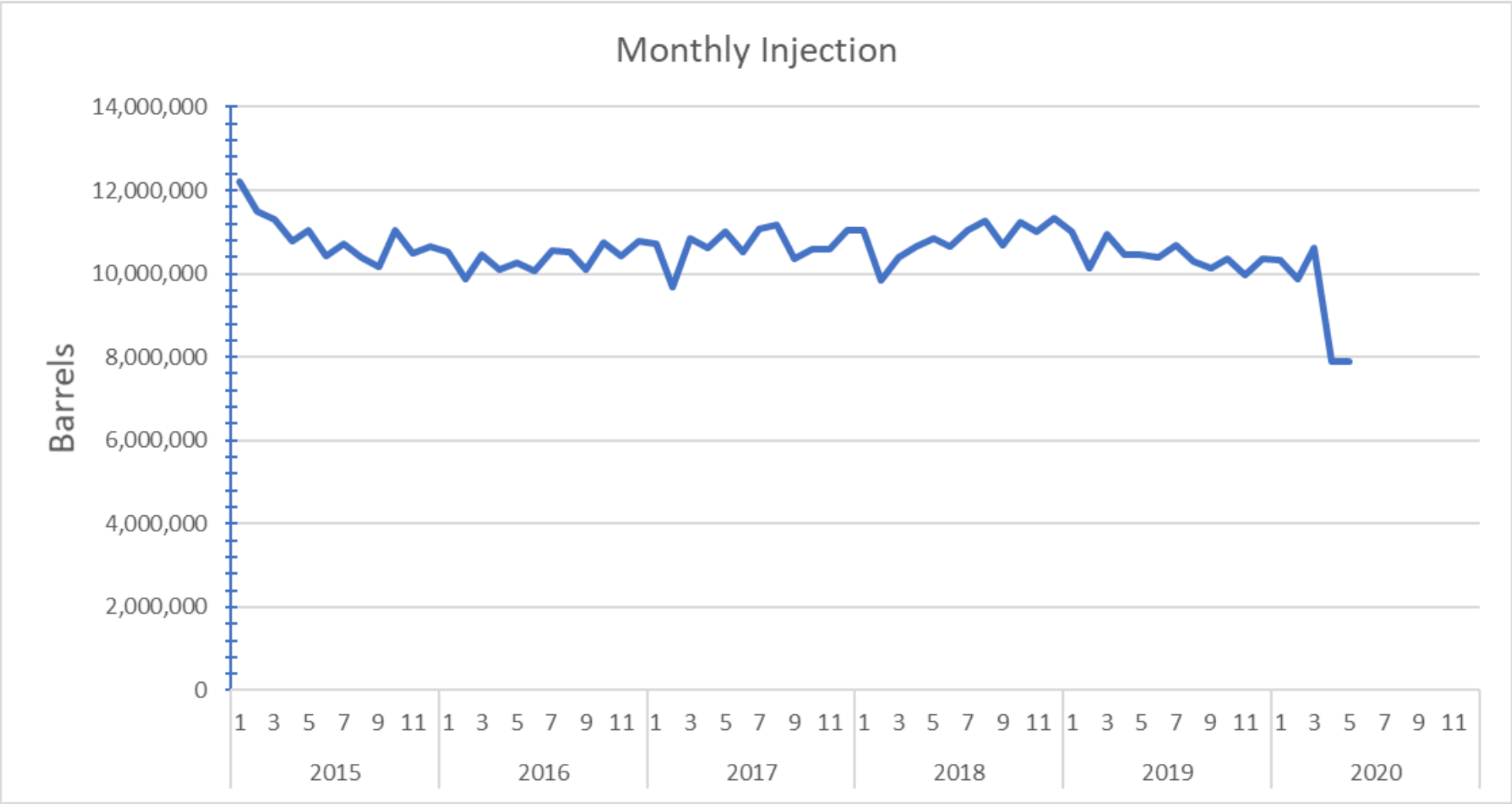
Inglewood Oil Field - Monthly Production Past 5 Years



Inglewood Oil Field - Daily Production Past 5 Years



Inglewood Oil - Field Monthly Injection Past 5 Years



Inglewood Oil Field - Current Issues of Interest

- High-visibility operations
- Complex Area of Reviews – high density of wellbores
- Multiple overlapping agencies
- Groundwater monitoring program
 - 2019 analysis: fluid injection and production balanced in all reservoirs and ground movement below threshold
- In the past 3 years, the operator has not received any violations



Study of Neighborhood Air Near Petroleum Sources (SNAPS)

- **Conducted by:** California Air Resources Board (CARB)
- **Purpose:** Study neighborhood air quality close to oil and gas extraction facilities.
- **Motivation:**
 - Exposure concerns from community
 - Aliso Canyon underground natural gas storage leak
 - California Council on Science and Technology recommendation
 - CARB effort to understand impacts of oil and gas operations
- **Program Goals:**
 - Characterize air quality
 - Identify nearby pollution sources
 - Analyze data to assess hazards and risks



THANK YOU

Questions & Answers