Hydraulic Fracturing in the Federal Offshore, California
Facts and Figures

- The Monterey Shale (Monterey Formation) is present in onshore and offshore California.
- The Monterey Formation is the most prolific oil and gas reservoir in the Pacific Region.
- Approximately 750 million barrels of oil (60% of the Region's production) has been produced from the POCS Monterey Formation. Over 1.2 billion barrels of oil have been produced from all Pacific Region reservoirs, including non-shale reservoirs.
- The Department of Energy estimates that approximately 15 billion barrels of oil are recoverable from the onshore Monterey formation using conventionally available technology.
- Hydraulic fracturing has only occurred 11 times in the last 25 years in the Federal offshore and none of the wells were horizontal (see table below).

Date	Lease & Well	Operator	Comments
1990's	OCS-P 0205 Well E-11	Venoco, Inc.	Not a Monterey formation frac. Upper Sespe formation fracked with limited success.
	OCS-P 0450 Well C-11	Chevron	Unsuccessful in increasing production.
	6 well program	Torch/Nuevo	Short radius "frac-packs." Somewhat successful. Not Monterey.
2001	3 well program	Torch/Nuevo	1 well very successful. Re-frac of 1 well. Not Monterey.
January 2010	OCS-P 0XXX Well E-8 Sidetrack 2	Venoco, Inc.	Small increase in production, but not enough to be commercial.

- Most hydraulic fracturing has been near well "frac-packs" or "mini-fracs" in sandstone with frac wings extending 30 to 50 feet from the well.
- During that time approximately 335 wells have been drilled in the Federal offshore, California.
- A telephone survey of POCS operators revealed that only one operator has plans for hydraulic fracturing in the near future although most did not want to rule out the possibility of hydraulic fracturing in the distant future.
- The POCS is currently reviewing the APD for DCOR, LLC to use hydraulic fracturing in their next sandstone well. This could be termed a "moderate" fracture job in terms of the projected length of fractures (200-300 feet) from the well, and using about 30 to 50 times less water as fracture jobs in the Bakken and Eagle Ford shales onshore.
- Some of the petroleum engineers responding to the telephone survey commented that the offshore Monterey Formation is much more brittle than its onshore counterpart and, as a result, responded to hydraulic fracturing by only fracturing the area nearest the well bore instead of propagating outward from the well bore. Therefore, any increased recovery was short-lived.