Groundwater Quality in Ventura County and Potential Impacts of Oil and Gas Exploration and Production – Executive Summary

Prepared by Thomas Johnson Associates, Substrata LLC, and CW Consulting Consulting firms specializing in water and environmental issues September 16, 2018

A scientific study was conducted to assess potential impacts to drinking water from oil and gas drilling and production activities in Ventura County, and evaluate the validity of claims by environmental activist groups regarding impacts of oil and gas drilling and production in the county. Following are conclusions from this study:

- Extensive studies of groundwater quality in Ventura County provide information to assess the magnitude and extent of possible impacts of oil and gas production on groundwater quality.
- Groundwater quality in Ventura County primarily reflects interaction of the water with surrounding soil and rock, and the quality of the water sources that recharge groundwater.
- Primary impacts to groundwater quality in Ventura County are contaminants from natural sediments, agricultural sources, urban development, septic systems, wastewater treatment, seawater intrusion, and commercial activities.
- <u>No</u> public drinking water supplies have been impacted by oil and gas production.
- Surface and groundwater monitoring programs conducted by water districts, Ventura County, water purveyors, the USGS and SWRCB have <u>not</u> identified oil/gas production as a contamination source.
- There is no evidence to support claims by CFROG, Blue Tomorrow and other environmental groups that oil and gas production activities have impacted any drinking water supplies or water resources.
- Oil-producing and water disposal formations in Ventura County oil fields are isolated from public water supplies and regional aquifers.
- Salts, metals and petroleum naturally occur in geologic formations, sediments, surface water and groundwater in Ventura County.
- Petroleum impacts on groundwater quality in Ventura County, where evident at all, are localized, generally unrelated to oil and gas exploration and production, and much less frequent and significant than other sources of natural, agricultural and urban water-quality degradation.
- Scientific studies and monitoring data indicate that current oil field operations do not pose a threat to public water supplies, consistent with industry practices and strict regulations designed to protect groundwater.
- Area-specific and regional groundwater monitoring programs to be conducted in oil-field areas as required by SB4 are expected to confirm findings from previous studies that water quality is

impacted by a variety of natural, agricultural, commercial, industrial, industrial and municipal sources.

About the Authors

Thomas M. Johnson, PG, CHG is Principal Hydrogeologist of Thomas Johnson Associates. He is former President of the California Groundwater Resources Association, and provides water and environmental expert consulting services to public and industrial clients.

Eric M. Nichols, PE is Principal of Substrata LLC. He provides strategic consulting on soil and groundwater contamination and cleanup, and environmental issues related to petroleum production and distribution.

Caryl L. Walti, RG, CEM is Principal of CW Consulting. She provides water resource and environmental consulting services to private and industrial clients.