

# **SB 4 WELL STIMULATION TREATMENT REGULATIONS**

## **UPDATED INFORMATIVE DIGEST**

### **AUTHORITY AND REFERENCE**

Pursuant to the authority vested by Sections 3013 and 3160 of the Public Resources Code, and to implement, interpret or make specific Sections 3106, 3150, 3151, 3152, 3153, 3154, 3156, 3157, 3158, 3159, 3160, 3203, 3213, 3215, and 3234 of the Public Resources Code, and Section 10783 of the Water Code, the Department is adopting changes to Chapter 4 of Division 2 of Title 14 of the California Code of Regulations as follows: adoption of sections 1751, 1761, 1777.4, 1780, 1781, 1782, 1783, 1783.1, 1783.2, 1783.3, 1784, 1784.1, 1784.2, 1785, 1785.1, 1786, 1787, 1788, and 1789.

### **POLICY STATEMENT OVERVIEW / UPDATED INFORMATIVE DIGEST**

Senate Bill 4 (Pavley, Chapter 313, Statutes of 2013) was signed by Governor Brown on September 20, 2013. The intent of SB 4 is to provide a comprehensive regulatory framework for well stimulation treatments in California. SB 4 requires a permit from the Division of Oil, Gas and Geothermal Resources to conduct well stimulation. The permit application must include detailed information about the fluids to be used, a ground water monitoring plan, and a water management plan. Copies of an approved permit must be sent to neighboring property owners and tenants, and water well testing must be provided upon request. SB 4 requires the Division to prepare regulations to ensure that well stimulation is done safely and to require detailed public disclosure about the well stimulation. The Division must develop an internet website to facilitate public disclosure of well stimulation information, and the website must allow the public to easily search and aggregate the information.

SB 4 requires the Division to prepare an environmental impact report, consistent with the California Environmental Quality Act, addressing the practice of well stimulation in California. Additionally, SB 4 requires the Natural Resources Agency to complete an independent scientific study on well stimulation treatments, and the State Water Resources Control Board to develop groundwater modeling criteria and implement groundwater monitoring programs.

Well stimulation is a short term and non-continual process designed to enhance oil and gas production or recovery. Initially, the Department's rulemaking effort had focused on one specific form of well stimulation: hydraulic fracturing. Hydraulic fracturing is the high-pressure injection of a mix of fluids and proppants into an oil or gas reservoir. The mix, injected under pressure, fractures the reservoir rock. When the fluids are removed, the proppants keep open the cracks left by the fracturing, allowing oil or natural gas to flow back to the well. Fracturing the rock is necessary to extract oil or natural gas from

formations in which the pore space in the rock making up the oil or natural gas reservoir is too tight to allow the flow of fluids or gasses to the well.

With the increased use of the practice in other parts of the country, public scrutiny of hydraulic fracturing has become as common as the practice itself. Public concern over a perceived lack of regulation has become widespread, highlighted by various documentaries, studies, reports, and proposed legislation, at both the federal and state level.

SB 4 began as a bill to regulate hydraulic fracturing, but was expanded to include all forms of well stimulation due in part to lack of public information about these procedures and new information about oil reserve estimates in areas of the state not previously subject to widespread oil recovery activity, such as the Monterey Shale.

### **Existing Law**

All oil and gas wells drilled and constructed in California must adhere to strict requirements. As specified in Public Resources Code (PRC), Division 3, Chapter 1, section 3106, the Department's Division of Oil, Gas, and Geothermal Resources (Division) regulates oil, gas, and geothermal well operations throughout the State. PRC section 3106 requires the Division supervise the drilling, operation, and abandonment of oil and gas wells "so as to prevent, as far as possible, damage to life, health, property, and natural resources ...." Also included in PRC section 3106 is the authority to allow, with Division approval and oversight, the oil and gas industry to "utilize all methods and practices known to the oil industry for the purpose of increasing the ultimate recovery of underground hydrocarbons." Essentially, PRC section 3106 mandates the Division to find a balance between health and safety, and the recovery of underground hydrocarbons.

In accordance with these statutory mandates, the Division has numerous existing regulations regarding oil and gas operations in California. These regulations include requirements regarding the protection of underground and surface water; testing and monitoring to ensure the integrity of the well casing; the cement used to secure the well casing inside the bore hole; the cement and equipment used to seal off the well from underground zones bearing fresh water, and other hydrocarbon resources; and minimum maintenance requirements for oil and gas production facilities. These requirements provide a first line of protection from potential damage caused by all aspects of oil and gas production, including well stimulation.

SB 4 complements the existing rules that require some of the strongest well construction and operation standards in the nation by requiring further safeguards to public health and safety and the environment regarding well stimulation treatment.

Senate Bill 861 (Committee on Budget and Fiscal Review, Chapter 35, Statutes of 2014) was adopted as urgency legislation and signed by Governor Brown on June 20,

2014. SB 861 made various amendments to the provisions of SB 4. In particular, SB 861 amended PRC section 3161 to provide that these regulations will not become effective until July 1, 2015, and that the Division's interim regulations adopted by emergency rulemaking can remain in effect until that time. SB 861 also amended PRC section 3160, subdivision (d), and Water Code section 10783 to provide that the Division may issue a well stimulation treatment approval in advance of completion of a groundwater monitoring plan, provided that the approval is conditioned on operations not commencing until the groundwater monitoring plan is complete.

### **Regulations**

The adopted regulations are the result of consideration of extensive public input and consultation with other state regulatory agencies. The Department made the proposed regulations and revisions thereto available for public comment from November 15, 2013 until January 14, 2014; from June 13, 2014 until July 28, 2014; and from October 9, 2014 until October 24, 2014. During those public comment periods the Department conducted a total of ten public comment hearings around the state. In addition, as required under Public Resources Code section 3160, subdivision (b), the Division developed these regulations in consultation with various state regulatory agencies. Although the adopted regulations include many modifications to what was original proposed, the adopted regulations are consistent in purpose and scope with what was originally proposed. The following description of the purpose and effect of the adopted regulations is updated from the original Informative Digest for this rulemaking to accurately describe the regulations as adopted.

The regulations are intended to supplement the Division's current oil and gas regulatory framework with regulations specific to well stimulation treatment to meet the mandates of SB 4. The regulations satisfy the goals and requirements of SB 4 by setting requirements to ensure integrity of wells, well casings, and the geologic and hydrologic isolation of the oil and gas formation during and following well stimulation treatments; and by requiring full disclosure of the composition and disposition of well stimulation fluids, including hydraulic fracturing fluids, acid well stimulation fluids, and flowback fluids. The regulations satisfy the goals and requirements of SB 4 by implementing express statutory requirements regarding well stimulation permits, public disclosure, neighbor notification, and water well testing. The regulations address the distinction between well stimulation treatment and other routine operations; the distinction between well stimulation and underground injection projects; and when a stimulation treatment is subject to the requirements of SB 4. Each of these objectives is discussed further below.

- Consistent with the intended purpose of satisfying the goals and requirements of SB 4 regarding a permit application to perform a well stimulation treatment, detail and specification has been added regarding the requirements for the various engineering reviews that occur in connection with the permit application in advance of well stimulation treatment. Additionally, the permitting structure has been

enhanced so that operators can simultaneously pursue permits from the Division and the State Water Board. Permits from both agencies are required before well stimulation can commence.

- Consistent with the intended purpose of satisfying the goals and requirements of SB 4, the regulations clarify the process regarding neighbor notification, water well testing, and disclosure by requiring operators to complete neighbor notification using a bilingual (English/Spanish) template form, by requiring operators to provide an explanation that neighbors have the right to request that their water wells be tested before and after well stimulation is utilized, and by adding detail and specification regarding operators' public disclosure requirements after completing a well stimulation treatment. The clarifications provide the public clear information regarding well stimulation that is occurring in their vicinity or in general. This is beneficial because neighbors will be provided the necessary information to have their water wells tested before and after well stimulation, and the public will have comprehensive information regarding well stimulation in the State.
- The regulations address pressure testing and specified evaluation of the well and the geology near the well prior to the well stimulation treatment to ensure that the well stimulation treatment will not damage the well, and that the well stimulation fluids will be confined to the intended zone. The objective of pressure testing a well prior to a well stimulation treatment is to make sure the well through which the well stimulation treatment occurs is competent to withstand the pressures created by the well stimulation treatment. The objective of evaluating the well and the area around the well is to identify other wells in the vicinity of the well stimulation treatment that may act as a conduit out of the intended zone. The benefit of the evaluation and testing is that the Division and the operator will have comprehensive information regarding the integrity of the well, information regarding the integrity of wells near the well stimulation treatment, and geologic information regarding the area around the well prior to the well stimulation treatment. Consistent with the intended purpose of satisfying the goal and requirements of SB 4 regarding the geologic and hydrologic isolation of the oil and gas formation during and following well stimulation treatments, the regulations incorporate the use of a more precise model for estimating how far hydraulic fracturing will extend, and in what directions.
- The regulations address monitoring that operators must complete during and after a well stimulation treatment. The objective of monitoring during and after well stimulation is to require operators to monitor for any indication of well failure, specify how an operator would respond in the case of a well failure, and specify that a well must be monitored to determine the amount of gas, oil and water produced, including the volume of a readily identifiable fluid flowback. The benefit of monitoring during and after well stimulation is that the operator will have a clear directive regarding when to terminate a well stimulation treatment, how to respond in the case of a well failure, and what information must be collected to ensure that future well

failures are preventable. Consistent with the intended purpose of satisfying the goals and requirements of SB 4 regarding monitoring during and after a well stimulation treatment, the regulations incorporate use of the California Integrated Seismic Network and specified evaluations if an earthquake larger than magnitude 2.7 occurs within the vicinity of a well stimulation treatment.

- The regulations address storage and handling of well stimulation fluids, including storage of fluid in containers. The objective of the regulations regarding storage and handling is to ensure that storage and handling be performed in compliance with all existing laws and regulations, and that an operator has a plan of action in the case of an unauthorized release. The benefit of the storage and handling requirements is that all fluids will be handled safely and that spills and incidents are responded to effectively and proactively.
- The regulations address reporting by establishing the procedures by which operators submit specified information during and after the well stimulation treatment has been completed. The objective of the regulations is to ensure that operators submit specified information to the Division throughout the well stimulation process, and other State agencies would be able to obtain specified information if necessary. The benefit of the regulation is that the Division will receive comprehensive data at every step of the well stimulation process to ensure that well stimulation is done so in a safe manner; and the public will know when and where well stimulation is occurring, and be able to obtain information specific to the completed well stimulation treatment.
- The regulations address the procedure by which an operator may request a review and authorization for multiple well stimulation treatment permit applications or notices of intent to drill or rework a well. The objective of the regulation is to group approvals to create efficiency for the Division and the operator.
- The regulations address the difference between well stimulation and underground injection projects. The objective of the regulations is to define the two separate terms and clarify that both are subject to two distinct regulatory frameworks. The benefit of the regulation is clarity for the Division, operators, and the public regarding which set of regulations oversee a specified oil and gas operation. Consistent with the intended purpose of satisfying the goals and requirements of SB 4 regarding the distinction between well stimulation and underground injection projects, clarification has been added in response to common points of confusion about the scope and applicability of the regulations.
- The regulations address the point at which well stimulation treatment begins and ends, for purposes of the regulations; and the distinction between well stimulation treatment requirements, and underground injection project requirements. The objective of the regulation is to establish the necessary parameters for the requirements of the regulations. The benefit of the regulation is clarity for the

Division, operators, and the public regarding which set of regulations oversee a specified oil and gas operation.

- Consistent with the intended purpose of satisfying the goals and requirements of SB 4 regarding the distinction between well stimulation and other routine operations, the regulations provide a calculated acid volume threshold. The acid volume threshold will be calculated on a case-by-case basis, factoring in the formation porosity and the wellbore volume. Also, to further satisfy this point, operators are required to report the use of acid and pressure while conducting maintenance to ensure that well stimulation is not the goal. Additionally, for operations that do not meet the definition of well stimulation treatment, the use of acid or the application of pressure to the formation must be briefly described and submitted for inclusion in the permanent well file. A searchable index of those reports will be maintained so that the public can easily review that information.