SB 4 WELL STIMULATION TREATMENT REGULATIONS

PUBLIC COMMENT SUMMARY AND RESPONSE

Public Comment Period:
October 9, 2014 through October 24, 2014

Numeric codes at the beginning of each comment summary can be used to locate the summarized comment in the marked-up version of the written comment submission or transcript of public hearing.

	Ban
2514	13578-1, 13076-6, 13082-1, 13085-2, 13090-1, 13099-1, 13104-1, 13105-1, 13106-1, 13371-1, 13379-1, 13381-1, 13583-1, 13392-1, 13393-1, 13394-1, 13395-1, 13396-1, 13397-1, 13398-1, 013399-1, 13400-1, 13401-4, 13402-1, 13403-1, 13425-1, 13426-1, 13462-1, 13526-1, 13534-1, 13545-2, 13125-5, 13138-1, 13142-1, 13141-1, 13137-1, 13128-2, 13119-1, 13159-1, 13148-3, 13150-1, 13155-1, 13112-1, 13118-1, 13116-1, 13145-1, 13139-1, 13149-4, 13137-7, 13107-1, 13110-1, 13110-4, 13133-1, 13133-5, 13133-7, 13123-1, 13126-2, 13157-1, 13121-1, 13121-11, 13143-2, 13143-4, 13131-1, 13113-1, 13156-1, 13132-1, 13140-6, 13121-9, 13121-9, 13161-4, 13166-1, 13188-1, 13169-2, 13176-1, 13183-2, 13180-4, 13174-1, 13177-1, 13167-1, 13186-1, 13171-1, 13185-1, 13185-8, 13175-3, 13160-1, 13181-1, 13165-1, 13184-4, 13184-1, 13168-1, 13178-1, 13173-2, 13177-1, 13141-1, 03491-1, 13536-1, 13515-2, 13461-1, 13440-1, 13470-12, 13482-1, 13482-2, 13533-4, 13476-1, 13540-1, 13525-2, 13440-4, 13492-7, 13531-7, 13515-1, 13468-1, 13460-1, 13470-3, 13440-2, 13198-1, 13232-1, 013205-1, 13347-1, 13309-1, 13209-1, 13209-1, 13253-1, 13241-1, 13206-3, 13311-1, 13316-1, 13324-1, 13272-1, 13258-3, 13234-1, 13204-1, 13220-1, 13307-1, 13348-1, 13312-1, 13308-2, 13306-2, 13302-1, 13297-3, 13217-1, 13296-1, 13256-4, 13236-1, 13240-1, 13334-2, 13325-1, 13265-1, 13255-1, 13247-1, 13249-11, 13310-1, 13200-1, 13229-1, 13257-5, 13223-2, 13285-2, 13300-1, 13313-8, 13257-3, 13223-1, 13287-1, 13212-1, 13352-1, 13238-1, 13246-1, 13243-2, 13259-1, 13259-2, 13203-15, 13194-13, 13328-1, 13263-1, 13260-1, 13262-1, 13284-1, 13270-2, 13315-1, 13329-2, 13329-7, 13329-12, 13242-2, 13295-1, 13335-3, 13234-6, 13320-1, 13268-1, 13286-1, 13318-5, 13318-1, 13294-2, 13282-1, 13230-1, 13208-1, 13327-1, 13327-3, 13327-4, 13245-1, 13245-2, 13342-1, 13214-2, 12311-1, 13193-1, 13300-2, 13319-3, 13276-2, 13248-1, 13224-1, 13197-1, 13367-1, 13340-2, 13264-8, 13201-1, 13281-1, 13252-1, 13357-1, 13191-2, 13345-6, 13345-7, 13301-1, 13353-1, 13293-3, 13246-2, 13236-2, 13253-2, 13195-1, 13217-3, 13577-1, 13577-4, 13560-1, 13366-1, 13234-1, 13348-2, 13244-4, 13264-5, 13234-3, 13232-3, 13205-4, 13203-2, 13203-3, 13194-2, 13264-2, 13200-3, 13271-5, 13209-6, 13241-3, 13335-4, 13297-6, 13256-3, 13332-3, 13332-4, 13305-1, 13221-3, 13364-1, 13195-5, 13201-5, 13252-2, 13241-4, 13215-1, 13206-4, 13206-5, 13316-5 13258-1, 13359-10, 13237-2, 13237-7, 13204-4, 13351-1, 13312-2, 13312-4, 13306-4, 13287-1, 13202-6, 13257-2, 13349-6, 13235-5, 13349-1, 13200-5, 13338-1, 13329-10, 13329-11, 13198-3, 13280-5, 13233-3, 13233-5, 13360-2, 13350-1, 13216-7, 13197-2, 13239-4, 13346-3, 13202-4, 13218-2, 13207-3, 13207-4, 13205-3, 13326-6, 13269-1, 13332-5, 13313-2, 13313-3, 13228-1, 7810-5, 8054-3 Residents of California are strongly opposed to the second revision of the proposed fracking regulation. California must ban fracking for none or for one or more of the following reasons: to protect California's atmosphere, water, wildlife, buildings, health, future, mankind and keep the planet livable for the next generations; increase in earthquakes, tampers with earth's stability, and it can create new fault lines, releases unknown chemicals into the earth, lights tap water on

	fire that's meant to be drinking water and it's not a good energy producer, there's no protection for California's water, health, environment, soil and air contamination, contamination from various chemicals, radium, salt, radium, chloride, bromide, strontium, hydrogen isotopic compositions; hydrogen, silica and nitrates released into the air/land/water, ozone destruction, consequences of fracking in unstable rich shale, non-compliance with the Safe Drinking Water Act, tax exemptions/loopholes should not be given, waste water laden with hazardous toxins, carcinogenic chemicals which go into California's aquifers that are supposed to be protected by state law and the Federal Safe Drinking Water Act, illegal injection/dumping into aquifers, greed, profiteering, Industry's lack of responsibility, lack of water for drinking and agriculture, abandoned wells can serve as conduits for surface migration of methane gas which can lead to explosives, only few regulations regarding pipes and compressors that are built with minimal oversight, leakage of methane gas, nitrogen oxides, and hydrogen sulfide out of the wellbore; deterioration of cement and casings used by Industry deteriorate quickly, emissions from fossil fuels endangering life on earth, potential to destroy California's ecosystem, hydrofluoric acid volumes are an Industry secret and it's also one of the most hazardous chemicals in use, more environmental studies need to be done, more regulation needs to occur, irrevocable water, water treatment plants are not setup to remove radioactivity from California's water, global warming, uses too much water, estimate axial dimensional stimulation area is preposterous to ask the oil companies to do, unsafe methodology, not the type of job creation desired, Industry needs time to clean up their standards, offshore drilling has too many risks such as leaks or spills. Regulators to act with courage and integrity to end fracking in California. Don't sell California out. There is no change to the regulation's wording that would change the fact that a polluting, toxic, idiotic process is unacceptable and should not be implemented anytime, anywhere ever. People outside of California want fracking banned in California. No amount of regulation is going to make this safe. Don't frack in LA, Ventura, and Mendocino Counties.
2515	13080-1, 13084-1, 13086-1, 13087-1, 13088-1, 13091-1, 13090-2, 13092-1, 13093-1, 13094-1, 13097-1, 13098-1, 13100-1, 13370-1, 13372-1, 13373-6, 13374-1, 13375-1, 13376-1, 13377-1, 13380-1, 13383-1, 13385-1, 13388-1, 13389-1, 13390-1, 13582-1, 13415-1, 13416-1, 13417-1, 13418-1, 13419-1, 13420-1, 13421-1, 13422-1, 13423-1, 13424-1, 13427-1, 13430-1, 013429-1, 13428-1, 13445-1, 13448-1, 13519-1, 13452-1, 13529-1, 13512-1, 13500-1, 13504-3, 13469-1, 13513-1, 13527-2, 13532-1, 13506-1, 13542-1, 13499-1, 13449-1, 13484-1, 13475-1, 013467-1, 13507-1, 13493-1, 13544-1, 13546-1, 13522-2, 13530-7, 13566-1, 13125-2, 13153-3, 13151-4, 13158-1, 13109-1, 13109-2, 13130-7, 13173-5, 13161-1, 13168-2 No/Stop or don't support hydraulic or acid fracturing, acid matrix stimulation or any other kind of stimulation treatment because of none or for one or more of the following various reasons: it's greed, only for profit and pillaging of California's natural environment, it kills humans, shows lack of consideration for people and animals, destroys water, land and resources; uses too much water, contaminates/pollutes water, large scale methane leaks, methane and other toxic elements being released into the atmosphere (global warming), reinjected tainted water that contaminates more groundwater, destroys the climate, accelerates the drought and water shortages, not safe for the climates future, causes earthquakes and/or disrupts fault lines, cause of a change in the structure of the land, interrupts the water cycle, exploitation of immigrant workers, displaces and ruins communities, increases economic inequality, depletes home values, encourages crony capitalism and monopolies, Californian's end up paying the price, pollution, noise, truck traffic, health risks, chemical types or amounts used being considered as trade secret, lack of public availability of information about the safety, Industries exemption to water conservation, irrevocable water, concerns of what will happen when the water runs out, inspection of water for contamination isn't enough, thinking it lowers gas prices, lack of water for drinking and irrigation of crops, sink holes, amount of wells are not being tracked or that information is kept a secret, hard to determine the exact amount of ground water that California has so a preservation/conservation plan can be developed, pollution to California's water, soil, air of homes and farms nearby wells, inability to monitor, exportation of gas, concern of whether it will be known if a compound is leaking, concern if doctors will know the cause of peoples

	symptoms and provide timely treatment to save their lives, Industry leaving California destroyed health and safety concerns, no technology to fix what fracking chemicals do to water, regulations are inadequate, concerns of rationing of water, lowering of water levels to a point of exhaustion, making these regulation changes is actually loosening the restrictions, concerns over making the proposed strike through removal of well requirements in the law, concerns over aquifer contamination, there are concerns of drilling in populated areas, Industry corrupts and manipulates property owners, elected officials, and the chamber of commerce; Industry needs to build a business that has the least amount of effect or intrusion in people's lives and it protects health, and the earth, concerns over some oil fields exempting out of a groundwater monitoring plan based on aquifer exemptions despite the water still being used for agricultural irrigation, money lost to agriculture and tourism, concern to not reuse water used in the fracking process, their needs to be an allowance to stop fracking if necessary, lack of adequate financial compensation if health or water supply is harmed, operators performing self-monitoring, toxic fluid not being biodegradable, release of dangerous hydrocarbons, pollutants evaporating into the air, concern of non-disclosure/trade secrets, lack of a tested cleanup plan, should be held to the Clean air and water laws, concerns on the concrete lining sealing a well, concerns over the amount of acid used in fracking, all water should be protected, knowledge of where all wells are and where the drilling is occurring with what pressures, concerns of what is being done with the waste and how it will be treated, all leaks should be stopped and fixed immediately, concern that SB1132 was defeated, concerns about fracking fluid/waste containment and the possibilities of it being dumped, lack of established safety laws for workers, businesses or jobs will not be created, lack of analysis of the risk of tainting the water supply for a state which is already in a drought, California needs water for agriculture, lack of a clear mechanism for remediation, either detailed in SB4 or by reference to the appropriate existing statute, lack of a fund for compensation of individuals whose health or livelihood has been adversely affected by fracking projects, a corporate tax to fund compensation efforts (amount defined by SB4 and administered by the appropriate state agencies).
2516	13096-1, 13102-1, 13438-1 Fracking must be abolished in California because of one or more of the following various reasons: earthquakes, current drought conditions, has the potential to kill the entire planet, irrevocable water, unsafe for people living nearby to drink water they're unaware if it's safe to drink, climate change, injection of chemicals causing contamination, and an unknown method of making water safe to use again.
2517	13375-3, 13376-3, 13383-3, 13137-8 It's not too late to establish a policy that does not allow fracking to take place. Just because you can do something doesn't mean you should. Once you frack, you can't go back.
2518	13135-1, 13496-3 Given the extreme drought Californians face, the people strongly urge there to be no fracking or well stimulation of any kind, under any regulations, given the huge amounts of water used and contaminated, which Californians cannot afford to waste.
2519	13128-1, 13121-10 Expanding fracking in California (or anywhere really) would be insane. Californians don't want to expand it.
2520	13147-1, 13147-6, 13221-1 Fracking is insane, unethical and should not be allowed under any circumstances. To allow it is to reject the authoritative consensus of the global scientific community in regard to climate change, human health and the integrity of Earth's ecosystem as a whole. Replace the entire regulations booklet with a single line in giant red type: "NO! Fracking is not permissible under ANY circumstances. Californians choose to have a future instead."

2521	13134-1, 13134-3, 13253-3, 13195-4 California citizens and taxpayers ask the Department of Conservation to stop the proposal to well stimulation treatments such as hydraulic fracturing and acid matrix stimulation. The public asks the Department of Conservation to uphold their promise to protect and conserve California by not moving forward on this proposal.
2522	13113-3, 13154-1, 13189-6 Citizens want the Department of Conservation to revise the regulation's text to delete the allowance of fracking absolutely. No to new wells of any kind unless they are for drinking water.
2523	13111-1, 13337-1, 13304-1 It seems to the public that in the well stimulation regulations that every provision protecting the citizens of California has been crossed over and over. The card Blanche has been given to oil companies to ruin the environment, poison the water system and create more earthquakes in earthquake-prone California. No one listens to the citizens screaming "no fracking in California!"
2524	13108-1 The public's priority is a healthier environment. The big priority is that whoever people vote for be anti-fracking.
2525	13124-2 Safe solutions have not been identified for: excessive water use, especially during drought conditions, water pollution, including pollution of aquifers by chemicals injected in fracking, lack of labeling and identifying the chemicals used in fracking. There's no good way to get rid of chemicals used for fracking.
2526	13144-3, 13129, 13297-1 Don't frack, duh. It is an absolute mystery to people why fracking is still going on at all when it has caused so much environmental damage everywhere it has been done. Stop the fracking now! The public will not stop protesting until it stops. Pumping toxic chemicals into the ground for any reason is not a sane idea. No one wants fracking to happen in the world, country, state or county. If Dick Cheney had not had the rules changed to make it easier for polluters to pollute, fracking companies would not be doing this. Corporations think they can pollute when there is profit in it for them which is unconscionable.
2527	13179-2 Water shortages and earthquake territory make this a bad idea.
2528	13187-1 Keep the coast frack-free.
2529	13492-6 Individuals propose the text of the regulations change to "SB4 Well Stimulation Treatment will not occur and all others will be stopped by January 1, 2015."
2530	13479-1, 1379-2 Individuals oppose the Proposed SB4 Well Stimulation Treatment Regulations because nearby wells affect the neighborhoods people live in. The process for rendering natural gas is lethal to all of life and citizens do not/will not support its use in their communities. Communities will organize against any attempts to promote the processing of fracking.
2531	13509-1, 13509-2 Thanks go out to the team of people who are attempting to regulate "well stimulation treatment" aka "fracking" in the state of California, a state that possesses so many well-known fault lines, is

	undergoing severe drought, and has issues with pollution already. Other areas are banning fracking altogether and citizens urge California regulators to do the same.
2532	13470-2 A ban on fracking is too late for already born babies, their mothers, fathers and grandparents—but it is not too late for other babies yet to be born in California.
2533	13502-1 People write to voice their strong rejection of well stimulation and fracking. Engineers who have been sufficiently proven that fracking is an extremely unwise form of oil extraction are particularly opposed to the practice.
2534	13243-5 Ordinary citizens who are not geologists or petroleum engineers find that the arguments against fracking seem to heavily outweigh the arguments for it (which mostly involve financial gain).
2535	13201-2, 13321-1, 13254-2, 13249-2 The proposed changes are only putting lipstick on a pig, the people say. Fracking must be abolished in California, the land of earthquakes and drought. Fracking only imperils everyone. Expert scientists have reportedly said that if Californians extract and burn all the fossil fuels they can, that life as everyone knows it on this planet will end. The people wonder if anyone needs to know more than that. Current regulations are laughable are terrible. Fracking is terrible. Californians want to disallow fracking.
2536	13333-2 Since Californians oppose such activity, they'd speak out against any action of the State to approve it. They can probably assume that since the mailed document does not address Sb4, it will not be considered.
2537	13192-1 Citizens are opposed to fracking altogether and cannot believe that there are efforts to continue its implementation in California given California's water crisis, earthquake sensitivity and issues with air quality and population density to name just a few. They join in the letter submitted on January 14, 2014 by Jed Holtzman and a coalition of other groups including Earthworks, Environmental Defense Fund, Angeles Chapter Sierra Club, et al. submitted as Public Comment to the proposed regulations.
2538	13191-4 Individuals do not approve of this or any other form of drilling.
2539	13311-2 The whole country is currently talking about the dangers of fracking, and it is shocking to concerned Californians that the Department of Conservation is proposing to allow fracking in their neighborhoods. If it comes to pass, the people state that they'll organize protests and demonstrations, sit-ins, etc. in their attempt to make fracking impossible.
	Moratorium
	13081-1, 13176-1 Please place a moratorium on fracking.
2540	13378-1, 13382-1, 13386-1, 13404-1, 13405-1, 13406-1, 13407-1, 13408-1, 13409-1, 13410-1, 13411-1, 13412-1, 13413-1, 13414-1, 13453-1, 13458-1, 13446-1, 13556-1, 13573-1, 13472-1,

	13164-1, 13164-2, 13457-3, 13496-2, 13464-10, 13473-5, 13502-4, 13280-3, 13280-4, 13269-4, 13365-4, 13190-1, 13365-2 DOGGR continues to propose regulations that will allow well stimulation to occur without providing any scientific or other information showing that these regulations can and will ensure that well stimulation does not pose serious risks to life, health, property, and the environment. California must place a moratorium on fracking for one or more of the following reasons: California needs water for agriculture, concern on where the money to pay for independent regulators will come from, Industry actually following the regulations, endangering California's water supply by the amount of water used and contamination, illegal injection of fracking wastewater, regulations are useless if contamination or illegal dumping of waste occurs, health risks, agriculture contamination, increase in earthquakes and fracking near fault lines, concerns about fracking's overall hazardous activity and it not being treated as such, inability to regulate such a hazardous activity, lack of sufficient notice provisions to those immediately affected, lack of continuous monitoring of each treatment or well, pollution (air, water, noise), use of highways, irrevocable water, illegal injection/dumping and contamination into aquifers, loopholes, deficiencies and omissions in the regulations, lack of scientific studies, leakage of toxic chemicals into the air and surface waters via runoff, health of people, animals and plants; a year between the EIR coming out and the continual development allowed to go on without necessary protections, unknown of the long term effects, short term gain of little natural gas extraction, greed, profiteering, concerns of fracking destroying farmlands, and natural habitats; methane being released into the atmosphere, Industry needing to stay within the guidelines of the Clean Air Act, and the Clean Water Act, lack of a cleanup plan, the public doesn't want to pay for the cleanup process, Industry doesn't pay taxes, lack of groundwater regulation, concern over exportation/transportation of carbon based energy sources, global warming, agricultural and urban struggles, oil dependency, several deficiencies and omissions in the regulations, regulations were drafted in the absence of scientific evidence, regulations don't mention air quality protections (monitoring air quality and requiring infrastructure and techniques to prevent methane leakage and other harmful gases), regulations should promote the use of food grade and other benign additives and in particular, prohibit the use of any distillate hydrocarbons, no elimination of risk of leakage during transport to the site, surface spills at the site, or other risks to communities near the transport, use or disposal of such chemicals, stimulation in, under or around sensitive areas is not included in the regulations (offshore platforms, near coastal bays, and estuaries or wetlands, near residential areas, or particularly sensitive areas such as schools, hospitals, senior facilities, national forest lands, monuments and wildlife refuges, increase in death rates of oil and gas workers, no protect for the health and safety of workers, there's no mention of enforcement or how the Division will respond to any non-compliance of any section of these regulations.
2541	13122-2 Fracking needs to be stopped until safe solutions can be identified for water pollution of aquifers by chemicals being injected during fracking, excessive water use (especially during drought conditions), and lack of safe disposal methods for chemicals used for fracking.
2542	13124-1, 13120-1 Fracking needs to be halted until much more research is done on its safety for humans, California's precious water resources and all living things.
2543	13146-4 The public objects to allowing any well stimulation treatment for the next 5 years. They need a 5 year recess from all fracking and oil drilling while the state builds a million new 2X solar powered homes in California. KB Homes is building 1,000 solar powered homes in Lancaster, CA.
2544	13112-2 There are demands for a moratorium on fracking in Ventura, California.

2545	13169-4 Halt the whole process until there is adequate staffing to monitor the oil industry.
2546	13481-1, 13481-2 Individuals have sent copied comments by the Sierra Club's researchers indicating they are in agreement with their demand for a moratorium on Fracking in Los Angeles and California. It poisons water which Californians have in short supply and disturbs a fragile balance of earth plates increasing the possibility of earthquakes.
2547	13266-2, 13572-3 The Division clearly has the authority, under SB 4 and the emergency regulatory power granted for the interim period by that statute, and under the existing power under Pub. Res. Code Section 3106, to implement the precautionary principle and halt well stimulation projects. In order to complete the regulations properly, all information, including the findings of the upcoming EIR and independent study, must be taken into consideration. The people believe that the Division has a responsibility to impose a moratorium on all well 2 stimulation in the interim. Until it can be determined that these methods will not negatively impact Californians' water, health, environment, and climate change goals, it is irresponsible to allow the continued use of well stimulation treatments.
2548	13571-3 The people of California continue to urge the Division to implement an immediate moratorium on hydraulic fracturing, acidizing and well stimulation as the state undergoes its scientific study of the impacts of hydraulic fracturing and other well stimulation treatments.
2549	13550-1, 13570-2 A moratorium on hydraulic fracturing should be implemented until after: DOGGR completes the certification of its EIR and the environmental, public health and safety impacts from well stimulation are fully analyzed; these regulations are revised, finalized and become effective after receiving appropriate public comment; and DOGGR has all the necessary means to enforce the regulations.
	<u>Regulations are Inadequate</u>
2550	13558-1, 13554-1, 13504-2, 13149-1, 13488-1, 13518-1, 13379-2, 13511-3, 13456-1, 13478-1, 13459-1, 13474-1, 13480-1, 13511-1, 13510-4, 13441-1, 13491-2, 13491-3, 13518-2, 13548-1, 13336-1, 13331-5, 13553-4, 13553-15, 13200-4, 13226-2, 13317-10, 13204-2, 13294-1, 13298-1, 13553-2, 13570-5, 13570-7, 13570-13, 13570-11, 13249-8 Fracking, regardless of regulation, will never be safe or in the best interest of the people and state of California. The six months of SB4 interim regulations in action show that regulation is not sufficient to protect the people and environment including plants and wildlife of California from the public health and climate impacts of fracking. The revisions do not provide enough oversight of the practices and allows unknown toxic chemicals to poison California water supplies in the middle of the worst drought in the state's history. Well stimulation should be prohibited. The recent draft of the regulations do not ensure the safety of those in close proximity to well stimulation sites. The regulations inadequately address the potential for accidents, steps to take in case of an emergency, worker safety, setbacks, continuous air monitoring, ambient air criteria standards, penalties for non-compliance, times of drought, do not cover all forms of well stimulation, the majority of wells in the notices are exempt from groundwater monitoring, and the regulations do not require 100% compliance. The regulations are unclearly written, is too wordy, contains useless information, is too narrow, do not flow, and in general, sections are not in a coherent or logical order. Reading through the text, it really seems to some that all anyone is requiring of operators is just some basic information for the permit, some basic testing and monitoring, and a basic level of communication with the Division. The amount and degree of

	precautions and conditions listed in SB4 are frightening to the public and indicative of the dangers of this process. Citizens urge the government to reject these guidelines and keep working for real regulation that keeps the population's health and water supply safe.
2551	13491-4 It seems to some that the proposed regulations have been weakened even more in the second revision. The public would like to know what group had the most influence on the proposed regulations through the drafts. To some, it seems the industry had a strong hand in removing elements of the regulations that required more transparency, tougher testing, and more disclosures.
2552	13514-1, 13528-1, 13535-1, 13539-1, 13541-1, 13501-1, 13239-2, 13346-1, 13309-2, 13209-5, 13341-1, 13226-1, 13196-1, 13196-2, 13356-1, 13280-2, 13209-2, 13210-1, 13244-5, 13201-3, 13250-1 We have deep concern of the recent revisions to the SB 4 regulations for well stimulation treatments. The alterations of this bill appear to limit the amount of oversight DOGGR will have over extraction operations, and includes ambiguous language in regards to where the water for these operations will come from, and how wastewater will be stored and/or disposed of after injections. These edits are very disconcerting considering that Californians are in a severe drought, these well stimulation treatments involve copious quantities of water and are known to use toxic chemicals, such as benzene, toluene and xylenes. The current draft of the proposed regulations for well stimulation and fracking are inadequate to protect public health and the environment. Concerned citizens feel that the original, revised and deleted texts have left something to be desired as they did not find any mention of the specific chemicals or gases that are being used in the fracturing process. This oversight results in what they believe is a totally unacceptable set of regulations because the specific chemicals and gases used in the fracturing process are not at the disposal of chemists and others—others not working directly with the petroleum industry, to analyze the toxicity so that the general public can make educated decisions about the true risks of fracturing.
2553	13464-1 Concerned citizens have been following the issue closely, and while they greatly appreciate the care with which SB4 has been crafted, they still - even in this 3rd or 4th revision - do not feel confident that these regulations properly guard the people or economy of this great state against the inevitable consequences that will occur should a full scale industrialized development of tight oil reserves occur in California on the model of other major shale plays - i.e. the Bakken of North Dakota and Marcellus of Pennsylvania. This lack of confidence stems not so much from the California Department of Gas and Geothermal Resources efforts as much as from the blatant recklessness of the oil industry at large.
2554	13554-3 The regulations as drafted violate various state laws and should not be implemented. These laws include: CEQA, the Administrative Procedures Act, and various sections of the Public Resources Code.
2555	13289-1, 13227-1 Residents ask that any revisions in the SB4 Stimulation Treatment Regulations that will make it easier to extract oil from California not be approved.
2556	13554-2 The regulations as currently drafted will do little to stop illicit dumping.
2557	13074-1, 13076-1 Regulating fracking actually facilitates it rather than stopping it.

2558	13075-1, 13085-1, 13379-3, 13421-2 Title of the Second Revised Text of Proposed Regulations is misleading. Since the regulations are about fracking, the title should not hide the facts. The regulations are incomprehensible to a non-attorney. Commenter's are concerned with the terminology and language used in the regulations being too advanced. A simple summary and analysis of the regulations would be beneficial for any regulations sent out in the future.
2559	13380-2, 13399-2, 13407-2, 13441-4, 13491-15, 13471-2, 13477-2, 13481-4, 13481-5, 13284-2, 13348-3, 13267-2, 13349-10, 13210-3, 13358-1, 13244-1, 13254-4, 13560-19 Californians state that they need to get stronger regulations on this industry, regulations that will keep the environment safe for agriculture, recreation, and clean California living. According to the Sierra Club, who as evaluated these regulations in detail, "The second revision fails to correct the many severe deficiencies Sierra Club and others identified in prior comments. Most importantly, DOGGR continues to propose regulations that will allow well stimulation to occur without providing any scientific or other information showing that these regulations can and will ensure that well stimulation does not pose serious risks to life, health, property, and the environment. Indeed, DOGGR has not shown that any possible regulations could avoid these risks. DOGGR's present course of drafting well stimulation regulations in the absence of and prior to a scientific inquiry regarding well stimulation is inconsistent with DOGGR's statutory obligations and basic principles of agency decision making."
2560	13401-1, 13404-2, 13511-6, 13401-3, 13447-2 There is no mention of ways to hold Industry accountable, such as penalties for non-compliance, nor references to other laws for penalty specifics to ensure the safety of California's water, land and communities. There is no mention of Industry being held to the Clean Water Act, Safe Drinking Water Act, CEQA, or Clean Air Act. There should be no federal regulation exemption.
2561	13410-2 The regulations should use an inclusive definition of well stimulation treatment that encompasses gravel packing and forms of stimulation that last longer than what DOGGR has termed "short and non-continual" processes.
2562	13503-1, 13222-1 In the light of the fact that this department is in fact the Department of Conservation, and in light of the fact that the State of California is currently in a severe drought, any revisions to "SB 4 Well Stimulation Treatment Regulations "must exclude any form of water (H20) as either a part of any "base fluid" or any other component of the extractive and cleanup process related to this activity
2563	13538-4 Under existing law, the Governor and DOGGR can deny approvals for wells that involve fracking or can place a partial or complete moratorium on fracking. A new amendment in SB 4 states that DOGGR "shall allow" fracking to take place until regulations are finalized in 2015 provided that certain conditions are met. This could be interpreted to require that every fracked well be approved between now and 2015, with environmental review conducted only after the fact.
2564	13444-1 Some commenter's are against all of the modified text and think some of the important language has been removed.
2565	13454-1 There is a desire for the revised text to be in a more readable/editable file such as MSWord to construct formal edits.

2566	13485-1 These changes do not guarantee this process being done safely. Slow down the development of these regulations until safeguards can be written into them.
2567	13130-1, 13183-1, 13198-4 The revisions are not sufficient to protect California from the water, soil and air contamination resulting from the Fracking process. Fracking causes chemical, radium and salt contamination of our fresh water. Hydrogen, Silica and Nitrates released in the air during the Fracking extraction cause a more rapid destruction of the ozone than current Co2 emissions. In addition, the revisions do not address the consequences of Fracking in unstable areas such as the San Andreas Fault and other California fault lines. As evidenced in Ohio and Oklahoma, Fracking causes earthquakes. Fracking and Oil Industries should be held accountable to comply with the Safe Drinking Water Act and should not be given tax exemptions.
2568	13130-19 California and the federal government have adequate regulations in place to protect the state's water supply for human and agricultural use. Across the country, evidence of contaminations to water, soil and air caused by Fracking prove state regulators have failed to protect Californians' health, dwindling water supply, as well as the environment from fracking. Governor Brown should move quickly to halt fracking to ward off a surge in oil industry wastewater that California simply isn't prepared to dispose of safely." SB4 Well Stimulation revisions are not adequate, No Fracking in California.
2569	13496-1 People are writing to comment on the SB4 regulations. Some applaud the Department of Conservation's efforts to define all aspects of hydraulic fracturing to a greater degree, and to add acidification to the list of processes used by the oil and gas industry to be regulated, though they do still feel there are several reasons why these actions do not go far enough.
2570	13521-1 Citizens would like to urge regulators to not make the proposed strike through removal of well requirements in the law. Officials cannot loosen restrictions that have only just been put into place.
2571	13441-2 The revised regulations do not ensure adequate protection from seismic events shown by USGS to be triggered by well stimulation activity, nor does it place enough responsibility on oil operators to compensate or remediate after seismic activity or leaks.
2572	13531-2 The people observe that there is no protection for the air and climate: The state's draft regulations don't require operators to capture methane, a potent greenhouse gas. They don't protect people living near fracked wells from air pollutants that cause cancer and respiratory illness. A recent Center analysis found that oil companies used more than 45 million pounds of dangerous "air toxic" chemicals in fracking, acidizing and gravel packing over the past year in Los Angeles and Orange counties.
2573	13491-8 The public states there is a complete lack of regulations regarding flaring. Maybe it is already against the law, they say, but that was not clear in reading the proposed regulations. They believe it should not be allowed at all, as it is a real disturbance to the public and also causes real air pollution which is a real and serious problem in the state of California—it is a health risk to the public.

2574	13521-3 The citizens urge regulators to not make these changes to the existing law. The health of the State of California is dependent on clean water and making the proposed changes gives the Well Stimulation contractors a higher likelihood of aquifer contamination.
2575	13349-2 The current permanent regulations on fracking and acidizing do not do enough to protect Californians from air and water pollution, and do nothing to protect the state's most vulnerable populations. Communities, such as Shafter in Kern County, a largely Hispanic town, are living with fracking right now, and suffer from severe health effects as a result.
2576	13266-1 Some Californian citizens agree with the San Diego Climate Change Action, and also applaud the progress made by the Department of Conservation (DOC) and the Division of Oil, Gas, and DOGGR since the first draft was released, as this second draft is substantially improved. However, there are many key areas in which the proposed regulations fail to meet the statutory mandate under state law to "prevent, as far as possible, damage to life, health, property, and natural resources." (Pub. Res. Code Section 3106). Citizens urge DOC and DOGGR to go beyond the minimum requirements of SB 4, and impose a moratorium on well stimulation. Until the Environmental Impact Report (EIR) and the independent study are completed, and the science is clear on how these processes impact health and the environment, well stimulation should not continue. The state has never made the determination that fracking and other forms of well stimulation will not unreasonably threaten water supply and quality, degrade the environment, negatively impact occupational and public health, or undercut state climate change goals.
2577	13575-2 Regulations should apply to all onshore and offshore well treatments of any kind including all stimulation methods and all injection methods for any purpose and include: complete identification of company doing the treatment work. exact location of well-being treated, owner of property where well is located, specific source and volume of water used in each operation, date of each treatment, specific type of treatment, pressure of treatment, depth of treatment, including horizontal and vertical pathways, volume and identification of all chemicals used in treatment, chemical and volume analysis of flowback or "produced" water, method and location of disposal of flowback and all wastes, disclosure of all well casing, storage container and other failures resulting in spills, including date, cause, volume spilled, chemical contents of spill, spill treatment, amount recovered and effect on nearest water body including migration pathway, mandatory area groundwater testing and disclosure of results and evaluation of migration pathway for injected fluids, disclosure of distance from fault lines, and monitoring and disclosure of seismic effect and pattern of all seismic activity in area of operations
2578	13571-2 There are environmental and health concerns with stimulation that these rules do not address at all. These include provisions regarding water use and prohibitions on the use of hazardous and toxic chemicals. Additionally, there are many other oil and gas production activities beyond the act of well stimulation for which updated regulations are urgently needed, such as well construction, air emissions, prohibiting development in sensitive areas, and setbacks.
	<u>Support Regulations as is</u>
2579	13362-1, 13282-5 It is important to adopt the 2nd revised text of proposed regulations for use of well stimulations in oil and gas production.

	Support of Division Creating Regulations
2580	13551-3 The California Independent Petroleum Association (CIPA) supports transparency around the oil and gas industry's operations and practices; much of what SB 4 requires of an operator is basically more information on well stimulation, some of which is already captured via the well history and through permitting.
2581	13551-1, 13551-2 The California Independent Petroleum Association (CIPA) remains committed to supporting the State in implementing all of Senate Bill 4's elements; though they believe the latest draft regulations contain significant issues that greatly exceed the original legislative mandate. CIPA represents approximately 500 independent crude oil and natural gas producers, royalty owners, service and supply companies operating in California. CIPA supports reasonable regulations that balance public interest and the environment with the needs of oil producers. As has been demonstrated across multiple state and federal jurisdictions, hydraulic fracturing, and well stimulation operations in general, are safe and effective technologies that are essential in many instances to increase the recovery of hydrocarbons and deliver significant economic benefits, in compliance with laws and regulations for environmental protection.
2582	13571-5 The proposed rules include important provisions that are crucial to help manage the environment and human health/safety risks associated with hydraulic fracturing, acidizing and other stimulation methods.
	Regulations Go Beyond Authority in SB 4
2583	13551-4, 13551-5, 13563-1 The draft regulation now asks for information which goes beyond SB 4. CIPA seeks clarity from DOGGR as to exactly why additional information is needed, how it will be analyzed and used, and validation that each piece of information actually serves a purpose. CIPA looks to DOGGR to be purposeful and efficient with every request for information, as information comes at a real cost to both the operator and the agency. CIPA hopes the draft regulations will be viewed with these principles in mind, and that data requests with minimal value are dropped from the final proposal. CIPA also supports the detailed comments and policy recommendations submitted by the Western States Petroleum Association (WSPA) on October 24th as well. They believe the recommendations put forward by WSPA are logical and will significantly help improve the regulatory structure of SB 4 once finalized.
	Acid
2584	13580-2 There is no mention of the type of acid or its certain toxicity to vegetative or animal life. The idea of fracking with acid runs counter to the perception of water being injected for the same purposes. 'Acid matrix stimulation treatment' does not mention possible health hazards, either. For this reason, the company requesting the fracking bid provide extensive tests as to its effect on human health and if no information currently exists, the company should be responsible for providing this important information.
2585	13509-5, 13313-7, 13340-1, 13241-1, 13239-1, 13331-3 Concerned citizens of California are strongly opposed to the practice of hydraulic fracturing, and in particular, acid matrix stimulation. There is enough evidence, they say, that these practices

	significantly affect the quality of nearby ground water sources and those effects over time are not easily reversed. Acid fracking is as dangerous as it is toxic. Leaving it in the ground in a cement well is environmentally toxic, and must be recycled. Montana has whole towns sitting on top of arsenic and acid pits that will never be cleaned up because of the lack of legal measures allowing oil companies to pollute. Please don't let this disaster continue under your watch.
2586	13464-8 Matrix Acidization. You need to put the words "HYDROFLOURIC ACID" in all caps in discussing acidizing. This, again, is one of the most toxic substances known to mankind. It's the stuff from which saran nerve gas is made. Its weapons-grade material. It's already being used with near careless abandon (in my humble view) in our refineries - and we still barely understand what it's impacts might be when pumped a mile or more into the ground, cutting through aquifers and other vital deposits. SB4 seems to maintain a status quo as far as reporting the use of highly toxic chemicals like hydrofluoric acid. The discussion needs to occur PRIOR to its use - not in the 6 month (or so) window after the fact that SB4 seems to offer.
	Response to Comments 2514-2586: The Division's primary statutory mandate, Public Resources Code section 3106, is that the Division permit operators "to utilize all methods and practices known to the oil industry for the purpose of increasing the ultimate recovery of underground hydrocarbons," but regulate operations so as to prevent, as far as possible, damage to life, health, property, and natural resources, including underground oil and gas deposits and water suitable for irrigation or domestic purposes. Specifically, Public Resources Code section 3106, subdivision (b), contemplates that the Division will regulate, but allow, "the application of pressure heat or other means for the reduction of viscosity of the hydrocarbons, the supplying of additional motive force, or the creating of enlarged or new channels for the underground movement of hydrocarbons into production wells." In recent years the Legislature has considered several legislative proposals that explicitly banned or placed a moratorium on well stimulation activities in the state. Each of these legislative proposals have failed passage in the Legislature. Senate Bill 4 does not contain any explicit ban or moratorium on well stimulation treatments. Rather it contains explicit direction to the Division to regulate well stimulation treatments. Consistent with this statutory mandate of Public Resources Code 3106 and Senate Bill 4, the Division has established regulations that address environmental risks and respond to public concerns, but do not prohibit methods and practices that are proven to increase hydrocarbon recovery. These regulations have been developed to supplement the Division's existing oil and gas regulatory framework to meet the intent and requirements outlined in Senate Bill 4. These regulations also respond to the feedback the Division has received in ten public comments hearings held throughout the state, tens of thousands of public comments submitted in written format, and in scientific and policy papers, which are listed in the Final Statement of Reasons. These regulations include monitoring, evaluation, and testing requirements for before, during, and after well stimulation treatment to ensure the integrity of the well and the geologic and hydrologic isolation of the stimulated hydrocarbon formation. These regulations also implement the public disclosure, neighbor notification, water testing, and permitting requirements established by Senate Bill 4. The Division believes that these regulations provide an effective framework for a level regulatory scrutiny that is commensurate with the level of public concern with well stimulation treatment operations.
	Air Quality

2587	13076-4 SB 4 regulations pay lip service to the California Air Resources Board's ability to safeguard public health from air contaminants cause by drilling. Fracking only adds more methane gas and deadly volatile organic compounds to the fatal concoction formerly known as the air that we breathe.
2588	13529-2 The new stimulation notices do not pass ambient air criteria standards to qualify as "attainment" status for either state or federal ambient ozone compliance. There is concern for the air pollutants known to be released during oil and gas development, stimulation, and production including volatile organic compounds.
2589	13349-7 Lack of protections against air quality contaminants that result from the construction and production phase of fracked wells concerns Californians.
	Response to comments 2587-2589: On August 25th, the California Air Resources Board held a public workshop and informed stakeholders and the public that it will proceed with the development of an oil and natural gas methane control measure that would include well stimulation. ARB will also continue a well stimulation emissions study and analyze chemical constituent data. Depending on results of this study and analysis it could propose additional controls for well stimulation activities. ARB staff anticipates bringing the methane measure to its board in the spring of 2015.
	Baker Hughes & Susan G. Komen
2590	13132-6 Tell Susan G. Komen to end their deplorable partnership with the fracking industry. The people thank the government for fighting fracking.
2591	13132-2 The largest breast cancer organization in the country and a major fracking company are banding together to pinkwash fracking. They are even painting drilling equipment pink. The graphic of a pink drill bit is straight from fracking company Baker Hughes' website; their partner for this ugly PR stunt is breast cancer organization Susan G. Komen. What makes this stunt so revolting is that fracking exposes people to toxic chemicals that are linked to breast cancer. Komen and Baker Hughes are going to get away with this insanity unless people speak out now. Californians urge for people to tell Susan G. Komen to end their deplorable partnership with the fracking industry. Last year, Komen raised more than $250 million, but Baker Hughes only had to spend $100,000 to persuade Komen to help it pinkwash fracking's toxic impact on women's health. The public is sure that breast cancer information packets that Baker Hughes is shipping to drilling sites around the world along with its 1,000 ludicrous pink drill bits won't contain a word about the cancer risks associated with fracking.
2592	13132-5 It's the height of hypocrisy for Komen to claim to be fighting to cure breast cancer, while helping the fracking industry clean up its much-deserved toxic reputation for exposing people to some of the very same toxins that cause breast cancer in the first place. Komen is deeply sensitive to public pressure. It reversed a decision to defund Planned Parenthood in the wake of a massive public backlash. But unless Californians call out its dangerous partnership with the fracking industry, the people can be sure that it will accept even more money to shill for oil and gas.
2593	13132-4 If anyone wants to know what a company that fights fracking and breast cancer looks like,

	CREDO is proud to say they are the largest corporate donor to Planned Parenthood, an organization that provides millions of women with cancer screenings and basic healthcare each year. This year checks have been delivered totaling over $200,000 to Planned Parenthood and given over $300,000 to groups fighting racking including 350, Friends of the Earth and Earth Justice.
	Response to comments 2590- 2593: Thank you for your comments.
	<u>CEQA</u>
2594	13350-2 Individuals are particularly concerned about rigorous enforcement of CEQA as it pertains particularly to water quality. The potential damage to scarce resources in the public's residing areas is worrisome.
2595	13552-14 There appears to be little consideration of ecological effects, despite the required analysis and full mitigation mandate of CEQA--and the requirement that the independent science review consider habitat and species effects. At some point in the regulatory consideration of well permitting, especially for development of areas outside existing disturbed areas, the Department will have to analyze impacts, specify areas that should be avoided, determine impacts that will have to be minimized, and identify appropriate mitigation for adverse impacts. We urge the Department to provide for this consideration at the programmatic level now, rather than addressing ecological effects on an inefficient and time-consuming well-by-well basis. Citizens recommend that the Department require environmental analysis that considers cumulative impacts over a whole landscape, not just looking at single-well impacts, which fail to show the full scope of negative ecological impacts. It may well be that the results of the scientific study and the EIR mandated by SB 4 will be needed to provide the substantive basis for protecting ecological resources, but the Department should, at the very least, provide for a process in these regulations describing how it will use those documents to evaluate and offset impacts to resources.
2596	13552-17 Once the draft EIR is available, the Department should define how it intends to conduct environmental reviews for well stimulation permitting. The Department should describe how it intends to "tier down" from SB 4's statewide EIR to individual well approvals under CEQA, and how it intends to assess cumulative effects across a landscape, a clear requirement of CEQA.
2597	13552-18 Individuals strongly recommend the Department identify the lead agency for purposes of conducting the environmental review of oil and gas drilling and well stimulation treatments, defining under what conditions that role can be assumed by a local or county land use authority. Officials should also state how they intend to deal with county or local jurisdictions that conduct and certify their own EIRs for drilling and well stimulation treatments--given the reservation of local CEQA authority in SB 4 [Public Resources Code, Section 3161(b)(4)(C)]. There is belief that the Department should establish a minimum set of requirements governing well stimulation activities that would apply statewide, while allowing for additional requirements derived from the EIRs of local jurisdictions.
2598	13552-19 The Department should acknowledge responsibility and authority to analyze and adopt mitigation

	requirements for the adverse effects of well stimulation treatments. Currently, CEQA reviews for well drilling, especially in established oil fields, appear to have been largely perfunctory, without appropriate consideration of mitigation options. Unconventional oil and gas development outside of existing oil fields, in particular, may cause significant ecological and other adverse effects that will require a far greater focus and reliance on mitigation: avoidance of sensitive areas and resources, minimization and compensation for adverse effects. Individuals urge for the Department to provide for this issue in the proposed regulations—or in a separate regulatory document--by adopting at least a basic set of rules to define how it intends to approach mitigation in permitting future unconventional wells including providing for specific authority to deny or condition permits based on ecological effects.
	Response to comments 2594-1598: As of the date that these regulations go into effect, Public Resources Code section 3160, subdivision (d), will require discretionary review and permitting of all well stimulation treatments in the state. This site-specific discretionary review of well stimulation treatments will require compliance with the California Environmental Quality Act. In addition, Public Resources Code section 3161, subdivision (a)(3), requires the Division to complete an environmental impact report providing detailed information regarding potential environmental impacts of well stimulation in the state by July 1, 2015.
	Climate Change
2599	13176-3, 13185-4, 13180-2, 13190-2, 13355-1, 13355-5, 13310-4 As most environmentalists and environmental scientists believe, the people of California also believe that fracking contributes to global warming and will have an enormously negative effect on the environment. Fracking is ultimately bad for the planet, short-term gains notwithstanding.
2600	13271-4, 13331-2, 13282-2, 13249-3, In order to stop Catastrophic Global Climate Change, chaos and further destruction of the planet, all Fossil Fuels must be left in the ground starting right now. No more drilling for oil, no more pipelines, no more coal mining, no more fracking, no more extraction, no more drilling or taking out of the ground any Fossil Fuels, sea or water or anything else! The climate is rapidly changing towards a desert climate. The people cannot afford the carbon footprint of their State to stay the same or to get larger from carbon emissions.
2601	13267-3 On a larger scale, citizens believe that the drought itself is the result of climate change caused by greenhouse gas emissions.
2602	13428-2 California needs to make more sensible climate policies, tax natural gas to support more renewable energy, and curtail use of coal-fired power plants.
2603	13143-2 California is entering a climate change crisis.
2604	13116-5 Everyone is facing a planetary crisis due to global warming and must reduce dependence on carbon-spewing sources of energy. The people suggest regulating it out of existence.
2605	13125-4 Citizens Climate Lobby is a non-partisan group of citizens that informs public opinion and creates the political will for a national, revenue-neutral carbon tax: a fee placed on the source of

	production, with 100% of the money collected returned equally to all American households—a carbon fee and dividend. Instead of fracking up the state further, Californians desire to consider this revenue neutral carbon fee.
2606	13137-3 California's water table is frighteningly low, the trees and farmland look unhealthy and are under-producing, and adding another greenhouse gas producing industry to California's table when it is trying to be a role model for Green Technology is foolishness beyond measure on many levels.
2607	13349-8 Lack of data collection to understand the effects that increased fracking and fossil fuel consumption will have on climate change is of particular concern to residents of California.
2608	13216-6 It doesn't take a genius to figure out that as you deplete water supplies by the trillions of gallons, there's less water in the ground to continue the natural cycle of water. An interrupted water cycle means less water in the air, which means fewer rain clouds, fewer crops, more deserts, and entire population centers without a critical resource, leading to widespread social instability. Fracking also puts an exponential amount of greenhouse gases into the air. Each of America's 500,000 gas wells requires 400 tanker trucks to carry water and supplies to and from the site – that's quantified to 200 million tanker trucks dumping tons of additional CO2 into the atmosphere every day. Methane, which traps even more sunlight in the atmosphere than CO2 and contributes even more to climate change, regularly leaks from fracking sites. As investigative journalist Steve Horn reported for DeSmogBlog, Mark Boling, an executive at Southwestern Energy, admitted that the amount of leaking methane at fracking sites concerned him greatly. One recent study that linked fracking to climate change illustrated that fracking was even worse for the climate than coal. So much for the "natural gas is cleaner than coal" argument.
2609	13309-5 Climate deniers continue to shout into the ever increasing winds, rain and weird weather with horrible costs to people, property and California's future.
	Response to Comments 2599-2609: On August 25th, the California Air Resources Board held a public workshop and informed stakeholders and the public that it will proceed with the development of an oil and natural gas methane control measure that would include well stimulation. ARB will also continue a well stimulation emissions study and analyze chemical constituent data. Depending on results of this study and analysis it could propose additional controls for well stimulation activities. ARB staff anticipates bringing the methane measure to its board in the spring of 2015.
	<u>Climate Change (Methane)</u>
2610	13148-7, 13384-1, 13545-3, 13547-4 Methane, a potent greenhouse gas that contributes to climate change, leaks from fracking sites.
2611	13130-15 In 2010, there were more than seven cases of methane gas migrating into groundwater for every 1,000 new wells. Large amounts of methane generated deep underground, and leaks in cement and casings allow gas and fluids such as particulate matter, carbon monoxide, nitrogen oxides, hydrogen sulfide and methane encountered in rock formations, to migrate up outside of the wellbore. Cement and Casings used by the Fracking Industry deteriorate quickly and cause soil, water and air contamination.

2612	13147-2 Agreement is effectively unanimous that all potential sources of carbon must be left in the ground to prevent a catastrophic rise in Earth's temperature. All fossil fuel production must cease immediate, this includes "natural gas."
2613	13486-2, 13491-6, 13218-1, 13264-3, 13329-6, 13329-5 There is a complete lack of mandatory testing of the air before, during and after well stimulation. With all the reports of more and more wells leaking Methane, the state should absolutely require air monitoring stations be setup before operations begin so the public can be assured that the air quality will not suffer as a result of well operations.
2614	13476-3 Water quality will be threatened by methane contamination tied to drilling and the fracturing of rock formations. Methane concentrations are 17x higher in drinking-water wells near fracturing sites than in normal wells.
2615	13476-7 Air pollution caused by fracking may contribute to health problems in people living near natural-gas drilling sites, according to a study by researchers with the Colorado School of Public Health. Fracking and similar techniques often release large amounts of methane, a *highly* potent greenhouse gas that's at least 86 times more effective at trapping heat than carbon dioxide over a 20-year period.
	Response to Comments 12610-2615: On August 25th, the California Air Resources Board held a public workshop and informed stakeholders and the public that it will proceed with the development of an oil and natural gas methane control measure that would include well stimulation. ARB will also continue a well stimulation emissions study and analyze chemical constituent data. Depending on results of this study and analysis it could propose additional controls for well stimulation activities. ARB staff anticipates bringing the methane measure to its board in the spring of 2015.
	DOGGR / DOC / Elected Officials
2616	13554-4, 13521-2, 13531-6 The widespread violations of the interim regulations suggest that DOGGR is ill-equipped to regulate well stimulation and implement a permitting system. DOGGR would be relying almost entirely on self-reported information from the industry, and it is unclear whether DOGGR has the resources or willingness to verify the information submitted to the agency.
2617	13270-4, 13280-1, 13290-1, 13277-1, 13277, 13207-1, 13207-5, 13265-4, 13252-3 The Department of Conservation is not doing its job. The public wants to know if the DOC has read the list of chemicals that are intended to go into the Earth forever. They wonder what kind of destructive agency the DOC has become. DOC didn't handle mailing notices properly, and is on the side of the operators.
2618	13076-3 DOGGR fails to require disclosure of wastewater disposal, neglects to assess risks of waterway and aquifer pollution, ignores well casing failures, waves away red tape items like requiring permits to frack wells - and cannot even pinpoint the statewide location of fracked wells.

2619	13145-4 Every person on Earth holds the responsibility of taking the best care of the planet for future generations. That includes the State of California government officials and power companies in California.
2620	13163-1, 13490-3, 13274-1 It is painfully apparent to the public that the Department of Conservation is missing something. Fracking destroys the Earth's crust. People believe the Department is aware that California is in its worst drought in history, and can't believe how it would consider wasting water for hydraulic fracturing. Citizens ask for the Department of Conservation to toss out the entire list of regulations and ban fracking.
2621	13185-7, 13161-2 The reason why petroleum continues to be relied upon so heavily is because the individuals who run the petroleum companies don't want to lose their power due to the world shifting from fossil fuels. Unfortunately, government agencies tasked with allegedly regulating petroleum companies don't do their jobs because of corruption: industry insiders coming to work in those government agencies, government officials going to work in those corporations, etc. No one has the spine to deal with the problem *now*, which is when the public believes it needs to be dealt with—there is no later.
2622	13169-41, 3328-7 If the Department of Conservation allows fracking to continue to let the oil industry get leases and monitor itself, the resulting environmental damage and harm to people will be their responsibility. Sharing in that responsibility is the oil industry. If officials don't do something to rectify awful, life-threatening decisions, the people of California shame them.
2623	13169-3 The public believes the DOC cannot possibly deal with the thousands of permit applications that are flooding offices, let alone monitoring the oil industry for compliance. They feel the Department is in an impossible situation and the only way to begin to address it is to call a halt to the whole process, at least until there is adequate staffing to monitor the oil industry.
2624	13172-1 Banning fracking is not conservation. The people ask the Department of Conservation to get a clue.
2625	13491-14, 13471-3, 13477-3, 13229-8, 13321-4, 13346-4, 13274-3 The Department of Conservation's goal is to protect the environment and people of California. Citizens want to know what the Department of Conservation is doing to prevent contamination of precious water resources and how the proposed regulations can protect the public's water. People ask that DOGGR please slow down and create regulations that protect the beautiful state of California, home to its citizens and the key to agriculture and recreation industries.
2626	13470-6 Californians wonder if comments are making a difference to the thinking of those who make policy decisions at the state level or if there is so much political pressure to put a veneer of regulations over practices and allowing them to continue.
2627	13489-3, 13357-2 DOGGR and OGER, which is missioned with protecting the environment and safety of citizens, is knowingly allowing this to happen. Version 2 of the proposed well stimulation regulations do nothing to stop this, and in fact allow it to happen. As people get sick, as agriculture is destroyed, DOGGR should be held criminally responsible for allowing such activities to occur.

2628	13280-6, 13269-3 DOGGR must “prevent, as far as possible, damage to life, health, property, and natural resources.” Indeed, consistent with this mandate, DOGGR may only permit those “methods . . . of increasing the ultimate recovery of underground hydrocarbons” which DOGGR deems “suitable,” and the only forms of production that may be used are those “methods or processes [that] have been approved by [DOGGR].”
2629	13510-7 If the DOGGR allows "hydraulic" fracturing to continue based upon permits granted by local water boards (which have been given until 2020 to get their acts together), it seems to the public that DOGGR may be passing its own liability down to the county level because the fracturing could not occur without water. Or, do the State, DOGGR and DOWR accept liability for Californians' water being drained from the aquifer and/or contaminated by hydraulic fracturing or that acid treatment? The Governor, the State of California and the Citizens of California all recognize the water crisis. Impending drilling with clear regulations may unleash disastrous consequences for the State, the people and businesses in California (other than the petroleum industry). The petroleum industry will, of course flourish, but they are not responsible for monitoring these wells forever nor are they responsible for replacing any potable used and/or contaminated.
2630	13491-12 There is hope that DOGGR and the Department of Conservation will go through the proposed regulations and require more of the operators in terms of full disclosures, more comprehensive testing of air and water, and complete notifications on a public website regarding the fracking operations as well as the chemicals used in their operations.
2631	13470-9, 13470-10 Californians want DOGGR employees to ask themselves what sort of future they want for the Earth and for themselves, and do they believe fracking could never affect them or their loved ones. DOGGR employees hold powerful positions of environmental stewardship on behalf of the people of California. Citizens want to know if these employees are passionately committed to the Earth's health, future and life.
2632	13552-20 Performance bond and fee requirements are not expressly dealt with in the proposed regulations. It is apparent that administration of SB4 will require a significant increase in DOGGR personnel and resources which should be financed by permit application fees that are commensurate with providing efficient and thorough service. Well performance bonds should be increased to a level adequate to provide plugging resources, abandonment of wells and the restoration and reclaiming of drill sites. These are costs that are likely to rise with horizontally drilled and fracked shale wells.
2633	13495-1 The Department of Conservation has been said to have made it very difficult to respond to the format provided as it is very tedious to follow section by section and make specific comments. This is the method that the DOC has decided to use to impose horrendous practices like fracking upon the general public.
2634	13495-2 Fracking has been thoroughly explained; the damage, the destruction to human life and all elements of the environment have been exposed over and over. Even the CEO of Exxon sued for the damage to his property value! So, for the Department of Conservation, monetary profits from fracking outweigh the damage that will result. Californians feel this is pathetic, counterproductive, reckless and inhumane. They add that it is also contemptible, questioning if the profits help DOC officials feel like less of a low-life? Their legacy is ruining nature and bringing damage, and

	disease to their fellow man.
2635	13309-3 The public wants the Department of Conservation to stop spending the state's time and money on these dangerous practices.
2636	13365-3 Officials were elected and appointed to keep Californians safe; they are charged with the responsibility of doing so. Money, corporate relationships, interstate commerce, all take a far back seat to public health and well-being.
2637	13313-11 Keep up the good work of trying to control the uncontrollable.
2638	13322-2 Government is all that stands between the American people and corporate abuse of power. Mankind might live in an age of robber barons, but the government's responsibility is to protect the people from their predations. Californians are counting on it.
2639	13326-7 People want to know why the Department of Conservation isn't delivering the other side of the story on fracking and well stimulation treatments instead of relying on energy companies who will profit the most, recklessly carving up the state lands in giving the so-called facts.
2640	13329-1 There are hundreds of thousands of California citizens the Department of Conservation will not hear from due to a lack of time and distinct sentiment that they feel they will not really be heard. The public thinks that if they were indeed heard, that opinions would not change anything as the oil companies are stronger than the people.
2641	13363-3 The people ask that the government please stop taking corporate interests into higher consideration over the needs of the millions of people they work for and are supposed to serve.
2642	13338-3, 13579-2 For maintaining a separation of the personnel from the operators and the regulatory administrations, the regulatory administrators may never, under any circumstance, receive from the operators any gift, donation or employment opportunity, under penalty of major fines and prison sentencing. This would also apply to the administrator's family and friends.
2643	13360-1 The public finds it hard to believe that a profit-driven company is going to comply with the strict rules regarding their operations. There are many details and reports to file; people want to know who will keep track and check to see if their information is accurate. In addition, they want to know who is in a position to understand all of the data required in the operation of well stimulation and what the expense would be for such a group of qualified people to perform such a task.
2644	13325-5 The people want DOC to remember that they are employed by the People of California and that their responsibility is to the citizen taxpayers, not to the corporations exploiting natural resources.
2645	13326-1 You can just tell that state government taking its orders from Big Energy, and not the public as recent October mailing says, when fracking given less threatening description of "Well Stimulation Treatment Regulations."

2646	13289-2, 13560-18 Citizens ask officials to reject oil company profits at the cost of public health, water and soil safety.
2647	13552-10 The administration and enforcement of written provisions is a true test of effectiveness, and citizens urge the Department to seek and employ adequate resources to effectively implement its new and expanded duties under SB 4.
2648	13316-6 What a regulator does in his or her life makes a difference and doing the right thing, longitudinally, is clearly more important than money or power—the public asks for them to quit their lost job and become a whistleblower.
2649	13199-2, 13189-4 Californians suggest thinking of the value of everything, not just money. Public safety should trump financial gain.
	Response to Comments 2616-2649: These regulations have been developed to supplement the Division's existing oil and gas regulatory framework to meet the intent and requirements outlined in Senate Bill 4. These regulations also respond to the feedback the Division has received in ten public comments hearings held throughout the state, tens of thousands of public comments submitted in written format, and in scientific and policy papers, which are listed in the Final Statement of Reasons. These regulations include monitoring, evaluation, and testing requirements for before, during, and after well stimulation treatment to ensure the integrity of the well and the geologic and hydrologic isolation of the stimulated hydrocarbon formation. These regulations also implement the public disclosure, neighbor notification, water testing, and permitting requirements established by Senate Bill 4. The Division believes that these regulations provide an effective framework for a level regulatory scrutiny that is commensurate with the level of public concern with well stimulation treatment operations.
	<u>Economy</u>
2650	13397-2 Each fracking business should be taxed at 500% of profit for funding possible future damages. Individuals and the government agencies involved should be sued for allowing such irreversible damage to homeowners in each city.
2651	13517-2 Fracking is a greedy technology.
2652	13567-5 The economic impact analysis needs to be redone due to legislative expansion to include acidizing operations.
2653	13567-3, 13559-1 This "knee-jerk response" legislation to an uneducated public outcry will end up costing Californians more in the long run than the perceived benefit these regulations will deliver. Oil companies have been hydraulically fracturing and acidizing wells for over 50 years in California with very few mishaps. Those hydraulic fracturing incidents that have occurred recently elsewhere in the United States have been attributed to mechanical failures due to poor casing

	and/or cementing practices, something the DOGGR already regulates. This new legislation adds substantial and unnecessary costs to hydraulic fracturing operations for third party neighbor notification, designated contractor water sampling, contractor fracture modeling, radial cement bond logging, seismic monitoring (minor), waste and flowback fluid sampling, post-stimulation monitoring, radioactivity measuring and public records disclosure, as well as funding an acidizing study (1777.4). Very few of these activities are productive. All will result in greater well costs and subsequently higher prices for petroleum-based products paid by consumers. Protection of the environment is definitely important, but not at the expense of the Bakersfield, and potentially the California, economy.
2654	13137-2 Fracking may be good for a small segment of energy producers' economy.
2655	13144-1 Stop wasting California's money with the fracking process.
2656	13148-6 Communities with fracking have seen declines in property values, increases in crime, and losses in local tourism and agriculture.
2657	13147-5 Fracking is a purely economic mechanism. The people ask if the planet's ecosystem is valued so little that it is to be put to the torch for the sake of the fossil fuel industry. Answering that question in the affirmative is no different than stating that the profits of said industry are more precious than human civilization and people continued survival on this planet. Citizens believe that is madness and that fracking is too.
2658	13151-3 Stop focusing on profits and instead think about the legacy California will leave to those who come after.
2659	13331-6 The people of California suspect that the oil and gas industries have great financial interests in passing regulations that allow them to use fracking and are paying lobbyists to attempt to influence legislators in their favor.
2660	13203-7, 13194-5 There is disproportion between what Californians lose and what they gain; economic growth in exchange for environmental destruction and pollution of ground water is not done in the interest of current and future generations of Californians.
2661	13326-4, 13326-5, 13352-2, 13198-2 Big deal if fracking/well stimulation treatment promises state revenue and jobs. All potential state revenue and jobs are negated by billions it will cost state to clean up inevitable fracking/well stimulation treatment accidents. The public is talking major cost of relocating whole communities in California because they are unlivable from air and water that literally stinks after a few years from fracking/well stimulation treatment. And those jobs fracking/well stimulation treatment promises will all go to low-paying contractors who will become sick over a decade later from cancer chemicals used in fracking/well stimulation treatment and then file a class action suit against the state of California that taxpayers will end up funding. If California is to truly lead the country in conversion to a sustainable future, a great place to start would be investing in and promoting green energy sources, which would also provide Californians with jobs. The notion fracking would create jobs is unacceptable, as would be setting up meth labs.

2662	13216-9 By investing in some professions that are labor-intensive, like education and construction, you can be assured that the money will create lots of jobs. But fracking is an industry that's capital-intensive, meaning most of the investment goes toward the equipment and technology, rather than the people. And when fracking wells become profitable, most of the profit goes to the owners of the equipment, not the workers who did the drilling. In addition, jobs on drilling sites are only temporary, since wells can only be fracked up to 18 times. Fracking makes it possible for people like Richard Kinder of Kinder Morgan to make out like bandits, whereas immigrants and other non-union employees who work on drilling sites get crumbs and are routinely exposed to lethal chemicals like benzene. While there were 135,000 more people working in the oil and gas industry in 2012 than there were in 2007 that number of jobs is negligible compared to the jobs created through sustainable energy. The solar industry alone employs over 140,000 Americans and is outpacing national job growth in other sectors by a factor of ten. The U.S. economy added one million new green jobs in 2013 alone, for a total of 6.5 million green jobs in the U.S. today. If you want an energy source that's great for job creation, look to wind energy – wind turbines alone create thousands of permanent jobs through their production, transportation, installation, and continued maintenance. More important, wind and solar power don't contaminate water supplies.
2663	13216-10 Exxon is one of the largest companies that engages in fracking. And in an ironic twist, Exxon CEO Rex Tillerson became a fracking protester when well drilling was about to happen next to his home. Through his attorney, Tillerson said he wasn't concerned about the environmental impact, but rather the impact to his property values. As I've written in the previous sections, Tillerson is obviously wrong to not be worried about the environmental costs of fracking, but he's 100 percent correct about what fracking does to homes. A study by the University of Denver found that fracking can reduce a home's value by 25 percent on average. And of 550 people surveyed, most wouldn't buy a home near a fracking site. Researchers looking at 43 counties in New York and Pennsylvania also learned that a house within 0.6 miles of a fracking site that depends on wells for its drinking water rather than municipal sources saw the value of their home plummet by 16.7 percent.
2664	13216-11 Right now, the incentives for using clean energy to heat and light our homes are next to none. Oklahoma and Arizona are even penalizing homeowners with fines for installing rooftop solar panels. This is the result of a model bill written up by the Koch Brothersfunded American Legislative Exchange Council (ALEC) aimed at giving oil and gas companies a monopoly on residential markets. Kansas governor Sam Brownback, a Republican, was originally for wind energy, before the Kochs twisted his arm. Kansas currently gets 11 percent of its energy from wind farms, and the state has invested $7 billion to date in installing and maintaining wind turbines. Kansas farmers receive a healthy $8 million in lease payments every year in exchange for allowing wind turbines to be built on their land. This all started in 2009, when Governor Mark Parkinson, who replaced Governor Kathleen Sebelius, signed legislation stating that power companies must have power grids consisting of 20 percent sustainable energy by 2020. But the Koch Brothers started aggressively lobbying against wind energy tax credits in 2013, and called for Kansas' renewable energy benchmark to be frozen at 16 percent in 2016. Koch-funded groups spent $383,000 in ads calling for the repeal of the 2009 legislation. On July 23 of this year, Brownback began calling for a phase-out of the program, in the midst of his re-election campaign, likely caving to pressure from the Kochs. Even though Charles and David Koch are already worth over $100 billion, they still insist on closing off avenues for cost-effective sustainable energy and steamrolling politicians who get in their way.
2665	13168-3 It's all dirty—the people who run it are corrupt and driven by the love of money. They call fracking for money "jobs."

	Response to comments 2650-2665: Thank you for your comments.
	<u>Enforcement, Financial Liability, Penalties</u>
2666	13558-3, 13548-3, 13298-10, 13359-3 The regulations do not specify strict enforcement penalties for violations by operators or direct collaborating agencies like the California Air Resources Board and the Department of Toxic Substances and Control to develop their own penalties. Without a truly serious penalty, the regulations insufficiently disincentive operators from bad behavior in violation of SB4. It is paramount that punishment for non-compliance be swift, harsh, debilitating, and include all clean up and remediation costs. Fines and Penalties need higher if people are being restricted water use anywhere in the state.
2667	13545-6 Auditing and inspection powers. The state of California must have auditing and surprise inspection powers to assure that the fracked wells are in compliance with the law.
2668	13079-4 The regulations fail to provide allowance for citizen lawsuits in the event that private water wells become contaminated.
2669	13359-8 If fracking has caused any harm to land, water, humans a means to report such instances and measures to stop further harm and damage needs to be made available.
2670	13130-2 The California State water Resources Board issued a report to the EPA confirming that at least nine of the eleven fracking sites were deliberately dumping poisoned waste water directly into central California aquifers.
2671	13152-1 Members of the public have filed law notices regarding well stimulation issues. The public objects to having neighbors subjected to fracking of any form. They state that living in the midst of several earthquake faults is unsettling enough, but for the Department of Conservation to permit artificial stimuli beneath this densely populated area in any form for the sake of the mighty dollar is unconscionable. People are overloaded with stress and tuned out. Most people are completely unaware of the probable consequences. It is regulators' job to protect the community from harm and the people of California ask that the abuse of the already unstable ground beneath citizens' homes not be permitted.
2672	13514-5, 13528-5, 13535-5, 13539-5, 13541-5, 13501-5, 13514-5, 13535-5, 13318-2 With increasing information that California injection wells are associated with the exacerbation of earthquakes and a number of these wells have been injecting wastewater into at least nine Californian aquifers, SB4 must contain regulations that will hold operators accountable for the illegal activities and implement the highest standards to ensure the safety of California's water, land and communities. It is top priority.
2673	13510-8, 13487-3 Citizens do not see comments, guidelines or descriptions of how residents in adjacent areas that have had their wells polluted by or depleted by well stimulation practices will be compensated for the loss of water supplies due to pollution. Citizens believe that this issue needs to be addressed

	since it has occurred in the past and will most likely occur in the future. Who exactly is willing and able to assume the responsibility and liability for damages in California, should they arise?
2674	13473-2 If California's aquifers, lakes, and streams become polluted by toxic fracking water, the public wants to know how that problem is going to be mitigated.
2675	13481-3 We the people are asked to pay for the destruction left behind while the oil companies walk off with profits and take no responsibility for the devastation to communities' water, earth and land.
2676	13491-9 Citizens report that they didn't see anything in the proposed regulations about penalties for non-compliance. Maybe this is spelled out elsewhere, but they feel it would be nice to know what those penalties are. They should be binding and proportional to the revenue levels of these wells. A small fine which only represents a few days of oil/gas extraction would be an insult to the people of California.
2677	13487-4 Compensation methods should be addressed should earthquakes stimulated by the fracking process cause damage to property or loss of value to the public's property.
2678	13237-4 The people feel that if ultimately approved, any injection into the ground by any entity should be required to be licensed, with a complete and transparent list of all injection content components, from water to chemicals.
2679	13227-3, 13228-3 Should regulators choose to bend to the fossil fuel industry "lobbying" efforts and still allow resource extraction using "well stimulation", then the public asks that regulators revise the text that the project operator also pays to the public additional fees during the resource extraction for anticipated damages related to greenhouse gas emissions and pollution (during extraction and when the fossil fuel is burned); this includes public health implications and natural disasters).
2680	13491-10 Citizens state that they didn't see anywhere the amount of money the operators have to pay for the volumes of oil and gas that they extract. That should be listed somewhere, they feel.
2681	13571-23 The Division has failed to provide measureable and enforceable standards by which a decision to grant a modification can be performed and evaluated. This is necessary to ensure consistent decision-making criteria among DOGGR staff, adequate and consistent environmental and human health and safety protection, and public confidence in the regulation and enforcement process.
2682	13579-5 Failure to research and develop alternatives should result in heavy penalties of incarceration of the corporate heads, and fines that forfeit all of the corporate assets.
2683	13359-13 If any intentional actions that harm humans, animals, land, property, etc. is found criminal charges need to be filed. An appropriate fine and jail time needs to be determined for owners and operators. Especially if people and animals become ill or die due to the actions of the companies that engage in fracking or well stimulation they should be tried as individuals as wells as the

	business entity as criminal or espionage acts against citizens of the US. The companies and individuals also need to follow environmental protection laws and standards.
	Response to comments 2666-2683: Thank you for your comments. The Division has several statutory enforcement authorities that are effective for obtaining compliance. Among these enforcement authorities is Public Resources Code section 3236.5, which provides for civil penalties of up to $25,000 per violation per day. Under SB 4, Public Resources Code section 3236.5 was amended to specify a minimum civil penalty of $10,000 for each violation of relating to well stimulation treatment.
	Environmental Damage
2684	13081-2, 13101-3, 13466-1, 13545-1, 13443-1, 13125-3, 13137-3, 13137-4, 13137-5, 13133-2, 13133-3, 13131-2, 13134-2, 13145-2, 13139-1, 13121-4, 13117-3, 13110-2, 13171-7, 13165-2, 13169-1, 13186-5, 13492-1, 13489-1, 13502-2, 13440-3, 13468-3, 13536-4, 13369-2, 13229-6, 13306-1, 13294-3, 13365-6, 13364-2, 13293-2, 13349-1, 13365-1, 13270-1, 13347-2, 13345-1, 13345-4, 13209-4, 13335-1, 13217-2, 13327-2, 13310-3, 13276-1, 13552-11,13552-12, 13560-15 The development and well stimulation for oil and gas in California, notably the Monterey Shale, has a high potential to adversely affect valuable ecological resources. The Monterey Shale underlies many surface and marine areas with high habitat and ecological resource values that agencies have spent decades protecting. Protect California from the following: groundwater, air, and surface water pollution, earthquakes, illness in surrounding communities, extreme water use (only reclaimed or recycled water should be used), exemption from the Safe Drinking Water Act, contamination of any water system, and the continued reliance on oil and the production of carbon dioxide. The new priorities to protect Californian's should first be the planet, people, crops and livestock and then profit. Fracking and acid matrix stimulation is a short term gain for a few with a long term detriment effect to the earth. The health and welfare of all Californians is at risk and the risks outweigh the benefits. Californians wonder if the state is willing to burden future generations with the task of dealing with toxic well stimulation materials.
2685	13558-2, 13548-2 The regulations fail to protect the public health of the most overburdened communities by pollution in the state because they do not limit the amount of pollution an operator may release. The overwhelming majority of well stimulation notices are in communities identified by California EPA's CalEnviroScreen as the top 20% of most polluted in the state. It is time to stop adding on to the already life-threatening burdens experienced by these communities and start prioritizing protection of their public health.
2686	13558-4, 13548-4, 13258-2 The regulations fail to protect public health because they do not include any setbacks for well stimulation, maintenance, and waste storage and disposal. Recent health studies found severely negative health impacts in people living 1.6 miles from a fracking site. People, earth, and water will be exposed to harmful chemicals. Huge amounts of water will be used during a drought. Hazardous waste will be produced. And the geologic consequences in California cannot be predicted. DOGGR should adopt a 2 mile setback limit for sensitive land-uses like residential housing, schools, hospitals, religious institutions, and other protected areas.
2687	13074-2 Burning of oil and gas is killing the planet.
2688	13564-1 The regulations don't offer adequate assurances and protections against undesirable

	consequences that are not limited to, but include; contamination of aquifers, damage to the local ecology, environmental impact to flora and fauna and potential seismic stimulation. The regulations should follow and be developed in support of independent scientific investigations and findings.
2689	13430-2 Real conservation and stewardship is critical to California's future.
2690	13077-1 Commenter's are concerned about the purpose of drilling wells and pumping chemicals into the earth.
2691	13130-14 There are additional concerns, such as abandoned wells. Abandoned wells can serve as conduits for the surface migration of methane gas, particularly from newly drilled wells; sometimes leading to explosion. There are few Regulations regarding pipes and compressors, which are built with little or no safety oversight and are likely, as in Pennsylvania, to cause natural gas explosions.
2692	13133-4 The people have heard reports that fracture miners have dumped contaminated water into the aqueduct water supply. This needs to be heavily fined by the state and the offender put out of business.
2693	13147-4 Contingency plans are useless once the fracking process has begun; no amount of money, cleanup or remuneration will be able to offset the consequences. The regulations document Californians were sent is viewed as utterly inadequate to address any relevant factors. It is farcical.
2694	13186-2, 13186-3, 13169-1, 13318-3 Fracking is believed to be environmentally destructive, especially given the oil industry's history for disregarding environmental safeguards. Recent reports that almost three billion gallons of oil industry wastewater have been illegally dumped into Central California aquifers is another deadly example of the oil industry's flagrant disregard for the law, for peoples' health, and the health of the environment. Regardless of regulation, the oil industry has proven they cannot or will not contain the chemicals used in the fracking process.
2695	13170-1 Hydraulic fracturing techniques are known to cause the release of methane into the atmosphere and poison well water despite highly funded industry claims of safety. There are numerous articles and documented evidence that upon rational reflection, would make the ban of such techniques a no brainer if public safety and health are considered a value, whether short term or long term. Of course if these [public health and safety] are no longer deemed valuable, and value is to be found rather in the currency of deals made between the industry and the agents of political representation, entailing exciting profits for the first and sustaining a comfortable hold on power for the second, then California should bring these into the light of public discourse for clarity. If hydraulic fracturing is not banned outright, the people desire to amend any contract that both industry executives, political representatives in favor, along with any children and family reside on the very ground proposed to be "stimulated".
2696	13464-7 A 1500 foot surface / 500 foot subsurface barrier between private residence and oil wells needs a rethink. While this may have worked with more conventional development, with a shale boom in

	CA this would spell disaster for rural communities. The loss of value of land alone would put the Golden State on long term trajectory of economic tailspin, while shareholders and CEO insulate their already swollen off-shore bank accounts.
2697	13439-3 Orphaned and disputed assets may not be properly maintained and thus, may begin to contaminate soil and water. The scenario could begin to resemble that of many abandoned mining operations that continue to pollute soil and waterways throughout the Sierra Nevada and Rocky Mountains.
2698	13537-3 As citizens who need to survive in California, or on this planet, everyone has to resort to these outrageously destructive measures to enjoy life, then we need to redefine what it means to live., If Californians destroy the very earth underneath them to the point where it is so toxic as to make everyone sick and die, they feel they have to question the motives and logic for such actions.
2699	13490-5, 13490-6 Oil corporations ruin production location after location and move on, even though all pipelines leak, there are always shipping mishaps that destroy vast areas, aquatic, avian and animal life. Multiple chemical exposure isn't even assessed. Most people do not know how irreparably damaging oil extraction is. Informed Californians look forward to managing to not poison the air, water, soil, one another and all creatures.
2700	13473-3 In addition to the loss of our fresh water, the fracking process scars California's landscape. Fracking sites have turned large swaths of land into Swiss cheese. The land is not being restored to its original state after a well has been tapped out; the scar on the land remains.
2701	13486-1 There have been a number of cases in California where natural gas seepage from oil fields has presented a fire and health hazard in overlying urban developments. Perhaps most notably, there was a fire in the Fairfax Area of the City of Los Angeles in 1985 due to a high volume of natural gas seepage through cracks in the concrete floor of a building, which subsequent studies have attributed to various causes, including episodic fracturing of the Third Street fault due to reinjection of oil production waste water into the Salt Lake field between 1980 and 1985.
2702	13486-2 Considering that injection of fluids may displace methane, hydrogen sulfide, and other gases naturally present in the geologic formation, and that well stimulation treatment may create permanent fractures that provide paths for these gases to be conveyed to faults or poorly abandoned wells via which they may migrate vertically to the surface where they could present fire hazards at structures and health risks to sensitive individuals.
2703	13486-3 Monitoring of natural gas seepage should be completed periodically following well stimulation treatment in accordance with the requirements of the Department of Toxic Substances Control, the Air Quality Management District or Air Pollution Control District, the local Fire Department, and any other state or local agencies responsible for overseeing and mitigating flammable and toxic gas seepage hazards in the affected communities.
2704	13476-2 Fracking uses toxic chemicals, 25% of which could cause cancer, according to scientists with the Endocrine Disruption Exchange. Approximately 40,000 gallons of chemicals per fracturing is a frightening scenario. After reading the regulations, some people are not convinced these

	chemicals wouldn't make their way into aquifers and drinking water. The operators of the fracturing operations will be monitoring, testing and overseeing themselves. Historically this doesn't fare well for the environment. Add to that only 30-50% of the fracturing fluid is recovered, the rest of the toxic fluid is left in the ground and is not biodegradable. The public would like to know how will that be regulated or even dealt with if it proves a problem.
2705	13579-3 As to the disclosure of the chemicals used for the stimulation, nothing that could prove fatal to the environment in the case of a "breach" should be allowed to be even considered, or allowed. There should be complete disclosure before any injection stimulation occurs. There should be nothing that the operators can deem proprietary that is being injected into the environment.
2706	13203-5, 13203-6, 13194-4 Every year, new fracking chemicals, new mining methods and new techniques for extracting oil and gas are developed. Californians are waging an increasingly asymmetric war against the living world by allowing fracking. What is the true cost of "Well Stimulation Treatment" aka "fracking"?
2707	13203-4, 13194-3 There seems to be some kink in the human brain that prevents humans from stopping, which drives everyone to carry on taking and destroying, even when there is no need to do so.
2708	13297-3 Fracking operations around the country have resulted in significant environmental damage to soils and groundwater that are irreparable and long-term. By the time such impacts are discovered, Californians state that it is too late; the damage has already been done and cannot be undone. Impacts on the water table cannot adequately be determined ahead of time because it is impossible to accurately determine where the chemicals pumped into the ground will go.
2709	13189-3 Having said that, it appears that hydraulic fracturing is dangerous and irresponsible. Members of the general public are not told what chemicals are used in the process, what potential hazards exist (in re: to the effect on the water table, destabilizing the substrata in an area with geologic fault lines). Officials need look no further than other areas in this country where fracking occurs to see documentation of all of the above. How California got into the fracking business defies logic (but imagination leads to financial manipulation). A process that may do more harm than good is not worth speculating on. Already citizens can smell noxious gases off the Baldwin Hills fracking site. Not to mention these gases seem to veer in the path of several schools. Well, anywhere the wind blows really. And what are these gases?
2710	13560-5, 13560-6 Salt is one of the few chemicals used in hydraulic fracturing that the general public can recognize as being dangerous if misused. Ancient societies destroyed their enemies by salting their fields. Salt is a basic, natural chemical that appears naturally in the ocean, many natural foods, and a food additive enjoyed by many. But when used for evil, salt is a very effective weapon. Yet one of the most prevalent additives to hydraulic fracturing solutions is this very same salt, added to the State's fresh water systems. Citizens want to know if anyone thinks this is a sustainable practice. They ask how this is good governance? Are California's residents enemies of the State?
2711	13227-2, 13228-2, 13195-2, 13226-6, 13193-2 Toxic chemical should not be introduced by humans under the surface of the land, but if so, it should be completely removed upon completion.

2712	13264-4, 13313-4, 13234-2, 13256-2, 13334-4, 13234-5 Chemical additives and radioactive materials are used in the drilling mud, slurries, cement and fluids required for the fracking process. Each well produces millions of gallons of toxic fluid containing not only the added chemicals, but other naturally occurring radioactive material, liquid hydrocarbons, brine water and heavy metals. Fissures created by the fracking process can also create underground pathways for gases, chemicals and radioactive material.
2713	13570-12 The regulations should prohibit stimulation in, under, or around sensitive areas, including but not limited to, the Pacific Ocean (offshore oil platforms), coastal bays and estuaries, coastal zones draining to the ocean, bays, or estuaries, near residential areas, sensitive receptors (hospitals, schools, daycare facilities, elderly housing and convalescent facilities), sensitive ecosystems, wetlands, critical watersheds, groundwater recharge areas, national forest lands, national monuments, national wildlife refuges, state ecological reserves, areas classified as "environmentally sensitive" pursuant to 14 C.C.R. §1760, and known fault zones.
	Response to comments 2684-2713: These regulations have been developed to supplement the Division's existing oil and gas regulatory framework to meet the intent and requirements outlined in Senate Bill 4. These regulations also respond to the feedback the Division has received in ten public comments hearings held throughout the state, tens of thousands of public comments submitted in written format, and in scientific and policy papers, which are listed in the Final Statement of Reasons. These regulations include monitoring, evaluation, and testing requirements for before, during, and after well stimulation treatment to ensure the integrity of the well and the geologic and hydrologic isolation of the stimulated hydrocarbon formation. These regulations also implement the public disclosure, neighbor notification, water testing, and permitting requirements established by Senate Bill 4. The Division believes that these regulations provide an effective framework for a level regulatory scrutiny that is commensurate with the level of public concern with well stimulation treatment operations. In addition, Section 3161 (b)(4)(A) and (B) of the Public Resources Code requires the Division to prepare an Environmental Impact Report (EIR) pursuant to the California Environmental Quality Act (CEQA) in order to provide the public with detailed information regarding any potential environmental and public health impacts associated with well stimulation treatments in California. Statute requires that the EIR be completed by July 1, 2015.
	Environmental Justice
2714	13558-5, 13548-5 Written notification of well stimulation treatment must be in plain and accessible language in order to successfully notify landowners and tenants of future activities. As CEQA provides, documents must be "organized and written in such a manner that they will be meaningful and useful to decision makers and to the public." Pub. Res. Code Section 21003(b). DOGGR's regulations must require notice in Spanish, English and other languages.
	13554-21 The second revised proposed regulations ignore environmental justice concerns.
2715	Response to Comments 2714-2715: The proposed regulations require operators to hire an independent entity or person to provide notification to every tenant and owner of neighboring property within a specified distance from the wellhead and horizontal projection of a well that will have a well stimulation treatment performed on it. This neighbor notification must be provided utilizing a bilingual (English/Spanish) template

	form developed by the Division. In addition, with respect to environmental justice communities, the Environmental Impact Report required by SB 4 will analyze the potential impacts of well stimulation activities on these communities. Statute requires that the EIR be completed by July 1, 2015.
	Flowback/ Produced Water
2716	13130-3, 13130-4 The waste water is laden with extremely hazardous toxins and carcinogenic chemicals used in fracking and the aquifers the industry destroyed are supposed to be protected by both state laws as well as the federal Safe Drinking Water Act. The waste water is laden with extremely hazardous toxins and carcinogenic chemicals used in fracking and the aquifers the industry destroyed are supposed to be protected by both state laws as well as the federal Safe Drinking Water Act.
2717	13552-21 The use of produced fracking water is supported (and should be encouraged/mandated) as demand for limited fresh water resources is considerable. There have been suggestions that regulations require all drilling rigs to employ closed loop drilling fluid systems and that the Department implement complete water cycle planning in consultation with the State and regional water boards.
2718	13560-8 The public does not see proposed regulations where the oil and gas companies are required to return water used as base fluid to the water's original composition prior to disposal. The disposal of such "amended" water is often done by dumping the fluid into underground systems, despite the language in item 1786(4). There is a requirement to report hazardous wastes transported to authorized facilities – what about the hazardous wastes that are NOT transported?
2719	13570-8 Because of potential increased volumes of wastewater due to unconventional drilling methods, the Division should examine the current methods of produced water and flowback disposal, and strengthen all related regulatory programs to ensure protection of surface and groundwater resources and reduce the risk of induced seismicity.
	Response to Comments 2716-2719: In Section 1783.1 of the proposed regulations, the application for a well stimulation permit shall include a water management plan that will provide an estimate of the amount of water to be used in the treatment, an estimate of water to be recycled following the well stimulation treatment, a description of how and where the water from the well stimulation treatment will be recycled, including a description of any treatment or reclamation activities to be conducted prior to recycling or reuse; and the anticipated source of water to be used in the treatment. The application will also include the anticipated disposal method that will be used for the recovered water in the flowback fluid from the treatment that is not produced water. And in Section 1788 of the proposed regulations, an operator will be required to disclose after a well stimulation treatment the source, volume, and specific composition and disposition of all water associated with the well stimulation treatment.

	Governor Brown
2720	13114-2 It is incumbent upon the governor of this state to preserve the public's water for its citizens and not squander and contaminate it with permanently damaging agents related to this dangerous and polluting process.
2721	13187-4, 13187-5 The people want to know what is wrong with Governor Brown and expect him to ban fracking. Californians say it is their state, listen to them, and that they don't want fracking.
2722	13243-8 Californians hope that Governor Brown will think twice and prevent fracking from getting a toehold in their state if he hasn't already.
2723	13224-2 Individuals say, "Shame on you, Governor Brown and all whom are involved." They write to the Department of Conservation with incredible disappointment.
2724	13222-2 It is incumbent upon the governor of this state to preserve California's water for its citizens and not squander and contaminate it with permanently damaging agents related to this dangerous and polluting process.
2725	13366-3 The people of California feel that Governor Brown can't declare a state of emergency, but will allow more homes, malls and in this case, direct water access for fracking to be used. He could be held liable for jeopardizing the public's health and safety.
	Response to Comments 2720-2725: It is the Division that has been tasked with developing and finalizing regulations for well stimulation treatments in the state.
	Health
2726	13122-3, 13132-3, 13171-4, 13476-6, 13491-13, 13474-2, 13200-2, 13200-3, 13243-6, 13300-4, 13247-2, 13259-3 Fracking can release dangerous petroleum hydrocarbons, including benzene, toluene and xylene. It can increase levels of ground-level ozone, a key risk factor for respiratory illness. Fracking exposes people to harm from lead, arsenic and radioactivity that are brought back to the surface with fracking flowback fluid. Fracking involves trucking huge quantities of toxic chemicals—many of which cause breast cancer—through communities to drilling sites. Toxic spills, accidents and water contamination are routine. Fracking issues have huge negative effects on human health when the process goes uneventfully. An accident during the process can magnify the dangers exponentially and the public asks for the dangerous practice to be halted. Fracking has been shown to make seriously ill the people who live in neighborhoods that have fracking wells nearby. The methods being proposed do not present any information on the potential for accidents and escape of materials from the efforts being undertaken.
2727	13101-2, 13447-1, 13543-3 Various health problems are created by fracking. There is no mention in the regulations of legal recourse for people to take that may be adversely effected by the process of fracking such as to agricultural workers.

2728	13136-1, 13136-2, 13171-5 Citizens of California want to know if they are going to have more nightmares in this country from the effects of fracking. They say that there are a lot of people who will suffer and have their health hurt because of a few greedy people who want to frack.
2729	13130-5 Arsenic, besides being a cancer-causing agent, also weakens the human immune system. The arsenic is combined with a toxin used in rat poison, thallium, which was found in water supplies in and around the fracking injection sites. Cancer-causing trihalomethanes, can form when chlorine in drinking-water treatment systems combine with bromide, which can be found in drilling waste.
2730	13470-1 Colorado School of Public Health and Brown University have found greater congenital heart defects and possible links to brain and spinal cord defects within a 10 mile radius of natural gas wells, related to density and proximity. That means increased birth defects of brain, spinal cord, and heart. That means babies with preventable injuries who are now crippled for life. The public wants to know if DOGGR has any miracles for these babies.
2731	13249-5 Even if fracking is theoretically possible to do without causing pollution and environmental damage, the reality is that equipment fails, pipes corrode, concrete crumbles, people make mistakes, accidents happen, the urge to cut corners to make a deadline or more money can be irresistible leading to shoddy work, and unhappy employees could intentionally sabotage a project.
2732	13189-7 Short-sighted schemes such as this will affect not only communities in California but the workers in such facilities. At what point does the peoples' health and respect for the Earth trump such endeavors? No one has to be a "liberal" tree-hugging-non-GMO-eating vegan to have concerns over this issue. It affects everyone.
2733	13226-7 The health and safety of workers is not addressed in the revised regulations. Californians believe this is an oversight.
2734	13309-4 Each month new studies continue to link Autism in part to environmental issues.
2735	13264-7, 13182-1, 13160-4, 13560-7 A 2011 article in the journal, *Human and Ecological Risk Assessment*, examined the potential health impacts of oil and gas drilling in relation to the chemicals used during drilling, fracking, processing, and delivery of natural gas. The paper compiled a list of 632 chemicals (an incomplete list due to trade secrecy exemptions) identified from drilling operations throughout the U.S. Their research found that 75% of the chemicals could affect the skin, eyes, and other sensory organs, and the respiratory and gastrointestinal systems. Approximately 40–50% could affect the brain/nervous system, immune and cardiovascular systems, and the kidneys; 37% could affect the endocrine system; and 25% could cause cancer and mutations. Health impacts from fracking are only now being examined by health experts, since such large-scale drilling is a recent phenomenon. Exposure to toxic chemicals even at low levels can cause tremendous harm to humans; the endocrine system is sensitive to chemical exposures measuring in parts-per-billions, or less. Nevertheless, many of the health risks from the toxins used during the fracking process do not express themselves immediately, and require studies looking into long-term health effects. Many of these chemicals, such as acetone, butyl alcohol and chloroform, have

	been showing up in water wells in Pennsylvania after hydraulic fracturing has been allowed.
2736	13219-1 Californians understand fracking is being considered in their state. They feel that it is apparent that regulators are not aware of the numerous studies linking fracking to Breast Cancer. Members of the Breast Cancer Action Community find the prospect of further fracking in California horrific. They ask that officials take a look at information on why their group opposes it.
2737	13311-3 Californian citizens state that this issue is not about the fancy wording of a document but of endangering peoples' and animals' lives. They ask that regulators be sure that they are researching this practice and the heavy risks that it presents, and that they are getting information from a source that is not the one that stands to gain from it as there would be an obvious conflict of interest.
2738	13560-4 For any government to allow, authorize, or permit the deliberate addition of chemicals known to cause harm to plants or animals to any water source is a perversion of what any good government should hold as a first standard, the health and wellbeing of the citizens.
	Response to Comments 2726-2738: In an effort to minimize public health risks, the proposed regulations require pressure testing and cement evaluation requirements, as well as require operators to perform a well stimulation treatment area analysis to demonstrate that there is no potential conduit for fluid to migrate out of the hydrocarbon zone where the well stimulation treatment will occur. There are also requirements for the storage and handling of well stimulation treatment fluids and wastes. In addition, Section 3161 (b)(4)(A) and (B) of the Public Resources Code requires the Division to prepare an Environmental Impact Report (EIR) pursuant to the California Environmental Quality Act (CEQA) in order to provide the public with detailed information regarding any potential environmental and public health impacts associated with well stimulation treatments in California. Statute requires that the EIR be completed by July 1, 2015. Lastly, SB 4 amended the Public Resources Code to add Section 3160 (a), which requires the Secretary of the Natural Resources Agency to cause to be conducted and completed, an independent scientific study on well stimulation treatments, including, but not limited to, hydraulic fracturing and acid well stimulation treatments. The independent scientific study is to evaluate the hazards and risks and potential hazards and risks that well stimulation treatments pose to natural resources and public, occupational, and environmental health and safety. This study will be completed on or before July 1, 2015.
	<u>Hidden Agenda</u>
2739	13138-6, 13170-2, 13509-7 The state of California's current political system in which policy is written for the highest bidders through puppet politicians outrages the public. Not unlike the past, that's the norm of today, only now, the process runs without common sense that regulations exist to protect people, not to be modified to protect private profiteers from liability of potential externalities—moral hazards, accountability. Any legislator or engineer who supports this technology has no interest in long-term survivability for the people and who must live with the mess fracking creates, nor the local economy. They just want money now, and the legislation to let them do it (for a campaign contribution when the time comes, of course).

2740	13130-16 The Fracking Industry has been given tax loopholes which should be stopped. The industry-funded Marcellus Shale Coalition, which provided a grant of about $100,000, and led by economist Dr. Tim Considine, the lead analyst for natural gas deregulation on the U.S. Congressional Budget Office, according to his University of Wyoming profile. The 2011 Common Cause report, "Deep drilling, deep pockets, in Washington and Pennsylvania," found that "from 2001 through June 2011, the fracking industry gave $20.5 million to current members of Congress and spent $726 million on lobbying."
2741	13130-17 Every Secretary of Environmental Protection since the DEP was created has had business ties to the natural gas industry. Twenty Department of Environmental Protection employees have held jobs in the energy industry either before or after their agency jobs. Former high-level staffers include Terry Bossert, who has worked for three law firms that represent the energy industry before being hired as a vice president at Chief Oil & Gas; John Hines, a former Executive Deputy Secretary, who is now a government relations advisor to Shell; and Barbara Sexton, a former Executive Deputy Secretary who is now a government affairs director at Chesapeake Energy.
2742	13140-2, 13332-1 The public is stunned by the egregious nature of SB4 toward the safety of California's water. It is obvious to the California public that the petroleum industry has bought and sold this travesty to the governor and to assorted political leaders.
2743	13537-4 For corporations to profit from such activities and cause such devastation to the water and Earth beneath California defies all common sense. Especially, when there are alternate options available, including going without power. Ask any 5th grader if they would prefer a toxic world with glitz and glamour, or a safe world with drinkable water and eatable food and you'll get the "right and moral answer" every time. California corporations and politicians have become so caught up in profits and corruption that it defies all logic to allow "fracking" the Earth.
	Response to comments 2739-2743: Thank you for your comments.
	<u>Injection Wells</u>
2744	13552-23 Citizens urge the Department to review the existing regulations on underground injection projects and subsurface injection or disposal projects in light of unconventional well development. In particular, well stimulation treatments may result in significant volumes of waste fluids injected into disposal wells, increasing the need for ensuring well integrity and the need for increased testing/monitoring/reporting of aquifers and surface waters as well as the source of seismic activity.
	Response to comments 2744: The Division regulates underground injection projects under its Underground Injection Control (UIC) Program. Injection operations regulated under the UIC Program include waterflood, steamflood, cyclic steam, water disposal, gas storage, and other enhanced oil recovery projects. The requirements of the Division's UIC Program are found in the Public Resources Code, the federal Safe Drinking Water Act (SDWA), and in state and federal regulation. The Division's UIC regulations are found in Section 1724.6 through 1724.10 and Sections 1748 through 1748.3. The

	Division's UIC program is monitored and audited by the U.S. Environmental Protection Agency because in 1982 the Division entered into a primacy agreement with the U.S. EPA for regulation of class II injection wells under the SDWA. The Division is engaged in an ongoing process of evaluating its UIC regulations and identifying needed updates.
	Economic Impacts
2745	13566-5 Given the economic context of well stimulation treatments, the added economic impacts associated with complying with the proposed regulations will not deter operators from performing future well stimulation treatments. For these reasons, the Department has made the following determinations: The proposed regulations will not affect the creation or elimination of jobs within the State of California, they won't affect the creation of new businesses or the elimination of existing businesses with the State of California, they won't affect the expansion of businesses currently doing business in the State of California and they won't affect the ability of businesses within California to compete with businesses in other States.
	Response to comments 2745: Thank you for your comment.
	Notice of Proposed Regulations & Public Hearings
2746	13520-1 Concern about not receiving notification of the revised regulations.
2747	13308-1 Citizens state they aren't going to read the whole SB4 mailing.
2748	13285-1 Citizens received word about the set of revisions of the SB4 Well Stimulation Treatments Regulations and want to know if it concerned fracking.
2749	13206-2 The public wants to know why they never received any invitations regarding public hearings and meetings about fracking.
2750	13233-1, 13243-1, 13191-1, 13303-1, 13206-1, 13303-2, 13213-1, 13233-2, 13249-1, The SB4 notice was found to be vague. People want to know specifically what it is about and why they, in particular, receive it. Perhaps they had written to the department at some time to object to fracking and were put on the mailing list, they say. People wonder if they received SB4 communications because they own mineral rights under their homes. They are concerned because neighbors who have mineral rights as well have not received the same literature. Because it requires a deadline for comment submission on October 24th, citizens would appreciate timely responses in order to gather comments for submission. Citizens Coalition for a Safe Community members request an extension of the comments deadline from October 24, 2014 to November 3, 2014, 5pm. Because of the voluminous comments of the previous version and needs for comparisons and the new revisions and new additions/deletions made to the current version, review and preparation of meaningful comments has required an extraordinary longer time.

2751	13083-1, 13089-1, 13431-1, 13432-1, 13433-1, 13434-1, 13435-1, 13436-1, 13333-1, 13345-2 Commenter's are concerned why they received one or multiple copies of the notice, some as many as four first class letters (at 40 cents each in postage) of the comment period notice. It was really all Greek to readers who started to put it aside, later deciding to go online and research the Department of Conservation's site. People then realized the letter was related to fracking for gas.
2752	13122-1, 13124-2, 13120-3, 13143-1, 13159-1, 13263-3, 13260-3, 13262-3, 13363-1, 13209-2, 13297-2, 13326-2, 13346-4, 13345-3 Well stimulation is another way of saying "fracking." Californians want to call it what it is: Hydraulic Fracking. "Well Stimulation" and other euphemisms for fracking must not be used. The public thinks it's plain to see California's Department of Conservation is hiding something in the fine print and legalese by refusing to just say "fracking regulations." Citizens demand that the full, recognizable names for this dangerous extractive process be used. Use the full, recognizable names for this dangerous extractive process.
2753	13173-1 Given what Californians state they know (and do not know about the dangers), the term "safe fracking" is an oxymoron at best.
2754	13578-2, 13175-1 People were in shock reading SB4 [the regulations]. I found most disturbing was the way that the procedure is white-washed with benign sounding language such as "well stimulation" and "matrix stimulation". Most people that I've encountered are entirely against fracking, in any form, and they actually know something about what fracking means. On the other hand, when I asked these same people about "well stimulation treatment" they had no idea what I was talking about.
2755	13180-1, 13164-4, 13181-1, 13339-1, 13257-1, 13235-4, 13232-2, 13305-3, 13189-1, 13189-2, 13293-1 The booklet sent to citizens regarding the second revised text of proposed regulations is indecipherable. If the Department of Conservation expects cogent comments from the public as is apparently a governmental PR mandate, the booklet provided should have a guide to explaining what exactly your proposed regulations are. It's impossible to know who wrote these regulations; whether the companies will 'police' themselves or if a government committee has been designed for such oversight. (A committee that is not beholden financially or connected in any way to said companies.) While this booklet is not written for the layperson, nor is it informative in any way regarding the intentions of the companies that will be fracking in local communities it begs for an interpretation that we citizens can understand before such regulations are approved and implemented. As long as this method of extraction is legal, California citizens deserve at least that. The public asks that regulators please simplify the cut out loopholes and backdoors. Some people want a permanent ban on fracking in California.
2756	13345-5 Receiving the SB4 revision novella with its chart of what was originally proposed, added and deleted in a first revision and again in a second revision only proves the public's point that no regulation is going to make this safe.
2757	13214-1, 13214-3 Californians feel the mail notice was impenetrable to them and they have no doubt the same goes for most citizens. They state that if the DOC needs more specific comments to please send information that isn't pure legalese that almost no one can be expected to understand.
2758	13464-2 Citizens have attended public comment forums in Salinas this year and that was enough to convince them that this is a deeply polarizing issue around which much ignorance - both pro and

	con – has aggregated. At the last meeting, the anti-fracking camp could only rehash old arguments against shale oil development based on the limited sound bites available online, while the pro-oil group simply took the oil industry line that regulations are bad, without even referring to the issue at hand. Citizens claim that neither side did their homework.
2759	13516-1 Individuals have no idea where the Department of Conservation received their name and address to send them a copy of the SB4 regulations revision informational packet. However, upon reading the regulations submission, people do have lists of concerns: 1) some members of the public was only given 2 days to respond because they were out of the country for two weeks. They believe more time should be allowed for response due to the very lengthy regulations text. 2) Proposed areas of drilling/existing areas are not listed. 3) I believe fracking in California would be the asinine move we could make. Fracking in areas of drought should never be permitted. Water is needed for survival--forget fracking. 4) Fracking also should not be permitted in areas in danger of earthquakes and fire.
2760	13470-4 DOGGR said at the hearing in Monterey, to propose regulations rather than a ban. That was not a choice approved by the people of California. This was agency overreach regarding a dangerous, polluting, and highly profitable industry practice.
2761	13314-1 Some citizens were not sure why they received the SB4 Well Stimulation Treatment Regulations information in the mail. They do feel strongly about the evils of fracking and read the literature, although they understood very little. They feel the revision practically rewrote the whole thing and people think it is a good sign. The revisions, they say, seem to be protecting the environment below the Earth but they can't be sure since they don't really follow the regulations nor understand the terminology. Regardless, citizens of California are glad to see the regulations information and now feel as though someone is doing something. They hope the U.S. will choose to protect the Earth instead of continuing to destroy it and pray that the Department of Conservation can save California, setting an example for other areas.
2762	13243-7, 13334-6 Californians ask that regulators please use common sense—fracking fractures shale rocks, causing instability in earthquake country. Fracking uses vast amounts of water. The state is experiencing historic droughts. Fracking can release toxins into the water and air. All of the abovementioned is possible just to extract products which will contribute to climate change. Californians wonder why this is even considered. They assume it is just to increase the already astronomical profits of the oil industry and believe that fracking is a terrible, disallowable idea.
2763	13359-1 The public feels the need for the Department of Conservation to include definition of terms so it is clear that well stimulation means and includes hydraulic fracking and a definition of what is hydraulic fracking. Well stimulation sounds like something to generate a well to begin working. The term stimulation does not convey that there are tons of water being forced into the ground.
2764	13265-3 The fracking issue has been mentioned in community newsletters.
2765	13125-1 The public thinks this is a pretty short comment period for something they never received a first notice on.

	Response to comments 2746-2765: 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. Notices of rulemaking activities and opportunities to comment were sent to everyone who requested it, to everyone who submitted written comments or made comments at public hearings, and to anyone else the Department thought might be interested. The timing and content of all notices conformed to the requirements of the Administrative Procedures Act.
	<u>Oil & Gas Industry</u>
2766	13212-3, 13328-6, 13537-1, 13300-3, 13345-7, 13253-4, 13335-2, 013331-4, 13313-10 The oil and gas industry has caused enough damage to the state of California, and the planet which everyone inhabits. To allow such activities as injecting undisclosed “proprietary” chemicals, some of which are known carcinogens, into the ground where water aquifers exist is sheer stupidity. Gas, oil companies and politicians are profiting. The cost is paid by every animal, insect, plant and human being. The oil and gas companies are so powerful that the government is putting their profits before the health of the people and environment. The insidious right of oil companies to continue to pollute pristine environments for commercial gain using public resources should be shut down and discontinued.
2767	13149-2 Oil industry assurances that the injected fluids are too deep to ever mix with groundwater is absurd. The geologic and groundwater systems are too complex for anyone to make that assertion with any degree of certainty.
2768	13116-7, 13510-313537-2 Given the oil companies’ long track record of self-interest, lack of concern for the public good, and disingenuousness, why should the California public trust anything they say with regards to fracking and seismicity? To believe this industry is capable of protecting the environment from an ecological disaster is complete ignorance. This has already been proven last July when billions of gallons of water in California aquifers became contaminated, aquifers that provide drinking water and water for agriculture and farming. Real smart!
2769	13470-8 With natural gas and oil being sold to the highest bidder, Californians have to be delusional if they think fracking guarantees “energy independence”, especially given the history of the oil and gas industry.
2770	13502-3 Oil companies don’t pay a red penny in taxes in our state for oil extraction internalize the profit and externalize the cost of cleanup in the form of tax-payer cost pickup.
2771	13468-2 SB4 is backed by Big Oil at an estimated 4.7 million dollars.
2772	13468-4 If fracking was a viable solution, Big Oil would not have to put money behind it.
2773	13464-4 SB 4 as it stands strongly favors Oil Industry Shareholders and Executives over California's

	diverse populace and economies - both of which are currently jeopardized by the extreme drought. While there's a lot of money to be had, this money will boost the income of a handful of CEO's while wreaking havoc on California's largely agricultural and tourism based economies.
2774	13470-7 Treating the earth, the ocean, and the air as a toilet is nothing new for this industry and many others. Psychopathic thinking dominates these toxic industries, and money and power are the only proof they need of “goodness” and sound practices.
2775	13329-9 People state that future generations will look back and see what this generation has decided to do, and the damage it has caused. They wonder if the real issue is monetary. The people hope that the citizens of California never find out that this level of damage was just about the oil industry lining the pockets of the decision makers.
2776	13216-2 These proposed modifications of current California law are merely meaningless tweaks meant to mollify Big Energy. As the Koreans say, Californians are only "licking the outside of the watermelon." Until people come together and put a stop to fracking by banning the practice in our cities, counties and states, and converting to clean energy, fracking will continue to deplete everything the public has until it’s too late.
2777	13204-5 The people feel they know the oil companies are paying for benefits and that matters more than the people. It saddens Californians to see what their state has become; they believe it is the fault of the people who have a complete lack of conscience when it comes to oil company gifts called regulations.
2778	13212-2 Profit! Profit! Profit! Profit!
	Response to comments 2766-2778: Thank you for your comments.
	<u>Renewable Energy</u>
2779	13075-5 Learn about and endorse MSRs (Molten Salt Reactors).
2780	13374-2, 13375-2, 13376-2, 13383-2, 13451-1 California needs to find other sources of energy that aren’t toxic and be committed to agriculture, secure unlimited water supply, ideas, and tourism.
2781	13377-2, 13406-2, 13505-3 Californians don’t need oil to drive vehicles. California needs to transition away from fossil fuels and reduce its oil dependency.
2782	13084-2, 13087-2, 13090-3, 13389-2, 13402-2, 13425-2, 13428-3, 13527-1, 13467-2, 13458-4, 13544-2, 13446-2, 13141-2, 13135-4, 13107-2, 13117-4, 13151-2, 13110-3, 13110-6, 13115-3, 13121-7, 13121-8, 13161-3, 13175-3, 13176-4, 13171-6, 13185-5, 13185-10, 13180-3, 13165-3, 13164-3, 13509-3, 13492-4, 13525-3, 13540-2, 13334-5, 13577-3 California is supposedly the greenest state in the country; it claims to have a leadership role in

	renewables. Californians need to be forward thinking with green solutions and move away from fossil fuels and fracking and toward alternative energy. The state can focus on renewable alternatives with little or no risk to humans and wildlife. California has plenty of green technologies that are not being supported or used. California can create jobs by looking into a statewide effort to conserve or cut back on usage and demand, wind turbines and the transportation, installations and continued maintenance that is needed for each turbine, as well as solar power, hydroelectric, water, geothermal, reduce speed limits, wave motion capture, all electric automobiles, LED lighting, using ground heat-exchange to warm and cool buildings, and better home insulation. Conservation methods are available as well as more efficient technology available for cars, homes, offices, factories and farms.
2783	13271-2, 13271-3, 13200-6, 13365-5, 13189-5, 13329-8, 13190-3, 13367-2, 13191-3, 13345-9, 13221-2, 13368-1, 13355-4, 13253-5, 13195-3, 13195-6, 13335-3, 13220-2, 13331-7, 13312-3, 13297-5, 13267-4, 13240-2, 13249-4, 13193-4, 13310-2, 13238-4, 13246-3, 13257-4, 13346-2, 13324-3 California's energy needs to come from solar, wind, geothermal and ethanol. Californians have the moral and ethical responsibility to leave a comprehensive renewable energy infrastructure to the future generations of Californians. Fracking does not guarantee the lowering of carbon footprint, the reduction of polluted water, lands or air, or the avoidance of potential earthquakes due to disruption of geological formations. Following Germany's progress towards becoming energy independent using renewable resources such as solar, wind and flex fuels; California needs to deeply fund renewable and sustainable energy projects and reject adding more fracking to its portfolio.
2784	13380-3, 13388-2, 13390-2, 13414-2, 13512-2, 13500-2, 13513-2, 13449-2, 13438-2, 013451-2, 13505-2, 13146-5 California needs to invest, develop, and push towards a clean sustainable renewable energy with strict conservation. California needs to stimulate the building of more 2X solar powered homes in every area.
2785	13116-6 Oil companies, when they attempt to blackmail the public with claims about losing jobs, should be told to invest in alternative energy sources like wind power and solar energy. The public calls for no fracking in their state.
2786	13566-6 To develop a more secure and sustainable long-term energy strategy, a fund for the development of renewable energy should be created, using funds from a corporate tax on the revenues derived from fracking. The amount of the tax should be specified in SB 4, and the taxation process administered by the appropriate state agencies.
2787	13146-3 Residents of California believe they can prevent toxic release of deadly methane from gas fracking by first passing a Solar Payment Policy to require PG&E and all utilities to pay solar home owners $0.33/kwh for feeding energy onto the grid. This can create enough cash flow from 2X solar power homes that generate twice as much energy as they use. This can help move California towards 100% solar and RE by 2041.
2788	13133-6 California utilities should be regulated and required to pursue solar and wind energy production only.

2789	13157-2 The people want fracking money to be put to better use by building wind turbines and solar panels.
2790	13110-5 The people encourage closing all nuclear power plants and cleaning up coal plants as much as possible.
2791	13185-6 Conflict and war caused by continued reliance on petroleum worries Californians.
2792	13313-9 If individuals want free gas, why not recycle plastic garbage in every dump circling the globe.
2793	13490-4 It's time people did some brain work to think up a safer, non-toxic way to power vehicles and phase out using petroleum in products when there is hemp, palm and cotton. If people in the Department aren't familiar, look up the "Pogue Carburetor." When a more efficient carburetor was invented getting 100 mpg+, an additive was added to the oil to prevent it from working.
2794	13579-4 Neil Young stated that he has been driving a car using electricity, and “Cellulosic ethanol” which is defined as “a biofuel produced from wood, grasses, or the inedible parts of plants”. There is no need for the operators of well stimulation operations to continue doing what they are doing to the environment.
	Response to comments 2779-2794 These proposed regulations in no manner directly impact the availability of alternative or renewable fuels.
	<u>Revised Regulations</u>
2795	13571-4, 13571-1 A number of the concerns raised in comment letters have not been addressed in the current proposed rules. Citizens direct officials to previous letters and renew their call for them to address these deficiencies. There are comments focusing exclusively on the proposed changes in the second revision of the proposed regulations. Additional improvements are still needed.
2796	13552-2 The Conservancy previously submitted comments to DOGGR’s first revised text of these regulations (letter dated on July 28, 2014) and on the draft interim regulations and the initial draft final well stimulation regulations (letter dated January 14, 2014). We also submitted scoping comments on January 16, 2014, to DOC on the related EIR on well stimulation practices required by Section 3161(b)(3) of SB 4. Many of the Conservancy’s comments offered in those previous letters that raised issues with the Rules and the linked EIR were not addressed in the current version of the regulations.
2797	13552-4 As an initial comment, the EIR and scientific study required by SB 4 are not complete. These are two essential missing pieces, required for the Division to determine risks and fashion appropriate well stimulation standards. The Conservancy strongly recommends that the Department conduct another round of changes to the well stimulation rules based on the results of the EIR and

	scientific study, before the full set of rules is issued in final form and placed into effect. The effective date for the final rules and certification of the EIR is now January 1, 2016. The science study must be completed by January 1, 2015.
2798	13552-9 Californians notice that the Department has sought to improve the workability and reasonableness of many of the regulatory provisions in response to the complex mandates of SB 4. Individuals appreciate the Department's previous response to a number of comments and those of other commenters. However, the second revised proposed regulations still fall short of what is needed to minimize environmental risks, particularly in the development of unconventional oil and gas resources using well stimulation practices. The proposed rules do not reflect many known best practices as outlined in reports such as "Attaining Sustainable Development of Oil and Gas In North America, Appendix: US Policy Briefs" (Krupnick, et al.), released by Resources for the Future Report in June 2014. These include well integrity, fluids handling and disposal, bonding, and setback requirements (including setbacks and avoidance areas to protect ecological resources). SB4 improvements will require a reassessment of and changes to the Department's overall oil and gas regulatory program, beyond the specific provisions dealing only with well stimulation practices. Californian citizens urge the Department, once the EIR and scientific study are complete, to consider implementing improvements in its overall oil and gas regulatory program that will fully ensure the integrity of California's environment and the health and safety of its citizens compatibly with maintaining a robust petroleum industry.
2799	13572-1, 13552-3 The revisions fail to address concerns. They should be further revised to strengthen environmental protections for the environment and water resources. They should also provide adequate public notice and opportunity for meaningful public participation in the permitting and monitoring of well-stimulation projects which have had and will likely continue to have negative impacts on California's natural resources. Suggest that further revisions be made before final regulations are put in place to bring the Department's program closer into accord with its mandate to prevent "damage to life, health, property, and natural resources" (Public Resources Code, Section 3106), meet the Division's goal to adopt rules that are "among the most protective" in the nation, and effectively limit environmental impacts from petroleum development that utilizes well stimulation treatments.
2800	13574-3 The revised regulations replace a concentration threshold with a volume per treated foot threshold, as required by SB 4. However, both volume and concentration are needed to calculate the amount of acid emplaced in the well. Different acids or mixtures of acids will have different effects in terms of penetrating the formation and reacting with minerals and wellbore deposits, so it is also important to report the identity and concentration of each acid.
2801	13554-6, 13549-3 The Second Revised Proposed Regulations mistakenly and unnecessarily excludes certain types of gravel packing from the definition of "well stimulation treatment." Whether the treatment exceeds the fracture gradient is irrelevant. Thus, a gravel packing treatment that does not exceed the fracture gradient of the formation may nonetheless be well stimulation if the gravel pack increases the permeability of the formation. Indeed some types of gravel packing (e.g. open-hole gravel packing) are not contained within the well casing. Gravel and chemicals are instead injected into the formation itself. These techniques are clearly within the statutory definition of "well stimulation," even if they stay below the fracture gradient, and the Second Revised Proposed Regulations' definitions should be amended to be consistent.

2802	13330-1 The revisions are not strict enough. They don't restrict steaming.
	Response to Comments 2795-2802: These regulations have been developed to supplement the Division's existing oil and gas regulatory framework to meet the intent and requirements outlined in Senate Bill 4. These regulations also respond to the feedback the Division has received in ten public comments hearings held throughout the state, tens of thousands of public comments submitted in written format, and in scientific and policy papers, which are listed in the Final Statement of Reasons. These regulations include monitoring, evaluation, and testing requirements for before, during, and after well stimulation treatment to ensure the integrity of the well and the geologic and hydrologic isolation of the stimulated hydrocarbon formation. These regulations also implement the public disclosure, neighbor notification, water testing, and permitting requirements established by Senate Bill 4. The Division believes that these regulations provide an effective framework for a level regulatory scrutiny that is commensurate with the level of public concern with well stimulation treatment operations.
	SB 4 Study & EIR
2803	13140-7, 13332-6 Please reconsider and refuse to codify these toxic agreements known as SB4.
2804	13478-2, 13478-3 This Senate Bill is not ready for primetime: the necessary studies have not been done, and important comments and questions raised regarding earlier versions have still not been addressed. In fact, this revision is in many ways even worse than the earlier ones. Californians do not want the Department of Conservation to rush this potentially deadly bill through the system.
2805	13552-5, 13552-6, 13552-8, 13552-16, 13552-7 The legislature has clearly intended that the well stimulation rules be informed and supplemented by the emerging content of the statewide EIR and independent science review. The revised timetable now provides adequate time for their consideration and integration. The scientific study is meant to evaluate potential hazards and risks that well stimulation treatments pose to a wide range of environmental, health and safety issues [in Public Resources Code, Section 3160(a)(4)]. The EIR is required by CEQA to analyze and mitigate for an equally broad set of environmental impacts. Given the importance of both the results of the EIR analysis and the conclusions of the science report, citizens believe that it is critical that the proposed regulations include and rely upon these studies. There is particular concern that unconventional oil and gas development will have adverse effects on un-fragmented habitats and the plant and animal species that depend on them, and that those effects will not receive due consideration if the proposed regulations, EIR and science review are not closely coordinated and integrated. The Department should consider the results of the independent scientific study of the risks of hydraulic fracturing and well stimulation commissioned by BLM conducted by the California Council on Science and Technology (released on August 28, 2014) to help inform its regulatory development in advance of receipt of the state study.
	Response to Comments 2803-2805: Senate Bill 4 and subsequent related legislation set specific deadlines for each major deliverable the bills require. It is the Division's, the Natural Resources Agency's and other state and local

	agencies intent to meet those deadlines. Permanent regulations are to be finalized by January 1, 2015. They will not be in effect until July 1, 2015. Informal agreements between the Division and other state and local agencies describing delineation of authority with respect to well stimulation activities, consultation, information sharing, and coordinated enforcement, among other issues, must be finalized by January 1, 2015. Section 3161 (b)(4)(A) and (B) of the Public Resources Code requires the Division to prepare an Environmental Impact Report (EIR) pursuant to the California Environmental Quality Act (CEQA) in order to provide the public with detailed information regarding any potential environmental and public health impacts associated with well stimulation treatments in California. Statute requires that the EIR be completed by July 1, 2015. Section 3160 (a) of the Public Resources Code requires the Secretary of the Natural Resources Agency to cause to be conducted and completed, an independent scientific study on well stimulation treatments, including, but not limited to, hydraulic fracturing and acid well stimulation treatments. The independent scientific study is to evaluate the hazards and risks and potential hazards and risks that well stimulation treatments pose to natural resources and public, occupational, and environmental health and safety. The first volume of the study will be completed by January 1, 2015. Subsequent volumes will be completed on or before July 1, 2015. The fact that the deadlines for completion for the EIR and scientific study are after the finalization of the permanent regulations may require the regulations be revisited for amending in the near future.
	<u>Seismic Activity/ Earthquakes</u>
2806	13075-3, 13384-3, 13545-5, 13109-4, 13121-6, 13113-2, 13116-4, 13145-3, 013187-3, 13171-3, 13173-3, 13175-4, 13174-4, 13181-2, 13480-2, 13476-4, 13457-2, 13536-3 Californians live in earthquake country. Fracking causes an increase in earthquakes, or disruptions of existing earthquake faults and ultimately yields very little oil or gas in return. San Franciscans live every day knowing the risk of earthquakes and the public does not want that risk to increase due to fracking. In a state where the people wait for the “Big One,” they wonder if it is smart to allow this form of extracting fuels which is known to cause earthquakes.
2807	13537-5 The number of earthquakes alone being reported in fracking zones in states all across this country should be alarm enough to stop this madness, according to concerned citizens. This activity is asking for disasters beyond the state’s capability to cope.
2808	13550-37 As part of its permit application, the operator should be required to conduct an evaluation of the potential for well stimulation treatments to trigger seismic activity that may be a danger to persons or property. Such an evaluation should include not only the potential impacts from a single hydraulic fracturing event, but also should assess the impacts of cumulative activity. The operators need to evaluate the risk of minor and major seismic events so that DOGGR can determine whether approval should be granted. The evaluation should be conducted by an independent geologist qualified in the field. The operator should be required to provide the geologist with all relevant information available to it including all data collected during any seismic survey, testing or analysis of the oil field regardless of any claim of trade secret.

2809	13550-38 Although the proposed regulations do not cover "underground injection projects" or "subsurface injection or disposal projects," the City believes it is extremely important and relevant to also evaluate and regulate the seismic impacts of such operations.
2810	13323-8 The state geology department should be involved in determining earthquake risk since states not known for earthquakes have had them due to fracking. In California, it seems inevitable that with the numerous faults fracking could cause a quake.
2811	13203-13, 13194-11, 13328-4, 13316-4, 13236-3, 13274-2, 13305-2, 13355-3, 13369-1, 13324-2, 13359-9, 13282-3, 13193-3, 013334-1, 013249-6, 13329-3 USGS data also shows that fracking can increase the frequency and likelihood of earthquakes. California is earthquake territory, yet the revisions to Section 1789 “Post-Fracking Report” removes earthquake reporting requirements for earthquakes that occur in the vicinity of fracking activity. Evidence in other states shows that this is the case. Also, there are too many unknown effects on geologic reactions and fracking’s possible role in increased earthquakes.
2812	13313-6 The time to monitor fracked wells for earthquakes is 10 days. This needs to be extended to one year because of today’s news that fracking causes earthquakes, 10 days is not tenable.
2813	13264-6 Earthquakes constitute another problem associated with deep-well oil and gas drilling. Scientists refer to the earthquakes caused by the injection of fracking wastewater underground as "induced seismic events." Although most of the earthquakes are small in magnitude (the strongest measured 5.2), their relationship with the storage of millions of gallons of toxic wastewater does little to ease the fears over fossil energy's long list of externalities.
2814	13359-4 The possibility of harming the ground is high since much of CA is earthquake prone. Language regarding damage to land and property including resources such as contaminated ground and drinking water need to be included.
2815	13570-10 The regulations should require microseismic monitoring to establish baseline ground movement, and monitor seismic activity and post-stimulation seismicity in the surrounding area.
	Response to comments 2806-2815: Thank you for your comments. These regulations include Section 1785.1, which requires monitoring of the California Integrated Seismic Network during and after hydraulic fracturing. If an earthquake of magnitude 2.7 or greater occurs within a specified area around the well, then further hydraulic fracturing in the area are suspended until the Division, in consultation with the California Geological Survey, determines that there is no indication of a heightened risk of seismic activity from hydraulic fracturing.
	<u>Shale</u>
2816	13464-3 The discussions regarding the potential development of California’s shale deposits can get very convoluted.

2817	13464-5 Conflicting Energy Department reports have called into question the ready accessibility of recoverable shale reserves - the most recent cutting the billions of barrels by 96%. Of course, the oil industry is ready to step in and ramp up its technology to meet the complex challenges of the Monterey shale - but with the recent closure of 11 injection wells in Kern country that had polluted now scarce fresh water aquifers – the people of California sincerely hope that DOGGR curbs its enthusiasm for shale oil.
2818	13464-9 While the development of shale reserves offshore and on federal forest land are not entirely within the purview of DOGGR, the citizens of California still believe these are issues that need to be meaningfully dealt with.
2819	13552-13 EIA opined that California's Monterey Shale formation contained 11.7 billion barrels of technically recoverable crude oil; this report raised expectations that a significant shale develop using well stimulation practices was imminent and could extend to many areas outside of the existing oilfields. The EIA estimate has reportedly been reduced by more than 95%, reflecting a more considered analysis of geology and other factors. The public's understanding is that recovering this resource is infeasible at foreseeable prices and employing current technologies. The industry has technically been innovative, crude prices are unpredictable, and a significant shale resource is thought to remain in place. Long-term development of this resource is possible and the Department of Conservation's regulatory programs should be configured to anticipate and carefully regulate its future development.
	Response to Comments 2816-2819: SB 4 does not direct these proposed regulations be formulated to promote or optimize any estimated projections for oil and gas production in the Monterey Formation.
	<u>Water Quality</u>
2820	13075-4, 03077-2, 13079-3, 13130-6, 13115-2, 13126-1, 13121-2, 13148-1, 13153-1, 13117-1, 13147-3, 13143-3, 13140-4, 13140-5, 13160-3, 13171-2, 13175-2, 13181-3, 13178-1, 13185-3, 13174-3, 13187-2 13510-1, 13476-8, 134734, 13489-2, 13525-1, 13525-4, 13229-5, 13225-2, 13235-3, 13249-9, 13238-3, 13246-3, 13321-2, 13319-2, 13210-4 California feeds nearly half the nation and the state is already struggling with a drought; what little water the people have left cannot be used to do further damage to the land. Fracking laces water with known cancer-causing chemicals, emits global warming pollution, contaminates groundwater and to water wells. Chemicals (drilling fluids), and methane gas are being mixed with gallons and gallons of good water, which is now irrevocable water. There is a concern of where the site for disposal of the chemical and water mixture will be as well as a financial assurance for aquifer restoration. An aquifer restoration bond should be required and at the expense of Industry to cover the costs to complete an aquifer treatment and restoration at every wellhead. The public has seen in hundreds of examples in California, the Country and the world, fracking contaminates the water supply period. Clean water, safety for the state's children and grandchildren is paramount.
2821	13243-4, 13229-4, 13328-3, 13261-1, 13271-2, 13336-2, 13275-2, 13236-4, 13239-3, 13339-2, 13355-2, 13237-3, 13237-5, 13287-2, 13325-3, 13265-2, 13332-2, 13229-3, 13203-9, 13264-1, 13194-7, 13363-2, 13328-2, 13205-2, 13329-4, 13283-1, 13296-2, 13275-1, 13216-5, 13209-3, 13369-3, 13316-2, 13366-2, 13272-1, 3273-1, 13341-2, 13359-2, 13237-1, 13318-4, 13294-4, 13267-1, 13256-1, 13334-3, 13325-2, 13247-3, 13249-10, 13323-7, 13210-2, 13271-1, 13263-2,

	13260-2, 13262-2, 13289-4, 13190-4, 13317-1 Water is a highly scarce commodity in the West. While agriculture, towns and cities are scraping the bottom of the barrel, fracking pumps vast amounts of chemically treated water into wells, returning poisoned water to the local aquifers, negatively impacting the health of surrounding communities. Not only does fracking use tremendous quantities of precious water, but the used liquid, with its chemicals added, is either injected into the ground where it will certainly find its way into the aquifer, or discharged into surface waters where it is unavailable for other uses. Water must be protected and used for other beneficial purposes, especially in the middle of a drought, and especially when citizens face fines for water usage.
2822	13384-2, 13465-1, 13503-2, 13545-4, 13543-4 Commenter's are concerned about polluting and over use of ground water or local surface water bodies. Fracking fluids can remain trapped in the immediate well bore area causing a continual pollution to the area.
2823	13078-1, 13511-5 Commenter's want protection and purification of their water systems through the least invasive or harmful means.
2824	13184-2 Already with regulation, the industry has polluted vast amounts of irrigation and drinking water in Kern County and elsewhere in California with toxic waste water.
2825	13096-2, 13331-1 Fracked wells are short term producers that when they are depleted, Industry will move to the next project, leaving a strong of depleted and poisonous injections into the water table. Oil and gas are finite resources subject to depletion.
2826	13483-1, 13523-2, 13543-1, 13127-1, 13116-2 Industry is using copious quantities of water in a severe drought year and is mixing it with toxic chemicals, damaging and polluting the water. Industry needs to be held accountable for any damages to the full extent of the law. Long term consequences need to be evaluated, instead of only looking at the short term gain. The public asks that the state not play Russian roulette with the water supply by allowing fracking.
2827	13153-2 There is wonder whether anyone realizes Californians needs the clean water it has and that everyone needs to keep it clean.
2828	31321-5 The damage done to the water table is irreversible and renders the land around the wells completely useless and toxic for a one to three hundred mile radius from the well.
2829	13130-18 Fracking and Oil Industries should comply with the Safe Drinking Water Act and should not be given tax exemptions. The OGWDW has allowed the Fracking and Oil/Gas Industry to be exempt from the Safe Drinking Water act. This exemption gives permission to the exact Industries that contaminate the water, which the OGWDW is responsible to protect.
2830	13140-1 The public is stunned by the egregious nature of SB4 toward the safety of California's water.
2831	13135-2, 13135-3 There is now proof that fracking can contaminate the groundwater, as the California State Water

	Resources Board just confirmed to the EPA. Water is too precious a resource to contaminate.
2832	13149-3, 13140-2 The public asks that the Department of Conservation not to allow toxic chemicals and water to be forced into oil or gas wells. As if this is not an obvious enough request, they state, it must be obvious that it is a bad idea to poison (or even risk poisoning) the water supply. They say to not collude with the forces that would exploit their water resource for hydraulic fracturing. The structure of the Earth is not something to experiment with either.
2833	13162-1 Conserving groundwater should be the number one priority in California and these regulations will not do that. Banning underground injection is the only way to protect California's water.
2834	13148-4, 13249-7, 13244-3 The experiences of many towns near fracking operations clearly shows the danger as wells are poisoned, "water" from faucets can be set afire, the stench of benzene and other chemicals fills the air and health problems increase. Property values plummet.
2835	13140-3 Californians are saddened that SB4 is even being considered because there is no going back once the water supply is tainted, and made toxic by chemicals that they are not even allowed to know about.
2836	13186-4 Whether by accident, incident or intent, the oil companies will continue to pollute drinking and irrigation water to the detriment of the entire state. Regulation may provide recourse but it cannot prevent the long-term problems that continued pollution will cause.
2837	13487-1 Californians are concerned about the effect of well stimulation techniques on the quality and quantity of groundwater in adjacent areas that are used for the purposes of drinking water as well as irrigation of crops.
2838	13470-5 The people of California know that the industry has destroyed aquifers in the Central Valley through dumping hazardous waste down wells. The industry is also reportedly dumping waste at sea.
2839	13473-2 The fracking process uses an excessive amount of fresh water which cannot be treated and restored to a potable state, nor can it be restored for crop irrigation. Why on earth would Californians want to allow our scarce water to be plundered for the profit of oil and gas companies? They wonder if anyone in their state government realizes that water is far more valuable than oil and is necessary to keep a huge part of our economy going. The state's agriculture helps to feed millions across the country and beyond.
2840	13464-6 SB4's groundwater protections, while admirable, still leave a lot of wiggle room for an industry that's already demonstrated strong contempt for clean air and water protections.
2841	13349-9 Lack of appropriate protections to safeguard surface and groundwater sources from produced water, including the prohibition of unlined or open-air pits is concerning.

2842	13336-3 People urge that regulators insist that waste water must be fully cleaned and treated before it is returned to aquifers, streams, oceans and other natural bodies of water. California's future health depends upon it.
	Response to comments 2820-2842: Thank you for your comments. Consistent with the mandate of Public Resources Code section 3160, subdivision (b), the purpose of these regulations is to ensure well integrity and geologic and hydrologic isolation of the hydrocarbon zone during and after well stimulation treatment. In addition, all wells that have well stimulation treatment performed on them are subject to groundwater monitoring requirements under Water Code section 10783. Wells that have well stimulation treatment performed on them must be covered by a regional, area-specific, or well-specific groundwater monitoring plan and the State Water Resources Control Board is currently developing the model groundwater monitoring criteria required under Water Code section 10783.
	Water Use / Drought
2843	13511-2, 13538-1, 13547-3, 13144-2, 13136-3, 13130-9, 13119-2, 13115-1, 13121-3, 13141-4, 13117-2, 13115-4, 13109-3, 13148-2, 13155-2, 13116-3, 13120-2, 13174-2, 13163-2, 13185-2, 13176-2, 13173-4, 13160-2, 13480-6, 13473-1, 13476-5, 13510-2, 13487-2, 13536-2, 13460-2, 13243-3, 13289-3, 13237-6, 13296-3, 13282-4, 13202-1, 13202-2, 13241-2, 13577-2, 13560-2 California is in a multi-year drought, possibly its worst drought in history, and the groundwater is the state's most precious resource. While the citizens of California are conserving every drop of water, the oil industry is using at least 140,000 to 150,000 gallons "per fracking site" every day of the year; permanently deleting it from the water cycle, mixing in poison and cancer-causing chemicals, and putting it into whatever water their fracking process has not yet robbed and poisoned. There needs to be a clearly defined water management plan that includes: total amount of water to be used, source of water and amount paid to purchase the water, total amount to be recycled, description of how the water will be recycled, the planned disposal method of the water (concern of illegal injection of wastewater into aquifers), including location of and date of disposals, and monitoring and reports need to be made available to the public on the entire disposal process. California can ill afford to use up its precious and dwindling water supplies (both surface and deeply-situated in aquifers) in order to satisfy the need for a dwindling fossil fuel resource that the people are trying to replace with solar, wind, geothermal energy and conservation measures. We need water to drink, for our homes, agriculture and wildlife and nature. Any revisions to the SB4 Treatment Regulations that encourage oil extraction will come at the expense of California's dwindling and precious water supplies.
2844	13560-3 California cannot afford the millions of gallons of water diversion for hydraulic fracturing, even if it were possible to protect that water from chemical additives during the process. The recent ballot initiative to upgrade the water delivery system statewide does not take into account the unbelievable amount of fresh water use required by these processes.
2845	13560-9 Millions of gallons of water are used in pressurized fracturing systems. Citizens want to know how many gallons are left in the wells, how many gallons are dumped in the same fields where the "well stimulation projects" are occurring and where are the reporting requirements for all of the water resources used?
2846	13543-2 No long term studies have been done regarding the impact on safety of all underground water

	supplies.
2847	13114-1 In the light of the fact that this department is in fact the Department of Conservation, and in light of the fact that the State of California is currently in a severe drought, any revisions to SB4's Well Stimulation Treatment Regulations must exclude any form of water as either a part of any base fluid or any other component of the extractive and cleanup process related to this activity.
2848	13130-8 According to the U.S. Energy Administration, oil companies could drill as many as 25,000 fracking wells in our state—each one using nearly 10 times more water than a typical California family in one year. America's abundant water supply should be considered as precious a natural resource as petroleum; not only is water crucial to agriculture, it is a fundamental necessity of human life.
2849	13156-1 Water is more important than oil and gas; people can live without oil and gas, but not water.
2850	13473-6 Only about 3.0% of earth's water is fresh, and California has only a small fraction of that. The citizens ask if everyone really wants to risk contaminating what little water they have, adding that they can live without oil, but cannot live without water.
2851	13514-2, 13528-2, 13535-2, 13539-2, 13541-2, 13501-2 In light of the current drought, it is imperative that the following requests are taken into consideration as DOGGR Regulations move forward with SB 4. There must be a clearly defined water management plan including: total amount of water to be used source of water and amount paid to purchase the water total amount to be recycled description of how the water will be recycled planned disposal method for the water, including location of and date of disposals reports available to public on the entire disposal process.
2852	13510-6 Nowhere in the regulations did the public see reference to having sufficient water to use for hydraulic fracturing.
2853	13463-1 Irate individuals want to know if officials are out of their minds, noting that California is experiencing the worst drought in history. They state that officials want to give hundreds of millions of gallons to monsters of death and destruction so they can poison what little water citizens have left. Then, they add, officials will put the citizens on strict water rations or face jail time. Individuals wonder how this makes sense, adding that officials deserve to have their heads cut off because they are too stupid to use them without having a murdering, destructive corporation up their crooked asses. Angry persons say shame on them and that they really deserve the death penalty in order to save the planet and for the peoples' survival.
2854	13537-6 Wasting millions of gallons of water by mixing with toxic chemicals and injecting it into the Earth may make dollars for corporations, but it makes absolutely no sense for sustainability for future generations. This activity must be stopped before everyone wipes themselves out of existence. Clearer heads must prevail over corporate profits or everyone is doomed.
2855	13231-1 There is belief that the crux of the matter is that each and every regulations maximize water conservation for human uses, use non-potable water for fracking, recover water 'used' for

	fracking and re-use if for fracking and recover water 'used' for fracking, purifying it for human uses.
2856	13355-6 Many fracking techniques use large amounts of water that could otherwise be used for irrigation or drinking. With California suffering from a severe drought, this is unwise to the point of criminally stupid. If fracking is to be allowed it must only use technology that does not use potable water. Otherwise, a class-action suit could be expected from those who are harmed by diversion of water to fracking.
2857	13204-3 Freshwater resources are limited in arid regions of California, and the state is currently suffering from the worst drought on record. The current well stimulations posted by DOGGR are located in the Elk Hills (Occidental Inc.), Lost Hills (Chevron), Belridge and Ventura (both Aera Production) oil fields and have all exempted out of a groundwater monitoring plans based on aquifer exemptions, even though the aquifers are a source of irrigation for the neighboring agriculture. Stimulation notices by Vintage Production in the Rose oil field, located in crop fields on farms, are accompanied by a groundwater and surface water monitoring plan. The public finds this to be completely unacceptable.
2858	13202-3 What are farmers supposed to do—water crops with oil? The people believe that someone will talk him into believing that his cash crop will be oil and that no one cares about food anyways.
2859	13366-4 The people feel that you cannot mandate water usage then allow companies to pay for more usage. Wasting water for economic growth is a crime. If this continues, then those involved, including state agencies and the governor, could be held liable for jeopardizing the public's health and safety.
2860	13560-10 Individuals are surprised the State is allowing the addition of chemicals to this fresh water that may take millions of years to be removed or filtered, if such is even possible. "Storage", "Handling", "Disposal", - these words appear many times. Restore, Clean, Rectify, - these words do not appear. The people of California wonder if this is because the State knows the water cannot be made clean again. They wonder if the state is leaving water restoration up to Mother Nature; a basic tenant of being a good member of a community is, "return whatever is borrowed in the same or better condition". Responsible adults teach this to the children in their care and rental companies include it in their rental agreements. The water Californians use now is borrowed from future residents, farmers, crops, livestock and wildlife. The people feel that the State can require this kind of responsible care from gas and oil companies.
2861	13203-8, 13194-6 The Environmental Protection Agency found that industry had illegally injected about 3 billion gallons of fracking wastewater into central California drinking-water and farm irrigation aquifers, which supply quality water in a state currently suffering unprecedented drought.
	Response to Comments 2843-2861: In Section 1783.1 of the proposed regulations, the application for a well stimulation permit shall include a water management plan that will provide an estimate of the amount of water to be used in the treatment, an estimate of water to be recycled following the well stimulation treatment, a description of how and where the water from the well stimulation treatment will be recycled, including a description of any treatment or reclamation activities to be conducted prior to

	recycling or reuse; and the anticipated source of water to be used in the treatment. The application will also include the anticipated disposal method that will be used for the recovered water in the flowback fluid from the treatment that is not produced water. And in Section 1788 of the proposed regulations, an operator will be required to disclose after a well stimulation treatment the source, volume, and specific composition and disposition of all water associated with the well stimulation treatment.
	Other Agencies
2862	13076-5 The California Department of Toxic Substances Control has the slightest ability or means to regulate the handling and treatment of hazardous fluids utilized in the process of well stimulation drilling.
2863	13490-2 The Toxic Substance Control Act is not protecting Californians nor are the requirements for reporting the fracking chemicals and phases. Citizens wonder if it does not bother officials that every poison available is being combined and used in fracking. Cementing to contain them is temporary. That the only plan is to store indefinitely, the by-product waste sledge and contaminated water that is recovered.
2864	13359-6 Reports need to be presented to the US Geological Survey for review.
2865	13277-3, 13200-7 "The California Water Resources Board regulators have shut down 11 fracking waste water injection wells last July in Central California over concerns that they might have contaminated the aquifers used for drinking water and farm irrigation. Exempting the Fracking companies from the Safe Water Act does not mean that the wells are safe, just that the companies are immune to legal responsibilities. Will the California EPA and Federal Environmental Protection Agency review this regulation? It seems that other related programs and agencies should have input prior to any decisions that are made.
2866	13553-1 The regulations should be revised to include a provision that requires the notification of local land use agencies.
2867	13570-4 The regulations should specify delineation and connection of regulatory authority among all state, regional, and local agencies, as mandated under SB 4. Regulations must formalize agencies' jurisdictions and duties and thereby facilitate more complete and coordinated regulatory coverage for all aspects of well stimulation. Responsible agencies must have formal agreements with other agencies before implementation.
	Response to Comments 2862-2867: Senate Bill 4 specifies the Division as the sole state agency tasked to permit well stimulation treatments in the state. However, the Division will consult with the appropriate state and local agencies as part of its permitting process.
	Other States & Countries

2868	13141-3, 13130-10, 13130-12, 13136-4, 13229-2, 13244-2, 13329-2, 13229-7, 13216-1, 13309-6 Disaster from fracking has already taken place in a number of other states, including Pennsylvania, Northeastern Ohio, Minnesota and Wisconsin. Other Countries and states have banned hydraulic fracturing. People in North Dakota are making a lot of money from fracking now, but their environment is being poisoned. Their tap water bursts into flames. Water contamination from Fracking is evidenced in other States such as Pennsylvania. Approximately 4.3 gallons of water are used per thousand cubic feet of gas - three times what previous research calculated. On average, only 6% of injected fluid is recaptured Water use. Pennsylvania operators reported an almost 70% increase in wastewater generated from 2010 to 2011—rising to a reported 613 million gallons of waste in 2011. A West Virginia University study of 15 waste and freshwater lagoons in that state found that eight were built to contain more water than permitted, or had structural problems that threatened leaks. Look at North Dakota and many other areas of the country—they are toxic areas with water unfit to drink. The people of California ask that the government please stop this from happening.
2869	13130-11 A 2013 *Environmental Science and Technology* study performed by scientists from Duke University, based on two years of water samples at a Pennsylvania plant that treats fracking wastewater, found high concentrations of radium, a highly radioactive substance. The concentrations were roughly 200 times higher than background levels. In addition, amounts of chloride and bromide in the water were two to ten times greater than normal. Elevated levels of chloride and bromide, combined with strontium, radium, oxygen, and hydrogen isotopic compositions, are present in the Marcellus shale wastewaters, the study found.
2870	13130-13 In July 2012, two federal agencies released research highlighting dangerous levels of exposure to silica sand at oil and gas well sites in five states: Colorado, Texas, North Dakota, Arkansas, and Pennsylvania. Silica is a key component used in fracking. High exposure to silica can lead to silicosis, a potentially fatal lung disease linked to cancer. Nearly 80 percent of all air samples taken by the National Institute of Occupational Safety and Health showed exposure rates above federal recommendations. Nearly a third of all samples surpassed the recommended limits by 10 times or more.
2871	13471-1, 13477-1 A handful of people there, and now in California are profiting from "quick and dirty" practices. The Pennsylvania coal companies in the 50s & 60s are a great example of this. One or two coal companies ripped open the land, whisked away the coal and then left behind polluted streams and bright, red, iron-polluted water in formerly pure springs. Groundwater wells in western PA require complicated and expensive filtration before it is even fit to do laundry. Today the soul-mates of these coal pillagers, the frackers, are trashing Pennsylvania and now descending on California.
2872	13326-3 From fracking/well stimulation treatment in other states, state regulations magically get watered down along with the hazardous chemicals used in fracking/well stimulation treatment.
2873	13254-3, 13336-5 The Wyden energy hearings in Washington took testimony from the Energy Lobby. They revealed that fracked wells are short-term producers, that when they are depleted, the industry just moves along to the next fracking project and leaves a string of depleted and poisonous injections into the water table which California cannot afford. The industry needs to be responsible for their damage. The California Department of Conservation must make sure the public's resources are responsibly handled with firmer regulations.

2874	13216-8 Pennsylvania, which houses the Marcellus Shale, is home to thousands of fracking operations. As more companies come in to drill new wells, they often displace entire communities of people who are then left homeless and broke, forced to uproot themselves for an out-of-state industry. One example is in Jersey Shore, Pennsylvania, where 32 families didn't even know they were going to be evicted from their trailer park until they read about it in the Williamsport Gazette. Aqua America, a water company dedicated to fracking, bought the piece of land that housed the trailer park, and families were told they would be paid $2,500 if they moved out by April 1, 2012; $1,500 if they moved out by May 1, 2012; and paid nothing if they moved out after that date. As *Mother Jones* reported, the cost of moving each family's trailer was between $8,000 and $10,000 on average. Residents staged a blockade of the construction, and state troopers were eventually called in to arrest anyone who refused to move. Construction has since begun where those 32 families used to live.
2875	13560-17 Ohio was recently fined because an individual was releasing toxic liquid into a local river. Californians want to know how their state will safeguard their land, water and air from such self-serving people.
2876	13552-16 Other states and the BLM have put in place methods to consider the complete landscape-scale ecological effects of development. BLM's Master Leasing Plans require an evaluation of the effects of oil development in prospective areas, exclude development in sensitive areas, and establish minimization and mitigation requirements. The State of Colorado's Geographic Area Plans and Comprehensive Drilling Plans are designed to accomplish much the same objective.
	Response to Comments 2868-2876: In the development of these proposed regulations, the Division has reviewed and evaluated regulations related to well stimulation treatment activities from other jurisdictions.
	Other
2877	13354-1 The public is concerned that Eminent Domain will be used as an excuse to override the desire of people with property near proposed well stimulation sites. They want to know what happens if neighbors don't want this to occur.
2878	13552-1 The Conservancy is an international non-profit conservation organization working around the world to protect ecologically important lands and waters for nature and people, seeking to preserve the lands and waters upon which all life depends. We employ a science-based collaborative approach to develop creative solutions to conservation, and carry out on-the-ground conservation work in all 50 states and across the globe with the support of approximately one million members. Our particular focus in comments on these well stimulation rules is a concern that ecological resources will not be adequately protected.
2879	13439-2 A big concern is that each surface right owner apparently will need to negotiate removal and remediation with each operator. Not all owners are equipped to effectively negotiate especially if the terms of the lease are silent or ambiguous or if there is a dispute over ownership of the infrastructure that attached to the real property and considered part of the real property. Further,

	some operators may have gone bankrupt, have changed hands many times making assigning responsibility for remediation difficult, or have abandoned the infrastructure.
2880	13439-1 In the regulations, the people of California ask that regulators please explicitly require a closure, removal, and remediation plan for each operation. The plan should address not just the well itself, but also the various facilities such as pumps, tanks, pads, fencing, lighting, roads, buildings, ponds, etc. associated with each well stimulation operation.
2881	13270-3 Some wonder why greedy humans are “so frickin’ stupid.”
2882	13254-1 People’s pensions and food comes from California, as reported. They love California and want it to thrive and prosper in this changing world.
2883	13576-1 Enviro OG™sent a comment letter introducing their product that is a replacement product for conventional hydrochloric acid that is commonly used in well treatment applications to remove calcium carbonate scale and improve performance of the well. Such products are commonly used in production, EOR injection and disposal wells and on pipes and equipment servicing the wells.
2884	13170-3 The people say that the scientific data is firm and available. Check at Union of Concerned Scientists, Nature, Scientific American, Sierra Club data, and see the documentaries that show what happened to regular people, without advocates to witness the kind of occurrences and suffering they experienced as well as the subsequent intimidation by the private corporations, and lack of responsible care after the hydraulic fracturing was implemented.
2885	13170-4 We all have to work together to help remove the blinders as the education and upbringing the profiteers and puppet legislators received shows to have been an inadequate one. That is, if public safety and health and environment are higher values than mere short-term-proven-dangerous-profiting.
2886	13561-1 Because the regulations contemplate new reporting and compliance requirements, Chevron encourages DOGGR to be flexible when addressing any unforeseen issues that may arise during implementation. DOGGR should work with operators to ensure that obligations are feasible and clear as the new regulatory framework is better understood by DOGGR, operators and the public.
2887	13382-2 Fracking proponents overestimated the amount of oil to be extracted leaving California with a huge risk and drastically lowered potential benefit in terms of energy and jobs.
2888	13498-4 Article 66261.24 (G)(15) Any radioactive components or tracers injected in the well. There should not be any radiological components or tracers used in the injection process without prior approval through community discussion. Reasoning: The local community should have the right to argue for or against the use of radioactive materials in their vicinity and precluded or separated from the doctrine of proprietary secrecy of injection formula.

2889	13470-11 Too much time and money have been wasted on this issue. Common sense should have prevailed and closed this discussion long ago when these industry practices were first proposed, according to individuals.
2890	13216-12 The public says to Jefferson [drill site LA] the meaningless legal “modifications” and save California from an ecological disaster by banning hydraulic fracking in California.
2891	13121-12 People want the state to let them know what they can do to help.
2892	13457-1 Citizens want to prohibit the use of materials that will result in damage to the quality of water, air and crops in the area surrounding fracking operations, and the health of humans and animals in these areas
2893	13509-4 Embedded in the language of the latest revision of SB 4 are many words such as "estimates" and "assessments" when it comes to the foresight of possible damage to our lands and the health of our waters, Earth and people. The truth is, fracking has consequences which are impossible to foresee and prepare for.
2894	13131-4 Trust the solution.
2895	13306-2 People want to know why a well needs to be stimulated at all. They say for money, that’s why and they state that it’s all happening under chemclouds.
2896	13203-1, 13194-1 This is a moment at which anyone with the capacity for reflection should stop and wonder what is being done in California.
2899	13492-2, 13492-3 Californians want to lead the way in being the good guys of the century, not the assholes of the century. Love America, not shit on America and Americans for the mighty dollar.
2900	13531-1 After reading over the SB4 Well Stimulation Treatment Regulations modified text, individuals are in full agreement with the Center for Biological Diversity’s assessment and feel that there are serious flaws in the text.
2901	13476-9 Many urge the government to consider all of these things ahead of the financial gain. At the end of the day the cheap energy comes at too high a price in the environmental, safety, and health hazards.
2902	13492-5 Californians want to lead the way to a better tomorrow for the youth of today.
2903	13490-1 The people of California do not agree that SB4 regulated fracking is the only way to ensure oil for Californians.

2904	13579-1 There is no mention of how to maintain separation of the persons on the individual water control boards, the “Division”, the “third party” review entities and the operators of the stimulation operations. There is no “up front” requirement to disclose the toxic chemicals the operators intend to use, which in the event of a “breach” will contaminate the ground water beyond any further use by the local population. There should be recommendations to explore alternatives to using fossil fuels.
2905	13552-15 There is concern about surface impacts from development of unconventional petroleum resources outside of existing oilfields. It is of paramount importance for the Department to spell out in its regulations how and where surface disturbance activities would be limited and how natural resources would be protected. Surface disturbance from oil and gas development that is not carefully planned and limited—construction of roads, pads, flares, processing facilities and pipelines, truck traffic, diesel pumps, and other related development activity can, as illustrated by development impacts in other US shale provinces, be highly disruptive to the surface environment and species that depend on that habitat.
2906	13570-9 The regulations should eliminate injection of dangerous chemicals, and promote the use of food-grade and other benign additives, including a prohibition on the injection of any distillate hydrocarbon, BTEX, and other hydrocarbons.
	Response to Comments 2877-2906: These regulations have been developed to supplement the Division’s existing oil and gas regulatory framework to meet the intent and requirements outlined in Senate Bill 4. These regulations also respond to the feedback the Division has received in ten public comments hearings held throughout the state, tens of thousands of public comments submitted in written format, and in scientific and policy papers, which are listed in the Final Statement of Reasons. These regulations include monitoring, evaluation, and testing requirements for before, during, and after well stimulation treatment to ensure the integrity of the well and the geologic and hydrologic isolation of the stimulated hydrocarbon formation. These regulations also implement the public disclosure, neighbor notification, water testing, and permitting requirements established by Senate Bill 4. The Division believes that these regulations provide an effective framework for a level regulatory scrutiny that is commensurate with the level of public concern with well stimulation treatment operations. The potential impacts on the environment and public health will be considered in the Environmental Impact report and independent scientific study required by SB 4. Section 3161 (b)(4)(A) and (B) of the Public Resources Code requires the Division to prepare an Environmental Impact Report (EIR) pursuant to the California Environmental Quality Act (CEQA) in order to provide the public with detailed information regarding any potential environmental and public health impacts associated with well stimulation treatments in California. Statute requires that the EIR be completed by July 1, 2015. SB 4 also amended the Public Resources Code to add Section 3160 (a), which requires the Secretary of the Natural Resources Agency to cause to be conducted and completed, an independent scientific study on well stimulation treatments, including, but not limited to, hydraulic fracturing and acid well stimulation treatments. The independent scientific study is to evaluate the hazards and risks and potential hazards and risks that well stimulation treatments pose to natural resources and public, occupational, and environmental health and safety. This study will be completed on or before July 1, 2015.

2898	13510-5 Who's liable if all goes wrong? If it's "approved by the Division" then the Operator is not liable? It seems to the public that if people are harmed someone ought to be liable for damages. Can the "Division" be sued? Or is this the Operator's sole responsibility? Who will be liable, the Division or the Operator if "modification" goes wrong? Again, if anything harms people, Californians believe *someone* ought to be liable for damages. Who, exactly is the "Operator" and is he/she/it a corporation, a driller, an entity that can be liable in the event of error. Will the Operator have an assessment by qualified experts, geologists, hydrologists, or other than petroleum company employees? Will the Division (DOGGR) have employed qualified experts to review these "assessments"? Qualified geologists, experts, employed by the "Operator" or the "Division" that approves each "stimulation" will be employed by the State, the Petroleum Company, the Drillers, by whom exactly? In other words, who will be liable? As API standards are American Petroleum Institute standards, are there any other drilling standards that might corroborate or validate these standards? Is there an engineering association or renowned educational institution that has reviewed these petroleum industry standards to ensure that they are more than adequate for public safety? WHO will be liable should they not be accurate or sufficient to ensure public health and safety? Is "rigged up" an engineering term that specifies that equipment shall be utilized/used as designed as opposed to finding a way to make it work as designed? Are API ratings universal or only used by the American petroleum industry? WHO is liable if these standards are not met or even if they are met but proved to be incorrect? One section specifies actions to be taken when and if something goes wrong, the possibility of error is admitted. What is important to note is that a definite, specific indication of liability in the event of harm, damage to persons and/or property as a result of any and all action(s) during well stimulation. I noted that the Division is to be notified AFTER something has gone wrong within "practical" time frame. There is no indication of what "reasonable and practical" are. And, the Division "staff" is to witness the "diagnostic testing." What staff, exactly, is qualified to witness and understand what is occurring? Does the Division employ sufficient engineers, geologists, hydrologists, etc. to witness and understand the event being diagnosed? If it does not, who is liable for not ensuring the correct diagnosis and allowing the operation to continue or ordering that it stop? Did California government or university expert seismologists determine that this was safe or are we relying on petroleum company employees and/or attorneys? WHO is liable should this distance be inadequate and/or inaccurate? In California, any earthquake resulting after hydraulic fracturing resulting in damage to person(s) or property might be considered to have been triggered by the additional "fracturing" activity. WHO exactly are the "Operators" liable in each case or violation? What kind of "containers" shall not rust or leak or be penetrated after years of storage? Where shall these "containers" be stored? Who is liable in the even the "containers" do not *contain* the wastewater? Procedures and steps to follow do not include liability for damage to person(s) or property.
	Response to comment 2898: The imposition of assessments to support the Division's administrative costs and requirements for bonding to cover compliance costs are addressed in statute and are outside the scope of this rulemaking. Compensation for damage to private property is outside of the Division's regulatory purview. Public Resources Code section 3009 defines "Operator" to mean "a person who, by virtue of ownership, or under the authority of a lease or any other agreement, has the right to drill, operate, maintain, or control a well or production facility." The Division's reviewing engineering are either qualified geologists or petroleum engineers. The Division's regulations do not prescribe minimum qualifications for operators' employees. The documents relied upon in this rulemaking include API standards and papers prepared by other academic and industry experts.

	The regulations require that the Division is notified if there is indication of a potential well breach, and they also require notification 72 and 3 hours before commencing treatment and at least 25 hours prior to pressure testing. The Legislature approved the Division's Budget Change Proposal for additional staff to implement the requirements of SB 4. If the Division determines that still more staff are needed to implement the program, then another Budget Change Proposal will be submitted.
	1751. Single-Project Authorization
2907	13554-5 There is no authority in Senate Bill 4 that would allow this circumvention of the permitting process. The only "grouping" that is authorized under the law is the authorization of a single drilling application together with a single well stimulation treatment application. Grouping multiple well stimulation applications into a single approval process would be clearly beyond the authority granted by SB 4 and would undermine DOGGR's ability to fully assess the risks of individual permits and the public's ability to stay apprised of new well and distinct stimulation operations. Additionally, this provision provides no context as to how the regulation will be implemented. Section 1751 should be removed in its entirety from the Second Revised Proposed Regulations.
2908	13573-2, 13472-2, 13410-3, 13556-2, 13297-4, 13557-2, 13557-3, 13557-1 DOGGR must specify the parameters that would allow for grouping, such as similar geologic characterizations, proximity to surface and/or groundwater, and proximity to urban or agricultural communities as a justification for grouping. The single project authorization be limited to a maximum number of 10 or fewer wells. Full compliance with CEQA should be required before any permit is issued.
2909	13349-4 "Single Project Approval" multiple wells that could lead to fewer environmental reviews concerns the public.
2910	13531-4 Rubber-stamp approval for multiple fracking events upsets the public: The regulations' "single project authorization" provision might be interpreted by oil officials as allowing them to approve many applications with one rubber-stamp approval.
2911	13552-25 The Conservancy previously recommended that the Department set a cap on the number of well stimulation or drilling permit approvals that can be combined in a single authorization. The current draft continues to reject such limits, stating that reviews will be conducted for multi-well applications on the same basis as individual well applications. Although citizens support providing the Department authority to combine approvals, we continue to believe that a reasonable limit on the number of grouped permits would comport with best practice. Additionally, the rule should make clear that the Department has the discretion to reject multiple filings that it deems excessive or inappropriate.
2912	13570-3, 13233-4, 13226-4 The regulations should specify that full compliance with CEQA be met through the completion of field-by-field and well-by-well environmental reviews, and affirm the statement in Pub. Res. Code § 3161(4)(C) that nothing in these provisions "prohibits a local lead agency from conducting its own EIR". Why is are the regulations coming out before the EIR?

2913	13570-14 The "single-project authorization" element destroys the current regulatory and permitting structure. Grouping is not currently required for the entire process of drilling, redrilling, or other works and completion for the entire well. Requiring grouping for only one phase in a well construction is neither reasonable nor efficient. Suggested language change: (B) For the purposes of this section, "single-project authorization" shall mean a single Division approval for multiple applications for permits to perform up to a total of ten (10) well stimulation treatments as part of ~~and/or~~ notices of intent to drill or rework wells within a single calendar year and a single lease, reservoir/pool, or field of up to 640 acres total area of surface or subsurface operations which has been reviewed and assessed in appropriate local certified CEQA compliance documents. CEQA Compliance shall require Programmatic EIR for Division delineated Fields under current Unit/Field Rules practice. (C) A request for a single-project authorization shall include: • Identification of each of the applications and notices that are part of the request; • The applications and notices that comprise the request for a single-project authorization***;*** (3) Division approved permits and histories of wells for all grouped wells for stimulation treatments; (4) Certifications of CEQA compliance for all related drilling, reworking, and/or stimulation. (c) The Division will specify what operations are approved by a single-project authorization and the conditions under which the operations are approved. (a) Operations approved by a single-project authorization that have not commenced within one calendar year shall not be commenced without first obtaining a new approval for those operations and new conditions as required or appropriate from the Division. (b) The Division may incorporate the provisions for stimulation treatment within the notice and permitting for each well construction (Permit to Drill) and reconstruction (Permit to Rework). (f) For the purposes of this section, "single unit authorization" may be considered through a single Division annual approval for multiple applications, notices, and permits to perform well stimulation treatments, drilling, or reworking of wells for a single calendar year in a single field or other designated unit of less than 640 acres total area of surface or subsurface operations which has been reviewed and assessed in appropriate local certified CEQA compliance documents and which shall replace any previous Field/Unit Rule for the same field/unit.
	Response to comments 2907-2913: Rejected. Section 1751 specifies that each application and notice submitted for single-project authorization will be reviewed in the same manner as it would had the application or notice been submitted individually. The purpose of Section 1751 is to establish a procedure for requesting a single-project review and authorization for multiple well stimulation treatment permit applications or notices of intent to drill or rework a well. Operators commonly plan to conduct multiple drilling and well stimulation operations in short period of time. In those instances, consideration of each permit on an individual basis can be much less efficient than considering the group of operations as a single project. Each individual application within the group of proposed operations will be subject to the same scrutiny and requirements as it would had it been submitted individually, and Section 1751 in no way relieves operators of any requirements. Section 1751 is consistent with statute. Public Resources Code section 3160, subdivision (d), requires operators to obtain a permit from the Division before performing a well stimulation

	treatment. Public Resources Code section 3203 requires operators to submit a notice of intention and obtain approval from the Division before drilling or reworking a well. Public Resources Code section 3160, subdivision (d)(2), provides that well stimulation permits and approvals of notices of intention to drill or rework wells may be approved under a single authorization if they are applied for concurrently. None of these statutes prohibits coordinated consideration of applications or notices, and coordinated consideration of application or notices does not circumvent any statutory requirement.
2914	13557-4, 13557-5 Section 1751(d) states: d) Operations approved by a single-project authorization that have not commenced within one year shall not be commenced without first obtaining a new approval for those operations from the Division. It is not clear to the public what this means: they wonder if *all* re-works and well stimulations must be commenced within one year, or just the initial drilling and well stimulation? If the latter, this would appear to allow an operator to use the single-project authorization to drill, re-drill, and do multiple well stimulations for a long, unspecified period of time. Conditions change, and without further environmental review, such a broad granting of approval for multiple operations for an open-ended time period is not acceptable.
	Response to comment 2914: Section 1751 does not extend the statutory lifespan of an approval of a well stimulation treatment permit or a notice of intent to drill or rework a well. Public Resources Code section 3203 and 3160, subdivision (d)(4), both specify that operations cannot commence more than one year after the Division's approval. For this reason, Section 1751(d) specifies that any operation approved under a single-project authorization that has not commenced within one year cannot be commence without obtaining a new approval for that operation.
	1761. Well Stimulation and Underground Injection Projects
2915	13547-6 Section 1761(a)(1)(A): This should be used with great caution. The Division should also be allowed to determine that an acid treatment below the threshold volume is in fact well stimulation.
2916	13571-10 Section 1761(a)(3) Definition of "Acid Volume Threshold": The 36-inch penetration distance threshold is arbitrary and has no basis in the implementing legislation and moreover is not rooted in strong science or data. The simplifying assumptions used in the AVT calculation are not appropriate and more robust methods of determining the stimulated volume should be required. The revised proposed rules now incorporate a concept named the "axial dimensional stimulation area" or "ADSA," which is precisely this volume. The proposed rules require that the ADSA be determined by "…modeling, or other analysis, approved by the Division that will effectively estimate the ADSA." If the Division decides to retain the 36-inch penetration distance threshold, which we do not recommend, then the evaluation of whether a particular stimulation treatment is over or under this threshold should be based on the ADSA rather than the AVT, or at the very least it should be required that these two calculations be examined for consistency and any discrepancies explained. If the Division decides to retain the AVT calculation as is, citizens approve of the Division's proposal that the lowest calculated or measured porosity be used to calculate the AVT.
2917	13547-1 The term "Acid Volume Threshold" is introduced, but no reason is given for why it is needed. Further on in this section, the equation defining this term is given, but leaves two important terms

	undefined. One is "porosity", which is usually defined as a fraction of the volume made up of pores. This is typically a quantity between 0 and 1, but in this case appears to be a quantity greater than 1. The second quantity needing definition is "Well bore volume of treated zone". Without a clear definition of this quantity, the entire meaning of "Acid Volume Threshold" is unclear.
2918	13562-1 (3) "Acid Volume Threshold" means a volume, in gallons, per treated foot of well stimulation treatment, calculated as follows: (((Size of the drill bit that was used in the treated zone/2(inches) +~~36~~ **50**(inches))2 x 3.1416 x 12(inches) x treated formation porosity) – wellbore volume of treated zone(inches3))/(231 (inches3/gallon). The **weighted average** ~~lowest~~ calculated or measured porosity in the zone of treated formation shall be the ~~treated formation porosity~~ used for calculating the Acid Volume Threshold. Rationale: the porosity used to calculate the threshold acid volume should be the weighted average rather than the lowest calculated or measured value of porosity. Porosity can vary greatly through the zone of the treated formation. Using the minimum value in many instances would drastically reduce the calculated threshold volume to where it would cover applications penetrating only a few inches of the formation, sweeping into definition of well stimulation treatment under the Proposed Rule many of the routine uses of acid that are expressly excluded from the definition of well stimulation treatment. The treated area should be extended from 36 to 50 inches. The White Paper acknowledges that wellbore damage generally extends up to 50 inches from the wellbore, yet has proposed a calculation for the Acid Volume Threshold that reflects a "conservatively smaller area"—a 36-inch radius from the edge of the wellbore. In practice this means that the routine removal of wellbore damage between 36 and 50 inches from the wellbore would potentially trigger application of the Proposed Rule despite the express exclusion of such maintenance operations under Public Resources Code section 3157. As this reflects 28% of the general extent of wellbore damage recognized as typical by the Division, we respectfully suggest that the calculation is over-inclusive. A 50-inch radius is sufficiently conservative for the Division's purposes and would preserve the ability to remove damage from the wellbore. Without this change, the Proposed Rules would significantly increase the difficulty of treating those last 14 inches, limiting the effectiveness of the treatments, risking a decrease in production and frustrating the intent of SB 4, without any significant corresponding benefit.
2919	13577-5, 13577-6 There is a desire to delete section 1761(B). Acid is still used and will have a cumulative effect in and on the environment. Section 1761(B)(3) states the lowest calculated or measure porosity in the zone of treated formation shall be the treated formation porosity used for calculating the Acid Volume Threshold. Citizens wonder if "lowest" refers to the least porosity or the most porosity. The Acid Volume Threshold should be calculated using the measurement of most porosity.
2920	13567-1 Porosity is the variable that will determine the acid volume and control the gallon/foot result. The newly revised porosity definition (a)(3) will severely limit the acid volume injected into shale inte-bedding (lowest porosity interval). A fairer measure would be the average porosity calculated throughout the interval. (a)(1)(A)(iii) The last clause is a bit confusing. It is recommended to insert "if" after "determination" and prior to "that".
2921	13563-4 There is substantial technical basis for modifying the proposed definition of "Acid Volume Threshold" as it defines acid treatments with a radius greater than 36 inches as stimulations even though the majority of acid treatments are simply cleaning out formation damage to distances greater than 36 inches. In fact, the State's own white paper that accompanied the release of the previous version of these proposed regulations acknowledged:

	"Typically, the radius of formation damage is between 20 to 50 inches." Consistent with the Division's white paper, WSPA believes it is imperative that the draft regulations clearly allow for a radius of 50 inches, calculated from the external portion of the wellbore to account for routine cleanout of deeper formation damage. SB 4 is clear that these kinds of routine well maintenance operations are excluded to avoid excessive administrative burden on operators and DOGGR and to keep the regulations focused appropriately on true well stimulation treatments. As currently drafted, the definition of “Acid Volume Threshold" exceeds the authority of DOGGR to regulate well stimulation treatments. The A VT formulation is a calculation of the pore volume in the cylindrical volume outside of the wellbore 36 inches (as noted earlier, we believe 50 inches is the appropriate value) from the well centerline, on a gallon per foot basis. Currently, the equation incorrectly calculates the pore space in this cylindrical volume by first treating the well bore as porous rock and then deducting an empty well bore volume, thus under calculating the true value. WSPA proposes modifying the calculation to allow for penetration up to a radius of 50 inches, including the volume needed to initially fill the wellbore prior to being displaced into the formation. The proposed modification is: (Size of the drill bit that was used in the treated zone/2)(inches) +.;650 (inches))2 x 3.1416 x 12 (inches) Jc tre.ated formation porosity) wellbore volume per foot of treated zone (inches3) x treated formation porosity I 23 l (inches3/gallon). The average calculated or measured porosity in the zone of treated formation shall be the treated formation porosity used for calculating the Acid Volume Threshold.
	Response to comments 2915-2921: Rejected. Section 1761(a)(3) was added to establish an Acid Volume Threshold, which is calculated on a case-by-case basis, factoring in the wellbore volume and the porosity of the formation. Calculation of the Acid Volume Threshold will return a number of gallons per treated foot of the wellbore, which will be used to help whether a treatment using acid is or is not a well stimulation treatment. Public Resources Code section 3157 defines “well stimulation treatment” to mean a treatment of a well that is designed to enhance oil and gas production by increasing the permeability of the formation. The definition of “well stimulation treatment” expressly excludes routine well cleanout work, well maintenance, removal of formation damage, bottom hole surveys, and other activities that do not affect the integrity of the well. Based on the Division’s determination that wellbore damage generally extends 20 to 50 inches from the wellbore, the Acid Volume Threshold is designed to calculate the formation bulk volume per treated foot of the wellbore for a 36-inch radius from the wellbore. A distance of 36 inches was selected because it is a conservatively smaller area than the area where wellbore damage could typically occur. If a treatment is below the Acid Volume Threshold, then it is clearly within the range of wellbore cleanout, maintenance, and removal of formation damage. Well treatments using acid that exceed the Acid Volume Threshold are presumed to be well stimulation treatment, unless it is successfully demonstrated to the Division that the treatment will not increase the permeability of the formation. The defined axial dimensional stimulation area, or “ADSA,” is a more technically involved analysis that may involve computer modeling or microseismic readings. Simplification is built into the Acid Volume Threshold to minimize complications added to an already complicated regulatory scheme. The Acid Volume Threshold has been set at a conservatively low level, in part to account for distortions caused by that simplification. The concept of porosity is a commonly understood by the Division and the regulated public. The lowest porosity value is to be used, consistent with the Division’s intent to set the Acid Volume Threshold at a conservatively low level.

	Additional discussion of the basis for the Acid Volume Threshold can be found in the document titled *Discussion of Calculated Acid Volume Threshold*, which is included in the rulemaking record.
2922	13573-8, 13472-8 Section 1761(a)(1)(A)(i) – (iii): The second revision inexplicably prefaces clauses in section 1761(a)(1)(A)(i) and (ii) with "Except for operations that meet the definition of 'underground injection project' under Section 1761(a)(2)." Thus, DOGGR appears to indicate that even if a process otherwise meets the regulatory definitions of well stimulation provided by Section 1761(a)(1)(A)(i) and (ii), to say nothing of the broader statutory definition of well stimulation, that process nonetheless does not constitute well stimulation if it also meets the definition of an underground injection project. This exclusion is unsupportable and must be removed.
	Response to comment 2922: Rejected. Public Resources Code section 3157 specifically excludes underground injection projects such as steam flooding, water flooding, and cyclic steaming from the definition of well stimulation treatment. Therefore, even if these underground injection project operations fall within the parameters of the definition of a well stimulation treatment, they are not well stimulation treatment operations for purposes of these regulations. Underground injection projects are regulated under Sections 1724.6 through 1724.10 and Sections 1748 through 1748.3. If a well stimulation treatment, such as a hydraulic fracturing treatment or an acid matrix stimulation treatment, is performed on a well that is part of an underground injection project, then that treatment would still be subject to these regulations.
2923	13573-9, 13472-9 Section 1761(a)(1)(A)(iii): It appears that an exception in 1761(a)(1)(A)(iii) encompasses the obligation to report use of the exception itself, because the exception appears to apply to clause (iii) itself. Thus, at an absolute minimum, DOGGR must amend the regulation to make it clear that the language the second revision added to Section 1761(a)(1)(A) does not apply to Section 1761(a)(1)(A)(iii).
	Response to comment 2923: Accepted. The grammar of Section 1761(a)(1)(A) was flowed and the referenced modifying clause has been moved so that it is clear that it only modifies Sections 1761(a)(1)(A)(i) and (ii).
2924	13573-10, 13472-10 Section 1761(a)(1)(A)(iii): DOGGR must explain the omission of the definition of "protected water" from Section 1781(n). While the previously proposed definition was unreasonably narrow, as we explained in our prior comment, DOGGR should provide additional clarity regarding the scope of waters that are protected, or the process for determining which waters are protected.
	Response to comment 2924: Consistent with the mandate of Public Resources Code section 3160, subdivision (b)(1), the purpose of these regulations is to ensure well integrity and geologic and hydrologic isolation of the hydrocarbon formation during and after well stimulation treatment. This standard applies regardless of the quality of groundwater in the area and the quality of groundwater in the area is not relevant to the definitional distinctions clarified in Section 1761.
2925	13559-2 Section 1761(a)(1) The category of matrix acidizing should be removed as a stimulation that requires a ground water management plan. By definition, a matrix acid stimulation does not

	fracture the formation being treated and therefore cannot reach shallow fresh waters provided other regulated wellbore integrity is adequately addressed. (a)(ii) The acid volume threshold calculation of 36" is an arbitrary number and should be increased to allow matrix acidizing that otherwise would be eliminated due to application of a meaningless threshold in the case of matrix. (a) The "lowest calculated or measured porosity in the zone of treated formation" should be rewritten to use average porosity to accommodate thinly bedded sand shale formations in California.
	Response to comment 2925: Rejected. Public Resources Code section 3158 expressly identifies acid matrix stimulation as a well stimulation treatment. Public Resources Code section 3160, subdivision (d)(1)(C) requires a water managements plan as part of an application for a well stimulation treatment permit and Water Code section 10783 applies to well stimulation treatments.
2926	13563-2 The definition of well stimulation should exclude routine well cleanout work, routine well maintenance and other activities described in Section 1761(a)(l)(B). This is required by the statute (Pub. Res. Code Section 3157(b)) and would ensure that Sections 1761(a)(l)(A) and Section 1761(a)(l)(B) are consistent. The proposed modification is as follows: Section 1761(a)(l)(A) "Well stimulation is a short term and non-continual process for the purposes of opening and stimulating channels for the flow of hydrocarbons. Examples of well stimulation treatments include hydraulic fracturing, acid fracturing, and acid matrix stimulation. Except for operations that meet the definition of "underground injection project" under Section 1761(a)(2) or are excluded pursuant to Section 1761Ca)(l)(B) ... "
2927	13563-3 There confusion under this definition as to whether the regulations apply to operations described in Section 1761(a)(l)(B). Those categories of operations are expressly excluded from the scope of well stimulation treatment under SB 4 (Pub. Res. Code Section 3157(b)), which should be· clear in the regulations. Moreover, the demonstration necessary to rebut presumption would be burdensome and time consuming for both operators and DOGGR staff.
	Response to comments 2926-2927: Rejected. If an operation does not involve the emplacing acid in the well or pressure exceeding the formation fracture gradient, then the presumptions of Section 1761(a)(1)(A)(i) and (ii) would not apply to that operation. The purpose of Section 1761(a)(1)(A) is to establish a basic framework for that analysis, and to dispense with discussion of certain treatments that clearly are not well stimulation treatment because of the low volume of fluid used. The suggested revision would undermine that purpose by foregoing that analysis if an operator concludes that the activity does not affect the integrity of the well or formation.
2928	13571-5 Section 1761(a)(1)(A)(ii): Individuals strongly object to the Division's proposal that, when determining whether a treatment is greater than the Acid Volume Threshold ("AVT"), pre-flush or over-displacement fluids that do not use acid be excluded from the treatment fluid volume. The environmental, public, health, and safety risks of acidizing (and matrix stimulation treatments more generally) do not arise solely from the use of acids, but rather are associated with the entire process of well stimulation. The AVT should be calculated using the entire stimulation fluid

	volume and should not be limited only to the main treatment fluid, or those fluids containing acids.
2929	13571-6 Pre-flush and over-flush fluids are part of the total fluid system used in an acid stimulation treatment. They require large quantities of water, which could strain local water supplies. They may contain chemicals in addition to acid that are hazardous to human health or the environment. They may be pumped into the wellbore under pressure, potentially increasing the risk of well integrity issues. They return to the surface after stimulation operations are complete and pose a risk to surface and ground water and soils and must be handled and disposed of properly.
2930	13571-7 Each successive fluid stage pumped displaces the previous fluid stage further into the target formation. Given that the Division's proposed method for determining whether or not an acid stimulation treatment is subject to these rules is based on how far into the formation the stimulation fluid penetrates, it is crucial that the AVT calculation be based on the total volume of fluid pumped, not only those fluids containing acid, in order to accurately determine the penetration distance. The over-flush stage is designed to displace the main treatment fluid more than 3 to 4 feet away from the wellbore.1 If pre-flush and over-flush fluids are not taken into account when calculating the AVT, the penetration distance of the stimulation fluids – including those fluids containing acid – will be underestimated. This means that acid stimulation treatments where the total fluid volume does in fact penetrate more than 36 inches into the target formation could be improperly exempt from these rules, putting the environment and human health and safety at risk.
2931	13571-8 The exclusion of pre-flush and over-flush fluids from the AVT calculation runs counter to this stated goal, as most acid matrix stimulation treatments utilize fluid systems containing one or more pre-flush and over-flush stages, while cleanout or maintenance treatments such as pickling often do not. Excluding the pre-flush and over-flush fluids from the calculation will almost certainly mean that stimulation treatments that legitimately meet the Division's definition of an acid matrix stimulation treatment will be improperly exempt from these rules.
2932	13571-9 For the purpose of determining whether a treatment is greater than the AVT, the total stimulation treatment volume for all stages should be used, including but not limited to any pre-flushes, main fluids, over-flushes, and diverters.
	Response to comment 2928-2932: Rejected. Section 1761(a)(1)(A)(ii) excludes the volume of fluid used in the pre-flush if it does not contain acid from the Acid Volume Threshold calculation because a non-acid pre-flush fluid pumped into the well below the formation parting pressure clearly does not meet the definition of well stimulation treatment. The fluid pumped during the displacement, if it does not include acid, is also properly excluded from the Acid Volume Threshold calculation. The concern that the displacement would push acid further into the formation does not take into account that the acid used in treatment becomes spent and diluted as it moves further into the formation. Therefore, a non-acid displacement does not increase the area of the acid treatment.
2933	13577-7 Section 1761(B)(3)(b)(3) regulations regarding wells that are part of underground injection projects needs to be reworded. The strictest regulations should apply in any and all cases since the formations are being subjected to various operations.

2934	13514-3, 13528-3, 13535-3, 13539-3, 13541-3, 13501-3, The exemption of underground injection projects in the recent revisions must be reversed due to: Cyclic Steam Injection (CSI) is the most common technique that will not be regulated by SB4 based on the aforementioned exemption these revisions effectively remove DOGGR's authority to regulate Enhanced Oil Recovery (EOR) under SB4.
2935	13573-7, 13472-7 The regulations should clarify the ambiguity regarding the overlap between well stimulation treatments and underground injection projects.
2936	13570-16 Excluding underground injection projects from the regulations is problematic because many injection projects have both injection and production wells that undergo well stimulation treatments. If underground injection wells are stimulated as part of a Drilling or Reworking Permit, they must be subject to these treatment rules. No exemption can be allowed for wells in underground injection projects from regulations regarding well stimulation.
2937	13570-17 The definition of injection for disposal, and/or production/recovery must be expanded to include gas injection and recovery. Suggested language for comments 13570-15, 13570-16 & 13570-17 Section 1761 (a) The following definitions are applicable to this chapter: (D) "Well stimulation treatment" means a treatment of a well designed to enhance oil and gas production or recovery by ~~increasing~~ modifying the permeability of the formation. ~~Well stimulation is a short term and non-continual process for the purposes of opening and stimulating channels for the flow of hydrocarbons~~. Examples of well stimulation treatments include hydraulic fracturing, acid fracturing, ~~and~~ acid matrix stimulation, and gravel packing. Well stimulation treatment does not include ~~routine well cleanout work; routine well maintenance; routine treatment for the purpose of removal of formation damage due to drilling; bottom hole pressure surveys;~~ routine well cleanout or maintenance activities that do not affect the integrity of the well or the formation; ~~the removal of scale or precipitate from the perforations, casing, or tubing; or a treatment that does not penetrate into the formation more than 36 inches from the wellbore~~. (E) ~~"Underground injection project" or "subsurface injection or disposal project" means sustained or continual injection into one or more wells over an extended period in order to add fluid to a zone for the purpose of enhanced oil recovery, disposal, or storage. Examples of underground injection projects~~ Well stimulation treatment does not include the enhanced oil recovery methods of ~~include~~ waterflood injection, steamflood injection, cyclic steam injection, injection disposal, and gas storage projects, unless those processes or projects employ stimulation. Any enhanced oil recovery or wastewater disposal process that employs stimulation (pressures exceeding 0.6psi/foot depth) is a well stimulation treatment and subject to these regulations. (b) ~~Well stimulation treatments and underground injection projects are two distinct kinds of oil and gas production processes. Unless a regulation expressly addresses both well stimulation and underground injection projects,~~ ~~(1) Regulations regarding well stimulation treatments do not apply to underground injection projects; and~~ ~~(2) Regulations regarding underground injection projects do not apply to well stimulation.~~
2938	13573-6, 13472-6 There is no basis for generally narrowing the definition of well stimulation treatment to encompass only "short and non-continual" processes.

	Response to comments 2933-2938: Rejected. There is a need for clear definition of the term "well stimulation treatment" because there has been confusion about the distinction between underground injection projects and well stimulation treatments. Injection projects for enhanced oil recovery, injection disposal, and underground gas storage are covered by extensive, existing regulations, found in Sections 1724.6 through 1724.10 and Section 1748 through 1748.3. These requirements for a "subsurface injection or disposal project" do not apply to well stimulation treatments. The scope, duration, and purpose of injection projects and well stimulation treatments are substantially different, and therefore the regulatory approach to each practice is different. However, because both practices involve putting fluids into an oil or gas well, some have advocated that the Division should apply the underground injection project regulations to well stimulation treatments. Disagreement about the distinction between these two categories of operations has been the subject of litigation in state and federal courts. The purpose of Section 1761 is to build upon the statutory definition of "well stimulation treatment" to make it as clear as possible what operations are subject to the proposed regulations and to the permitting requirements of Public Resources Code section 3160, subdivision (d). Section 1761 clearly defines the term "underground injection project" and is intended to resolve any confusion about the Division's intention to regulate well stimulation treatments in a manner that is distinct from the way that underground injection projects are regulated. The definitions note that well stimulation treatment is a short term and non-continual process and that an underground injection project involves sustained or continual injection, as these are salient distinctions between the two types of operations. Section 1761(b)(3) states that regulations regarding well stimulation treatment apply to well stimulation treatment operations and regulations regarding underground injection project operations apply underground injection project operations. Wells that are part of underground injection project are not exempt from these regulations. If well stimulation treatment is done on a well that is part of an underground injection project, then the well stimulation treatment operations are subject to the requirements for well stimulation treatment. However, the requirements for well stimulation treatment do not apply to the underground injection project operations, as there are separate requirements that apply to those. Public Resources Code section 3157 specifically excludes underground injection projects such as steam flooding, water flooding, and cyclic steaming from the definition of well stimulation treatment. Therefore, even if these underground injection project operations fall within the parameters of the definition of a well stimulation treatment, they are not well stimulation treatment operations for purposes of these regulations. Underground injection projects are regulated under Sections 1724.6 through 1724.10 and Sections 1748 through 1748.3. If a well stimulation treatment, such as a hydraulic fracturing treatment or an acid matrix stimulation treatment, is performed on a well that is part of an underground injection project, then that treatment would still be subject to these regulations.
2939	13554-7 The definition for "Acid Volume Threshold" is not based on an assessment of the risks of acid matrix treatments – a direct contradiction to the requirements of SB 4. DOGGR is required to conduct a risk-based analysis before promulgating and implementing a definition. DOGGR suggests that the threshold value will not be known until 2020.41 Delaying any real analysis of the public safety implications of acid treatments for six years is simply unacceptable. Moving forward without an Acid Volume Threshold that fails to consider a threshold based on any consideration of public safety would be in violation of the clear mandates of SB 4.

	Response to comment 2939: Rejected. As explained in the *DOGGR Discussion of Calculated Acid Volume Threshold* included in the rulemaking record, the Division has determined that the quantitative assessment of risks contemplated in Public Resources Code section 3160, subdivision (b)(1)(C) is not feasible given the limited data presently available and the timeframe during which the Division must promulgate regulations regarding well stimulation treatment. For this reason, the proposed Acid Volume Threshold is not intended to be a basis for making the risk-based distinction called for under Public Resources Code section 3160, subdivision (b)(1)(C). That is, the proposed Acid Volume Threshold is not intended to be a basis for acid matrix stimulation treatments that will enhance the permeability formation to be excluded from regulation. Instead, the sole purpose of the proposed Acid Volume Threshold is to distinguish acid matrix stimulation treatment from the routine uses of acid that are already expressly excluded from the definition of well stimulation treatment under Public Resources Code section 3157. Public Resources Code section 3160, subdivision (b)(1)(C)(ii), requires the Division to reevaluate the acid volume threshold by 2020, taking into account newly available data, and making revisions to the regulations if appropriate.
2940	13574-2 Reinstate the flat 7% concentration limit.
	Response to comment 2940: Rejected. The acid concentration threshold that was initially proposed in Section 1780(a) has been deleted and the Acid Volume Threshold has been added to the definition of "well stimulation treatment" at Section 1761(a)(3). Consistent with the statutory definition, the Acid Volume Threshold is intended to identify excluded operations based on the effect of the treatment, as designed, upon the formation.
2941	13573-6, 13472-6 There is no basis for excluding activities such as gravel packing from the definition of well stimulation treatment.
	Response to comment 2941: Rejected. A gravel pack is designed to provide a screen to the formation to limit the formation's fine material from entering the well. There are high-rate gravel pack operations that inject the gravel at such high pressure, that which exceeds the formation fracture gradient, that places the gravel deep into the formation and increase the permeability. These operations, although called a gravel pack, would be considered a well stimulation because the injection pressure exceeded the fracture pressure. A gravel pack done at lower pressure is only filling up the void space between the production liner and the wellbore with the gravel and is not increasing the permeability of the formation, and therefore it is not a well stimulation treatment. Section 1761(a)(1)(A)(i) specifies that a treatment at pressure exceeding the formation fracture gradient is presumed to be a well stimulation treatment, and Section 1761(a)(1)(B) specifies that a gravel pack treatment that does not exceed the formation fracture gradient is not a well stimulation treatment.
2942	13531-3 Citizens note that a "Well-maintenance" loophole continues to let companies avoid disclosure: The draft regulations allow companies to avoid disclosing dangerous chemical use to the public by claiming to be using the fracking or acidizing chemicals for "well maintenance" purposes.
2943	13580-1 The meaning of well stimulation doesn't mention the risk to human health from enterprises. None

	of the regulations refer to health at all.
2944	13242-1 Paragraph 1761 al A: Examples of well stimulation include hydraulic fracturing. The public wants to omit “acid fracturing and acid matrix stimulation.” Instead, they desire to add “no chemicals shall be added to the fluid used for stimulation. Only natural water may be injected into any well.” The public wants a royalty payment required and sent to the State of California for a permit to extract oil and gas which belong to all of the people of California.
	Response to comment 2942-2944: Thank you for your comments. Public Resources Code section 3160 requires the Division to establish regulations regarding well stimulation treatments and it requires a permitting process for well stimulation treatments. Public Resources Code section 3157 defines the term “well stimulation treatment,” but further elaboration is necessary to make it clear whether specific types of operations do or do not meet the definition. Public Resources Code section 3157 distinguishes well stimulation treatment from routine well cleanout, well maintenance, removal of formation damage from drilling, bottom hole pressure surveys, and other routine operations that do not affect the integrity of the well or the formation.
	1777.4. Well Maintenance and Cleanout History
2945	13554-8 The minimal reporting requirements fail to disclose the true nature and extent of the risks posed by well maintenance and cleanout activity. These activities use largely the same toxic chemicals that are used in well stimulation operators, including formaldehyde, methanol, hydrochloric acid, and hydrofluoric acid. Thus, many of the same dangers to public health and safety are present when a well operator conducts a well maintenance or well cleanout procedure. DOGGR should require operators to submit the same information for well maintenance and cleanout as they do for well stimulation, including the disclosure of chemicals used and their quantities and chemical analysis of water used and the quantity of water used. As currently drafted, the Second Revised Proposed Regulations would not alert nearby residents to potential risks posed by using harmful chemicals in the process of maintaining or cleaning a well. With no data on the chemicals used in well maintenance, the public also has no way of knowing the quantity of chemicals being used across a county or the state in the aggregate.
2946	13547-4 In order to collect the necessary data for a quantitative risk assessment, it is imperative to include information on the acids used in the below-threshold reporting requirements. At a minimum, in addition to the volume, the chemical names of the acids (including ammonium bifluoride, which when dissolved forms hydrofluoric acid) and their concentrations should be reported for the below-threshold well logs.
2947	13103-1 1777.4(a): Emplacing fluid containing acid in a well likely means polluted wells.
2948	13577-8 Section 1777.4(a) individuals desire to delete “Unless already addressed by an approved aggregation plan under subdivision (d).”
2949	13579-12, 13547-5 Section 1777.4(d): Californians oppose the Division’s proposal to allow operators to submit aggregated information regarding emplacing fluid containing acid in a well. Part of the purpose of gathering this information is so that the Division can develop a fuller understanding of the types of activities that employ acids and to ensure that operators are properly complying with well

	stimulation regulations. Allowing operators to aggregate this information will diminish the Division's ability to understand and categorize various activities that emplace acid in a well and ensure compliance. Under this provision, it would not be possible to determine the volume of fluid and/or acid injected into individual wells, which will also impede the Division's ability to gather information necessary to refine the acid volume threshold. This proposed provision undermines transparency and public trust in the regulatory process and should be deleted.
2950	13572-2 Revised SB4 regulations add new provisions that will allow extensive well operations without adequate oversight to ensure the timely identification of problems and environmental impacts. The new subsection (d) to Section 1777.4 provides for an "aggregation plan" for acidizing well operations that occur repeatedly at an oil field. The draft regulations provide no definition of "aggregation plan" and, troublingly, do not specify any limit on the number of wells or the size of the oil field that can be included in the "aggregation plan." Moreover, Section 1777.4 (d) requires only limited annual reporting of the aggregated volume of fluid containing acid used in the oilfield, including a list of wells where the emplacement of acid has occurred and the number of times it has occurred at each well. No permit for such potentially significant well operations involving the emplacement of acids in oilfields or monitoring of impacts on water resources is required. Considering the serious degradation to water resources which may occur as a result of the repeated insertion of acids into numerous wells over time, citizens believe Section 1777.4(d) is inadequate and should be revised to require increased regulatory and public oversight, including a permit for such significant well operations, and monitoring of their impacts.
2951	13554-9 The Second Revised Proposed Regulations also newly include provisions that allow well operators to submit an "Aggregation Plan," which would summarize information from multiple wells and numerous well cleanouts, maintenance events, and other activities into one annual report. The Aggregation Plans would be far different from the SB 4's requirement for operators to provide a "complete well history" by March 1, 2015. A summary of information would not be "complete" if it does not disclose the information required by section 3160, which includes chemical identities, chemical and additive concentrations, and other details necessary to properly assess the extent of danger posed by these operations. As drafted, the Second Revised Proposed Regulations deny the public access to critical information regarding the chemicals used in these practices.
	Response to comments 2945-2951: Rejected. Public Resources Code section 3157 distinguishes well stimulation treatment from routine well cleanout, well maintenance, removal of formation damage from drilling, bottom hole pressure surveys, and other routine operations that do not affect the integrity of the well or the formation. A treatment that is not a well stimulation treatment is not subject to the permitting and public disclosure requirements of Public Resources Code section 3160 and these regulations. Section 1777.4 is added to specify data that must be submitted for treatments that do not meet the definition of a well stimulation treatment. Under Section 1777.4, operators are required to submit a brief description of the treatment and include the calculations that would demonstrate that the treatment is not a well stimulation treatment. Section 1777.4(d) allows for submission of acid treatment data on an aggregated basis, at the Division's discretion. Under Section 1777.4(d), an aggregation plan would specifically describe the treatment and identify the number of times it is performed on a given well, but the information would be submitted annually and fluid volume could be aggregated by oil field. An aggregation plan would achieve efficiency by allowing operators to submit data at a lower

	frequency and by allowing operators to forego individual Acid Volume Threshold calculations for treatments that clearly would not meet the definition of a well stimulation treatment. However, use of an aggregation plan would still result in collection of specific acid treatment data for each treatment. An aggregation plan would cover a particular treatment, which would be defined with sufficient specificity to make it clear to the Division that the treatment would never meet the definition of a well stimulation treatment. The description of a treatment covered by an aggregation plan would necessarily include specific description of the nature and purpose of the treatment and narrow and specifically defined parameters for the range of volume and content of fluid used. Therefore, an aggregation plan would provide specific data about the treatment and the number of times that treatment was done on a given well.
2952	13563-5 The revised regulations provide for terminating approval of aggregated reporting at DOGGR' s "sole discretion", with no basis for making the decision. Specific criteria should be developed for instances where the Division may withdraw its approval of an operator's ability to aggregate reports and mandate a 60-day reporting timeline after each use. For example, terminating aggregate reporting may be appropriate if the Division determines that the operator fails to comply with the aggregate reporting plan or no longer satisfies the basis on which aggregate reporting was approved.
	Response to comment 2952: Rejected. It is imperative that an aggregation plan does not undermine the purposes of Section 1777.4 or Section 1761. Given that these regulations implement a new regulatory program, the Division is not confident that it can foresee all of the reasons that it might see a need to revisit an approved aggregation plan.
2953	13553-9 1774.4(d) (d) Subject to approval by the Division, an operator may propose a plan forsubmitting aggregated information regarding a specific type of repeated operation that involves emplacing fluid containing acid in the well yet clearly does not meet the definition of a well stimulation treatment. An aggregation plan shall provide ~~for~~ an annual submission of the following: 1) aggregated volume of fluid containing acid used in an oilfield for the type of operation; and, 2) a list of the wells subject to the operation during the year.; and~~, if the operation is performed multiple times on the same well,~~ 3) the number of times the operation was performed on each well, if the operation is performed multiple times on the same well. An aggregation plan may be terminated at the Division's sole discretion.
	Response to comment 2953: Rejected. Section 1777.4 is sufficiently clear and specific without the suggested non-substantive edits.
2954	13577-8 Delete section 1777.4(c)(3) entirely "Drilling, redrilling, reworking, plugging or abandonment operations permitted under Public Resources Code section 3203 or 3229" as it should not be exempt from the requirements of section 1777.4.
	Response to comment 2954: Rejected. Drilling, redrilling, reworking, plugging or abandonment operations are already well documented during the permitting process under Public Resources Code section 3203 or 3229. Requiring that documentation to be resubmitted to the Division under Section 1777.4 would be duplicative, unnecessary, and outside the scope of this rulemaking.

2955	13455-1 1777.4(e): There's a question on whether the Division will follow the searchable index example of the South Coast Air Quality Management District's (SCAQMD) by including the distance from each submission for a treatment to the nearest residence/business?
2956	13553-5 To provide clarity, a separate section should be created to describe process for "searchable index of submissions."
	Response to comments 2955-2956: The Division is working to develop and implement business processes and information technology to make information about all aspects of well stimulation treatment operations available on its public website in formats that can be easily searched and aggregated. Integration and easy cross referencing all records is one the Division's goals in the development of these processes and technologies.
	1780. Purpose, Scope, and Applicability
2957	13570-15 The term "well stimulation treatment," combined with the "applicability" definition in Section 1780, is too narrowly defined in the draft regulations and must be amended in the final regulations. In particular, the definition should not limit the regulations to treatments that penetrate a formation more than 36 inches from the well-bore, or that use acid concentrations of more than 7% (see Section 1780). These thresholds are arbitrary and have no basis in the enabling legislation.
2958	13570-18 The purpose, scope, and applicability of Article 4 (Well Stimulation Treatments) is too narrowly defined in the draft regulations, and must be amended in the final regulations.
2959	13570-19 An acid concentration threshold is in contravention of the plain text of SB 4. SB 4 mandates that the Division establish a threshold volume for acid not a threshold concentration. Section 3160, subsection (b)(1)(C)(i) states that "the rules and regulations shall establish threshold values for acid volume applied per treated foot of any individual stage of the well, or for total acid volume of the treatment."
2960	13570-20 Volumetric and other thresholds create different regulatory regimes not just for the actual act of well stimulation, but also for many other steps in the production process, such as: public notice, well construction, chemical disclosure, and waste water handling. In practice, this means that oil and gas production performed below the threshold is not subject to the more stringent rules that apply to production above the threshold. As such, they create a system in which regulations to protect environmental and human health are not consistently applied across all oil and gas operations.
2961	13570-21 SB 4 directs the Division to set the volumetric threshold "based upon a quantitative assessment of the risks posed by acid matrix stimulation treatments that exceed the specified threshold value or values in order to prevent, as far as possible, damage to life, health, property, and natural resources pursuant to Section 3106." The Department does not provide any assessment or basis to support the proposed concentration threshold. In the absence of such an assessment, the

	Department must set the volumetric threshold at zero; any volume of acid should be subject to the proposed rules. Suggested language for comments 13570-18 thru 13570-21 Section 1780 (a) The purpose of this article is to set forth regulations governing well stimulation treatments, as defined in Section 1761, subdivision (a)(1).~~, except that t~~ The requirements of this article ~~do not~~ apply to acid ~~matrix~~ stimulation treatments that use an acid volume of more than 0 gallons per treated foot, or total acid volume of the treatment of morethan 0 gallons ~~concentration of 7% or less~~. ~~Nor is a~~An operator is required to obtain a permit under Public Resources Code Section 3160, subdivision (d), prior to performing an acid matrix stimulation treatment that uses an acid volume of more than 0 gallons per treated foot, or total acid volume of the treatment of more than 0 gallons ~~concentration of 7% or less~~. ~~(b)Well stimulation treatments are not subsurface injection or disposal projects and are not subject to Section 1724.6 through 1724.10. This article does not apply to underground injection projects.~~ For purposes of this article, a well stimulation treatment commences when well stimulation fluids and equipment are delivered to the pad ~~is pumped into the well,~~ and ends when well stimulation treatment equipment and all fluids and additives are ~~is~~ disconnected from the well and removed from the site.
	Response to comments 2957-2961: Accepted in part. The acid concentration threshold has been removed from Section 1780(a). Section 1761(a)(3) was added to establish an Acid Volume Threshold, which is calculated on a case-by-case basis, factoring in the wellbore volume and the porosity of the formation. Calculation of the Acid Volume Threshold will return a number of gallons per treated foot of the wellbore, which will be used to help whether a treatment using acid is or is not a well stimulation treatment. Public Resources Code section 3157 defines "well stimulation treatment" to mean a treatment of a well that is designed to enhance oil and gas production by increasing the permeability of the formation. The definition of "well stimulation treatment" expressly excludes routine well cleanout work, well maintenance, removal of formation damage, bottom hole surveys, and other activities that do not affect the integrity of the well. Based on the Division's determination that wellbore damage generally extends 20 to 50 inches from the wellbore, the Acid Volume Threshold is designed to calculate the formation bulk volume per treated foot of the wellbore for a 36-inch radius from the wellbore. A distance of 36 inches was selected because it is a conservatively smaller area than the area where wellbore damage could typically occur. If a treatment is below the Acid Volume Threshold, then it is clearly within the range of wellbore cleanout, maintenance, and removal of formation damage. Well treatments using acid that exceed the Acid Volume Threshold are presumed to be well stimulation treatment, unless it is successfully demonstrated to the Division that the treatment will not increase the permeability of the formation. Additional discussion of the basis for the Acid Volume Threshold can be found in the document titled *Discussion of Calculated Acid Volume Threshold*, which is included in the rulemaking record.
2962	13562-2, 13531-15 (a) The purpose of this article is to set forth regulations governing well stimulation treatments, as

	defined in Section 1761(a)(1), for wells located both onshore and offshore, except that the requirements of this article do not apply to acid matrix stimulation treatments that use an acid concentration of 7% or less. Nor is an operator required to obtain a permit under Public Resources Code section 3160, subdivision (d), prior to performing an acid matrix stimulation treatment that uses an acid concentration of 7% or less. Explanation: The Division retain rather than remove the language regarding the use of acid concentration of 7% or less. The removal of this language does not significantly streamline the process for determining the application of Article 4 to any given emplacement of fluid containing acid. Nor would retaining this language decrease the Division's visibility into treatments using an acid concentration of 7% or less—these operations would still be reported under Section 1777.4. Retaining the language would, however, continue to provide an administrative incentive to utilize lower concentrations of acid where possible.
	Response to comment 2962: Rejected. The acid concentration threshold that was initially proposed in Section 1780(a) has been deleted and the Acid Volume Threshold has been added to the definition of "well stimulation treatment" at Section 1761(a)(3). Consistent with the statutory definition, the Acid Volume Threshold is intended to identify excluded operations based on the effect of the treatment, as designed, upon the formation.
2963	13577-9 Section 1780(c) states "For the purposes of this article, a well stimulation treatment commences when well stimulation fluid is pumped into the well, and ends when the well stimulation treatment equipment is disconnected from the well." The public wants clarification, asking what about the waste products or spillage that occurs before the pumping begins or after the equipment is disconnected from the well?
2964	13553-6 Will all monitoring provisions be applicable to well stimulation treatments since this section says the treatment ends?
	Response to comments 2963-2964: The commencement and termination of treatment operations do not mark the beginning and end of the regulation treatment operations. There are requirements that must be complied with in advance of well stimulation, and there are requirements that must be complied after well stimulation treatment is complete. It is necessary to define the commencement and termination of well stimulation treatment operations because the timeframes for certain requirements are triggered at the commencement or end of a well stimulation treatment. Section 1780(c) identifies concrete activities that clearly indicate the time when the actual treatment is occurring, and therefore these activities are ideal for staging the pre-treatment and post-treatment requirements. If well stimulation treatment were said to begin and end long before or after the treatment was actually occurring, then the timing public disclosures, neighbor notifications, and well evaluations would be disrupted and statutory purposes would be undermined.
	1781. Definitions
2965	13450-1 1780(d): Acid stimulation treatment fluid: base fluids and physical and chemical additives need to be specified as to chemical composition. (e) Additive: this substance called "Additive" needs to

	be specified as to chemical composition. (g) "Base fluid": this substance called "Base fluid" must be specified as to chemical composition. Many of the chemicals used in this well stimulation treatment have been known to contaminate drinking water supplies, so any chemicals used in the well stimulation treatment must be specified as to chemical composition, to protect the public drinking water supplies.
	Response to comment 2965: Rejected. The requirement to publicly disclose the identity and concentration of each chemical constituent in the well stimulation treatment fluid used is already found in Section 1788(a)(19).
2966	15370-22 (uu) "Acid Fracking or Fracturing" means an acid treatment conducted at pressures greater than the pressure necessary to fracture the target formation, which may both dissolve existing natural fracture cements and exceed the altered rock fracture pressures, and for the purposed of increasing formation permeability.
2967	15370-23 (a) "Acid ~~matrix~~ stimulation treatment" means an acid treatment conducted at pressures lower than the applied pressure necessary to fracture by dissolution any parts of the native/original underground geologic formation (including cemented native fractures)
2968	15370-24 ~~(b) "Acid well stimulation treatment"~~ and may also mean~~s a well~~ stimulation treatment that uses, in whole or in part, the application of one or more acids to the well or underground geologic formation for the purposes of enhancing or increasing permeability and flows from the formation. The acid well stimulation treatment may be at any applied pressure and may be used in combination with hydraulic fracturing treatments or other well stimulation treatments. Acid well stimulation treatments include acid matrix stimulation treatments and acid fracturing treatments.
2969	15370-25 (c) "Acid stimulation treatment fluid" means one or more ~~base~~ fluids mixed with physical and chemical additives for the purpose of performing an acid well stimulation treatment and has a pH of less than 7.
2970	15370-26 (yy) "Acid Fracturing" (or AcidFracs) means the injection of acids at pressures exceeding the unaltered natural formation's rock fracture pressures.
2971	15370-27 (zz) "Fracture" means naturally or induced breaks in the formation which may or may not be c e m e n t e d by precipitates before the stimulation.
2972	15370-28 (uu) "Formation permeability" means the summation of the rock permeability and natural or induced fracture permeability (e.g., flow through naturally occurring fractures).
2973	15370-29 (d)"Additive" means a substance or combination of physical and chemical substances added to a base or carrier fluid for purposes of preparing well stimulation treatment fluid, including, but not limited to, acid stimulation treatment fluid and hydraulic fracturing fluid. An additive may serve additional purposes beyond the transmission of hydraulic pressure to the geologic formation. An additive may be of any phase (gaseous, liquids, or solids) and may include proppants.

2974	15370-30 (xx) "Annulus (or annular space)" means any void between a casing or tubing and another casing or the borewall of the drilled well. If not specified the annular space shall be between the production casing and either the intermediate or the surface casing.
2975	15370-31 (xx) "Carrier fluids" means a fluid that is used to transport materials into or out of the wellbore, typically developed with 1) ability to efficiently transport the necessary material (such as pack sand during a gravel pack), 2) ability to separate or release materials at correct times or places, and 3) compatibility with other wellbore fluids while being nondamaging to exposed formations.
2976	15370-32 (uu) "Breaches, leaks, seeps, or failures" mean any imperfections in the casings, cementing, or borehole wall integrity which may allow fluids or gases to move between the casing annular space, through the cement layers, and/or from/into the surrounding formations and can be replaced with a simple use of a single term, "leak."
2977	15370-33 (zz) "Cement bonds" means bondings that adherence between cement annular layers, well casings, and drilled bore walls of geological units and can be interpretatively measured by cement (bond) evaluation logs and indirectly by well pressure tests.
2978	15370-35 (yy) "Closed Loop System" means any combination of piping, pumping, and storage facilities for containing fluids and gases without any exposure to or releases to the environment.
2979	15370-36 (xx) "Fault" means any break, discontinuity, or planar surface in brittle rock across which observable displacement occurs.
2980	15370-37 (x) "Formation permeability" means the summation of the rock permeability and natural or induced fracture permeability (e.g., flow through naturally occurring fractures).
2981	15370-38 (g) "Flowback or flowback fluid" means the fluid recovered from the treated well before the commencement of oil and gas production from that well following a well stimulation treatment. The flowback fluid may include materials of any phase.
2982	15370-39 (yy) "Production" means the drawing of fluids and gases including groundwater from the surrounding formations and arising from the wellhead and eventually transported offsite for commercial purposes or returned to the production zone. Produced water only comes from the later testing phases of well completion and during production for commercial purposes.
2983	15370-40 (xx) "Flowback period" means the time period that begins as soon as any injected stimulation fluid begins to resurface, and ends when either the well is shut in or is producing continuously, whichever occurs first.
2984	15370-41 (xx) "Stimulation Envelope or Envelope" means the total volume of altered formation and its measurements of the intended and actual volume of all fractures and pathways created by

	stimulation operations and as confirmed by microseismicity monitoring of the stimulation results.
2985	15370-42 (vv) "Fresh Water" means waters with existing or potential beneficial uses as defined under the Porter-Cologne Water Quality Control Act.
2986	15370-43 (vv) "Horizontal projections" means the projected surface representation of the horizontal path of the wellbore.
2987	15370-44 (h) "Hydraulic fracturing" means a well stimulation treatment that, in whole or in part, includes the pressurized injection of hydraulic fracturing fluid into an underground geologic formation in order to fracture the formation (exceeds rock fracture pressures of the native or amended formation or unit), thereby causing or enhancing the permeability of the formation and the production of oil or gas from a formation and a well.
2988	15370-45 (xx) "Leasee" means a person to whom a lease is granted; a tenant under a lease.
2989	15370-46 (aa) "Lease" means a contract granting use or occupation of property during a specified period in exchange for a specified rent.
2990	15370-47 (yy) "Microseismicity" means natural and induced ground movement events which generally may not be perceptible to most people and would be measured within the Richter Scale range of -3 to +2 magnitudes.
2991	15370-48 (zz) "Notice" for treatments means the announcements of treatment activities 30 day after the date of the "notices" and does not mean the notices of intent generally submitted by operators to the Division in order to receive a permit to drill, rework, or abandon a well which herein would be equivalent to the Application for permit to conduct treatment.
2992	15370-49 (uu) "Occupant" means any individuals or entities, which have the legal right to reside or operate in or on such properties even though they may not have a recorded or notarized lease or contract to reside therein.
2993	15370-50 (vv) "Planned modifications" means those changes of the usual permitted or typical designs, practices, or activities or those required by the Field/Pool/Unit Rules which are anticipated prior to initiation of the construction or reconstruction and associated stimulation treatments of a well.
2994	15370-51 (ww) "Each POINT of treatment" (or "a Point") means all outermost points of stimulation including the furthest point of fracture or dissolution from the perforation of the casing/tubing/borewall and shall not mean the perforation of the casing or cement.
2995	15370-52 (xx) "Pressures" means those planned and measured ~~actual~~ pressures generated during ~~the~~ stimulation programs for enhancing formation permeability as measured/estimated at or in

	the stimulation envelope (depth times psi/foot of depth, or psi), as measured at the surface in equipment used for the stimulation (psiG), and as estimated for the target formation as “rock fracture pressure” of native rock and acidized rock.
2996	15370-53 (xx) “Produced or Formation Water” means water produced from a wellbore during production that is not a treatment fluid and is originally found in those formations in or beneath the “ Uppermost Hydrocarbon Zone.”
2997	15370-54 (xx) “Operator” means any organization which has the Division-designated responsibilities and authorities to control the development of an oil field and its wells and which has authority to contract or sub-contract any activities related thereto to other organizations and/or individuals.
2998	15370-55 (vv) “Property” means any delineated lands and formations which have been formally recognized by a governmental agency and have been assigned to (are owned by) a specific individual(s) or other entity(ies) who have rights and obligations for all activities on and/or within such properties.
2999	15370-56 (j)“Proppants” means physical materials carried by stimulation fluids and inserted or injected into the underground geologic formation that are intended to prevent or slow fractures from closing after stimulation.
3000	15370-58 (l)“Regional Water Board” means the Regional Water Quality Control Board with jurisdiction over the location of a well subject to well stimulation treatment.
3001	15370-59 (xx) “Rock Fracture Pressure” means the pressures required to be exerted on the natural or altered state of the formation (psi/foot vertical depth or X times and hydrostatic pressureof 0.433/foot depth) to achieve or promote fracturing and increasing the fracture permeability of the formation.
3002	15370-60 (xy) “Subsurface property owner” owners and/or leasors of subsurface property rights for the production of mineral resources by the operator and/or the leasee.
3003	15370-61 (m)“Surface property owner” means the owner of real surface property as shown on the latest equalized assessment roll or, if more recent information than the information contained on the assessment roll is available, the owner of record according to the county assessor or tax collector.
3004	15370-62 (xx) “Stimulation Envelope” (or “envelope”) means the length (radius), height, and width of the stimulation in a stratigraphic unit produced by the stimulation treatment.
3005	15370-63 (a) “~~Well~~ Stimulation treatment fluid” means a base fluid mixed with physical and chemical additives, which may include acid, for the purpose of a well or formation stimulation treatment. A ~~well~~ stimulation treatment may include more than one ~~well~~ stimulation treatment fluid. ~~Well s~~Stimulation treatment fluids include, but are not limited to, hydraulic

	fracturing fluids and acid stimulation treatment fluids.
3006	15370-64 (vv) "Tenant" means a person or entity possessing the right to occupy a legally recognized parcel, or portion thereof.
3007	15370-65 (xx) "Uppermost Hydrocarbon Zone" means the shallowest true vertical depths of any stratigraphic unit containing hydrocarbon contents of greater than 100 mg/L of total petroleum hydrocarbon or any other hydrocarbon liquid or gas, whether of commercial value or not.
	Response to comments 2966-3007: Rejected. The suggested additions and revisions to the definitions are not included because they would not add clarity to terms that are already clearly defined in regulation or statute, they define terms that do not require definition because the term is commonly understood, or they define terms that are not used in these regulations.
3008	13567-4 1781(f): This definition attempts to define the size (volume not area) of the fracture, may create an impractical standard for measuring distances from the fracture (2X or 5X). Frac width is miniscule. Frac height and length can be estimated from a model. A possible better precise and workable definition for measuring offset impacts might be: "2X the estimated fracture length from the projected fracture path measured horizontally and vertically."
3009	13571-13 Individuals approve of the Division's addition of the term and concept of the axial dimensional stimulation area. This method of determining stimulated volume is an improvement on the previous stimulation radius method and will provide a more clear understanding of the subsurface extent of stimulation activities. However, given that the concept considers three dimensions-length, width, height—citizens suggest that a more technically accurate term would be the axial dimensional stimulation *volume*, or ADS*V*.
	Response to comment 3008-3009: Rejected. Use of the term "volume" would indicate a different, and smaller, area of review than what is described in Section 1781(f). The objective in doubling the dimensions of the anticipated stimulated volume is to create a conservative safety buffer between the expected volume of stimulation from an engineering perspective and the unanticipated extension of the stimulated volume resulting from unanticipated geologic conditions. Because the volume of an object, for example a sphere, increases as the cube of the radius, the volume created by doubling the volume actually creates a smaller buffer than by doubling the dimension (in the case of a sphere the radius). For example, a sphere of radius 1 has a volume of 3.14 (literally 3.141592 . . .), doubled gives a volume of 6.3. However, doubling the radius yields a volume of 25, or a factor of 4 larger. In addition, given that in most cases the anticipated stimulation volume has shapes that approach a disk or cone shape, the differences between doubling the volume and doubling the dimensions becomes even larger. Hence the regulation under all circumstances provides a larger margin of error than provided by simply doubling the volume. Hence public safety is enhanced under the provision as written.
3010	13573-11, 13472-11 The legislature explicitly and specifically instructed DOGGR to use FracFocus only as an interim

	measure pending development of a state disclosure website. The proposed regulations violate a clear legislative command to use a system other than FracFocus as soon as possible.
3011	13455-2 1781(h): Fracfocus is an industry sponsored, voluntary reporting site that relies on the goodwill of the operators submitting reports and should not be considered a reliable source of public information. It should not be used as a regulatory compliance tool. What, if any, penalty would operators face for submitting false, inaccurate or incomplete information to Fracfocus?
3012	13556-3, 13552-26 Chemical Disclosure Registry. There is an objection to DOGGR stopping the development of its own database with the intention to make FracFocus the permanent reporting registry. This violates the direct instruction from the legislature to develop the state's own disclosure website. There are numerous issues with FracFocus.org previously enumerated by others, and for a location to be used for mandatory public disclosures it is not suitable. It's mandated by law that the Division development its own reporting website. Because the state cannot fully control access or the content or use of Fracfocus, unless there is some other means to assure that California's disclosure rules and public access requirements will be respected, citizens believe that the state should set up and preferentially use its own website, which would also include additional data and information for public use.
3013	13441-3 FracFocus does not provide adequate transparency so that the public can be informed and prepared.
3014	13553-7 Definition of "chemical disclosure registry": this should not only be FracFocus, should refer to the website that will be developed.
3015	13316-4 Citizens are particularly concerned about changes in public disclosure regulations on page 2, section 8 "Chemical Disclosure Registry": It seems that the proposed internet site will not be governed or managed by a governmental authority and that disco sure will be left to the corporations that are engaged in the business of 'fracking", i.e., Ground and Water Protection Council and the Interstate Oil and Gas Compact Commission.
3016	15370-34 "Chemical Disclosure Registry" means the Internet Web site developed by the Division for the purpose of reporting the information required under Section 1788. [Until the Division has completed development of the reporting website, "Chemical Disclosure Registry" shall mean the chemical registry Internet Web site known as fracfocus.org developed by the Ground Water Protection Council and the Interstate Oil and Gas Compact Commission, or another publicly accessible information Internet Web site that is designated by the Division. Any submissions in compliance with these regulations to other designated agents or organization shall be considered as if to the Division and all such submissions shall carry all the same requirements for validity and correctness in compliance to State laws and regulations.]
	Response to comment 3010-3016: Rejected. "Chemical Disclosure Registry" is a defined shorthand for the chemical registry Internet Web site known as fracfocus.org. Section 1788(b) was added to require that, in addition to posting chemical information to the Chemical Disclosure Registry, operators must submit all required public disclosures directly to the Division and that the Division will make the information available

	to the public in a format that can easily searched and aggregated. The defined term “Chemical Disclosure Registry” is functional and does not need to be changed.
3017	13103-2 1781(m): A commenter is in question about an Independent third party being responsible for an operator.
3018	13373-1 1781(m): A commenter is in question about an Independent third party and how an indirect financial interest isn’t discussed in the regulation.
	Response to comments 3017-3018: Rejected. The term “independent third party” is used in the context of the requirement that the operator hire an independent third party under Section 1783.2. The independent third party must be responsible to the operator so that the operator can give the independent third party requisite instruction and ensure that the work is performed.
3019	13577-10, 13531-15 Section 1781(nk) Citizens ask that the Department reinstate the definition “Protected water” which means water outside of a hydrocarbon zone that contains no more than 10,000 mg/l dissolved solids.
3020	13552-26 Omitted definition of “Protected Water” The reason for this deletion is not explained; it appears to eliminate important protection of groundwater and should be restored.
3021	13226-5 Water is California's most valuable natural resource, especially now that citizens face one of the worst droughts on record, and should be broadly protected with the most stringent regulations possible. "Protected water" should include all water with current or potential beneficial uses, including water up to 30,000 TDS, consistent with ocean water which is commonly desalinated.
3022	13570-6 The regulations should broaden and redefine the definition of “protected water” to include waters of all current and potential beneficial uses, consistent with the Clean Water Act, the Safe Drinking Water Act, and the Porter-Cologne Water Quality Control Act.
3023	13313-1 Section 1781 (nk) has been deleted, but should be reinstated. Protected Water, outside the fracked zone or in an exempt aquifer, needs to be protected in the eventuality that fracking toxic solution breeches it.
3024	13554-10 The definition of “Protected Water” has been deleted from the Second Revised Proposed Regulations without explanation. Previously, any water having a level of total dissolved solids (TDS) below 10,000 parts per million was considered protected water under the regulations. Now, it is unclear what waters would qualify. The U.S. EPA has criticized DOGGR in the past for the inability to delineate which waters are protected from oil and gas industry contamination. And now, DOGGR’s trouble with identifying which waters receive protection have further jeopardized the state’s water resources, as demonstrated in the recent admissions of wastewater contamination in multiple sources of clean water.

3025	15370-57 (k)" ~~Protected w~~Water with beneficial use(s)" means water outside of a Hydrocarbon Zone that has existing or potential for beneficial uses as defined by the Porter-Cologne Water Quality Control Act.contains no more than 10,000 mg/l total dissolved solids.
	Response to comments 3019-3025: Rejected. The defined term "protected water" was removed from the regulations. Public Resources Code section 3160, subdivision (b), calls for regulations that ensure well integrity and geologic and hydrologic isolation of the stimulated hydrocarbon formation, regardless of the quality of groundwater in the area. Accordingly, the requirements of these regulations apply regardless of the groundwater quality and therefore it is not necessary to define "protected water."
3026	13555-1 Surface property owner definition intends to only include surface real property or includes all real property, meaning the inclusion of surface ownership and sub-surface rights such as storage and mineral rights. The definition should be clarified to include storage and other sub-surface rights in order to protect the integrity of gas storage fields. As the rule is currently written, a third party could drill a well below a gas storage project formation and stimulate wells that could potentially compromise the integrity of the storage formation, and the gas storage project operator may not receive notice as described in Section 1783.2 Neighbor Notification, Duty to Hire Independent Third Party. Likewise, in Section 1783.3 Availability of Water Testing, Request for Water Testing, the definition is not clear as to which real property owners have the right to request water quality testing. The following revised language, which 1) replaces title "Surface Property owner" with "Real Property owner" and 2) adds language to ensure that "Real Property" includes the surface and sub-surface rights and include the proper language for tax entities. (q) "Surface property owner" "Real property owner" means the owner of real property, which includes land, anything located within or under the land, anything growing on, affixed to, or built upon the land as shown on the latest equalized assessment roll with the County Assessor Office, State Board Of Equalization or any tax collector, or if more recent information than the information contained on the assessment roll is available, the owner of record according to the county assessor or tax collector.
	Response to comment 3026: Rejected. Public Resources Code section 3160, subdivision (d)(6), requires notification of pending well stimulation treatment to be provided to neighboring surface property owners. Ownership of subsurface pore space is not relevant to the implementation of the statutory notice requirement. Use of the term "real property owner" would be a deviation from the statutory requirement.
3027	13553-12 What does variance mean?
3028	13553-20 What does immediately mean?
3029	13317-2, 13298-2 The terms "sustained or continual injection" and "extended period" are too ambiguous to enforce. The people feel there must be enough data to state a minimal period of time.
	Response to comments 3027-3029: Rejected. The terms "variance," "immediately," "sustained or continual injection," and "extended period" are commonly understood and do not require definition.

3030	13344-1 The definitions portion of the regulations should prompt anyone with a moral compass and any care for this Earth to realize well stimulation is not acceptable for any reason. The people say, “Department of Conservation, [my] ass!”
	Response to comment 3030: Thank you for your comment.
	1782. General Well Stimulation Treatment Requirements
3031	13530-1 1782(a)(2-7): there is no failsafe control to guarantee the fracking fluids are contained. There have been thousands of cases of water contamination next to areas of gas drilling. The gas companies have not established containment of the toxins from hydraulic fracturing in their processes. Factor in the unpredictable seismic activity in California and the variables are truly too many to make these requirements realistic. Contrarily, they should show that fracking is not a feasible method of natural gas extraction in California. (a)(8) There should be established penalties if a well breach is discovered unreported and/or undetected for any amount of time.
3032	13373-2 1782(a)-(c): The word “shall” leaves no verification put in place to determine that the operator is doing what they are supposed to. If things are not correctly done, there should be consequences and penalties imposed on the operator.
3033	13504-1 General Well Stimulation Treatment Requirements. This is particularly flawed as it is common knowledge that the toxic mixture of unknown, or "proprietary" chemicals used by corporations for the purpose of hydraulic fracturing cannot be and are not contained to the cemented casings referred to in line item (1). It is documented that, as per line (2), the isolation of oil and gas is not successful in most cases. That in reference to line items (3) and (4) any "stimulation fluids", otherwise known as hazardous chemicals that pose an extreme risk to environment and human health, are by a large not properly stored and leak into the ground while being stored in open pits, that are frequently not properly sealed and also off-gas dangerous volumes of poisonous gasses into the air.
3034	13570-66 Current regulations lack formal relationships between information submitted by the operator(s) as part of an application to drill for consideration by the Division. Studies and analyses may be performed by the operator, but are not required to be submitted nor reviewed by the Division and not made available to the public. The following amendments are suggested: (a) When a well stimulation treatment is performed, the operator shall ensure that all of the following have been documented, reported, and included in notices, permits, and reports (history of well): (1) Casing description and demonstration that the casings are ~~is~~ sufficiently cemented or otherwise anchored in the hole in order to effectively control the well at all times; (2) Geologic, hydrologic, hydraulic, and gaseous isolation of the oil and gas formation are maintained during and following the well stimulation treatment through production and until abandonment;

	(3)All potentially productive zones, zones capable of over-pressurizing the surface casing annulus, or corrosive zones be isolated and sealed off to the extent that such isolation is necessary to prevent vertical migration of fluids or gases behind the casing before, during, and following stimulation treatment; (4) The wellbore's mechanical and bond integrity is tested, logged, ~~and~~ maintained and reported; (5)All well stimulation treatment fluids are directed into the zone(s) of interest and would not and have not penetrated beyond the planned stimulation envelope; (6)The well stimulation treatment fluids used are of known quantity and description for reporting and disclosure as required pursuant to this Article; and (7)The well stimulation treatment fluids ~~is not of a concentration level that~~ shall not ~~will~~ damage the well casing, tubing, cement, or other well equipment, or would otherwise cause degradation of the well's mechanical and bonding integrity during and/or after the treatment process. (8)A history of all stimulation of the well and for all wells within five-times the maximum stimulation envelope dimensions. (b) In addition to specific methods set forth in these regulations, to achieve the objectives of this section, the operator shall follow the intent of all applicable well construction requirements, use good engineering practices, and employ best industry standards, shall compile and submit all such requirements, practices, and standards for related activities in other states for mitigation, and shall include those required by local jurisdictions where they may be demonstrated to be equal or more stringent than those included in these Sections, 1780-1799.
3035	13552-27 Section 1782(a)(1): This provision would allow the operator to anchor casing by methods other than cement "in order to effectively control the well at all times." If inadequate cementing of casing is ever to be permitted, alternative methods and the basis for using them should be spelled out. "Well control" should be defined to include prevention of the migration of fluids and gases behind the casing, which is also a purpose for cement integrity. Division discretion to approve alternate cement evaluation methods in Section 1784.2(c) should be eliminated or the use of alternative methods specified. *Subsections (a)(2) and (3)* All zones capable of transmitting fluids or gases into fresh water zones or to the surface or inappropriately through an annulus should be isolated and sealed off. The qualifier "to the extent necessary" implies that operators have discretion to avoid necessary protection. *Subsection (a)(7).* Further clarity is needed for determining what the precluded practices, constituents and concentration levels should be, preferably based on an independent, third party review. *Subsection (a)(8) and Section 1785.* Well breaches or any other occurrence listed in Section 1785 subdivision (b) should require immediate reporting as required by Section 1785 subdivision (d), with public notice of all such events. In addition, "well breach" should be a defined term, and include all types of well failures, such as fluid or gas flow behind casings or between a casing strings and the open hole. Breaches or failures should require immediate and follow up testing of aquifers. Studies and reports currently conflict about existing and likely future contamination of fresh water from oil and gas well failures. It is important to establish data collection and recording systems to enable regulators and researchers to assess the risks of groundwater contamination from faulty cementing and casing operations to reduce risks over the life of the well, and to make that information publicly available. *Subsection (a)(9)***.** Since the California State Department of Fish and Wildlife (CDFW), as well as other state and federal agencies may administer requirements applicable to the location and conduct of permitted well stimulation operations, the list of agencies should include, after 'agency' in the 4th line, "the Department of Fish and Wildlife and any other state, federal or local agency with jurisdiction over the location, conduct or effects of well stimulation activities."
3036	13484-2, 13531-15 1782(3): This provision needs to protect against the release of all methane gas.

	Response to comments 3031-3036: Rejected. The purpose of Section 1782 is to establish a set of governing principles under which all well stimulation treatments must be conducted, and to make clear that the operator has the burden of operating in accordance with those principles. The remainder of Article 4 already lays out specific requirements to ensure the integrity of the well and the geologic and hydrologic isolation of the stimulated hydrocarbon formation, and to implement the public disclosure, neighbor notification, water testing, and permitting requirements of Public Resources Code section 3160. The Division has several statutory enforcement authorities for ensuring accurate compliance with these regulations, including the authority to impose minimum civil penalties of $10,000 per violation under Public Resources Code section 3236.5.
3037	13103-3 1782(9): Since all these boards are listed, a commenter is concerned about who the division is.
	Response to comment 3037: As defined in Public Resources Code 3002, the “division” is the Division of Oil, Gas, and Geothermal Resources in the Department of Conservation.
3038	13550-2 Subsection (b): The requirement that the operator shall "follow the intent of all applicable well construction requirements" should be revised to require the operator "to follow all applicable well construction requirements." Whether an operator is following the "intent" is very subjective and does not ensure compliance with the requirements.
	Response to comment 3038: Rejected. The purpose of Section 1782(b) is to point out that operators must adhere to the general principles of Section 1782, even when adherence to all specific requirements might not be enough to do so.
3039	13102-2 Section 1782(c) gives the operator the ability to continue the process because the operator deems it’s unsafe to shut down operations despite this actually not being the case. This creates a loophole that has operations continue even when damage can be occurring in an area. This creates an added threat to the environment since any damage is irreversible and permanent.
3040	13386-2 An operator is given too much discretion on when to terminate treatment that is of danger to the environment and humans. Termination of treatment should occur immediately with all affiliated systems to the subject treatment stopped. There should be notification sent to the responsible governmental and private authorities. The wording, “as soon as possible” does not meet the inherent risk and damage that Industry causes when it is not done right or not maintained correctly.
	Response to comments 3039-3040: Rejected. The Division rejects revisions requiring operators to abruptly terminate a well stimulation treatment even if it is clearly not safe to do so. Section 1785 provides procedures for responding to indication of a potential well breach, which include notification and involvement of the Division.

	1783. Application for Permit to Perform Well Stimulation Treatment
3041	13550-3 Subsection (c): The municipality and any other local agencies with jurisdiction or if the wellhead is located within 1500 feet of the local jurisdiction should also be provided with copies of the permit application of well stimulation occurring within its jurisdiction or within 1500 feet of its jurisdiction.
3042	13550-4 Subsection (d): The municipality and any other local agencies with jurisdiction should also be notified concurrent with the Division prior to the commencement of any well stimulation within its jurisdiction or if the wellhead is located within 1500 feet of the local jurisdiction.
3043	13574-1 Section 1783(c): The chemical information should be provided to CUPAs as well as the other agencies mentioned, for both regulatory and emergency preparedness purposes. This would be consistent with 1786(a)(5) and (7).
3044	13549-2, 13531-15 Sections 1783(c) and 1788(c) require the Division to share completed permit applications with the public and other information not publically disclosed to various agencies, including regional air quality districts such as the SCAQMD as long as a written agreement is signed between DOGGR and the other agencies. The SCAQMD staff recommends language be added to clarify the mechanism, format, timing, and criteria for establishing this written agreement. In addition, we would like to see the text ensure that information which is not confidential be provided to the agencies without requiring a written agreement.
3045	15370-67 The following language is suggested: 1783(c) The operator shall notify the Division <u>and all related agencies with jurisdiction over the operation</u> (e.g., Water Board and Air Resources Boards/Districts, federal land management agencies) at least 72 hours prior to commencing well stimulation so that Division staff <u>and other agencies</u> may witness. Three hours prior to commencing, the operator shall confirm with the Division and other agencies that the well stimulation treatment is proceeding.
	Response to comments 3041-3045: Rejected. As required under Public Resources Code section 3160, subdivision (d), approved permits will be available on the Division's public website within five days of approval and operators are not permitted to commence well stimulation treatment unless all surface property owners and tenants with a specified distance have been given at least 30 days in advance. The Division is working to develop and implement business processes and information technology to make information about all aspects of well stimulation treatment operations available on its public website in formats that can be easily searched and aggregated. Section 1783(c) and (d) reference information sharing with agencies listed in Public Resources Code section 3160, subdivision (c), but the specifics of the information sharing will be detailed in the formal agreements required under that statute. The Division invites discussion of similar information sharing agreements with any other state or local agency.
3046	13571-14 Section 1783(a): Individuals approve of the Division's addition of the provision that explicitly requires written approval from the State Water Board that the treatment is covered under Water Code section 10783 before stimulation may commence.

3047	13563-6 Clarification is needed in Sections 1783(a) and 1783.l(a)(27), as to the scope of the requirements . Specifically, both sections should address situations involving exemptions from groundwater monitoring or already approved groundwater monitoring plans.
3048	13563-7 Section 1783(a) 'All well stimulation treatment permits approved by the Division. shall include the condition that the well stimulation treatment shall not commence until ill the State Water Board or the Regional·. Water Board has provided written approval that well stimulation treatment is covered under an area-specific or well-specific groundwater monitoring plan pursuant to Water Code section 10783 or (ii) the well stimulation treatment is covered by a regional groundwater monitoring program previously approved by the State Water Board or a Regional Water . Board or is exempted pursuant to Water Code section 10783."
3049	13563-8 Section 1783.l(a)(27) 'Unless exempted under Water Code section 10783, dBocumentation from either the State Water Board or the Regional Water Board that the well subject to the well stimulation treatment is covered by an area-specific, well-specific, or regional groundwater monitoring program pursuant to Water Code section 10783, subdivision (h)(l), or indication. that the operator is working with the State Water Board or the Regional Water Board to ensure that the well subject to well stimulation treatment is covered ..."
3050	13553-10 a) A well stimulation treatment or repeat well stimulation treatment shall not commence without a valid permit approved by the Division and shall be done in accordance with the conditions of the Division's approval. All well stimulation treatment permits approved by the Division shall include the condition that the well stimulation treatment shall not commence until the State Water Board or the Regional Water Board has provided written confirmation approval that the location of the well stimulation treatment is being monitored covered pursuant to under Water Code section 10783.
	Response to comments 3046-3050: Rejected. Public Resources Code section 3160, subdivision (d)(3)(D), provides that the Division may approve a well stimulation treatment permit in advance of compliance with Water Code section 10783, provided that the permit is conditioned on the treatment not commencing until compliance is achieved. Whether and how the operator has complied with Water Code section 10783 is within the regulatory purview of the State Water Resources Control Board and the appropriate Regional Water Quality Control Board. The required condition in Section 1783(a) is written in broad terms to allow for the fact that compliance with Water Code section 10783 may come in different forms. Pursuant to Public Resources Code section 3160, subdivision (c), the Division will enter into a formal agreement with the Water Boards, and that agreement will address the mechanics of these parallel processes to ensure that the agencies are coordinated with regard to these requirements.
3051	13497-1 1783(b): The language, "information in the application designated as trade secret or confidential" must reflect the fact that proprietary, trade secret or confidential labeling cannot prevent listing all the chemicals used in stimulation fluids. All chemicals must be listed to enable aquifer water

	sampling to identify contaminating chemicals and their source.
3052	13235-1 Section 1783(c) of the regulations contains the language “information in the applications designated as trade secret or confidential”—the public believes there should be no secret information regarding what chemicals are being used and it’s an affront that this information will not be made available to all citizens, researchers and public health officials of this state. Californians feel this is wrong and “competition” is a poor excuse for this type of sanctioned secrecy. The people have less and less reason to trust official agencies and this type of law further erodes the legitimacy of the regulatory system and the government in general.
3053	13565-1 This contains the language, “information in the application designated as trade secret or confidential”, proprietary, trade secret or confidential cannot be allowed to prevent listing all the chemicals used in stimulation fluids. All chemicals must be listed by their common name to enable aquifer water sampling to identify contaminating chemicals and their source.
	Response to comment 3051-3053: Accepted in part. Public Resources Code section 3160, subdivision (j), imposes strict limitations on the ability to claim trade secret protection as a basis for not making required public disclosures required under SB 4, and it is therefore unlikely that a claim of trade secret protection will be made in the context of these regulations. In the event that a claim of trade secret protection is asserted, Public Resources Code section 3160, subdivision (j), provides detailed procedures for the Division’s handling of that claim. Section 1788(d) indicates where those procedures can be found and it is not necessary to quote those statutory provisions in the regulations. Public Resources Code section 3160, subdivision (c), requires the Division to enter into formal agreement with other state regulatory agencies for the purposes of coordinating regulation of well stimulation agreement. Each of the required formal agreements will address confidential information sharing.
3054	13553-3 Clarification is needed regarding notification by the operator to DOGGR. Is there an assumption that all well stimulation treatments will take place during normal business hours?
	Response to comment 3054: Division staff are on call at all hours to witness operations.
3055	13571-14 Section 1783(e): The intent of this newly proposed subsection is unclear. If an operator intends to revise activities approved in a permit to drill, re-drill, or rework a well such that it necessitates a material change in the approved well stimulation operations, then a supplemental or new permit for well stimulation should be submitted, rather than simply a verbal description of any changes.
	Response to comment 3055: If actual drilling, redrilling, or rework of a well differs significantly from what was contemplated at the time that the well stimulation treatment permit was approved, then the approved permit may need to be reevaluated.
3056	13386-3 Notice of Application for Permit to Perform Well Stimulation Treatment should be published to the

	public in the County where the permit is applied. The application should include an EIR detailing the well's impact to the water, ecology, air, and land of the proposed drilling site. Notice should be provided directly to those who occupy lands covered by the application, own the land, or who may be immediately impacted by its instillation.
3057	13079-1 The regulations specify whether the application for fracking permit is subject to CEQA review process which should be triggered for each and every fracking well permit application. The public should be allowed to comment on every well application.
	Response to comment 3056-3057: Reject. Approval of a an application for a well stimulation treatment permit is subject to CEQA, but the mechanics of CEQA compliance are outside the scope of this rulemaking.
3058	13552-28 In subsections (c) and (d), public notice should be expanded to include notice of when applications are deemed complete and receipt of 72 hour and 3 to 15 hour notifications of the commencement of operations.
	Response to comment 3058: Public Resources Code section 3160, subdivision (d)(5), requires that the Division post well stimulation treatment permits on its public website within five days of approval. The Division is working to develop and implement business processes and information technology to make information about all aspects of well stimulation treatment operations available on its public website in formats that can be easily searched and aggregated. Integration and easy cross referencing all records is one the Division's goals in the development of these processes and technologies.
3059	13549-1 There is belief that the 72 hour prior notification will not capture well stimulation activities that are postponed or canceled. Notifications for well reworks and completions are typically revised routinely due to inherent problems associated with timing of the activity due to equipment, personnel, and other logistics. Rule 1148.2 requires operators to continually notify the SCAQMD when time frames change so that staff may observe the operations and provide public notification of when the activity will actually occur. It is not uncommon for well treatment events to be revised three or more times. If revisions occur on separate days, rule 1148.2 requires a new electronic notification be submitted. Therefore the SCAQMD recommends the revised text be amended to incorporate notification requirements which allow for revisions to occur. Amendments should include both an upper timeframe boundary and a lower boundary of 72 hours or more.
	Response to comment 3059: Rejected. Section 1783(d) requires the operator to confirm with the Division between three and fifteen hours before commencing well stimulation treatment.
3060	15370-67 The following language is suggested: (a) A well stimulation treatment or repeat well stimulation treatment shall not commence without a valid permit approved by the Division and shall be done in accordance with the conditions of the Division's approval. (b) An application for a permit to conduct well stimulation operations shall include all of the information listed in Sections 1782 and 1783.1 and shall be submitted electronically to the

	Division on a digital form specified by the Division and available on the Division's public internet Web site at http://www.conservation.ca.gov/DOG/Pages/Index.aspx. (x) An application shall be included as part of any well operator's notice of intent to drill, rework, or abandonment of a well in which stimulation treatment shall be used and shall be reviewed in conjunction with the other Division's approval of well activities. Stimulation treatment notices shall be for actual implementation of activities approved as part of a Permit to Drill, or to Rework (including redrilling), or to Abandon.
	Response to comment 3060: Rejected. The suggested revision is not consistent the Division's permitting scheme, whereby an application for a well stimulation treatment permit can be submitted separately or conjunction with a notice to drill or rework a well.
3061	13553-11 The following should be included in section 1783: (c) (d) Within five business days of issuing a permit to perform a well stimulation treatment, the Division shall provide a copy of the permit to the appropriate regional water quality board or boards, and to the local planning entity where the well, including its subsurface portion, is located. agency.
	Response to comment 3061: Rejected. This requirement to post approved permits on the Division's website is clearly stated in Public Resources Code section 3160, subdivision (d)(5), and it is not necessary to quote that requirement in regulation.
	1783.1. Contents of Application for Permit to Perform Well Stimulation Treatment
3062	13554-19 The Second Revised Proposed Regulations fail to describe any criteria under which DOGGR will accept or reject a permit for well stimulation treatment. Without standards, the public has no way of knowing whether DOGGR will consider health and safety concerns that are apparent in a permit application. DOGGR should not approve any permit application that presents a risk to public health and safety or the environment.
	Response to comment 3062: Section 1783.1 details the information and analysis that must be included in an application for a well stimulation treatment permit. As required under Public Resources Code section 3160, subdivision (d), the Division will not approve an incomplete permit application and the Division's review of an application will include an evaluation of the quantifiable risk of the well stimulation treatment.
3063	13552-28 *Section 1783.1. Contents of application for Permit to Perform Well Stimulation Treatment.* The application should include the following additional information: An electronic map of the well location from which the public will be able to easily determine the location of the proposed well stimulation treatment; Proof that an operator has received from the county or other local land use authority a land use permit or any necessary permission to conduct well operations; and, a description of how the proposed well stimulation treatment complies with requirements of CEQA.

3064	13317-4 Non-toxic tracers should be included in order to hold operators accountable for well wall breaches and disposal violations. (Additionally, given the 72 hour Notice prior to well stimulation, there is no excuse not to know whether this is planned.)
3065	13103-4 1783.1(a)(1): The application needs to not only include the operator's name but the corporation as well. (31) There is a concern that trade secret information/protection is provided to companies that could easily pollute the water tables of many California citizens.
3066	13386-4 The identity of all toxins and chemicals used at any time during treatment should be disclosed to address water integrity and the health and safety of those exposed to waste from this activity. There should be an affirmative duty by the permit holder to notify of any changes in the toxins/chemicals used. The method of waste disposal and its location should be documented daily. There should be an affirmative duty on behalf of the permit holder to notify the responsible governmental agencies of all disposal locations on an ongoing basis. The public should be also notified of where waste disposal is located in order to assess the valuation or devaluation of land and/or to avoid purchasing land near the treatment. Permits should be denied when the State Water Board determines that there is insufficient water to serve the needs of agriculture in the State and its Citizens. The permit holder should be required to indemnify and hold harmless, including in the payment of attorney's fees and legal costs, the State of California and its citizens from any and all damage caused by breach of disposal sites, wells, or other operations associated with hydraulic fracking and injections wells, misfeasance by any agent of the permit holder, and failed treatment and wells as a condition to acquiring a permit.
3067	13558-6, 13548-6 DOGGR should require individual approval of permits from all listed assisting responsible agencies without requiring "written agreement with DOGGR." DOGGR should also require operators submit their compliance history and disproportionate impact data.
3068	13558-7, 13548-7 The regulations fail to consider an operator's compliance history in its permit review process. An operator's prior environmental record is essential information to assist DOGGR's determination of the sufficiency of a permit application. DOGGR should consider the length, number, and severity of prior environmental consideration of an operator's environmental record. Consideration should also be given to measures an operator proposes to take in the future not just the measures it took or failed to take in the past. In evaluating an operator's prior shortcomings to determine sufficiency of their application, DOGGR should consider relevant factors including: the length, number, and severity of prior environmental errors and the harm caused; whether the errors were intentional, negligent, or unavoidable; whether the operator's environmental record has improved or declined; whether he has attempted in good faith to correct prior problems; and whether the proposed activity will be regulated and monitored by a public entity.
3069	13558-8, 13548-8 Permit applications should include a summary of information on the location of the stimulation notice provided by California EPA's CalEnviroScreen in order to assist DOGGR in eliminating the disproportionate impact of oil and gas drilling on overburdened communities and communities of color in the state. The current well stimulations in California based on disclosures pursuant to SB4 have a discriminatory effect on Latinos in the state in violation of state and federal laws. DOGGR should use the full force and extent of its authority to mitigate and eliminate disparate impacts of oil and gas drilling on communities of color in the state.

3070	13550-6 Information regarding the city where the well is going to be located should be included.
3071	15370-73 The Division must require in the permit application, mapping requirements similar to those outlined in Section 1783.4(b)(3) through (5) in the interim SB 4 well stimulation treatment regulations. The radius of review, however, must be extended. The interim language requires evaluation of water wells and geology within the same radius as that specified for notification to neighbors, 1500 feet of the oil/gas well-head and 500 feet of the surface projection of an oil/gas well path. Potential impacts on water contamination could have a much larger reach. The Division must increase the radius for water testing to at least one mile (5280 feet) or twice the anticipated stimulation radius, whichever is greater. Mapping and analysis must include any existing active and abandoned oil/gas wells, water wells and surface water sources with beneficial uses, aquifer recharge zones, discernible faults, and other potential geologic features that could transport fluids or gases into waters with beneficial uses or to the ground surface.
3072	15370-74 Since the exact location of public supply wells may not be publicly available – exact locations are obfuscated to one mile – it may be impossible for an operator to know whether or not any public supply wells lie within the 1500 foot radius of the well head, or 500 feet of the surface projection of a well path. Mapping requirements must include all wells whose obfuscated location intersects with the required area of review.
3073	15370-75 Mapping and review requirements must apply to all well stimulation permit applications and must demonstrate exemption from monitoring requirements due to the absence of nearby waters that may be have beneficial uses. Regulations must clearly state that the mapping requirements be included in all permit applications regardless of whether or not any actual groundwater monitoring will occur.
3074	15370-76 For any well stimulation activities occurring on state or federal lands, the application should contain certification from the appropriate land management authority stating that the activity complies with any relevant land management plans.
3075	15370-77 Suggested language for comments Section 1783.1: (a) All applications for permits to perform a well stimulation or re-stimulation treatment**s** shall include the following: Operator (F) Operator's name; (G) Name and telephone number of person filing the form; (H) Name(s) of person to contact with technical questions regarding the treatment ~~operations~~; (I) Telephone number(s) and email address(es) of person(s) to contact with technical questions regarding treatment and related operations e.g., perforations, production testing, etc., and an on-site representative for the public and/or Division to contact in case of an emergency or complaint. Well (c) API number assigned to the well by the Division; (d) Lease name and number of the well; (e) Location of the well, submitted as a non-projected, Latitude/Longitude, in the General Coordinate System (GCS) NAD83 with at least six digits to the right of the decimal point.

(f) County, City, and USPS-Zip Codes in which the well is located;
(g) Name and Division number of the oil field, unit, area, lease, pool, or other identified production designation;
(h) Type, activity (active, idled, etc.), and date of original completion of well;
(i) For directionally drilled wells, ~~the proposed~~ coordinates (from surface location), the true vertical depth at total depth, and the wellbore path for the entire well at 100-foot intervals and any stages of perforations and stimulation;
(j) Measured and e~~E~~stimated true vertical depth of the well included in (12);

Resources and Environmental Contexts
(k) Depth of the base of ~~protected~~ water(s) with beneficial uses and uppermost hydrocarbon-bearing zone as shown on an iso-surface diagram/map;
(l) Name(s) and vertical depth(s) of the productive formation(s), member(s), and horizon(s) where well stimulation treatment(s) will occur;
(00) Names and descriptions of all faults penetrating the to-be-stimulated horizon within 2640 ft or twice the anticipated stimulation radius of the proposed location of stimulation, whichever is greater;
(00) All other previously stimulated and fractured wells within 2640ft of the wellhead and path or twice the anticipated stimulation envelop, whichever is greater;
(00) Any relevant Spill Contingency Plans or Pipeline Management Plans, in accordance with 14 C.C.R. §§ 1722 and 1774.2, respectively.
(00) Whether any of the facilities associated with the well stimulation are classified as "environmentally sensitive" as defined in 14 C.C.R. §1760(e).
Notice activities
(11) ~~The~~ Time period during which the well stimulation treatment is planned to occur;
(15) ~~The~~ Planned location(s) of the well stimulation treatment(s) on the well bore, the estimated length, height, width, and directions of the induced (Stim Envelope) fractures or other planned stimulation effects ~~modification(s)~~, if any, and the location of existing wells, including plugged and abandoned wells, measureable faults, and any UIC Program areas (Areas of Reference) that may be impacted by these fractures and modifications or within five times the greatest dimension of the Stim Envelope;
(a) Anticipated volume, rate, and pressures of fluid to be injected;
(b) Identification of all wells that have previously been stimulated ~~hydraulically fractured~~ in all ~~the same~~ production horizons within the area of twice the anticipated maximum ~~fracture radius~~ stimulation envelope and heights;
(c) Identification of where in the operator's Spill Contingency Plan ~~handling~~ as to where the Water Management Plan of well stimulation fluid and additives and flowbacks ~~has been addressed~~ is found;
(d) ~~The c~~ Cement and bond evaluation required under Section 1784(a)(1);

Planned and Limits
(e) ~~The w~~ Well stimulation treatment envelope (Stim Envelope) ~~radius~~ analysis required under Section 1784(a)(2), including identification of all water within the area of the well stimulation treatment envelope ~~radius~~ analysis, and the names and API numbers of all wells, identifiable faults, and UIC project areas within the area of 1500 feet or five times the maximum dimension of the Stim Envelope (whichever greater) of the well stimulation treatment envelope ~~radius~~ analysis;
(f) ~~The w~~Well stimulation treatment design required under Section 1784(a)(3);
Fluids and Management
(J) ~~A w~~Water management plan that includes an estimate of the amount of water to be used in the treatment, an estimate of water to be recycled following the well stimulation treatment, the anticipated source of the water to be used in the treatment (provided in latitude/longitude coordinates), the estimated volume from each source (where multiple

	sources of water will be used), and the anticipated disposal method that will be used for the recovered water in the flowback fluid from the treatment that is not produced water that would be reported pursuant to Section 3227; (K) ~~The e~~ Estimated amount of treatment-generated waste materials that are not addressed by the water management plan, and the anticipated disposal method for the waste materials; (00) The operator shall design, and provide process flow diagrams and piping- instrumentation-diagrams, and provide monitoring/reporting system for both Closed Loop Water and Gases Systems. The design and other supporting documents shall identify and include activities for delivery, storage, mixing, injection, flowback recovery, flowback storage/treatment, and transfers for transport. (m) Certification from the Regional Water Board that the well subject to the well stimulation treatment is covered by a well-specific, field-wide, or regional ground water monitoring plan developed in accordance with Water Code section 10783; and ~~A c~~ Complete list of the names, Chemical Abstract Service numbers, volumes, and estimated concentrations, in percent by mass, of each and every chemical constituent of the well stimulation fluids anticipated to be used in the treatment. If a Chemical Abstract Service number does not exist for a chemical constituent, another unique identifier may be used, if available. A claim of trade secret protection for the information required under this section shall be handled in the manner specified under Public Resources Code section 3160, subdivision (j), which specifies that the identities of the chemical constituents shall not be considered trade secrets: PRC 3160 (n) (j)(2) Notwithstanding any other law or regulation, none of the following information shall be protected as a trade secret: (A) Identities of the chemical constituents of additives, including CAS identification numbers; (B) Concentrations of the additives in the well stimulation treatment fluids; (C) Any air or other pollution monitoring data; (D) Health and safety data associated with well stimulation treatment fluids; and (E) Chemical composition of the flowback fluid (averaged and maxima values). (XX) All other information regarding past stimulation treatments on the same well and comparisons with those of the current application along with justifications as to differences.
	Response to comments 3063-3075: Rejected. The purpose of Section 1783.1 is to implement the statutory permitting requirement of Public Resources Code section 3160, subdivision (d). The specified permit application contents reflect the statutory requirements for a permit application under Public Resources Code section 3160, subdivision (d)(1); the Division's assessment of the information that it will need to effectively evaluate a permit application; and interagency consultation, as contemplated in Public Resources Code section 3160, subdivision (b)(1)(A). Some of the suggested contents for permit applications are already addressed, at least in part, in Section 1783.1. Other suggested contents for permit applications were not included in Section 1783.1 because the Division did not deem them necessary for review of an application for a well stimulation treatment permit. However, Section 1783.1(a)(31) provides that the Division may request additional information from an applicant on a case-by-case basis.
3076	13554-11 The Second Revised Proposed Regulations have added a provision allowing a well operator to submit a well stimulation application without a certification from the state or regional water board that a groundwater monitoring plan is in place. Instead, the Proposed Revisions allow an alternative submission of an "indication that the operator is working with [a water board] to ensure

	that the well subject to well stimulation treatment is covered…." Obviously, an indication of developing a groundwater monitoring plan is not the same as submitting an actual groundwater monitoring plan. If DOGGR were to approve an application without first reviewing an actual groundwater monitoring plan, it would be a serious violation of its duty to prevent, as far as possible, damage to life, health, property, and natural resources.
3077	13553-14 The contents of the permit application should include documentation that the State Water Board or the regional Water Board is monitoring well stimulation.
3078	13442-1 There should be a requirement for a monitoring well for ground and surface water to be drilled near the main fracking well to help comply with all water quality issues as in 1783.3(b)(3).
3079	13373-3 The word "shall" leaves no verification put in place to determine that the operator is doing what they are supposed to. If things are not correctly done, there should be consequences and penalties imposed on the operator. (27)(h)(1) Indication that the operator is working with the State or Regional Water Board, the indication is not identified. A commenter wants to know what the indicator(s) would be.
	Response to comments 3076-3079: Rejected. Public Resources Code section 3160, subdivision (d)(3)(D), provides that the Division may approve a well stimulation treatment permit in advance of compliance with Water Code section 10783, provided that the permit is conditioned on the treatment not commencing until compliance is achieved. Whether and how the operator has complied with Water Code section 10783 is within the regulatory purview of the State Water Resources Control Board and the appropriate Regional Water Quality Control Board. The required condition in Section 1783(a) is written in broad terms to allow for the fact that compliance with Water Code section 10783 may come in different forms. Pursuant to Public Resources Code section 3160, subdivision (c), the Division will enter into a formal agreement with the Water Boards, and that agreement will address the mechanics of these parallel processes to ensure that the agencies are coordinated with regard to these requirements.
3080	13317-3 Given the required 72 hour notice Period, it seems to the public that the operator should be able to provide exact Disposal methods rather than "anticipated."
	Response to comment 3080: Rejected. It would not always be possible to predict what the most effective available means of disposal will be.
3081	13577-11 Section 1783.1(a) contents of an application to perform well stimulation treatment shall include the following: Reinstate Article. 4 Section 1783.1(a)(12) For directionally drilled wells, the proposed coordinates(from surface locations), the true vertical depth at total depth, and the wellbore path.
	Response to comment 3081: Rejected. It is not necessary to require the proposed coordinates for a directionally drilled well because, as revised, Section 17831.(a)(12) requires "a description of the wellbore path that is specific enough to identify the location of the well stimulation treatment."

3082	13556-4 1783(a)(17): “Depth of the base of protected water…” clause has been deleted. “Protected water” should be broadly and well defined. It is not included in the definitions. “Protected water” should include “waters of all current and potential beneficial uses consistent with the Clean Water Act, the Safe Drinking Water Act and the Porter Cologne Water Quality Control Act”. This area shouldn’t be over looked due to the recent aquifer exemptions and possible contamination and current drought.
3083	13567-2 There is a concern about drinking 10,000 ppm water. The accepted base of fresh water has been supplanted by the politically correct “protected waters.” (11) It would be extremely difficult for operators to identify the “two-week time period during which the well stimulation treatment is planned to occur” with the number of unknown permitting and potential water testing requests that could arise. Perhaps eliminate this requirement from the permit application section and place something similar in the pre-stimulation notification section.
3084	13530-2, 13531-15 1783.1(a)(16,17,19) It appears that already weak acknowledgment and protection of existing wells, drinking water and protected waters has been removed. If the gas companies cannot prove no contamination to California's water but only claim safety they should agree to severe penalties if they cannot protect the people they are making a profit off of. There should be exuberant protections for private as well as county and state wells and water reserves.
3085	13577-11 Section 1783.1(a) contents of an application to perform well stimulation treatment shall include the following: Reinstate Article. 4 Section 1783.1(a)(17) Depth of the base of protected water, including method used to determine protected water.
3086	13203-10, 13194-8 Where will the water used in the fracking process come from? Changes to Section 1783.1(21) remove requirements to identify protected water reserves, to test water before and after fracking, and to disclose where the water used in the process came from.
3087	13571-15 Section 1783.1(a)(17): Individuals oppose the Division’s proposal to delete the requirement for operators to disclose the depth to the base of protected water in the permit application. Knowing the depth to the base of protected water is crucial in evaluating whether the geology at the proposed well location and well design and construction are appropriate to prevent endangerment of protected water. If protective barriers, including surface casing and cement, do not properly isolate protected water and if an appropriate confining zone is not present between the stimulated formation and protected water, stimulation activities may result in contamination of protected water. Knowing the depth to the base of protected water helps regulators make this assessment, and should be required to be disclosed on the permit application. 2.5.2
3089	13553-13 Depth of the base of protected water, including method used to determine protected water should be included in the contents of the permit application.
	Response to comments 3082-3089: Rejected. The defined term “protected water” was removed from the regulations. Public Resources Code section 3160, subdivision (b), calls for regulations that ensure well integrity and geologic and hydrologic isolation of the stimulated hydrocarbon formation, regardless of the quality of

	groundwater in the area. Accordingly, the requirements of these regulations apply regardless of the groundwater quality and therefore it is not necessary to define "protected water."
3090	13571-15 Section 1783.1(a)(18): Given that section 1784 requires the identification, evaluation, and disclosure on the permit application of all wells located within twice the ADSA, we recommend the following revisions to avoid confusion and ensure consistency: (18) The results of the requirements of Section 1784(a)(2). In addition, the operator must indicate that subset of wells identified under Section 1784(a)(2), if any, ~~Identification of all wells~~ that have previously been subject to well stimulation treatment in the same production horizon within the area of twice the ADSA.
	Response to comment 3090: Accepted in part. Section 1783.1(a)(21) requires that the permit application include the information required under Section 1784(a).
3091	13571-17 Section 1783.1(a)(23): Citizens suggest the following revisions to this subsection: (ii) The water supplier, if it will be purchased from a supplier, and the source from which the water supplier obtains water; (iv) Each water source should be reported separately and should include information on source type (oilfield produced or wastewater, municipal or industrial wastewater, surface water, groundwater, municipal water, or specify other source), volume, and whether the water has been treated or recycled.
3092	15370-72, 13531-15 Water source disclosure must provide more specific information so as to accurately describe the precise source of all water to be used in a stimulation treatment. Pursuant to SB 4, PRC 3160(b)(2)(E), operators must disclose the "source, [and] volume... of all water to be used as base fluid during the well stimulation treatment." If an operator discloses more than one water source, estimated volume from each source must be specified.
	Response to comments 3091-3092: Accepted in part. Section 1783.1(a)(23)(D) has been revised to clarify that "source of water" means the well(s), water supplier, or point of diversion where the water was obtained. This language is consistent with the definition of "source of water" found in recently-chaptered Senate Bill 1281.
3093	13288-1 Water level monitoring of the well(s) source and wells within the same basin should be monitored to avoid overdraft. Data reported for the life of the project. Diii: eliminate this source, no diversion of surface water can be used.
	Response to comment 3093: Rejected. Source and volume restrictions for water use are outside the scope of this rulemaking.
3094	13571-18 Section 1783.1(a)(29): Individuals approve of the addition of this proposed requirement.
	Response to comment 3094:

	Thank you for your comment.
3095	15370-68 The contents of the permit application must be publicly available and readily accessible on the Division's website within 24 hours of submittal.
3096	15370-69 All applications for permits must be submitted electronically in a format that is searchable by public users of the Division's website. The Division must also provide for list serve subscribers for applications for particular Districts, Counties, Zip Codes, Fields/Units/Pools/Leases, and wells.
3097	15370-70 Items must be reorganized so that related items are grouped with like items.
3098	15370-71 The water management plan attachment must be standardized to ensure that all required information is disclosed on every well stimulation permit application. The well stimulation treatment notices for the interim period have displayed a lack of clarity and uniformity that needs addressing.
3099	13550-7 Subsection (28): Any substances used in well stimulation fluids should be disclosed to the municipality and any other local agencies with jurisdiction or if the wellhead is located within 1500 feet of the local jurisdiction regardless of any claim of trade secret.
	Response to comments 3095-3099: Public Resources Code section 3160, subdivision (d)(5), requires that the Division post well stimulation treatment permits on its public website within five days of approval. The Division is working to develop and implement business processes and information technology to make information about all aspects of well stimulation treatment operations available on its public website in formats that can be easily searched and aggregated. Integration and easy cross referencing all records is one the Division's goals in the development of these processes and technologies.
3100	13530-2, 13531-15 1783.1(a)(31) "Trade secret" should not apply when using and threatening resources that belong to others. "Trade secret" should not apply when it endangers people's health. It is not secret that the chemicals operators do not disclose are highly toxic as well. It has already been shown that the chemicals used for fracking are not properly being removed from waste water. In addition, over half of the fracturing fluids are unrecovered and left to dissipate their toxins into our land which includes the "trade secret" ingredients.
3101	15370-77 Because the provisions of PRC 3160(j)(2) prohibit certain information from being claimed as a trade secret, and neither operators nor regulators may be familiar with these provisions, they should be quoted in the chemical disclosure requirement in this section.
	Response to comments 3100-3101: Rejected. Public Resources Code section 3160, subdivision (j), imposes strict limitations on the ability to claim trade secret protection as a basis for not making required public disclosures required under SB 4, and it is therefore unlikely that a claim of trade secret protection will be made in the context of these regulations. In the event that a claim of trade secret protection is asserted, Public Resources Code section 3160, subdivision (j), provides detailed procedures for the Division's

	handling of that claim. Section 1788(d) indicates where those procedures can be found and it is not necessary to quote those statutory provisions in the regulations.
	1783.2 Neighbor Notification, Duty to Hire Independent Third Party
3102	13568-1 Notification Radius & Setbacks. The radius for notification and review should be expanded and setback distances should be required. Evidence suggests that the potential impacts of water contamination extend beyond a 1500-foot radius of the wellhead or a 500-foot radius of the surface projection of a well path. For instance, a study in Pennsylvania found the migration of substantial amounts of methane from gas wells to private water wells as far out as 3000 feet. Although a distance is specified for notification, there is still no mention of setback requirements in the proposed SB4 Well Stimulation Treatment Regulations. There are well-known environmental and public health risks associated with oil and gas development. Emissions of health damaging air pollutants such as nitrogen oxides, volatile organic compounds, aromatic hydrocarbons, particulate matter, and other tropospheric ozone precursors (e.g.,CH4) escape throughout the lifecycle of oil and gas development, including stimulation of the well. Oil and gas operations have been linked to surface and groundwater contamination on numerous occasions. In Pennsylvania, for example, there have already been 243 confirmed cases of water contamination caused by conventional and unconventional oil and gas activities. As one would expect, risks to air, water, and public health correlate to the geographical proximity of the operations. For instance, a screening-level human health risk assessment showed that residents living closer to well pads were at an increased risk of acute and subchronic respiratory, neurological, and reproductive health effects. Additional evidence also suggests a greater prevalence of some adverse birth outcomes for neonates whose mothers live in higher densities of oil and gas development. Finally, a recent association study suggests higher reported health symptoms per person among resident living closer to gas well. There is a great amount of uncertainty and disagreement as to what constitutes a “safe” and appropriate setback distance. In the end, this determination may have more to do with value judgments than scientific rationale. Yet, this does not mean that minimum setback distances should not exist. Indeed, many jurisdictions have implemented setbacks from sensitive receptors, such as public water supplies, schools, and wetlands. For instance, in Pennsylvania unconventional wells cannot be drilled within 1,000 feet from existing water wells, surface water intake, or other water extraction points. Well stimulation projects and operations, to the extent practicable, should be located far away from human populations. Minimum setback distances should be specified for a number of sensitive receptors including, but not limited to, residences, schools, hospitals, churches, water wells, surface waters, parks, playgrounds, and other public facilities.
3102	13530-3, 13319-1 1783.2(a)(1): The notification areas should be a larger radius. In addition, notification should be given to residents who will be affected by the hundreds of trucks traveling in and out of the area. (County compensations should be considered for infrastructure and environmental damages caused by traffic) Notifications should be sent to anyone whose water table may be affected, as well as users of waterways at ground level where waste may be a factor. More protections should be added for property owners. If the well operation causes loss of lively hood, homestead, health, or property the well operation should pay 200% of property owner’s losses. (k) The independent third party should be chosen by the county or state and paid for by the operator.
3103	13531-5, 13533-2, 13491-7, 13531-15 Regulations display weak water protection: The 1500 foot radius is not sufficient as a buffer zone to spare the people and businesses who are adjacent to proposed fracking operations from the noise, air, and potential ground/water pollution that these operations are known to create.

3104	13079-5 For any public supply well located within 1,500 foot radium of a fracking well should require notification of all potential residential and commercial users served by the public supply well. Given the variability of local hydrogeologic conditions, it is also questionable whether or not a standard 1,500 foot radius is adequately protective as many existing groundwater contamination plumes are several miles long. A standard notification buffer of at least a 1 mile radius is recommended.
3105	13386-5 The broad range damage that can be done to land and air and water does not include “surface” neighbors or tenants only, but includes the citizens of the entire County at the very least. Notification of and transparency of activity should be supported throughout these regulations on an ongoing basis.
3106	13359-12 Notices to property owners, neighbors, dwellers, businesses, government agencies need to be given with sufficient time for the public to respond and if necessary.
3107	13566-2 1783.2(c): At least 3 months should be allowed between the delivery of notices and project commencement, to allow time for residents to respond. Due to California’s diversity, notices to residents should be required in both English and Spanish. In addition, translation should be made available, at the expense of the company proposing to commence the project, should a tenant, occupant or resident of the property request these notices in another language. The State should also establish a dedicated toll-free line, with staffing in English, Spanish and other languages documented as in use in California, to address concerns or questions about the proposed project and notices. This call center should be responsible for tracking data about the volume and the reasons for the calls they receive. The statewide data from the call center should be publicly available and published quarterly. To cover the costs associated with tracking the impact of fracking, companies wishing to extract resources from the State should be taxed on their revenues, with the funds going to support the development and operation of the call center. The amount of the tax should be specified in SB 4, and the taxation process administered by the appropriate state agencies.
3108	13573-3, 13472-3 Sections 1783.2 and 1783.3 should be amended to require affirmatively inform neighbors of the application and environmental review processes, in addition to informing neighbors when actual drilling is contemplated.
3109	13573-12, 13472-12 Section 1783.2 should be revised to extend the period between neighbor notification and well stimulation treatment to 45 calendar days, to ensure adequate opportunity for baseline water testing. Similarly, the period in which a property owner may request water quality testing, pursuant to proposed Section 1783.3(a), should be extended from 20 to 30 days.
3110	13533-3 Specifying that the distance required is 'from the proposed wellhead itself ' would mean that other aspects of the operation such as equipment set-up, chemical storage and transfer, and truck egress would be occurring much closer to 'neighbors' of proposed well stimulation sites. This distance must be increased significantly in order to protect residents and the value of their property. The minimum boundaries should include all aspects of the stimulation operations including chemical transfer and storage, waste storage, on site equipment, etc.

3111	13533-1 Section 1783.2: Individuals find the distance requirement greatly insufficient. They also take issue that 'neighbors' are apparently only to receive *notification* of well stimulations but do not have an actual voice in the permit process, i.e. whether the permits are granted.
3112	13533-5, 13323-1, 13323-2 Individuals believe that permit applications for well stimulation should be subject to local review and that property owners and tenants within at least a half mile, preferably more, radius be notified of applications and be allowed to submit objections to stimulation operations that may affect their property, property features, or property values.
3113	13550-5 The municipality and any other local agencies with jurisdiction or if the wellhead is located within 1500 feet of the local jurisdiction should be notified in a timely manner of any applications pursuant to this section and their comments invited.
3114	13288-2 Identify surface property owners---situated within a 1500-foot radius--- change to within the major watershed boundary that includes all sub-basins. As hydrologists know, wells affect the whole watershed and direction and flow of aquifers can be changed if large wells are drilled. The entire watershed occupants must be notified. DWR must have the report, as well as the water-master of the particular watershed.
3115	13317-5 Given documentation suggesting adverse related health effects of frack fluids to the community and the known carcinogens in frack fluid, operators should be required to notify tenants and landowners well beyond those within the proposed regulation of a “1500-foot radius of the well-head or 500 feet of the surface representation of the horizontal path of the subsurface parts.” Individuals would suggest, for example, that fracking not be permitted at all within a ten-mile radius of schools, hospitals, and farmland – and that the distance for neighbor notification be expanded to at least 2 miles.
3116	13215-2 The proposed notification of 1500-foot radius (below) of legally recognized parcels of land appears to be under represented. 1. Representatives of the Foothill Water Association would not be notified according to DOGGR’s 1500-foot radius. Therefore, the people propose that all legally recognized parcels of land that could draw water from the water aquifer effected by the Well Stimulation be notified. The regulations need to be applied to aquifers not feet radiuses. 2. Individuals are also concerned that the water table will be lowered due to the amount of water used for Well Stimulation. This would cause a water association to drill to another water source (level) at a cost that should be encumbered by the drilling company. Therefore, water table data should be required from all existing wells that draw water from the Well Stimulation area. 3. Pre-Well Stimulation Water Quality testing of all wells in the Well Stimulation aquifer and neighboring aquifers should be required at the expense of the driller, due to geologic faulting that might allow contamination to flow to neighboring aquifers. 4. A Bond should be posted before Well Stimulation occurs, that will pay for water treatment if contamination occurs.
3117	13209-7 Concerning Neighbor Notification is a farce; neighbors within a 1500 foot radius will be informed of the well stimulation treatment after it is already approved which upsets Californians. They believe it should be within a 200,000 foot radius and the neighbors should be informed of the proposed project and be allowed to vote on whether they approve of having “fracking neighbors.” Citizens want to know why it is that frackers themselves don’t want it near their ranches.

3118	13279-1 1783.2 Neighbor Notification, Duty to Hire Independent Third Party. ADD: Notification must be publicly published in local newspaper. ADD: A prominent sign must be displayed 60 days in advance to be easily visible to people driving by as well as public flyer notice to residents.
3119	13251-1 1783.2 (1)" Identify surface property owners and tenants situated within a 1500 ft. radius of the well-head, or 500 ft. of the surface representation of the horizontal and subsurface parts." The public questions whether this is enough, considering how large aquifers are. Should this not be within the ADSA?
3120	13203-14, 13494-12 The people of California ask regulators if oil and gas will be allowed to frack in their back yard. Section 1783.2 removes the requirement for giving notice before commencing fracking activities, so that well operators do not have to alert property owners before fracking within 500/1500 feet of their land. Isn't that something most people would like to know about?
3121	13550-8 The municipality and any other local agencies with jurisdiction or if the wellhead is located within 1500 feet of the local jurisdiction should receive a sample copy of all Neighbor Notifications submitted with a list of the addressees if the notices are sent to surface property owners and tenants within and immediately adjacent to its jurisdiction.
3122	13550-10 Subsection (c): Well stimulation should not commence until 45 calendar days after all required notices are provided to provide notified parties with adequate time to raise any concerns that they may have regarding the well stimulation. The Neighborhood Notification Form should be revised to reflect this change.
3123	013279-2 1783.2. ADD: Notification must be publicly published in local newspaper. ADD: A prominent sign must be displayed 60 days in advance to be easily visible to people driving by as well as public flyer notice to residents.
3124	13298-5 Given documentation suggesting adverse related health effects of frack fluids to the community and the known carcinogens. In frack fluid operators should be required to notify tenants and landowners well beyond those within the proposed regulation of a "1500-foot radius of the well-head or 500 feet of the surface representation of the horizontal path of the subsurface parts." The public would suggest, for example, that fracking not be permitted at all within a ten-mile radius of schools, hospitals, and farmland – and that the distance for Neighbor Notification be expanded to at least 2 miles.
3125	13328-5, 13506-2, 13458-3, 13322-1, 13321-3, 13341-3 Although neighbors within 1500 feet must be notified about the fracking, there is no provision for them to object and prevent the fracking which will probably do irreparable harm to their and their children's health and to their drinking water.
3126	13336-4 Neighbors and communities deserve control over extractive industries like fracking; notification to neighbors within 1500 feet is not enough in the public's opinion. Their consent should be necessary.

3127	13325-4 Individuals have not found provisions in the regulations that protects wells near frack sites and the people who use them. Notification of residents within 1500 feet is not enough when they cannot effectively object.
	Response to comments 3102-3127: Rejected. Public Resources Code section 3160, subdivision (d), requires operators to hire an independent entity to provide notification to every tenant and owner of neighboring property within 1500 feet of the wellhead or 500 feet of the surface representation of a well that will have a well stimulation treatment performed on it. The statute requires operators to provide neighbor notification at least 30 days prior to commencing the well stimulation treatment, and the notice must consist of the approved permit and notification that the property owners may request water quality testing at the operator's expense. Public Resources Code section 3160, subdivision (b)(1)(B) expressly requires the Division to adopt regulations implementing the statutory neighbor notification requirement. The purpose of Section 1783.2 is to establish procedures implementing the neighbor notification requirement of Public Resources Code section 3160, subdivision (d), and the suggested revisions to Section 1783.2 would be a departure from the statutory requirements. Setback and other land use restrictions are not included in the proposed regulations. These regulations have been developed to supplement the Division's existing oil and gas regulatory framework to meet the intent and requirements outlined in Senate Bill 4. These regulations include monitoring, evaluation, and testing requirements for before, during, and after well stimulation treatment to ensure the integrity of the well and the geologic and hydrologic isolation of the stimulated hydrocarbon formation. These regulations also implement the public disclosure, neighbor notification, water testing, and permitting requirements established by Senate Bill 4. The Division believes that these regulations provide an effective framework for a level regulatory scrutiny that is commensurate with the level of public concern with well stimulation treatment operations.
3128	13552-28 *1783.2. Neighbor notification.* Under subsection (c), the proposed regulations should clarify that the well stimulation treatment shall not commence until the later of (i) 30 days after notices are provided, or (ii) all of the baseline water testing required to be completed prior to well stimulation commencement under section 1783.3 is completed.
	Response to comment 3128: Accepted in part. Section 1783.3(b)(4)(A) provides that, upon a timely request from the surface property owner, the well stimulation treatment shall not commence until baseline sampling has been completed.
3129	13498-1, 13349-5 Neighbor Notification (4)(h) In addition to the means set forth in subdivision (d) tenants of a residential or commercial property that has 10 or more individuals (This should be 1 or more individuals) units for lease may be provided notice. Reasoning: All living persons should be provided notice and this notice should be given no later than 60 days in order to investigate and insert opinions on operations in their vicinity.
3130	13531-5, 13533-2, 13491-7 Regulations display weak water protection: An apartment building would only receive one notice for all its tenants which citizens find unacceptable.

	Response to comments 3129-3130: Section 1783.2(h) requires notification of each unit in a multi-unit building.
3131	13555-3 The definition of "Surface property owner" is not clarified as to which real property is covered by the proposed regulation, changes to Sections 1783.2 and Section 1783.3 are needed to protect gas storage operators' rights to notification and to request water quality testing. The additional language is recommended to be added under Section 1783.2, paragraph (a) (1), so that it reads as follows: (a)(1) Identify surface property owners and tenants, <u>underground injection projects, and gas storage projects</u>, other than the operator of the well subject to well stimulation treatment, of legally recognized parcels of land situated within a 1500-foot radius of the wellhead receiving well stimulation treatment, or within 500 feet of the surface representation of the horizontal path of the subsurface parts of such well.
	Response to comment 3131: Rejected. Public Resources Code section 3160, subdivision (d)(6), requires notification of pending well stimulation treatment to be provided to neighboring surface property owners. Operators of underground injection projects or gas storage projects are outside the scope of this notification requirement unless they are surface property owners.
3132	13553-16, 13553-8 DOGGR should create a pre-approved list of 'independent third party' and contractors to provide some oversight of this process. DOGGR should have responsibility to review third party, to ensure it remains an independent third party.
	Response to comment 3132: Accepted in part. It is not clear what criteria is suggested for pre-approval of independent third parties performing neighbor notification. The Division has a statutory mandate under Public Resources Code section 3160, subdivision (d)(6), to audit the performance of independent third parties performing neighbor notification.
3133	13573-13, 13472-13 Tenants, in addition to property owners, must be afforded the right to request water quality testing at the operator's expense pursuant to Section 1783.3(a)-(c). At a minimum, tenants must have a right to request water quality testing by a designated contractor for water sampling selected by the operator pursuant to Section 1783.3(b)(4)(A).
	Response to comment 3133: Rejected. In accordance with Public Resources Code section 3160, subdivision (d)(7)(C), Section 1783.3(d) states that a tenant who has lawful access to a water well or surface water may independently contract with a designated contractor, but is not entitled to reimbursement from the operator. The Well Stimulation Treatment Neighbor Notification Form includes information about how to find a list of Designated Contractors for Water Sampling.
3134	13550-9 Subsection (a)(2): An easy-to-understand map of the proposed well stimulation location should also be included with the notification. The Neighborhood Notification Form should be revised to reflect this change.

	Response to comment 3134: Rejected. The Well Stimulation Treatment Neighbor Notification Form directs people to the Division's public website, which has intuitive tools for mapping wells.
3135	13550-11 Subsection (j): If any additional surface property owners or tenants are provided notice after the original declaration, the time period under Subsection (c) upon which well stimulation shall commence should be re-calculated from the date of the last notice provided to ensure that all interested parties have a fair opportunity to raise any concerns with the proposed well stimulation. This provision shall not be applicable to surface property owners or tenants that are not required to be notified under the provisions of Subsection (a)(1).
	Response to comment 3135: Rejected. Section 1783.2(c) already provides that well stimulation treatment shall not commence until 30 days after all required notices are provided.
3136	15370-78 A template for neighbor notification is needed to ensure that landowners and tenants within the specified radius receive all required information in an easy to read format, in English and other appropriate languages, and have a standardized method to request monitoring, such as a pre-paid and addressed postcard with a check box. Such a template should also ask neighbors to provide information about active or abandoned wells and surface water located on their property, in order to provide information to operators that is required in the water management plan. The Division should develop such a template in consultation with the State Water Resources Control Board and make the template publicly available for review prior to approval of the permit.
	Response to comment 3136: Accepted in part. Section 1783.2(a)(2)(B) requires that neighbor notification include a completed Well Stimulation Treatment Neighbor Notification Form. The Well Stimulation Treatment Neighbor Notification Form was developed in consultation with the State Water Resources Control Board, it includes information about requesting water testing, and it is in both English and Spanish.
3137	15370-79 A system is also needed that will allow the Division to verify that all required information and notification has been properly distributed to the appropriate recipients. This verification process needs to be part of the permit approval process and must include communication with the Board. This will allow the Board to track requests for monitoring and ensure that appropriate follow-up and all requested monitoring has occurred. Suggested language revisions to Section 1783.2: (a) Within three (3) days of an operator's submission of a permit application to conduct stimulation treatment, the operator shall notify and provide copies of the notice(s) to those persons and entities to be notified for the stimulation treatment. (b) At least three (3) days in advance of submission of notice to conduct stimulation treatment, the operator of any oil or gas well who may receive a well stimulation treatment permit from the Division shall provide all notices of pending submissions to the Division for all surface and subsurface property owners, occupants, lessees, and tenants of legally recognized properties situated within a 2640-foot radius of the wellhead of any such well, or within 2640 feet of the horizontal projection(s) of the subsurface parts of any such well and shall identify sources of the official notices and supplements through the Division. The operator shall authorize the Division to make accessible via the internet all submissions regarding the

	notice and its considerations. (c)At least 30 days in advance of commencing well stimulation treatment, the operator of any oil or gas well receiving a well stimulation treatment permit from the Division ~~is required to~~ shall provide to surface and subsurface property owners, occupants, lessees, and tenants of legally recognized properties ~~parcels of land~~ situated within a ~~15~~2,640-foot radius of the wellhead of any such well, or within ~~5~~2,640 feet of the horizontal projection of the subsurface parts of any such well, the following: (1) ~~A copy~~ Copies of the well stimulation treatment notice(s) and permit(s); (2) Notice of the availability for water sampling and testing of any water well suitable for drinking, other beneficial uses, or agricultural ~~irrigation~~ purposes; and (3) Notice of the availability for water sampling and testing of any surface water suitable for drinking, other beneficial uses, or agricultural ~~irrigation~~ purposes. (d)For the purposes of this section, "occupants," "lessees" and "tenant" means a person or entity possessing the right to occupy, use, or produce from a legally recognized parcel, or portion thereof.~~, by way of a valid agreement.~~ (e)If the surface and subsurface property owner, occupant, lessee, or tenant receiving the notice is a state or federal government agency, then the notice shall be delivered to that agency's office located closest to the proposed well stimulation activity.
	Response to comment 3137: Rejected. Section 1783.2 already contains procedures and specifications for the neighbor notification requirements of Public Resources Code section 3160, subdivision (d)(6), and the suggested revisions are inconsistent with the purpose and intent of that section.
3138	13577-11 It is very important to reinstate the entirety of Article 4 Section 1783.2. Copy of Well Stimulation Permit; Notice of Availability for Water Testing Sampling.
3139	13517-1, 13531-15 There is concern that 1783.2 and 1783.3 are deleted and though there is a reference to 1783.2(e), it could not be found in the second revised text.
	Response to comments 3138-3139: The initially proposed Sections 1783.2 and 1783.3 were replaced by significantly revised provisions that serve the same purpose.
	1783.3 Availability of Water Testing, Request for Water Testing
3140	13298-7 "The Operator shall pay for all reasonable costs of water quality testing" creates an inherent conflict of interest. Perhaps the testing should be contracted by the State or Regional Water Control Board and reimbursed to them afterwards by the operator.
3141	13298-8 The Regional Water Board ought to actually GUIDE the sampling effort (what is to be tested for) – and be required to be present. It is essential that the Water Board stipulate exactly what chemicals ought to be included in the water sampling (based on the well stimulation permit application's list of chemicals, tracers, and other components of the frack and base fluid). A surface property owner, tenant, (or other interested party) would otherwise not have the knowledge to obtain a useful and valid sample.

3142	13235-2 Under section 1783.3(b)(1) Water quality testing shall be performed by a Designated Contractor for Water Sampling hired by either the owner of the property or the operator. There is a conflict of interest in either case and the public, whose water supply is potentially contaminated, will inevitably be the recipients of the bad news but, as is usual, the profits will be privatized and the majority of costs borne by the public. Fines are just a cost of doing business.
3142	13317-8 The Regional Water Board ought to actually guide the sampling effort (what is to be tested for) – and be required to be present. It is essential that the Water Board stipulate exactly what chemicals ought to be included in the water sampling (based on the well stimulation permit application's list of chemicals, tracers, and other components of the frack and base fluid). A surface property owner, tenant, (or other interested party) would otherwise not have the knowledge to obtain a useful and valid sample.
3143	13317-7 The testing should be contracted by the State or Regional Water Control Board and reimbursed to them afterwards by the operator.
	Response to comments 3140-3143: Accepted in part. Public Resources Code section 3160, subdivision (d)(7), requires that water tested requested by neighboring surface property owner shall be conducted by an independent third-party contractor in adherence to sampling and testing standards and protocols specified by the State Water Resources Control Board. Accordingly, Section 1783.3(b) requires that sampling and testing is performed by a Designated Contractor for Water Sampling in accordance with the standards and protocols specified by the State Water Resources Control Board.
3144	13556-5 Section 1783.3(a): Water quality testing of any "existing water well or surface water located on the parcel that is suitable for drinking or irrigation purposes" should automatically be required as part of the permit process, and not only upon request. In (a-c) a tenant should be afforded all the same rights as the surface property owner from whom the property is leased, including testing at the operator's expense. Having a baseline test will ensure that water quality is maintained, and not compromised by the well stimulation activities. Then when a post well stimulation test is done, having the base line test, it'll help show if there is a link and contamination really occurred or not.
3145	13531-5, 13533-2, 13491-7 Regulations display weak water protection: Testing to collect baseline water quality data and uncover fracking pollution will only be done at the request of people living within 1,500 feet of a fracked well.
3146	13565-2, 13531-15 Section 1783.3(a): The groundwater in the State of California is a common resource and must be protected by the State of California. The standard methodology in the industry when a potential contaminating source to ground water exists monitoring wells must be installed before the source is put into operation to ascertain a baseline. Then regular sampling is done thereafter. Since it has been ascertained with no doubt that groundwater contamination has occurred from fracking this monitoring should take place on a schedule no less than once per month per well and there should be no less than 4 wells. The monitoring wells shall be constructed as per standard guidelines and be sufficiently deep to include vertical contamination and spaced to include the entire area of the horizontal well. Water quality testing shall be performed by a water quality lab

	listed by the California State Water Quality Control Board. The company seeking the permit must present a cash bond of two times the amount of the value of the well before commencing work to cover future fines and cleanup costs.
3147	13566-3 Section 1783.3(a): Responding to requests from individual residents should not be the only trigger of water testing. Pretesting prior to project commencement and periodic testing thereafter *by the State* should be made a requirement for any authorized project, with the costs billed back to the lead company on that project. Further, using the same process, water testing should be available for any property using water from an aquifer with boundaries within 5 miles of the project site, or from any other water source within 5 miles of the project site. As the property of the State, data and findings from these tests should be made publicly available and published quarterly.
3148	13497-2 Section 1783.3(b)(1): The standard methodology in the industry when a potential contaminating source to ground water exists is that monitoring wells must be installed before the source is put into operation to ascertain a baseline. Then regular sampling is done thereafter. As it has been ascertained with no doubt that groundwater contamination has occurred from fracking, this monitoring should take place on a schedule no less than once per month per well and there should be no less than 4 wells. The monitoring wells shall be constructed as per standard guidelines and be sufficiently deep to include vertical contamination and spaced to include the entire area of the horizontal well. Water quality testing shall be performed by a water quality lab listed by the California State Water Quality Control Board. The company seeking the permit must present a cash bond of two times the amount of the value of the well before commencing work to cover future fines and cleanup costs.
3149	13323-3 Prior water testing should be done by the county's water department automatically and at the cost of the drilling company.
3150	13248-2 If fracking is allowed, the public thinks that water sampling must be mandatory and automatic, and not conducted only if requested by a surface property owner. Water sampling must also be continuous (e.g. weekly) for the duration of the fracking operation, as well as for a reasonable period of time following the closure of the fracking operation.
3151	13491-5 The regulations show a complete lack of mandatory testing of groundwater before, during, and after well stimulation. Allowing property owners to optionally request testing is a perfect example of how these regulations are far too weak and do not prioritize protection of the citizens and the groundwater. Also allowing the testing to be done by a Contractor selected by the operator is another insult to the citizens. It should clearly be mandatory and done by a true independent contractor, arranged through the Division.
3152	13279-3 ADD: The potable and ground water as well as the aquifer is to be tested regardless of request by a surface owner or tenant. Bench mark testing (before the injection project, as well as regular (monthly) testing, dependent upon the extent of the adjacent water. For any water twice the anticipated well stimulation treatment length from each point of well stimulation.
3153	13552-22 The people of California strongly recommend that DOC require baseline water testing of both surface and groundwater. The law allows for neighbors to request testing for such water sources,

	but it is important for all aquifers to be sampled before and after well stimulation activities. The operator should be required to obtain baseline and follow-up testing by a designated contractor for water sampling, irrespective of a request by a property owner or tenant of nearby land.
3154	13317-6, 13298-6 Limiting the ability to request a water sample prior to the well stimulation to a "Surface Property Owner" or "tenant" is unfair to individuals who may also be subject to the health risks associated with the well. This language should be broadened to extend the right to all constituents.
3155	13304-2 If such practices proceed, it should be required of the operator to test the well waters of all those potentially affected before initiating the well stimulation, during and after.
	Response to comments 3144-3155: Rejected. Public Resources Code section 3160, subdivision (d)(7) requires operators to pay for testing of water wells or surface water suitable for drinking located on neighboring parcels within 1500 feet of the wellhead or 500 feet of the surface representation of a well, if the neighboring surface property owner requests the water testing. The statute specifies testing is to consist of baseline testing prior to well stimulation treatment and follow-up testing after well stimulation, testing must be conducted in accordance with standards and protocols specified by the State Water Resources Control Board, and testing must be conducted by a qualified independent third-party contractor designated by the State Water Resources Control Board. The statute further specifies that results of the water testing must be reported to the Division, the appropriate Regional Water Quality Control Board, and the surface property owner. Public Resources Code section 3160, subdivision (b)(1)(B) expressly requires the Division to adopt regulations this statutory neighbor water requirement. The purpose of Section 1783.3 is to establish procedures implementing the water testing requirement of Public Resources Code section 3160, subdivision (d), and the suggested revisions to Section 1783.3 would be a departure from the statutory requirements. Although testing of neighbors' water wells and surface water is optional at the election of the surface property owner, all wells that have well stimulation treatment performed on them are subject to groundwater monitoring requirements under Water Code section 10783. Wells that have well stimulation treatment performed on them must be covered by a regional, area-specific, or well-specific groundwater monitoring plan and the State Water Resources Control Board is currently developing the model groundwater monitoring criteria required under Water Code section 10783.
3156	13511-4 Section 1783.3(b)(4)(A): The condition for delaying the beginning of a well stimulation treatment must be communicated to Surface Property Owners and Tenants. Neighbors must know that they have the ability to delay the beginning of well stimulation until after groundwater has been sampled. This provision must be included as part of Neighbor Notification.
3157	13514-4, 13518-4, 13535-4, 13539-4, 13541-4, 13501-4 The condition for delaying the beginning of a well stimulation treatment (provided under Section 1783(3)(b)(4)(A) must be communicated to Surface Property Owners and Tenants. Neighbors must know that they have the ability to delay the beginning of well stimulation until after groundwater has been sampled. The provision under Section 1783.3.b.4.A must be included as part of Neighbor Notification.

3158	13279-4 1783.3 A – Citizens would like the 20 calendar day notice changed to anytime the owner were to request during the life of the well. The owner has rights to testing at any time, not limited to the beginning of the operation. An operator may change the supervising employee, so the diligence may change. The operator may change the contents of the materials used creating mistrust in the owner.
3159	13550-13 Subsection (b){4)(A): A notified surface property owner should be given thirty (30) calendar days from the date notice is provided to request water quality testing. The Neighborhood Notification Form should be revised to reflect this change.
	Response to comments 3156-3159: Rejected. One of the purposes of Section 1783.3 is to prevent a late request for water testing from delaying well stimulation treatment beyond the required 30-day neighbor notification period, while protecting surface property owners' right to have water testing paid for by the operator. Section 1783.3(b)(4) specifies that if the request for water testing is made within 20 days of notice being provided, then the operator must ensure that baseline sampling occurs before well stimulation treatment commences. If the surface property owner does not make a timely request for testing, then the property owner is responsible for ensuring sampling gets done before the treatment commences, and the operator is not required to delay commencement of treatment beyond the required 30-day neighbor notification period. Regardless of the timing of the request or the sampling, the operator is responsible for cost of sampling and testing requested by surface property owner in accordance with Section 1783.3.
3160	13563-9 Changes to Section 1783.3(4)(B) that specifically allow well stimulation treatments to proceed after the 20-day time period, even if the surface owner/occupant elects to contract for water testing. Such changes would be prudent and consistent with the other provisions in the section. Suggested language change: "If the surface property owner elects to select the Designated Contractor for Water Sampling and communicate directly with the contractor to arrange for testing, the surface property owner.is responsible for scheduling baseline measurements to be taken prior to the commencement of the well stimulation treatment. The operator shall immediately inform the surface property owner when the well stimulation treatment is completed so that follow-up measurements can be collected. <u>The surface property owner arid the Designated Contractor for Water Sampling must arrange for the baseline sample to be collected within 10 calendar days of the surface property owner's election to use the Designated Contractor for Water Sampling."</u>
3161	13567-6 Section 1783.3 (b)(4), (b)(7): These two are not coordinated. If the surface owner elects to secure their own water sampling contractor and the RWB is required to witness the sampling, there is a concern on who will contact the RWB for them to witness the sampling.
	Response to comments 3160-3161: Rejected. Section 1783.3(b)(4)(B) already specifies that if the surface property owner elects to hire and supervise the Designated Contractor for Water Sampling, then the burden is on the surface property to ensure the baseline sample is taken before the operator commences the well stimulation treatment.

3162	13571-19 Section 1783.3(b)(7) Individuals approve of the Division's proposed requirement to provide notice of sampling to the Regional Water Board but request that the notice period be extended to at least 5 working days to improve the chances that staff may be available to witness sampling. There are additional requests that the State Water Board also be notified, along with the Regional Water Board. Section 1783.3(d) People renew concerns over the unequal and unjust treatment of tenants vs. property owners in regard to water quality testing and request that this double standard be eliminated.
	Response to comment 3162: Rejected. The provision requiring advance notice to the appropriate Regional Water Quality Control Board was developed in consultation with the State Water Resources Control Board.
3163	13573-5, 13472-5 Section 1783.3(b)(4)(A): By eliminating the requirement that operators "arrange follow-up [water quality] measurements to be taken between 30 and 60 calendar days after the well stimulation treatment is completed," the section has been weakened. While baseline, pre-stimulation testing at the operator's expense is essential, it is also important to provide post-stimulation testing to determine what changes, if any, occurred.
3164	13554-12 The Second Revised Proposed Regulations eliminated a provision requiring operators to "arrange for follow-up measurements to be taken between 30 and 60 calendar days after the wells stimulation treatment has occurred." This places the burden on residents threatened by water contamination rather than on the companies that are jeopardizing water supplies, and is not in the public interest. It is also contrary to the requirements of SB4, which state that a property owner may request follow-up measurements after the well stimulation treatment."
3165	13553-19 The deleted requirement: "The operator shall arrange for follow-up measurements to be taken between 30 and 60 calendar days after the well stimulation treatment is completed", should be reinstated.
	Response to comments 3163-3165: Rejected. Public Resources Code section 3160, subdivision (d)(7), requires that water tested requested by neighboring surface property owner shall be conducted by an independent third-party contractor in adherence to sampling and testing standards and protocols specified by the State Water Resources Control Board. Accordingly, Section 1783.3(b) requires that sampling and testing is performed by a Designated Contractor for Water Sampling in accordance with the standards and protocols specified by the State Water Resources Control Board.
3166	13508-1, 13523-1, 13524-1, 13522-1, 13531-15 The regulations were loosened regarding the requirement of operators to test water quality at stimulations sites. The strike through text must not be removed.
	Response to comment 3166: Rejected. The initially proposed Sections 1783.2 and 1783.3 were replaced by significantly revised provisions that serve the same purpose.
3167	13103-5 There is a concern that the surface property owner must pay for baseline water sampling test

	measurements.
3168	13530-4 Section 1783.3(A): More responsibility should be put on the operator unless the invasion is agreed upon by the property owner. (d) This appears to reroute responsibility of operator as stated in (B)(5) and puts it on the property owner. If the property owner has no say in the contamination or threat of, they should not be held responsible for paying testing, cleanup or compensation thereof.
3169	13550-14 Subsection (b)(5): All costs of conducting water quality testing should be paid by the operator. The word "reasonable" should be struck.
	Response to comments 3167-3169: Rejected. Under Public Resources Code section 3160, subdivision (d)(7), the operator is responsible is responsible for the cost of sampling and testing, but would not be responsible for billing that does not reflect the cost of sampling and testing. The statute provides that sampling and testing preformed shall be subject to audit and review by the State Water Resources Control Board or the Regional Water Quality Control Board, as appropriate.
3170	13573-4, 13472-4 Section 1783.3 should be amended to grant any person entitled to receive notification under section 1783.2 the right to water quality testing at the operator's expense, rather than treating neighboring tenants differently than neighboring landowners.
3171	13279-5 1783.3 (7) d – Change the tenant's rights to be that they may have the water quality tested at the expense of the operator. The tenant has equal access to the water quality report.
3172	13550-16 Subsection (d): If the surface property owner declines to request water quality testing, a tenant should be entitled to request the same options as the surface property owner for water quality testing, including reimbursement by the operator for the testing. However, only one request for water quality testing for each property should be reimbursed.
3073	13577-11 Reinstate the second revision of Article 4 Section 1783.3, unlike this unacceptable revision, the owners &/or tenants must be informed of their rights to water testing. Citizens ask to change Article 4 Section 1783(d) stating tenants should have equal treatment with the surface property owners and be included in the current 1783.3 Availability of Water Testing, Request for Water Testing, with operators paying for all reasonable costs of water testing done at the request of tenants.
	Response to comments 3170-3173: Rejected. In accordance with Public Resources Code section 3160, subdivision (d)(7)(C), Section 1783.3(d) states that a tenant who has lawful access to a water well or surface water may independently contract with a designated contractor, but is not entitled to reimbursement from the operator.
3174	13555-4 The additional language is recommended to be added under Section 1783.3, paragraph (a), so that it reads as follows: (a) A surface property owner (<u>for purposes of this section surface property owner includes underground injection projects and gas storage projects</u>) notified pursuant to Section 1783.2 may request water quality testing on any existing water well or surface water located on the parcel that is suitable for drinking or irrigation purposes.)

	Response to comment 3174: Rejected. Public Resources Code section 3160, subdivision (d)(7), requires operators to pay for water testing requested by neighboring surface property owners. Operators of underground injection projects or gas storage projects are outside the scope of this requirement unless they are surface property owners.
3175	13146-2 Water Testing: The public desires for such test result to be openly available online.
3176	13550-15 Subsection (b){6): The municipality and any other local agencies with jurisdiction or if the wellhead is located within 1500 feet of the local jurisdiction should also receive copies of any water quality testing results.
3177	13552-28 *1783.3. Availability of Water Testing, Request for Water Testing.* To ensure compliance, the operator should provide documentation demonstrating that all required water quality testing (including both baseline and follow-up testing) has been completed.
	Response to comments 3175-3177: Accepted in part. Public Resources Code section 3160, subdivision (d)(7), specifies testing is to consist of baseline testing prior to well stimulation treatment and follow-up testing after well stimulation, testing must be conducted in accordance with standards and protocols specified by the State Water Resources Control Board, and testing must be conducted by a qualified independent third-party contractor designated by the State Water Resources Control Board. The statute further specifies that results of the water testing must be reported to the Division, the appropriate Regional Water Quality Control Board, the surface property owner, and tenants, to the extent authorized by a tenant's lease. Consistent with Public Resources Code section 3160, subdivision (d)(7), Section 1783.3(b)(6) states that the results of any water quality testing shall be provided to the Division, the appropriate Regional Water Board, the State Water Board, the surface property owner, and any tenant notified pursuant to Section 1783.2 to the extent authorized by the tenant's lease.
3178	13550-12 A DOGGR ombudsman should be designated on DOGGR's website to provide assistance to parties receiving the Neighbor Notification, including assistance on requesting water testing.
	Response to comment 3178: The required Well Stimulation Treatment Neighbor Notification Form includes contact information for both the Division and the State Water Resources Control Board, either of which could provide information about requesting water testing.
3179	15370-80 Proper implementation by the third party is very important. We request the following amendments to increase accountability and ensure proper notification: (a) T~~It is t~~he operator shall ~~'s responsibility to~~ identify the surface and subsurface property owners, lessees, occupants, and tenants to whom a copy of the approved well stimulation treatment permit and information on the available water sampling and testing must be

	provided ~~and notification is required~~ under Section 1783.2. To fulfill this responsibility, the operator or owner must hire an independent person or entity to provide a copy of the permit and the notification required. (b) Any person or entity hired by the owner/operator of a well to provide a copy of the permit and notice in accordance with this regulation shall, ~~after~~within 30 days of providing such notice, deliver to the Division, in writing, the following: (1) The names of the property owners, lessees, occupants, or tenants identified; (2) The methods and procedures by which the copy of the permit was provided, and the date on which the copy of the permit was provided; and (3) The methods by which the notice of the availability of water sampling and testing was provided, and the date on which the notice was provided. (c) Information about the availability of water quality testing may be included in the notification ~~or the notification may reference a website with further information about testing options.~~ (d)Whether or not water testing was requested by each recipient of the notice. (e)The performance of the independent entity or persons under this section shall be subject to independent review and audit by the Division.
	Response to comment 3179: Rejected. Section 1783.3 already contains procedures and specifications for requests for water testing under Public Resources Code section 3160, subdivision (d)(7), and the suggested revisions are inconsistent with the purpose and intent of that section.
	1784. Well Stimulation Treatment Area Analysis and Design
3180	13571-21 Section 1784(a)(1) The Division should provide additional specificity as to what types of "information supporting the modeling or analysis" must be submitted to the Division, including any inputs, model assumptions, geologic data, and any other data the Division requires to evaluate the adequacy of the ADSA determination.
3181	15370-84 1784(a)(2)(i): Additional clarifications about what constitutes an "appropriate model" are necessary. Regulations must specify that operators are required to model the lengths, heights, widths, and orientations of fractures (in the case of fracture stimulation), horizontal and vertical penetration of stimulation fluids and additives, and the horizontal and vertical extent of any displaced formation fluids. Operators should also model the volume of rock in which chemical reactions between the formation, hydrocarbons, formation fluids, or injected fluids may occur and should consider and account for potential migration of fluids and chemical reaction byproducts over time. The model must take into account all relevant geologic and engineering information including but not limited to: (1) Rock mechanical properties, geochemistry of the producing and confining zone, and anticipated stimulation pressures, rates, and volumes; (2) Geologic and engineering heterogeneities; (3) Potential for migration of injected and formation fluids through faults, fractures, and manmade penetrations; and (4) Cumulative impacts over the life of the project.
3182	13530-5 1784(2): Replace the reduced radius of review with a larger area to be analyzed. Again in 1782 (B)(3). Make the review area larger and the operators should pay for a third party review as well. Gas companies need to take complete responsibility for their projects.

3183	13552-29 Section 1784. Well Stimulation Treatment Radius Analysis and Design. Subsection (b) should also require the well stimulation treatment design to prevent the migration of “produced water.”
3184	13577-12 Section 1784(a)(2) of this second revision must be deleted unless the review area is to be made larger: The Division may allow modification of the review area based on modeling and analysis provided by the operator that demonstrates geologic and hydrologic isolation of the oil and gas formation during and following well stimulation treatment. The public does not want the Department to allow these modifications. The public objects to the Division’s proposal to allow the review area to be modified. This provision grants complete discretion to the Division to allow the review area to be modified with only minimal and vague criteria for determining whether such a modification is appropriate (if the model or analysis “demonstrates geologic and hydrologic isolation of the oil and gas formation”).
3185	13571-24, 13571-25 Poorly constructed or abandoned offset wells are one of the most likely pathways for injected fluids to reach protected water. This analysis is crucial to protect drinking water and there are few if any circumstances under which such an analysis should be waived or made less rigorous. As such, we request that this proposed provision be dropped and that operators be required to determine whether contamination pathways exist within twice the ADSA for all wells. The public renews their call for operators to perform an analysis of whether stimulation activities may communicate with the identified offset wells and, if so, to develop and implement a plan to mitigate or prevent such communication.
	Response to comments 3180-3185: Rejected. Consistent with the mandate of Public Resources Code section 3160, subdivision (b), Section 1784 requires modeling and analysis to evaluate wells and geologic features within the area of a proposed well stimulation treatment in order to ensure geologic and hydrologic isolation of the treated hydrocarbon formation. This could be accomplished in any number of ways and Section 1784 provides a flexible framework for making this demonstration without prescribing a particular analytical or modeling technology. If modeling and analysis effectively demonstrates geologic and hydrologic isolation, then it would be an unnecessary burden to require detailed evaluation of wellbores outside the confined area. For this reason, Section 1784(a)(2) for modification, based on a showing of geologic an hydrologic isolation, of the area in which detailed casing diagrams must be provided.
3186	15370-86 The rules, regarding offset wells and faults, should require the operator to provide the Division with additional information about any such features identified and take additional steps to prevent communication with such features, including: 1. A list of all such wells, including but not limited to wells permitted but not yet drilled, drilling, awaiting completion, active, inactive, shut-in, temporarily abandoned, plugged, and orphaned. 2. A description of each well's type, construction, date drilled, location, depth, record of plugging and/or completion, and any additional information the Division may require. 3. An assessment of the integrity of each well identified. 4. A plan for performing corrective action if any of the wells identified are improperly plugged, completed, or abandoned. 5. An assessment to determine the risk that the stimulation treatment will communicate with each well identified.

	6. For each well identified as at-risk for communication, a plan for well control, including but not limited to: a. A method to monitor for communication. b. A determination of the maximum pressure which the at-risk well can withstand. c. Actions to maintain well control. d. If the at-risk well is not owned or operated by the owner/operator of the well to be stimulated, a plan for coordinating with the offset well operator to prevent loss of well control. 7. The location, orientation, and properties of known or suspected faults, fractures, and joint sets. 8. An evaluation of whether such features may act as migration pathways for injected fluids or displaced formation fluids to reach protected water or the surface. 9. An assessment to determine the risk that the stimulation treatment will communicate with such features. 10. If such features may act as migration pathways and are at-risk for communication, the stimulation design must be revised to ensure that the treatment will not communicate with such features or the well must be re-sited.
3187	13555-2 In order to protect all gas storage projects within the area of twice the axial dimensional stimulation area ("ADSA"), the application should not be limited to wells in the same production horizon, but should include identification of all gas storage project wells and horizons. Under Section 1783.1, between items 18 and 19, a new item is recommended to be added that states, "Identification of all underground injection projects of subsurface injection or disposal projects." This addition to the permit application will provide the Division the necessary information to assess the application and apply any specific conditions to the permit for well stimulations.
3188	13570-88 1784(a) (3) Utilizing the well stimulation treatment radius analysis conducted pursuant to subsection (a)(24), the operator shall design the well stimulation treatment so as to ensure that the well stimulation treatment fluids or hydrocarbons do not migrate and remain geologically and hydrologically isolated to the hydrocarbon formation. Elements of the well stimulation treatment design must include: (i) The type (e.g. fresh water, brine, nitrogen, etc.) and source (e.g. stream, well, recycled flowback, etc.) of base fluid(s) to be used; (ii) The estimated total volume of fluid and, if applicable, proppant to be used; (iii) The anticipated surface treating pressure range; (iv) The maximum anticipated pumping pressure;(v) The operating procedure; and (vi) The estimated or calculated fracture gradient of the producing and confining zone(s).
	Response to comment 3186-3188: Rejected. Section 1784 already provides a framework for analysis to ensure the geologic and hydrologic isolation of the oil and gas formation during and following well stimulation treatment. To the extent that the suggested additions are not already specifically addressed in Section 1784, the Division has the ability to request the information on a case-by-case basis, if necessary.
3189	13571-20 Section 1784. Well Stimulation Treatment Area Analysis and Design as stated in our comments on Section 1781, people believe that a more appropriate term is "well stimulation treatment *volume*," and that all references to "area" should be replaced with the term "volume."
3190	15370-85 1784(a)(2)(ii): The safety factor should be twice the largest dimension anticipated by the AOI modeling, rather than twice the well stimulation treatment length. Depending on the specifics of

	the stimulation treatment, depth of the well, and other geologic and engineering factors, the length may not always be the greatest dimension of the AOI.
	Response to comment 3189-3190: Rejected. Use of the term “volume” would indicate a different, and smaller, area of review than what is described in Section 1781(f). The objective in doubling the dimensions of the anticipated stimulated volume is to create a conservative safety buffer between the expected volume of stimulation from an engineering perspective and the unanticipated extension of the stimulated volume resulting from unanticipated geologic conditions. Because the volume of an object, for example a sphere, increases as the cube of the radius, the volume created by doubling the volume actually creates a smaller buffer than by doubling the dimension (in the case of a sphere the radius). For example, a sphere of radius 1 has a volume of 3.14 (literally 3.141592 . . .), doubled gives a volume of 6.3. However, doubling the radius yields a volume of 25, or a factor of 4 larger. In addition, given that in most cases the anticipated stimulation volume has shapes that approach a disk or cone shape, the differences between doubling the volume and doubling the dimensions becomes even larger. Hence the regulation under all circumstances provides a larger margin of error than provided by simply doubling the volume. Hence public safety is enhanced under the provision as written.
3191	13567-7, 13559-3 1784(a)(3): A review of all geologic features five times the ADSA appears excessive. It should be two times like in 1784(a)(2). (a)(3)(B) There is a concern on how risk is assessed. Commenter wants this portion to be eliminated and let 1784(a)(3)(A) address the issue. (a)(4) Adjacent formation rock property analysis. Some old fields do not have porosity or acoustic logs to permit this analysis. A commenter is concerned that an operator will have to incur additional cost and run cased-hole logs prior to performing a stimulation.
3192	13550-17 Subsection (a)(3): The review of all faults (active or inactive) should be more carefully spelled out. In addition to including known faults, the review should include any faults that can be identified with reasonable diligence. Operators that have conducted any subsurface seismic testing should be required to provide any data suggesting or demonstrating such faults. The purpose of such diligence must not be limited to "geologic and hydrologic isolation of the oil and gas formation" but also for the potential that well stimulation activity might trigger a seismic event. Any such analysis must include not only the potential for single well stimulation activities to trigger such a seismic event, but the cumulative effect of past and future well stimulations causing a seismic event. The analysis should include the potential impacts on nearby structures, particularly ones which may be closer, older (not up to current seismic standards), or other circumstances that may increase the risk of property damage or personal injury. Where there is an identifiable risk (e.g. 1 in 100,000) of triggering a seismic event (either from a single activity or cumulative activity), the regulations should require a second round of review and approval by third party seismic experts and/or USGS before any well stimulation activity can proceed. In any instance where the risk of property damage or personal injury is identified, both DOGGR and the local agency exercising jurisdiction over the location or if the wellhead is located within 1500 feet of the local jurisdiction must be notified.
3193	13550-18 Subsection (a)(4): The second sentence, which states 'The operator shall assess the mechanical rock properties, including permeability, relative hardness (using Young's Modules), relative elasticity (using Poisson's Ratio), and other relevant characteristics of the geological formations to determine whether the geological formations will ensure the geologic and hydrologic isolation

	of the oil and gas formation during and following well stimulation" should also apply to Subsection (3).
3194	15370-87 1784(a)(2)(iii): We object to the proposed requirement to exempt operators from reviewing the properties of geological formations adjacent to the productive horizon unless a radius of five times the anticipated well stimulation treatment length from a point of treatment extends beyond the productive horizon. This proposed rule appears to be a misinterpretation of the requirements of SB 4 at 3160(i)(1)-(2). This section requires the operator to define a radius at least five times the fracture radius (for fracture stimulation treatments), and identify geologic features within that radius that may act as pathways or barriers for fluids to migrate outside the fractured zone. In other words, SB 4 requires all wells that are fracture stimulated to have such an analysis performed. Operators should be required to demonstrate the presence of a suitable confining zone for all wells that will be stimulated, not only for fracture stimulated wells and not only for those wells where a radius of five times the anticipated well stimulation treatment length extends beyond the productive horizon. Suggested revisions to Section 1784: (a) ~~If a radius of five times the anticipated well stimulation treatment length from a point of treatment extends beyond the productive horizon being evaluated for possible well stimulation treatment, then the well stimulation treatment radius analysis shall include a review of the geological formations adjacent to the productive horizon.~~ Wells that will be stimulated must be sited such that a suitable confining zone is present. The owner or operator shall demonstrate to the Division that the confining zone: (1) Is of sufficient areal extent to prevent the movement of injected or displaced fluids above the stimulated zone; (2) Is sufficiently impermeable to prevent the vertical migration of injected or displaced fluids; (3) Is free of transmissive faults or fractures that could allow the movement of injected or displaced fluids above the stimulated zone; and (4) Contains at least one formation of sufficient thickness and with geomechanical characteristics capable of preventing or arresting vertical propagation of fractures. (5) The Division may require the operator to identify and characterize additional zones that will impede or contain vertical fluid movement. The operator shall assess the mechanical rock properties, including permeability, relative hardness (using Young's Modulus), relative elasticity (using Poisson's Ratio), and other relevant characteristics of the geological formations to determine whether the geological formations will ensure the geologic and hydrologic isolation of the oil and gas formation during and following well stimulation. The results of this analysis should be submitted with the well stimulation application.
	Response to comments 3191-3194: Rejected. Consistent with the mandate of Public Resources Code section 3160, subdivision (b), Section 1784 requires modeling and analysis to evaluate wells and geologic features within the area of a proposed well stimulation treatment in order to ensure geologic and hydrologic isolation of the treated hydrocarbon formation. Section 1784(a)(4) requires assessment of adjacent formations that the well stimulation treatment might interact with. In addition, Section 1784(a)(3) requires assessment of all geologic features within a safety factor of five, as contemplated in Public Resources Code section 3160, subdivision (i). This could be accomplished in any number of ways and Section 1784 provides a flexible framework for making this demonstration without prescribing a particular analytical or modeling technology. Section 1785.1 has been added requiring monitoring of the California Integrated Seismic Network

	during and after hydraulic fracturing. If an earthquake of magnitude 2.7 or greater occurs within a specified area around the well, then further hydraulic fracturing in the area are suspended until the Division, in consultation with the California Geological Survey, determines that there is no indication of a heightened risk of seismic activity from hydraulic fracturing.
3195	13571-27 Section 1784(a)(3): The commenter approves of the Division's proposed additions to this subsection, requiring operators to evaluate the risk of migration through and communication with geologic features within five times the ADSA. This analysis is crucial to protecting drinking water.
3196	13571-26 The public approves of the Division's proposal to require information about the cement slurry to be included in the well stimulation treatment area analysis.
	Response to comments 3195-3196: Thank you for your comments.
3197	13562-3 DOGGR should delete section 1784(a)(2)(x) as redundant of (ix). Section1784(a)(2)(ix) requires the submission of "all steps of cement yield and cement calculations performed," which would presumably include information on the cement slurry, if available and relevant to the calculations required to analyze the well bores within the review area.
	Response to comment 3197: Rejected. The purpose of Section 1784(a)(2)(x) is to make it clear that cement slurry information must be specified.
3198	13577-11 The Department should reinstate Article 4 Section 1784(a) that is deleted in this revision.
	Response to comment 3198: The cement evaluation requirements that were in Section 1784(a) in the originally proposed regulations are now in Section 1784.2
3199	13373-4 A commenter is concerned that the word "shall", which is seen throughout 1784, leaves no indication of how this would be verified and by whom. Not having outside verification is a concern due to earthquakes occurring.
	Response to comment 3199: The use of the word "shall" means that it is a mandatory requirement. The Division is responsible for enforcing the requirements of these regulations.
	<u>1784.1. Pressure Testing Prior to Well Stimulation Treatment</u>
3200	13571-28, 13531-15 We object to the Division's proposal to eliminate the 25% safety factor in the test pressure. The incorporation of an appropriate safety factor is best practice. The addition in the first revised version of the rules of the requirement that the test pressure not exceed the API rated minimum

	internal yield of the casing ensures that the test pressure will not be inappropriate, and therefore an appropriate safety factor can and should be incorporated into these provisions without concern that the test pressure will be excessive.
	Response to comment 3200: Rejected. The minimum pressure testing of well casing and tubing is reduced to 100% of anticipated treatment pressure in order that operators are not required in order that pressure testing is not required to go above 80% of the API rated minimum internal yield of the tested casing, which is a common margin of safety adhered to by operators. The additional 25% safety factor is retained in that the termination threshold under Section 1785(b) was reduced from 90% of the API rated minimum internal yield of the casing to 80% for wells that are not first pressure tested to 100% of the API rated minimum internal yield. If the wells has been successfully pressure tested to 100% of the API rated minimum internal yield, then the termination threshold for monitoring during treatment remains at 90% of the API rated minimum internal yield of the casing.
3201	13562-4 (a) The operator shall conduct pressure testing not more than 30 days before commencing well stimulation treatment, but after all operations that could affect well integrity are complete. Pressure testing shall include the following: *** (2) All surface equipment to be utilized in the well stimulation treatment shall be rigged up as designed. The pump, and all equipment downstream from the pump, shall be pressure tested at a pressure equal to <u>at least 100%</u> ~~125%~~ of the maximum surface pressure anticipated during the well stimulation treatment, but not greater than the manufacturer's pressure rating for the equipment being tested. If during testing there is a pressure change of 10% or more from the original test pressure, ~~then the operator shall immediately notify the Division, and~~ the tested equipment shall not be used until the cause of the pressure change is identified and corrected ~~to the Division's satisfaction~~. No equipment shall be used unless it has been successfully tested pursuant to this section. Explanation: The psi level for the pressure test should match the level the Proposed Rule has set in 1784.1(a)(1). In the alternative, setting pressure testing to 1000 psi over the maximum surface pressure anticipated, which provides a conservative margin to ensure mechanical integrity. Testing to 125% of the maximum surface pressure anticipated provides comparatively less benefit in lower pressure operations (e.g., testing to 500 psi on a 400 psi job may not tell one much about the mechanical integrity of the equipment), and comparatively greater risk in higher pressure operations without any corresponding benefit.
3202	13563-10 The following edit should be made to Section 1784.1(a)(2) to make it consistent with the other pressure testing requirements: "All surface equipment to be utilized for well stimulation treatment shall be rigged up as designed. The pump, and all equipment downstream from the pump <u>to the wellhead isolation valve</u>, shall be pressure tested at a pressure equal to <u>100% of</u> ~~125%~~ of, the maximum surface pressure anticipated during the well stimulation treatment. .."
	Response to comments 3201-3202: Rejected. The Division believes that Section 1784.1(a)(2) is sufficiently clear and that pressure testing surface equipment to 125% of the maximum surface pressure anticipated during the well stimulation treatment provides an appropriate safety margin.

3203	13562-4 Pressure changes of 10% or more may unduly delay operations for minor maintenance issues. Pressure changes of 10% or more observed during testing are often caused by routine maintenance issues that are fixed on site in a matter of minutes. It is not at all uncommon to change out a chicksan (the swivel to make a turn in high psi iron), a high psi valve or a high psi gasket after pressure testing reveals a potential for failure. Each of these equipment change-outs takes as little as 5 minutes. Similarly, incorrect tightening of the iron might be indicated during pressure testing, and can be corrected in several minutes. Less often, a valve or valve seat in a pump might fail during testing, requiring 30 minutes to an hour to fix. Requiring the operator to notify the Division in the event of these types of routine maintenance issues—and to wait for the Division's approval to resume operation—would impose significant administrative and operational burdens on the operators, service companies and the Division, with no real corresponding benefit. It is sufficient to require the operator and service company to identify the cause of the pressure change, to remediate it, and to successfully pressure test equipment prior to use.
	Response to comment 3203: Rejected. The Division is on call to answer questions and to provide guidance to operators. If a piece of equipment fails during the pressure test, the operator is required to notify the Division and document the work required to remediate the issue. This is to ensure appropriate corrective action and transparency throughout the process. Remediation of minor problems should not cause a delay.
3204	13563-11 The provision to submit the pressure test charting to DOGGR 12 hours prior to the commencement of the well stimulations treatment, requires the equipment and employees performing the treatment to sit idle for 12 hours after the pressure test. This will impose additional costs and operational burdens which are unnecessary. DOGGR can always verify that the pressure test was conducted after the well stimulation treatment has occurred. Suggested language: The operator shall notify the Division at least 24 hours prior to conducting the pressure testing required under subdivision(a)so that Division staff may witness. The charting of pressure testing · required under subsection (a)(l) **shall be maintained onsite by the operator and provided, to the; Division upon request** ~~not less than 12 hours~~ before commencing well stimulation treatment **and must be included in the well history.**
3205	13570-90 The proposed regulations do not include a requirement to report the results of the pressure test.
3206	13553-21 12 hours is too short of a time frame, the charting should be given to DOGGR "at the time of notification".
	Response to comments 3203-3206: Rejected. It is imperative that the well casing and tubing strings are tested and verified by the Division. Section 1784.1 requires operators to chart the required pressure testing. If pressure testing fails, then charting must be provided to the Division immediately. If pressure testing is successful, then charting must be provided to the Division not less than 12 hours before commencement of treatment. Operators will need to plan to have this test not more than 30 days before and not within 12 hours of the well stimulation. With adequate planning, the operator will not need to idle the rig for 12 hours.

3207	13570-89 The proposed rules fail to include testing and bond logging standards for un-cemented and deeper completions of existing wells subject to rework during the expected 25+ years of production.
3208	13570-89 The proposed rules fail to include testing and bond logging standards for un-cemented and deeper completions of existing wells subject to rework during the expected 25+ years of production.
3209	13570-91 (a)The operator shall do and report all of the following not more than 24 hours prior to commencing or recommencing well stimulation treatment: • All cemented ~~and uncemented~~ casing strings and all tubing strings to be utilized in the well stimulation treatment operations shall be pressure tested for at least 30 minutes at a pressure equal to 125% of the maximum ~~surface~~ pressure anticipated during the well stimulation treatment. If during testing there is a pressure drop of 10% or more from the original test pressure, then the tested casing or tubing shall not be used until the cause of the pressure drop is identified and corrected. No casing or tubing shall be used unless it has been successfully tested pursuant to this section. Non-cemented production completions shall be tested to a minimum of (i) 70% of the lowest activating pressure for pressure actuated sleeve completions or (ii) 70% of formation integrity for open-hole completions, as determined by a formation integrity test. • All surface equipment to be utilized for well stimulation treatment shall be rigged up as designed and the design must be submitted with the permit application. The pump(s), and all equipment downstream from the pump, shall be pressure tested at a pressure equal to 125% of the maximum surface pressure anticipated during the well stimulation treatment or 2000psiG whichever greater. (b)The operator shall notify the Division at least ~~24~~72 hours prior to conducting the pressure testing or logging required under this section, 1784.1 so that Division staff may witness. (c)In the event of a failed test, the operator shall orally notify the authorized officer as soon as practicable but no later than 12 hours following the failed test. The operator shall conduct a cement evaluation or other appropriate tests to determine the source of failure. Stimulation operations may not begin until a successful pressure test is performed, and the results are submitted to the Division. If mechanical integrity cannot be restored, the well must be cement-plugged 100% and abandoned.
	Response to comments 3207-3209: If a well stimulation is to occur in an uncemented casing it must be verified that the well stimulation is confined to the intended zone. Well stimulation into an uncemented casing should only occur in a production liner. Under existing regulation Section 1722.4, a production string of casing must be cemented across the top of the zone with at least 500 feet of cement above the zone. No matter what the age of the well is, the well must still have zonal isolation. A pressure test of the casing would be conducted on the cemented production string of casing and/or the tubing used in the well stimulation, and the uncemented liner would not be pressure tested.
	1784.2. Cement Evaluation Prior to Well Stimulation Treatment

3210	13552-29 1784.2. Cement evaluation Prior to Well Stimulation Treatment. Subsection (a)(2). Cement bond logs and variable density logs should be required to measure the sealing quality, and the cement should be formulated to prevent shrinkage. Subsection (c). The cement evaluation is too critical to well integrity for a waiver to be allowed. The authority to provide this waiver should be deleted.
3211	13568-3 Wellbore Integrity. Regulatory text specific to wellbore integrity fails to recognize the difficulty of ensuring consistent and long-term wellbore and barrier integrity. Specifically Section 1784.2(c) in regards to cement evaluation prior to stimulation treatment reads "The Division may approve an alternate cement evaluation plan that waives the requirements of subdivisions (a) and (b) if the Division is satisfied that, based on geologic and engineering information available from previous drilling or producing operations in the area where the well stimulation treatment will occur, well construction and cementing methods have been established that ensure that there will be no voids in the annular space of the well." However, prior drilling experience cannot confirm wellbore integrity in a newly drilled, cased and cemented well. Numerous hazards to cement design may lead to flaws in cement coverage. Such hazards include fluid intrusion, dehydration, premature gelation, and other unintended and unforeseen interactions, the occurrence of which may not become evident without pre-stimulation cement tests. Thus, *all* wells should be subject to pre-stimulation cement evaluation.
3212	15370-82 We request the Division's proposal to allow the requirement to do a cement evaluation to be waived be deleted. Verifying the integrity of the cement job is crucial to ensure mechanical integrity and isolation of fluids and should be performed on every well.
3213	15370-83 We request a requirement to run cement bond evaluation logs (CELs) on production, intermediate, and surface casings. CELs must be obtained for all strings of cemented casing that isolate waters of beneficial uses, potential flow zones, or through which stimulation will be performed.
3214	13550-19 Subsection (c): DOGGR should not have the discretion to allow an operator not to conduct the cement testing.
3215	13544-13 The Second Revised Proposed Regulations would allow DOGGR to waive cement testing requirements in cases where DOGGR is satisfied that "there will be no voids in the annular space of the well." DOGGR may base its decision to waive cement testing requirements based on "information available from previous drilling or producing operations in the area where the well stimulation treatment will occur." A cement evaluation must be conducted for each and every well. The exemption for submitting information that "satisfies" DOGGR is an inappropriate and unnecessary loophole that further endangers the state's water resources.
3216	15370-81 1784(a)(1): In order to ensure reliable measurements, the cement must be sufficiently hard before running a cement evaluation tool (CET), among other factors. In practice the amount of time needed to ensure an accurate reading varies by site, and depends on many factors including the cement formulation and the characteristics of the CET used. A general rule of thumb is to allow the cement to harden for 72 hours, however, so we recommend revising the minimum wait time from 48 to 72 hours.

	Response to comments 3210-3216: Rejected. Section 1784.2(c) allows the operator to propose a plan to ensure wells are adequately cemented without running a cement evaluation tool. An alternative will not be approved by the State Oil and Gas Supervisor unless the operator can conclusively prove that the plan will ensure zonal isolation. Existing well construction regulations require that surface casing is cemented to surface, and Section 1784.1 requires that production casing be pressure tested prior to a well stimulation. These requirements are in place to ensure mechanical integrity. In addition, Section 1785 requires that pressure is closely monitored during the well stimulation activity and well stimulation activity is required to cease if the pressure exceeds either 80 or 90 % of the tested pressure, depending on if the pressure test was performed up to 100% of the API rating for the casing. These requirements will effectively demonstrate the integrity of the well. The well-established standard for the wait time for cement to cure is 48 hours. This time will allow the cement to harden sufficiently prior to running a cement evaluation tool.
	1785. Monitoring During Well Stimulation Treatment Operations
3217	13550-20 The operator should log and provide to DOGGR all data collected pursuant to this section regardless of whether any of the events in Subsection (b) occur. Relying entirely on the operator to self-report the problems described in Subsection (b) provides too much room for potential underreporting and does not give DOGGR the opportunity to enforce such underreporting.
	Response to comment 3217: Accepted. Section 1785(a) states that the required monitoring must be recorded and Section 1789(a)(1) requires that the monitoring records are submitted to the Division within 60 days after completion of well stimulation treatment.
3218	13571-29 Individuals object to the Division's proposal to allow stimulation operations to continue at pressures up to 90% of the API rated minimum internal yield for some wells. Stimulation operations should cease if pressure exceeds 80% of the API rated minimum internal yield on any casing string in communication with the stimulation treatment, regardless of the test pressure used under Section 1784.1(a)(1). This will help ensure that operators incorporate appropriate safety factors when selecting well construction materials and are not tempted to cut corners by selecting lower-rated casing that cannot perform to standard and may not adequately withstand treatment pressures.
	Response to comment 3218: Rejected. The API rated minimum internal yield already includes a significant safety factor and therefore 80% of the API rating represents a very conservative safety factor. Allowance for variance up to 90% of the API rating on a well that was previously pressures tested to 100% of the API rating provides ample assurance of well integrity.
3219	13553-23 1785(b)(1) (b) The operator shall terminate the well stimulation treatment and immediately provide the collected data to the Division if any of the following occur**s**: (1) ~~A production-surface casing annulus pressure change of~~ A pressure change of 20% or

	greater (due to pressure and/or temperature expansion) in the annulus between the tubing or casing through which well stimulation treatment fluid is conducted and the next larger tubular or casing ~~more than 20% or greater than the calculated pressure increase due to pressure and/or temperature expansion;~~.
	Response to comment 3219: Rejected. The suggested limitations on the pressure threshold specified in Section 1785(b)(1) would narrow the scope of the threshold in a manner inconsistent with the Division's intent.
3220	13562-5 (b) The operator shall terminate the well stimulation treatment and immediately provide the collected data to the Division if any of the following occurs: (2) Differential p~~P~~ressure exceeding 90% of the API rated minimum internal yield on any casing string in communication with the well stimulation treatment, if the pressure testing under Section 1784.1(a)(1) was done at a pressure equal to 100% of the API rated minimum internal yield of the tested casing; (3) Differential p~~P~~ressure exceeding 80% of the API rated minimum internal yield on any casing string in communication with the well stimulation treatment, if the pressure testing under Section 1784.1(a)(1) was done at a pressure equal to 100% of the API rated minimum internal yield of the tested casing; or Explanation: When designing a well stimulation treatment to ensure well integrity, the differential pressure on the casing string is more relevant than the pressure at which the well stimulation treatment fluid is pumped, and differential pressure will vary by job. In addition, we note that there may be a typographical error in this section, as the conditions under which the two different threshold pressure levels would apply appear to be identical.
3221	13563-14 Section 1785(b)(2)Replace the term "Pressure" with "Differential pressure."
	Response to comments 3220-3221: Rejected. Differential pressure would take the outside pressure into consideration and therefore decrease the amount of pressure used to test the well from the inside, inconsistent with the Division's intent.
3222	13552-30 Section 1785(b)(3): A suspected potential breach of any casing or casing cement (not just production casing) should also be a reason for immediately terminating treatment and reporting to the Division, which should make that information available to the public.
3223	13288-3 A section needs to be added that includes drilling a "paired" well for the fracking area's water basin that includes piezometers to test the groundwater at various levels.
	Response to comment 3222-3223: Rejected. Section 1785(b) expressly requires monitoring must likely to identify a potential well breach, but Section 1785(b)(4) generally requires that termination of treatment and notification of the Division if there is any reason to suspect a potential well breach.
3234	13553-22 1785(b)(3)This needs to be separated into two sentences, as they are separate issues. The second portion should actually be deleted, as written earlier in Section 1784.1, pressure tests MUST be equal to or greater than 100%, so why would you create provisions for those not

	properly following regulation?
	Response to comment 3234: Rejected. Section 1784.1 requires pressure testing in advance of well stimulation treatment to a minimum of 100% of the maximum surface pressure anticipated during treatment, which may be less than 100% of the API rated minimum yield of the tested casing. If pressure testing was done to 100% of the API rated minimum yield of the tested casing, then the termination threshold during well stimulation treatment is as high as 90% of the API rated minimum yield of the tested casing.
3235	13102-3 1785(c): The phrase as soon as is reasonably practical gives too much leeway for the operator to delay testing.
	Response to comment 3235: Rejected. If there is indication of a potential breach during well stimulation, it is likely that steps will need be taken to wind down the treatment before diagnostics can be done safely and effectively.
3236	13577-13, 13531-15 It is very important to the public that the Department reinstates Section 1785(d)(3)(A), (d)(3)(B), (d)(3)(C), (d)(3)(4), (d)(3)(5) as reporting requirements in case of a well breach.
3237	13203-12, 13194-10 Research shows that fracking chemicals cause cancer and that these chemicals can find their way into our water tables. The proposed changes to Section 1785 “Monitoring During Fracking Ops“ red act requirements for disclosing the chemical constituents of the fracking fluid in the event of well breach. Well operators are not required to tell residents what chemicals they are pumping into the earth—even if those chemicals include radionuclides like uranium or radium.
3238	13279-6 1785. Monitoring During Well Stimulation Treatment Operations. (3) (A) (B), (C),(4) (5) is to be unstruck. In addition the word “failure” is to be put back in.
3239	13550-21 Deleted subsections (d)(3)(A) though (C) and (4) and (5) should be restored. The information that must be specified in the removed sections would be relevant, material and important to any analysis of the potential impacts and consequences of a well breach.
3240	13553-24 1785(d) Both of the following need to be added back to the regulations: (4) An estimate of the volume of fluid lost during well failure. (5) If available, groundwater quality data for the protected water closest to the well failure.
3241	13552-30 Section 1785(d). Water quality data should also be reported to the Division and Regional Water Board, and made available to the public if a breach has occurred.
	Response to comments 3236-3241: Rejected. The specifications of water quality data to be collected in response to a well breach have been removed from Section 1785(d). In the event of a well breach, Section 1785(d) requires the operator to cease operations and notify the Division and the Regional Water Quality Control Board. The Regional Water Quality Control Board would take the lead in the groundwater investigation and would specify what water quality testing is necessary based on the specifics of

	the situation.
3241	13563-15 Section 1785(1)Revise to read as follows: "If the surface casing is not open to atmosphere or the casing is not cemented to surface, then the surface casing ... "
3243	13563-12 Section 1785 should be modified to allow for the casing pressure monitoring requirements to be waived if the annuli have been cemented to surface. Surface cement returns are commonly accepted as a sufficient gauge of casing integrity, and also do not allow for the monitoring of individual annuli. Furthermore, we believe that operation should only be required to be terminated if the differential pressure on the casing (i.e. the difference in pressure inside the casing to the pressure exerted externally to the casing) exceeds 90% of API rated minimal internal yield.
3244	13563-13 Section 1785(a)(5)Revise to read as follows: "All annuli pressures, unless the annuli have been cemented to surface."
	Response to comments 3241-3244: Rejected. Annular pressures should be monitored to the extent possible.
3245	13571-30 Section 1785(e) there is support of the Division's proposed addition of this requirement.
	Response to comment 3245: Thank you for your comment.
3246	13570-93 The following should be incorporated into this section: (e) Groundwater quality data submitted to the Division shall be copied to the Regional Water Boards under subsection (d) shall be in an electronic format that follows the guidelines detailed in California Code of Regulations, title 23, chapter 30.
3247	13567-8 1785.1(f): This should be eliminated. It's already included on page 17 (1783(3)(c)).
	Response to comments 3246-3247: Rejected. The State Water Resources Control Board maintains a groundwater quality database and Section 1785(f) requires that groundwater quality data submitted under Section 1785 be included in that database. The State Water Resources Control Board groundwater quality database is a public database.
3248	15370-92 (a) The operator shall continuously monitor, record/document, and report/submit within five business days reports for all of the following parameters during the well stimulation treatment, if applicable: (1) Surface injection pressure; (2) Slurry rate; (3) Proppant concentration;

(4) Fluid rate; ~~and~~

(5) All annuli pressures.; and

(6) Identities, rates and concentrations of additives used.

(b) The operator shall terminate the well stimulation treatment and immediately notify and provide the collected data to the Division if any of the following occur:

(1) Production-surface or intermediate-surface casing annulus pressure change of 20% or greater than the calculated pressure increase due to pressure and/or temperature expansion;

(2) Pressure exceeding ~~90%~~ 80% of the API rated minimum internal yield on any casing string in communication with the well stimulation treatment;

(3) The operator suspects ~~has reason to suspect~~ any potential leak ~~breach~~ in the production or intermediate casing strings , production casing cement or plugs, or isolation of any sources of ~~protected~~ waters with beneficial uses, pressurized zones, and hydrocarbon zones;

(4)Any monitored parameters indicate a loss or potential loss of mechanical and bond integrity;

(5)Injection pressure exceeds the fracture pressure of the confining zone(s);

(6)Any indications that injected fluids or displaced formation fluids have contacted any fault or fracture or constructed or plugged well;

(7) Communication occurs with an offset well.

(c) If any of the events listed in subdivision (b) occur, then the operator shall perform diagnostic testing and logging on the well to determine whether a leak ~~breach~~ has occurred. Diagnostic testing shall be done as soon as is reasonably practical but no longer than 24 hours following any of the above events or others. The Division shall be notified before ~~when~~ diagnostic testing is performed ~~being done~~ so that Division staff may witness the testing. All documentation regarding any leak and diagnostic testing and logging results shall be submitted ~~provided~~ to the Division as it becomes available or within 24 hours, whichever comes first. Prior to any further operations, mechanical integrity must be restored and demonstrated to the satisfaction of the Division, and the operator must demonstrate that the ability of the confining zone(s) to prevent the movement of fluids
above or beyond the stimulated zone has not been compromised.

(d)If diagnostic testing reveals that a leak~~breach~~ has occurred, then the operator shall immediately shut-in the well, isolate the leaking ~~perforated~~ interval, and notify/report to the Division and the Regional Water Board by electronic formats and hard copy follow-ups with all of the following information:

(1) D~~A d~~escriptions of the activities leading up to the well failure.

(2) Depth interval(s) of the well leaks~~failure~~ and methods used to determine the depth interval.

(3) E~~An e~~xact description of the chemical constituents of the well stimulation treatment fluid, or of the fluid that is most representative of the fluid composition in the well at the time of the well failure, including:

- Total dissolved solids, hydrogen sulfide, and volatile organic compounds;
- Chloride, sodium, barium, boron and bromine, and all organic or inorganic chemicals listed in the tables in California Code of Regulations, title 14, sections 64431 and 64444; and
- Gross alpha, gross beta, uranium, tritium, radium 226+228, and all other radionuclides.

(4) ~~An estimates~~Estimates of the volume of fluid lost during well leak ~~failure~~.

(5) If available, groundwater quality data for the beneficial ~~protected~~ water closest to the well leak ~~failure~~. If a loss of mechanical and/or bond integrity is discovered, if the

	integrity of the confining zone has been compromised, or if fluids have reached any fault or communicated with any other well, operators shall take all necessary steps to evaluate whether injected fluids or formation fluids may have contaminated or have the potential to contaminate any unauthorized zones. If such an assessment indicates that fluids may have been released, or pose any risk of release into a source of protected water or any unauthorized zone, the operator shall notify the Division immediately, take all necessary steps to characterize the nature and extent of the release, and comply with and implement a remediation plan approved by the Division. If such contamination occurs in a source of water with a beneficial use, a notification shall be placed in a newspaper available to the potentially affected population and on a publicly accessible website and all known users of the water supply shall be individually notified immediately by mail and by phone.
3249	15370-94 (a) Microseismicity (tremors of -3 to +2 Richter Magnitude) shall be monitored from at least three days prior to the stimulation treatment, throughout the treatment phases and for at least seven days after the last pressurized injection or until tremor events return to levels experienced prior to the treatment for the area and depths of five times the greatest dimension of the stimulation envelope.**1786. Storage and Handling of Well Stimulation Treatment Fluids.** (a) Operators shall adhere to and report documentation of such adherence to and/or compliance with the following requirements for the storage and handling of well stimulation treatment fluid, additives, and produced water from a well that has had a well stimulation treatment: (1) Fluids shall be stored in compliance with the secondary containment requirements of Section 1773.1 and the Spill Contingency Plan, including ~~except~~ that secondary containment is ~~not~~ required for portable or temporary production facilities when used or onsite for more than three-hours. (a) Operators shall be in compliance with all applicable testing, inspection, and maintenance requirements for onsite ~~production~~ facilities containing well stimulation treatment and waste fluids. (b) Fluids shall be accounted for in the operator's previously approved Spill Contingency Plan. (c) Fluids shall be stored in containers, tankers, and tanks and shall not be stored in ground sumps or pits. (d) In the event of an unauthorized release, the operator shall immediately implement the approved Spill Contingency Plan and notify the appropriate response entities for the location, quantities, and the types of fluids involved, as required by all applicable federal, state, and local laws and regulations; and the operator shall perform clean up and remediation of the area, as required by the approved Spill Contingency Plan and all applicable federal, state, and local laws and regulations. (e) Within 5 days of the initial occurrence of an unauthorized release, the operator shall provide the Division a written report and weekly updates as needed or requested that includes: (1) ~~A d~~Description of the activities leading up to the release; (2) T~~he t~~ypes and volumes of fluid released; (3) ~~The c~~Cause(s) of release; (4) Actions taken to stop, control, and respond to the release; and (5) Steps taken and any changes in operational procedures implemented and related changes to the Spill Contingency Plan by the operator to prevent future releases. (f) Operators shall document quarterly to the Division ~~be in~~ compliance with all applicable

	requirements of the Regional Water Board, the Department of Toxic Substances Control, and the Air Quality Management District with jurisdiction over the location of the well. If fluids will be transported offsite, fluids shall be chemically characterized as if it is an industrial wastewater ~~and not injected into a well regulated by the Division under Sections 1724.6 through 1724.10,~~ and ~~then the fluids shall be~~ evaluated to determine if they are hazardous waste, as defined by Department of Toxic Substances Control in its regulations.
	Response to comments 3248-3249: Rejected. Section 1785 already contains procedures and specifications for well monitoring during well stimulation treatment, and, to the extent that the suggested revisions are not already addressed under Section 1785, they are inconsistent with the purpose and intent of that section.
3250	13146-1 Section 1785 Monitoring: This section must allow for residents of the county in which stimulation is being done to watch and video tape the project, or require CAM recorder to be set up to view the project online. Under the Brown Open Meeting Act, the public must be able to monitor the project. Such stimulation is as dangerous as an atomic power plant, so the public must be able to monitor it in order to prevent another Fukushima-type accident during an earthquake.
	Response to comment 3250: Rejected. Oilfields are not public places and a well stimulation treatment is not a public meeting. Public Resources Code section 3160 does not provide for private parties entering an oilfield to witness operations.
	1785.1. Monitoring and Evaluation of Seismic Activity in the Vicinity of Hydraulic Fracturing
3251	13317-9, 13531-15 1785.1 (a)**.**Given the nature and magnitude of previously reported earthquake swarms here in California and elsewhere, it seems more than reasonable to citizens to keep the threshold magnitude at 2.0 (rather than the proposed 2.7 or greater) to catalyze certain precautionary actions – including, but not limited to, consulting the USGS and halting the well stimulation**.** Doing otherwise greatly diminishes the volume of quakes reported (in this case it would be reduced to 1/6 of what actually happened) obscuring and ignoring what is really happening in the backyard of fracking operations – and the triggers these might pose for much larger magnitude quakes.
3252	13552-30 *1785.1. Monitoring and Evaluation of Seismic Activity in the Vicinity of Hydraulic Fracturing.* This section should not be limited to hydraulic fracturing but should extend to all well stimulation activities. In addition, an operator should be required to document the monitoring and submit the documentation under Section 1789.
3253	13498-2 1785.1 (a): From commencement of hydraulic fracturing until 10 days after the end of hydraulic fracturing, the operator shall monitor the Cal Integrated Seismic Network for indication of an earthquake of magnitude 2.7 (changed from 2.0) or greater occurring within a radius of five times the ADSA. (1) The operator shall immediately notify the Division and inform the division when the earthquake occurred relative to the hydraulic fracturing operations. There are concerns about changing the 2.0 to 2.7 and the 10 day outset should be 30 days of full and complete monitoring.

	Reasoning: Any seismic activity, whether due to current or later fracturing operations or not, should put an immediate halt from operations for further investigation by all stakeholders. The problem is not just the impact that fracturing may have on the earth's fissures but what the earths activities may cause to damage and breach the hydraulic fracturing operation's underground injection pipelines.
3254	13556-6, 13577-14 1785.1(a): The threshold should be set at 1.0, or at a maximum of the originally included 2.0 threshold. The baseline monitoring should occur at least three days prior to initiation of fracturing activities in order to establish better causality. This is still not included, and should be added.
3255	13455-3 Minimum earthquake magnitude should be lowered, not raised. Given the high probability and high risk for devastating earthquakes in California, the additional risk of induced seismicity due to oil and gas activities is a public health and safety hazard that should be given closer scrutiny. Microseismicity can be an indicator of triggered slippage on a pre-existing fault.
3256	13571-31 Section 1785.1: Though people continue to support the Division's intent to address the risk of induced seismicity, they remain skeptical that these provisions address this risk in a meaningful, substantive, and scientifically supported manner.
3257	13568-2 The required monitoring and evaluation of seismic activity in the vicinity of hydraulic fracturing is inadequate. Pursuant to Section 1785.1, "the operator shall monitor the California Integrated Seismic Network for indication of an earthquake of magnitude +2.7 or greater occurring within a radius of five times the ADSA." If such an event is found, the operator must notify the Division, assess whether the event was related to well stimulation activity, and test the integrity of the well. The set level of 2.7 was revised from a previous determination of +2.0, although it is not clear from the scientific literature that this new level is appropriate. There have been numerous earthquakes correlated with hydraulic fracturing activities throughout the U.S. detected at magnitudes > +1, and a substantial number of these fall below the revised value of +2.7. Regulators should continue to monitor the industry closely for instances of induced seismic activity. Local microseismic arrays should be set up to monitor seismic hazards from smaller, hard-to-detect faults which may have been missed in the well stimulation treatment area radius analysis, in addition to post-stimulation seismic monitoring in the surrounding area. Simply put, *any* seismic activity provides important data, especially in California.
3258	13573-17, 13472-17 A threshold of 2.7 on the Richter for both monitoring and cautionary action, the second revision raises this to 2.7. DOGGR has not provided any basis for concluding that this threshold is adequately protective. Even if DOGGR were to conclude, wrongly, that the cautionary measures provided in Section 1785.1(b)(2) and (3) did not need to be taken unless a magnitude 2.7 or greater event was observed, the monitoring obligation in Section 1785.1(a) could be set at a lower level, and should be coupled with a recording and reporting obligation in Section 1785.1(b)(1). The magnitude 2.0 threshold was too high, 1.0 represents a better threshold. In addition, the reporting period and area should be extended to 14 days and 14 times the ADSA, respectively.
3259	13550-22 Subsections (a) & (b): The subsections should be revised to require monitoring of earthquakes of a magnitude of 2.0 or greater.

3260	13298-9 1785.1 (a): Given the nature and magnitude of previously reported earthquake swarms here in California (http://www.scsn.org/) and elsewhere, it seems more than reasonable to keep the threshold magnitude at 2.0 (rather than the proposed 2.7 or greater) to catalyze certain precautionary actions – including, but not limited to, consulting the USGS and halting the well stimulation. As you can see from the URL above, doing otherwise greatly diminishes the volume of quakes reported (in this case it would be reduced to 1/6 of what actually happened) obscuring and ignoring what is really happening in the backyard of fracking operations – and the triggers these might pose for much larger magnitude quakes.
3261	13279-7 1785.1. Monitoring and Evaluation of Seismic Activity in the Vicinity of Hydraulic Fracturing. Reestablish 2.0 earthquake magnitude.
	Response to comments 3251-3261: Rejected. Section 1785.1 is based on sound scientific principles of rock physics and rock mechanics. In fracture theory, the stresses that build up at the tip of an advancing fracture exist ahead of the fracture by several times the width dimension of the propagating fracture. Therefore from the perspective of a single fracture, the five times the maximum length portion of the provision provides an unreasonably large margin of safety. However, as one purpose of the seismic provision is to assess the potential for fluids to find and activate a hidden fault and therefore escape from the zone of interest, as well as allow for other geologic uncertainties that affect fluid migration, the five-times fracture length margin is based on the limit of the possible extent of fluid flow under typical pressures and fluid volumes of hydraulic fracturing activities. Hence the rock volume of five times the maximum fracture length provides a large margin of safety while at the same time not making the volume so large that background seismic events or geologic variability outside any feasible volume of rock influenced by hydraulic fracturing does not create unnecessary or irrelevant impediments for industry. The focus of Section 1785.1 on hydraulic fracturing, as opposed to other or all stimulation techniques, is based on the fact that the volumes and pressures of fluids used in hydraulic fracturing impart the largest stresses into the rocks of any stimulation technique. In fact, some stimulation techniques reduce in situ stresses. Hence the provision is again based on sound scientific principles of rock physics and mechanics and is protective of the activities that conceivably create the greatest threat to public health and safety. The threshold magnitude was selected by assessment of the capabilities of the CISN in the Central Valley and other locations around the State (areas in which hydraulic fracturing is being employed or might be) to locate M 2-3 seismicity with sufficient accuracy so that the event could be located within a volume that is germane to hydraulic fracturing. At the same time there was a desire to keep the threshold as low as practical, and hence as protective as possible. The accuracy of the location of size and depth of a seismic event is directly related to the number and types of seismic instruments in a given area, hence in many areas of the Central Valley, network density is not sufficient to allow for a lower threshold. The magnitude threshold, M 2.7, was decided based on network capabilities and the desire for the provision to be as protective as practical and at the same time high enough so that background seismicity or poorly located seismic events outside of the volume of interest would not cause an unnecessary work stoppage that could impose an undue burden of cost and time on the industry. A seismic provision based on seismic hazard and risk would be a more refined approach to the one proposed. However, as the risk of even felt seismicity induced by hydraulic fracturing is very low, and approaching zero for damaging seismicity, the potential benefit of a full analysis of hazard and risk is far outweighed by the cost and time necessary for developing and

	implementing such a robust, and quite nuanced approach, which itself would have its own limitations and will greatly increase the costs of implementation.
3262	13550-23 Subsection (b)(1): The municipality and any other local agencies with jurisdiction or if the wellhead is located within 1500 feet of the local jurisdiction should also be notified immediately of any seismic activity.
3263	13550-24 Subsection (b)(2): The results of the evaluation in Subsection (b)(2) should be transmitted to the municipality and any other local agencies with jurisdiction or if the wellhead is located within 1500 feet of the local jurisdiction.
	Response to comments 3262-3263: Rejected. The Division invites discussion with local agencies regarding information sharing and notification.
	1786. Storage and Handling of Well Stimulation Treatment Fluids and Wastes
3264	13565-3, 13531-15 1786(a): Fracking fluids are known to be toxic and hazardous. All fracking fluid and wastes must be recycled and shall never be stored or discharged subsurface.
3265	13313-5 Water used in all fracking wells must be cleaned and recycled into potable before it is put back into the ground. These oil companies using public water must be held legally responsible for cleaning up any water use.
	Response to comments 3264-3265: Rejected. The vast majority of produced water is reinjected into a class II well regulated by the Division as part of an underground injection project. A portion of produced water is treated and used or disposed by a means other than injection.
3266	13102-4, 13531-15 1786(a)(1): Hazardous waste is still hazardous even if it has existed less than 30 days.
3267	13498-3 1786 (a)(1): Fluids shall be stored in compliance with the secondary containment requirements of Section 1773.1 except that secondary containment is not required under this section for production facilities that are in one location for less than 30 days. There needs to be more clarity on this point. Reasoning: If Article 1773.1 does not have a requirement for production facilities in a location less than 30 days, this should be eliminated to include all facilities production anywhere for anytime and it should be included in Article 1786.
3268	13547-2, 13577-15 Section 1786(a)(1) The public wants the Department of Conservation to delete the following: "except that secondary containment is not required under this section for production facilities that are in one location for less than 30 days." We see no environmental justification for this exception as the material is hazardous no matter how long it is stored and backup containment is absolutely necessary in case of failure of the primary containment. They note that a lot of damage can be done in 30 days or less!

3269	13554-14 The Second Revised Proposed Regulations create an unsafe and unnecessary exemption for temporary chemical storage. The proposed provisions state that storage facilities that are in one location for less than 30 days are not subject to section 1773.1's secondary containment requirements. Californians deserve protection from chemical leaks from all types of storage, including temporary storage facilities. Well stimulation treatment fluids can spill within the first 30 days of storage. Certain well stimulation fluid chemicals, like hydrofluoric acid and hydrochloric acid, are extremely corrosive and pose an elevated threat of leaking. Furthermore, temporary facilities may not be as reliable or well-made as permanent storage units. For these reasons, secondary containment should be required of all storage and handling units, including those that are temporary.
3270	13552-31 *Storage and Handling of Well Stimulation Fluids and Wastes***.** Relative to section 1786 (a)(1), citizens strongly believe that secondary containment is essential to limiting the potential adverse effects from spills of fluids and wastes. The 30-day period will essentially exempt many production facilities for well stimulation treatments from secondary containment requirements. There is nothing in SB 4 to support this exemption and it should be removed.
	Response to comments 3266-3270: Rejected. Construction of effective secondary containment may not be cost effective for facilities that will only be on site for a short period of time. Section 1786(a)(1) provides that production facilities that are in place for less than 30 days are not required to have secondary containment, but a specific spill response plan for those facilities must be detailed in the operator's Spill Contingency Plan. The Division invites discussion with local agencies regarding information sharing and notification.
3271	13550-25 Section 1786(a)(5): DOGGR and the municipality and any other local agencies with jurisdiction or if the wellhead is located within 1500 feet of the local jurisdiction should be notified within twenty-four (24) hours of any unauthorized release of fluids containing hazardous substances, if not earlier notified pursuant to this subsection.
3272	13550-26 Subsection (a){6): The municipality and any other local agencies with jurisdiction or if the wellhead is located within 1500 feet of the local jurisdiction should also receive the written report.
	Response to comments 3271-3272: Rejected. There are numerous federal, state, and local requirements for reporting and responding to unauthorized releases. The exact requirements that apply depend on various factors including what substances are in involved, the volume of the release, and the setting of the incident. It would be impractical and confusing to attempt to iterate all of those requirements in the Division's regulations and it is not the Division's intent to modify those requirements. The purpose of Section 1786(a)(2) is to make a general admonition that operators must be familiar with and comply with those requirements.
3273	13102-4 1786 (a)(8): There should be no exclusion that allows the operator to decide that the wastes are not hazardous and do not need to be managed in compliance with all hazardous waste management requirements of the Department of Toxic Substances Control. This should be

	decided by a third party.
3274	13550-27 Subsection (a)(8): The first sentence should be reinstated because determining whether fluids are hazardous waste is important to understand the well stimulation treatment fluid used.
3275	13323-4, 13531-15 Any liquid waste should be considered toxic and be tested by the county's hazmat department to ensure proper disposal. To leave determination to the company allows them too much leeway to go around local and state regulations and delay proper disposal. This allows leakage to occur into groundwater.
	Response to comments 3273-3275: Rejected. Section 1786(a)(8) is in no way an exemption from the laws administered by the Department of Toxic Substances Control. Developed in consultation with the Department of Toxic Substances Control, Section 1786(a)(8) is a statement of existing law regarding the characterization and handling of hazardous waste.
	1787. Well Monitoring After Well Stimulation Treatment
3276	13573-16, 13472-16, 13531-15 DOGGR must not allow an operator to postpone protective action until a breach has been demonstrated with certainty. Instead, protective actions should be required once a risk of breach has been established. Once the obligation to take protective action is triggered, the operator must be required to "immediately take all appropriate measures to prevent contamination…" in addition to taking the specific steps enumerated by Section 1787(b) of the second revision. That is, DOGGR should reinstate this language from the first revision's Section 1787(a), but as a catch-all remainder obligation, rather than the sole obligation.
3277	13577-16 Section 1787(a) needs a short time frame (12-24 hours) – no timeframe was given in the second revision.
3278	13553-25 Specific time periods need to be included in 1787(a).
3279	13577-17, 13531-15 Section 1787(a)(3) needs to have its language restated: "immediately take all appropriate measures to prevent contamination of all underground sources of protected water, hydrocarbon zones, and all surface waters in the area of the well and shall provide the Division and the Regional Water board with the information described in section 1785(d).
3280	13571-33 Section 1787(b): Individuals suggest the following regulation revisions: If testing reveals that a breach has occurred, then the operator shall immediately shut-in the well, isolate ~~the perforated~~ all producing and/or injection intervals, and notify the Division and the Regional Water Board with all of the following information: (3) An exact description of the chemical constituents of the fluid or fluids that is are most representative of the fluid composition in the well at the time of the well breach. (4) An evaluation of whether such fluids may have contaminated or have the potential to contaminate any unauthorized zones. If such an assessment indicates that fluids may have been released, or pose any risk of release into a source of protected water or any unauthorized zone,

	the operator must take all necessary steps to characterize the nature and extent of the release and comply with and implement a remediation plan approved by the Division. If such contamination occurs in a source of protected water that serves as a water supply, a notification must be placed in a newspaper available to the potentially affected population and on a publicly accessible website and all known users of the water supply must be individually notified immediately by phone and by mail.
3281	1357-34 Section 1787(c) This provision should apply to all wells in which a breach is suspected, not only those where a breach has been confirmed. Operators must be required to suspend operations at all wells where a breach is suspected and not be allowed to resume operations without approval from the Division until they have demonstrated that either a) a breach has not occurred or b) a breach has occurred but has been remediated.
3282	13480-3 The post-treatment monitoring described in Section 1787 of the regulations should be expanded to include a new subdivision containing methane or natural gas monitoring requirements in cases where the evaluation and assessment required pursuant to subdivision 1784(a) (3) concludes the proposed treatment is not completely without risk of contributing to increased natural gas seepage to structures or sensitive receptors in the vicinity.
3283	13203-11, 13194-9 What if something goes wrong? Changes to Section 1787 “Well Monitoring After Fracking“ removes the requirement of well operators to take appropriate measures to prevent contamination of protected water in the event of a well breech, and reduces operator monitoring requirements for fluid flowback. In other words, well operators can use Californians’ drinking water to extract gas, and pollute their drinking water in the process, with limited accountability.
3284	13550-28 Subsection (a): The operator should be required to provide DOGGR and the Regional Water Board with immediate notification of any well failure prior to any diagnostic testing to put them on notice of an issue. The subsection should be revised to include this provision again. The Regional Water Board should also be provided with any diagnostic testing results.
3285	13279-8 1787.3) Unstrike: immediately take all appropriate measures to prevent contamination of all underground sources of protected water, hydrocarbon zones, and all surface waters in the area of the well and shall provide the Division and the Regional Water Board with the information described in section 1785(d).
3286	13550-29 Former Subsection (b)(2): The requirement that the operator report the information on the monitoring to DOGGR should be reinstated. This will provide an important metric to determine when and how much well stimulation fluid is recovered or left in place.
3287	13550-30 Subsection {b){3): The deleted language should be restored. The deleted language requires the operator to 'take all appropriate measures to prevent contamination of" underground and surface waters. It is inconceivable as to why this requirement would not be imposed on an operator that has caused a well breach.
3288	13573-15, 13472-15 DOGGR’s existing nor proposed regulations define the terms “diagnostic testing” or “monitoring.” Further, the changes to section 1787 need to be clarified.

	Response to comment 3276-3288: Rejected. In the event that there is reason to suspect a well breach, Section 1787(a) requires that diagnostics be done and that the Division be notified and involved. In the event of a well breach, Section 1787(b) requires the operator to cease operations and notify the Division and the Regional Water Quality Control Board. The Regional Water Quality Control Board would take the lead in the groundwater investigation and would specify what water quality testing is necessary based on the specifics of the situation. Appropriate local, state, and federal agencies will be involved as a matter of course if there is indication of a hazardous gas leak. The terms "monitoring" and "diagnostic testing are commonly understood terms by the Division and the regulated public.
3289	13577-18, 13531-15 The public desires for the Department to leave in all of Article 4 Section 1787(d)(2), shown as deleted in the current revision. Article 4 Section 1787(d)(2) [(d)(2) of current revision], the public wants to delete "unless it has been demonstrated to the Division's satisfaction that there are no voids in the annular space". Article 4 Section 1787(d)(4) of current revision, citizens want to delete "the requirement may be waived by the Division, if the operator demonstrates to the Division's satisfaction that the installation of a pressure relief device is unnecessary based on technical analysis and/or operating experience in the area."
3290	13279-9 Unstrike: (2) The well shall be monitored at least once every two days for the first thirty days after the well stimulation treatment and on a monthly basis thereafter to determine the amount of gas, oil, and water produced, including the volume of readily identifiable well stimulation treatment fluid flowback. The operator shall report the information to the Division on a monthly basis for 5 years or until there has been a 95% reduction in well stimulation treatment fluid contained in the produced fluid, whichever comes first.
3291	13288-4 The monitoring wells in the above section 1787 should remain collecting data for at least 5 years after the project has been completed.
	Response to comments 3289-3291: Rejected. Section 1787(b)(2) was removed because it is redundant to the requirement under Public Resources Code section 3160, subdivision (b), that within 60 days after well stimulation treatment the operator must publicly disclose the composition of water recovered from the well after well stimulation treatment. That statutory disclosure requirement is implemented by Section 1788(a)(12)(D) and (E), which specify required sampling and testing analytics for that disclosure.
3292	13568-4 The revised text ignores ongoing and long-term risks to wellbore integrity. Section 1787 (d) 2 reads, "The annular pressures of the well shall be reported to the Division annually, unless it has been demonstrated to the Division's satisfaction that there are no voids in the annular space." Wellbore/barrier integrity may be lost at any time during well construction, production, through to abandonment and plugging, providing a potential pathway to subsurface gas or fluid migration from shallow or intermediate formations. Moreover, a micro-flaw in cement can easily go unnoticed during standard logging and may contribute to cracking, channeling, or sheath failure over time. Thus, annular pressures need to be monitored continuously over the life of *every* well. Pressure testing should be reported to the Division quarterly or at a minimum, biannually to ensure that the Division has early warnings of potential integrity problems.

3293	13571-35 Section 1787(d)(2) Individuals object to the Division's proposal to exempt operators from reporting annular pressures to the Division if "if has been demonstrated to the Division's satisfaction that there are no voids in the annular space." First, this is vague and lacks enforceable standards. The Division has not specified what methods or data would be acceptable to make such a demonstration. Furthermore, well integrity may degrade over time, so a single showing of well integrity is not a guarantee of future well integrity. Ongoing monitoring is needed to ensure that mechanical integrity is not only initially established, but maintained over the life of the well.
	Response to comments 3292-3293: Rejected. A cement evaluation is required for every well and the Division will not approve the evaluation if it is not conclusive. In addition, the well must have a pressure test performed prior to conducting a well stimulation. If both of these evaluations and tests are successful, and the operator demonstrates to the Division's satisfaction that there are no voids in the annular space of the well, then the mechanical integrity of the well has been demonstrated.
3294	13550-31 Subsection (d){3): DOGGR should not be provided with the authority to waive the requirement for a pressure relief device. Such device should be included in all wells.
	Response to comment 3294: Rejected. As stated in Section 1787(d)(4), the requirement would only be waived if the operator demonstrates to the Division's satisfaction that the installation of a pressure relief device is unnecessary based on technical analysis and/or operating experience in the area.
3295	13570-96 As indicated for pre-treatment and during treatment activities, the Division's requirements for an approved oil spill/leak plan must be used for all levels of actions for breaches, leakage, or other failures for the well and related facilities and piping above and below ground. Similarly, all activities must be documented and reported/reports submitted to the Division and to the Water Board and such should be done in a matter of hours, not days, or as practical or reasonable. Continued confusion of leaks, breaches, and failures must be simplified down to leaks and included in definition. Suggested language for comment 13570-96: (a)Operators shall monitor each ~~producing~~ well that has had ~~a~~ well stimulation treatment to identify any potential problems with a well that could endanger any underground source of ~~protected~~ beneficial water or hydrocarbon zone. If there is any indication or suspicion of ~~a~~ well leakage ~~failure~~, the operator shall immediately notify the Division and the Regional Water Board, implement the approved Spill Contingency Plan, and perform diagnostic testing on the well to determine whether ~~a~~ well leakage~~failure~~ has actually occurred. If the testing indicates that a well leakage~~failure~~ has occurred, then the operator shall immediately take all appropriate measures to stop or reduce leakage, contain leaked materials within the well bore, and prevent contamination of all underground sources of ~~protected~~ beneficial water, hydrocarbon zones, and all surface waters in the area of the well and shall provide the Division and the Regional Water Board with the information described in section 1785(d). (b)Operators shall adhere to and report and document such adherence/compliance with the following requirements for a well that has had a well stimulation treatment: (1)~~The p~~Production pressure(s) of the well shall be monitored at least once every two

	(2)days for the first thirty (30) days after the well stimulation treatment and on a monthly basis thereafter. Information regarding production pressures shall be reported to the Division on a monthly basis. (2)Well flows~~The well~~ shall be monitored at least once every two days for the first thirty days after the well stimulation treatment and on a monthly basis thereafter to determine ~~the~~ amounts of gas, oil, and water produced, including ~~the~~ volumes of ~~readily~~ identifiable well stimulation treatment fluid flowback. The operator shall report the information to the Division on a monthly basis for 5 years or until there has been an elimination of detectible ~~95% reduction in well stimulation~~ treatment fluid contained in the produced fluid***(s)***, whichever comes first. (3)All ~~The~~ annular pressures of the well shall be reported to the Division annually. Any unusual events ~~It~~ shall be immediately reported to the Division, such as if annular pressure exceeds 70% of the API rated minimum internal yield or collapse strength of casing, or if surface casing pressures exceed a pressure equal to: 0.7~~0~~ times 0.433 times the true vertical depth of the surface casing shoe (expressed in feet). (4)The annular valve shall be kept accessible from the surface or left open and plumbed to the surface with a working pressure gauge unless it has been demonstrated to the Division's satisfaction that there are no voids in the annular space. (5)A properly functioning pressure relief device shall be installed on the annulus between the surface casing and the production casing, or, if intermediate casing is set, on the annuli between the surface casing and the intermediate casing and the production casing. This requirement may be waived by the Division, if the operator demonstrates to the Division's satisfaction that the installation of a pressure relief device is unnecessary based on technical analysis and/or operating experience in the area and submitted to the Division before the waiver is granted. (6)If a pressure relief device is installed, then all pressure releases from the device shall be reported to the Division within 24 hours of detection. The maximum set pressure of a surface casing pressure relief device shall be the lowest of the following: • A pressure equal to: 0.7~~0~~ times 0.4~~33~~ times the true vertical depth of the surface casing shoe (expressed in feet); • 70% of the API rated minimum internal yield for the surface casing; or • A pressure change that is 20% or greater than the calculated pressure increase due to pressure and/or temperature expansion. (7) As indicated for both pre-treatment and during treatment, microseismicity monitoring shall be continued after the cessation of pressurized injection for each stage and for the duration of all stage, until the monitoring demonstrates statistically the return to pre-treatment conditions. If during the post-treatment monitoring period, any tremor of greater than 2 Richter magnitude occurs the monitoring shall be continued for an additional 30 days.
	Response to comment 3295: Rejected. The Spill Contingency Plan required under existing regulation Sections 1722(a) and 1722.9 address spill at the surface and not response to a well breach. In the event of a well breach, Section 1787(b) requires the operator to cease operations and notify the Division and the Regional Water Quality Control Board. The Regional Water Quality Control Board would take the lead in the groundwater investigation and would specify what water quality testing is necessary based on the specifics of the situation. Section 1785 already contains procedures and specifications for well monitoring during well stimulation treatment, and, to the extent that the suggested revisions are not already addressed under Section 1785, they are inconsistent with the purpose and intent of that section.
3296	13563-16 The monitoring required by Section 1787(a) be limited to the time period during which the well stimulation activity is occurring. After the well stimulation activity, the individual well should be

	treated the same as any other production or injection well.
	Response to comment 3296: Rejected. The purpose of Section 1787 is to verify ongoing well integrity after well stimulation treatment.
3297	13563-17 Section 1787 should be revised to limit the application section 1787(d)(1) to flowing wells. Well pressures on wells using mechanical lift fluctuate and pressure measurements provide no additional data regarding the well integrity. Well integrity will already be established by the monitoring requirements contained in section 1787(a).
3298	13563-18 The requirement to monitor production pressure during the first thirty days after well stimulation treatment assumes that wells are immediately placed in production following treatment. This is not always the case. At times, after undergoing a treatment, a well cannot be fully completed (for example by the installation of tubing, packers, and pumping units) for more than 30 days.
3299	13563-19 Section 1787(d) should be revised to read as follows: "Operators shall adhere to the following requirements for a flowing well that has had a well stimulation treatment if not done as part of the normal production reporting process: (1) The production pressure of the well shall be monitored at least once every two days for the first thirty days after the commencement of production ~~well stimulation treatment~~ and on a monthly basis thereafter. Information regarding production pressures shall be reported to the Division on a monthly basis.
	Response to comments 3297-3299: Rejected. If the well has no production pressure, then the reported pressure should indicate that.
3300	13553-26 1787(d)(1)Is monthly basis the ultimate end period?
	Response to comment 3300: Regular monthly production reporting will satisfy the requirement for monthly production reporting under Section 1787(b)(1).
3301	13571-32 Section 1787. Well Monitoring After Well Stimulation Treatment. Individuals support the Division's proposed additions to this subsection, although they also renew our call for the revisions proposed in our previous comments.
	Response to comment 3301: Thank you for your comment.
	1788. Required Public Disclosures
3302	13359-11 Included with the reports Videos should be taken showing the before picture, during the fracking and post fracking developments. These videos need also to be made available for public viewing.

3303	13359-7 1788(a)(10) Additives need to be in layman's terms with a description of its possible and direct affects if used for agriculture, bathing, drinking, cooking.
3304	13079-6, 13575-1 Notice to the public should be required 30 days before each individual operation begins (including expected dates of each operation in a single-project authorization) and follow up reporting within 7 days after each operation is completed (except immediately in cases of spills or seismic activity or threat to water quality). This is because notification after the fact disenfranchises the public's right to know and fails to adequately protect public health and private property rights.
3305	13079-2 The regulations fail to indicate whether adequate Prop 65 disclosure to the public is required prior to well drilling. Full disclosure of all fracking chemicals to be injected into the subsurface where drinking water aquifers may be impacted is warranted, including material safety data sheets and toxicity information.
3306	13550-32 Subsection (a): The public disclosure should be made within 30 days of cessation. In addition to the matters included in the section, the following should also be subject to public disclosure: the unauthorized release of any well stimulation treatment fluids, the matters set forth in section 1785(b) indicating breach or other significant problems, or indication of problems arising from the well stimulation treatment.
3307	13299-1, 13299-2 After reading the revised text regarding disclosure regulations, the public reports that they did not see the location of wells that will be fractured. They ask that exact locations and physical addresses of wells that will be fractured/stimulated be disclosed to the public. In addition, they ask that all safeguards to underground potable water sources and earthquake fault stimulation safeguards also be included.
3308	13279-10 1788 (9) The trade name, supplier, concentration, and a brief description of the intended purpose of each additive contained in the well stimulation fluids used; Add- the identified hazards of the compounds, including hazards to pregnant women, children, and potential birth defects. Longitudinal studies of the hazards of chemicals in the water. Add- the operator is responsible for the costs of cleanup to the state of potablility or habitability of the area in the case of a well failure. The operator is responsible for the cost of medical treatment for tenants, surface owners, or others whose heath is impaired due to the well's activities and/or hazardous substances. The operator is to reestablish the land at the end of the well's activity including indigenous flora, reestablish fauna, and reestablish ground water pure potability as well as aquifer, or artesian well.
	Response to comment 3302-3308: Rejected. The purpose of Section 1788 is to implement the public disclosure requirements mandated by Public Resources Code section 3160, subdivision (b). Section 1788 reiterates the disclosures specified in the statute, with specification added where necessary to implement the purpose of Public Resources Code section 3160, subdivision (b). Some of the suggested public disclosures are already required under Public Resources Code section 3160, subdivision (b), as implemented in Section 1788. Other suggested public disclosure are beyond the scope of Public Resources Code section 3160, subdivision (b) and are therefore inconsistent with the purpose of Section 1788.

3309	13225-1, 13531-15 People all have to know exactly what chemicals are being used while fracking.
3310	13148-5, 13156-1 The oil and gas industry is not required to disclose the chemicals they use in the fracking process but many are known endocrine disruptors and carcinogens.
3311	13338-2 There is no up-front requirement to disclose the toxic chemicals the operators intend to use, which in the event of a "breach" will contaminate the groundwater beyond any further use by the local population.
	Response to comments 3309-3311: As specified in Public Resources Code section 3160, subdivision (b)(2)(B), and Section 1788(a)(19), within 60 days after well stimulation treatment is complete, operators are required to publicly disclose the identity and maximum concentration of each chemical constituent in the well stimulation treatment fluid used. In addition, the required contents of an application for a well stimulation treatment permit are specified in Public Resources Code section 3160, subdivision (d)(1), and Section 1783.1, and include the identity and estimated maximum concentration of the chemical constituents of the anticipated well stimulation treatment fluid. Public Resources Code section 3160, subdivision (d)(5), requires that the Division post an approved well stimulation treatment permit application on its public website within five business days of approval. The Division is working to develop and implement business processes and information technology to make information about all aspects of well stimulation treatment operations available on its public website in formats that can be easily searched and aggregated.
3312	13359-7 1788(a)(12)(A)(iii) Need to include where and how the water was acquired. Recycled water is becoming more abundant and humans need to know if potable water is being used for Fracking while humans and animals may be forced to consume lesser desirable water that is not clean.
3313	13571-36 Section 1788(a)(12)(A): Individuals suggest the following revisions to this subsection:(ii) The water supplier, if it will be purchased from a supplier, and the source from which the water supplier obtains water;(iv) Each water source should be reported separately and should include information on source type (oilfield produced or wastewater, municipal or industrial wastewater, surface water, groundwater, municipal water, or specify other source), volume, and whether the water has been treated or recycled.
3314	13095-1 Add in section (A)(iiii) regarding groundwater used in areas of drought may not be used for well stimulation. (G) Operators shall be held responsible for the quality of water of those effected by well stimulation. If it is determined by the designated contractor for water sampling that the water is made non-potable then the operator shall be responsible to provide potable water to those affected for 25 years.
	Response to comments 3312-3314: Rejected. Public Resources Code section 3160, subdivision (b)(2)(E), requires public disclosure of the the source of water used for well stimulation treatment. Sections 1783.1(a)(23)(D) and 1788(a)(12)(A) have been revised to clarify that "source of water" means the well(s), water

	supplier, or point of diversion where the water was obtained. This language is consistent with the definition of "source of water" found in recently-chaptered Senate Bill 1281. Restrictions on volume or source of water used are outside the scope of this rulemaking.
3315	13571-37 Section 1788(a)(12)(E): The public supports the Division's proposed additional analyses to the chemical analysis of water recovered following well stimulation practices. They request that officials provide additional guidance as to what constitutes "appropriate indicator compounds for the well stimulation treatment fluid."
3316	13554-15 The composition of water recovered from the well should include testing for all chemicals used in the well stimulation treatment of that well.
	Response to comments 3315-3316: Rejected. Appropriate indicator compounds would be a selection of chemical constituents found in the well stimulation treatment fluid that was used.
3317	13563-20 The flowback fluid/produced water sampling guidelines required by section 1788 could prove to be overly burdensome to operators. WSPA therefore recommends that requirements for the second sample after 30 days in Section 1788(a)(12)(D) apply to flowing wells only. "Composition of water recovered from the well following the well stimulation treatment, sampled· after a calculated wellbore volume has been produced back but before three calculated wellbore volumes have been produced back, ~~and then~~ Flowing wells shall be sampled a second time after 30 days of production after the first sample is taken, with both samples taken prior to being placed in a storage tank or being aggregated with fluid from other wells;"
3318	13532-3 Section 1788(E): This is not a viable option for oil and gas production in this state.
	Response to comments 3317-3318: Rejected. Public Resources Code section 3160, subdivision (b)(2)(E), requires public disclosure of the composition of water recovered from a well after well stimulation treatment, and Section 1788(a)(12)(D) implements this statutory requirement. Section 1788(f) reflects that the Division understands that in some cases it will not be feasible to provide all required disclosures within the 60 day timeframe.
3319	13567-9 1788(a)(16): Since there are naturally occurring radioactive minerals that may return with the stimulation fluids, there is a concern on what the threshold level of violation and what actions will be taken.
	Response to comment 3319: Rejected. Public Resources Code section 3160, subdivision (b)(2)(H), requires public disclosure of the radioactivity of recovered well stimulation fluids. Section 1788(a)(16) requires that the disclosure include a description of the equipment and method used to determine the radioactivity, but does not prescribe a particular technology.
3320	13577-19 Section 1788(b) the public wants the Department to reinstate "and the Division will make the consolidated information available in an organized electronic format on the Division's public

	internet website. If the Chemical Disclosure Registry is unable to receive information required to be reported under this section, then the operator shall provide the information directly to the Division."
3321	13550-34, 13531-15 Subsection (b): The language states that the operator shall post the information listed in the Chemical Disclosure Registry, "to the extent that the website is able to receive the information." What does that refer to? What occurs if the website cannot receive it regarding public disclosure of that information?
3322	13553-28 Regarding the chemical registry, what does "to the extent that the website is able to receive the information" mean?
3323	13553-27 1788(a): How and where are operators supposed to publically disclose information?
3324	13570-97 This section must ensure that all information is easily accessible to the public in a timely manner. All data submitted to the chemical disclosure registry must be verified by the Division and in a sortable/searchable and easy to use electronic format. In the period prior to the Division developing its own website as the chemical disclosure registry, all information must be submitted to the Division as well as an independent site such as FracFocus.org as compliance with any state required submissions. All information submitted during this period must also be added to the state-run registry upon its operation. All submissions to any non-state organization must include provisions to assure accuracy, correctness, and lack of purposeful errors as if the submission were directly to a state agency with implied penalties for errors and omissions.
3325	13570-98, 13531-15 The Division should post to the chemical disclosure registry and to a suitable Division webpage, additional data and map layers, including groundwater basins, exempt aquifers, surface waterways and nonattainment air quality areas, and boundaries of state- and federally-owned lands (including but not limited to national forests, national wildlife refuges, national monuments, and state ecological reserves) in order for the public and other agencies to identify surrounding conditions and contexts and risks and threats to health and the environment.
	Response to comments 3320-3325: Accepted in part. Section 1788(b) requires operators to submit all of the required public disclosures directly to the Division on a spreadsheet developed by the Division for that purpose. Among the required public disclosures is the identity and concentration of each chemical constituent and additive in the well stimulation treatment fluid. The Division will organize the public disclosures submitted by the operators and make them publicly available in a format that is easily searched and aggregated, to the extent practicable. In addition to submitting the required public disclosures directly to the Division, operators are required to post the required public disclosures to the public internet website known as FracFocus.org maintained by the Ground Water Protection Counsel and Interstate Oil and Gas Compact Commission (the "Chemical Disclosure Registry"). The additional disclosure to the Chemical Disclosure Registry is necessary so that activities in California are accounted for in the national disclosure registry.

3326	13554-17 In order to ensure that operators are reporting truthful, accurate information, the regulations must make clear that operators submit information to FracFocus and to DOGGR under penalty of perjury.
	Response to comment 3326: Rejected. The Division has several statutory enforcement authorities for ensuring accurate disclose of the information required under Section 1788. Those enforcement authorities include the authority to impose minimum civil penalties of $10,000 per violation under Public Resources Code section 3236.5. However, Public Resources Code section 3160 does not provide for criminal penalties.
3327	13573-14, 13472-14, 13552-17 Section 1788 should be revised to emphasize that full transparency and public disclosure must be DOGGR's baseline regulatory approach. In the event that DOGGR determines that public disclosures are not required pursuant to Public Resources Code section 3234, DOGGR must provide written documentation for the basis of that decision. In all instances where information is available prior to any well stimulation, disposal or related activities, that information shall be required to be reported to all relevant authorities and disclosed to the public prior to those activities taking place.
3328	13554-20 Despite the clear guidance relating to the intended parameters of disclosure, the Second Revised Proposed Regulations sketch a far broader exemption regarding confidential wells. Of the nineteen public disclosures required of operators in the Second Revised Proposed Regulations, only six disclosures are required of Section 3234 confidential wells. The Second Revised Proposed Regulations would allow operators to withhold information that must be disclosed under the Public Resources Code. Section 1788(c) of the Second Revised Proposed Regulations, therefore, should be amended to require operators of confidential wells to disclose all other information to the public.
3329	13577-19 Article 4 Section 1788 (c) individuals want to delete, "Except for the information specified … operators are not required to publicly disclose information found in a well record that the Division has determined is not public record, pursuant to Public Resources Code section 3234".
	Response to 3327-3329: Rejected. Public Resources Code section 3234 states that well records that are required to be filed with the Division are not public record and shall be maintained as confidential information if the well is an exploratory well or if other extenuating circumstances warrant confidential treatment. Public Resources Code section 3160, subdivision (k), specifies that a well granted confidential status pursuant to Public Resources Code section 3234 is not be required to disclose well stimulation treatment fluid information until the confidential status of the well ceases. Public Resources Code section 3160, subdivision (k), also provides that, notwithstanding the confidential status of a well, it is public information that a well will be or has been subject to a well stimulation treatment, but does not otherwise expressly invalidate confidential treatment of well records under Public Resources Code section 3234. Accordingly, Section 1788(c) provides that an operator is not required to disclose information found in well records subject to confidential treatment under Public Resources Code section 3234.
3330	13103-6 1788(19)(c): There is a concern of who the Division is that will provide relevant information that is not publicly disclosed.

3331	13550-35 Subsection (c): In addition to state agencies, the municipality and other local agencies with jurisdiction or if the wellhead is located within 1500 feet of the local jurisdiction should be able to receive the information that is not publicly disclosed.
3332	13570-99 1788(c) must be amended to clearly require that all information for confidential wells be disclosed to the public, the Division and other applicable agencies, including the Water Boards and CUPAs, and health professionals.
	Response to comments 3330-3332: Public Resources Code section 3160, subdivision (c), requires the Division to enter into formal agreement with other state regulatory agencies for the purposes of coordinating regulation of well stimulation agreement. Each of the required formal agreements will address confidential information sharing. The Division invites discussion with local agencies regarding information sharing and notification.
3333	13566-4, 13531-15 1788(d) 1788 Trade secrets" should not undercut the jurisdiction of the State, and information regarding fracking projects conducted in California, at any level of detail and from any party involved in the project, should be made available upon demand from the Department of Conservation. The process for requesting, providing and receiving this information should be specified in SB 4 and reviewed in the context of the regulation as a whole.
3334	13530-6 "Trade Secret" being a secret substance of probable toxicity. There's concern of how to disclose this trade secret to the public. Disclosure of other toxins to the public as well as the probability of drinking water poisoning and air toxicity, and disclosure to all towns which the toxins will be traveling through so they can be on high alert for spills and other hazmat problems should be done.
3335	13079-2 Trade secret/proprietary information should not trump public tight to know about their potential toxic exposures, especially since the technology is standardized and treatment chemicals are known and commercially available to all of the drilling companies and are not really trade secrets that impact their competitive advantage.
3336	13538-3 There is a concern that the regulations contain a clause that gives fracking fluid makers the right to use trade secret protections to prevent the public from easily accessing information about the quantities of fracking chemicals carried through their neighborhoods and injected into the ground in their region near their water sources.
3337	13496-4 Given the secrecy of this industry and the effects noted in other portions of the country – farm animals downwind dying mysteriously, flames coming out of household water faucets, dangerous amounts of methane being released, and kids sick when the schools are downwind - transparency of the chemicals involved in fracking and acidification is absolutely necessary for any informed consent of this process in any community.
3338	13480-3, 13480-4 Finally, what people do not see in the Proposed Regulations are clear and firm requirements that

	the application of the "trade secret" doctrines and statutes are to be waived by any Gas & Oil companies which propose to use the process to inject their base and additional fluids and substances into the ground or water. Those statutes and principles have been used repeatedly by the industry to deny public knowledge of what is being used to fracture underlying rock, or is being proposed to be used. The public's belief is that fracking should not be permitted to occur at all unless and until every aspect of the process has been studied, and every substance used has been disclosed and its effects on animal or plant life fully understood.
3339	13491-11 Mention of trade secret protections regarding disclosures to the public. When it comes to potentially toxic chemicals being added to water, Californians absolutely must have complete disclosures of all chemicals used in well stimulation operations. The public safety comes before any industry trade secrets if these companies want to operate here in California.
3340	13333-4 As to the disclosure of the chemicals used for the stimulation, nothing that could prove fatal to the environment in the case of a "breach" should be allowed to be even considered, or allowed. There should be complete disclosure before any injection stimulation occurs. There should be nothing that the operators can deem proprietary that is being injected into the environment.
3341	13234-4, 13323-6 In addition to a full review of the health impacts of fracking, there remain numerous unanswered questions about the health risks of fracking because companies refuse to fully disclose all the chemicals they use in drilling and fracking process citing "trade secrets." This lack of transparency and full disclosure is unacceptable. Furthermore, it leaves the public and regulators at a significant disadvantage when weighing the possible health risks because we are unable to comprehensively identify or analyze the full scale of the health risks. Furthermore, the health risks could be significantly higher than the limited data suggests. The health and safety of citizens should rank higher than a business' bottom line.
3342	13550-33 Any hazardous substances used in well stimulation fluids should be disclosed to the public regardless of any claim of trade secret.
3343	13075-2, 13076-2, 13447-3, 13532-2, 13480-5 Industry doesn't want to say what chemical is being mixed with the water injected underground and say its confidential (trade secret), not disclosing information. California's would like to see disclosure prior to fracking, rather than after fracking. "Frack first and disclose later" is insanity.
	Response to comments 3333-3343: Rejected. Public Resources Code section 3160, subdivision (j), imposes strict limitations on the ability to claim trade secret protection as a basis for not making required public disclosures required under SB 4, and it is therefore unlikely that a claim of trade secret protection will be made in the context of these regulations. In the event that a claim of trade secret protection is asserted, Public Resources Code section 3160, subdivision (j), provides detailed procedures for the Division's handling of that claim. Section 1788(d) indicates where those procedures can be found and it is not necessary to quote those statutory provisions in the regulations.
3344	13554-16 The Second Revised Proposed Regulations state that the public disclosures, if not made within 60 days, must be made as soon as possible thereafter. The language should clarify that this is not an extension of the 60-day deadline. DOGGR should make clear in its regulations that operators that submit information after 60 days will be assessed a fine and other appropriate

	penalties for the delay.
3345	13401-2 There is concern that operators will not comply with disclosure. The requirement for public disclosure within 60 days is altered by later language that effectively says “or whenever you get around to it.”
	Response to comments 3344-3345: Rejected. Section 1788(f) was added because in some instances it may not be feasible to provide the feasible to provide the required information within 60 days. This is most likely to be that case for requirements that involve analytical testing of water samples. When disclosures are not provided within the required timeframe, the Division will evaluate on a case-by-case basis whether enforcement action is warranted.
3346	13554-18 The Second Revised Proposed Regulations omit any requirement for follow up monitoring, including the “random periodic spot checks” clearly mandated by SB 4. The Second Revised Proposed Regulations instead rely on operator reports to DOGGR of operator-conducted post-stimulation monitoring. DOGGR should amend the language of the Second Revised Proposed Regulations to place certain monitoring and verification requirements on DOGGR to induce better compliance with the regulations.
	Response to comments 3346: Rejected. The Division has ample statutory authority to conduct field inspections.
3347	13552-18 There is every reason for the Department of Conservation to strive for greater disclosure and transparency when it comes to treatment notices, well breach, seismic events, neighbor notifications, water monitoring, testing and sampling. It should be electronically available to the public in an easily searchable form. Ways for the public to readily identify well locations should be included. Making such information public, accelerating the state’s establishment of Chemical Disclosure Registry once well stimulation operations are completed will help achieve transparency, accountability and boost public trust. Individuals recommend that the Department also provide for easy public access to all reports required by operators, such as cement evaluations, well integrity and water testing results. Most importantly, make the notice of well breach and seismic events readily available.
	Response to comment 3347: The Division is working to develop and implement business processes and information technology to make information about all aspects of well stimulation treatment operations available on its public website in formats that can be easily searched and aggregated. Integration and easy cross referencing all records is one the Division’s goals in the development of these processes and technologies.
3348	13570-100 Amendments suggested for section 1788: (a) Except as provided in subdivision (c), within 60 days after the cessation of a well stimulation treatment, the operator shall post to the Chemical Disclosure Registry all of the following information: (1) Operator’s name;

(2) API number assigned to the well by the Division;

(3) Lease name and number of the well;

(4) Location of the well, submitted as a non-projected, Latitude/Longitude, in the General Coordinate System (GCS) NAD83.

(5) County and Zip Code in which the well is located;

(6) Date(s) that the well stimulation treatment occurred;

(7) True vertical and measured depths of the well and all stimulation treatment zones;

(8) Name(s) and vertical depth(s) of the productive horizon(s) where well stimulation treatment occurred;

(9) ~~The t~~Trade name(s), supplier, concentration(s), quantities, and a brief description of the intended purpose(s) of each additive contained in the well stimulation fluids used;

(10) ~~The t~~ Total volume(s) of base fluid used during the well stimulation treatment;

(11) Identification of whether the base fluid is water suitable for irrigation or domestic purposes, water not suitable for irrigation or domestic purposes, or a fluid other than water;

(12~~)The s~~Source(s), volume(s), and specific composition(s) and disposition(s) of all water associated with the well stimulation treatment, including, but not limited to, water used as base fluid and water recovered from the well following the well stimulation treatment that is not otherwise reported as produced water pursuant to Section 3227;

(13)Identification of any reuse of treated or untreated water for well stimulation treatments and well stimulation treatment-related activities;

(14)~~The s~~Specific composition(s) and disposition(s) of all well stimulation treatment fluids, including waste fluids, other than water;

(15)Any radiological components or tracers injected into the well as part of the well stimulation treatment, a description of the recovery method, if any, for those components or tracers, the recovery rate, the residual or remaining percentages, and specific disposal information for recovered components or tracers;

(16)~~The r~~Radioactivity of the recovered well stimulation fluids;

(17)~~The l~~Location of the portion of the well (including measured and true vertical depths) subject to the well stimulation treatment and the extent of the stimulation envelope ~~fracturing or other modification~~, if any, surrounding the well induced by the treatment;

(18)~~The e~~Estimated volume(s) of well stimulation treatment fluid that has been recovered; and

(19~~)A c~~Complete list of the names, Chemical Abstract Service numbers, and maximum concentration, in percent by mass, of each and every chemical constituent of the well stimulation treatment fluids used. If a Chemical Abstract Service number does not exist for a chemical constituent, the operator may provide another unique identifier, if available.

(20)All prior stimulation treatments of the well.

(b)If the Chemical Disclosure Registry is unable to receive information required to be reported under this section, then the operator shall provide the information directly to the Division in digital formats as directed by the Division.

~~(c)Except for items (1) through (6) of subsection (a), operators are not required to post information to the Chemical Disclosure Registry if the information is found in a well record that the Division has determined is not public record, pursuant to Public Resources Code section 3234.~~

(d)A claim of trade secret protection for the information required to be disclosed under this section shall be handled in the manner specified under Public Resources Code section 3160, subdivision (j). PRC 3160 (j)(2) Notwithstanding any other law or regulation, none of the following information shall be protected as a trade secret:

(1) The identities of the chemical constituents of additives, including CAS identification numbers.

	(2)The concentrations of the additives in the well stimulation treatment fluids. (3)Any air or other pollution monitoring data. (4)Health and safety data associated with well stimulation treatment fluids. (5) The chemical composition of the flowback fluid. (e) Groundwater quality data reported under this section shall also be submitted to the Regional Water Board in an electronic format that follows the guidelines detailed in California Code of Regulations, title 23, chapter 30.
	Response to comment 3348: Rejected. Section 1788 already contains procedures and specifications implementing the public disclosure requirements specified in Public Resources Code section 3160, subdivision (b)(2), and, to the extent that the suggested revisions are not already addressed under Section 1788, they are inconsistent with the purpose and intent of that section.
	1789. Post-Well Stimulation Treatment Report
3349	13571-6 Section 1788(b), 1788(c), 1789. Post-Well Stimulation Treatment Report are all supported by citizens.
	Response to comment 3349: Thank you for your comment.
3350	13359-5 Item 1789 (64) All records should be made public. Too many times government officials have been found to be in collusion with private entities which poses a danger to human being. Safeguards need to be in place to insure that the public always has access to reports.
3351	13570-102, 13531-15 All information eventually must be submitted to and integrated with the other records for any specific well, e.g., History of Well. Historic hardcopy files are being replaced with online and digital files and archives. Hardcopy submittal must be replaced with near-real time reporting to the Division and simple copying (cc/bcc) of the same to other agencies and subscribers.
3352	13570-103 The post-event reporting must be linked to all other records related to the same well, usually through the American Petroleum Institute's numbering system – the API No. – including all records and histories of the same well resulting from the Notices of Intent and Permits processed through a currently separate system. Such isolation will lead to errors and required revisions of these and other regulations.
	Response to comments 3350-3352: The Division is working to develop and implement business processes and information technology to make information about all aspects of well stimulation treatment operations available on its public website in formats that can be easily searched and aggregated. Integration and easy cross referencing all records is one the Division's goals in the development of these processes and technologies.
3353	13563-21 Revised Section 1789(a)(2) requires reporting 30 days of production pressure monitoring data

	within 60 days of cessation of well stimulation treatment. This assumes that production always commences within 30 days after well stimulation treatment. As noted above, wells that are subject to well stimulation treatments are not always immediately placed in production. Therefore we request the following modification to section 1789(a): "Within 60 days after the commencement of production for ~~cessation of~~ a well subject to a well stimulation treatment, the operator shall submit a report to the Division describing:"
	Response to comment 3353: Rejected. If the well has no production pressure, then the reported pressure should indicate that.
3354	13570-101 The reference to 1784(a)(4) appears to be incorrect, as there is no such section and must be replaced with 1784(a)(2).
	Response to comment 3354: Accepted. The erroneous reference to Section 1784(a)(5) has been corrected.
3355	13455-4 1789(6)(b): In the interest of public health and safety, the first revised text requirement should be restored.
3256	13577-20, 13531-15 Californians want to reinstate this subsection, Article 4 Section 1789(6)(b) in its entirety, “If data maintained by the U.S. Geological Survey indicate that, since the commencement of well stimulation treatment, an earthquake of magnitude 2.0 or greater has occurred in the area of well stimulation treatment radius analysis required under Section 1784(a)(4), then the occurrence of that earthquake shall be noted in the report prepared under subsection (a)”.
3357	13550-36 Former Subsection (b): This subsection should not have been removed. The operator should be required to disclose seismic information in the report.
3358	13570-104 (a) Within 60 days after the cessation of a well stimulation treatment, the operator shall submit a report to the Division describing: (1) ~~The~~ History, all conditions, and results of and during the well stimulation treatment and all previous stimulation treatments; (2) ~~The p~~Pressures and flows encountered before, during, and following the well stimulation treatment; and previous such treatments; ~~and~~ (3) Difference between ~~How the~~ actual and planned/designed well stimulation treatments and all related conditions ~~differs from what was anticipated in the well stimulation treatment design that was prepared under~~ (Section 1784(a)(5)).; and (4) Records of all microsiesmicity tremors during the monitoring period for the subject treatment and any prior treatments and comparisons and differences for subject and prior envelopes. (b) If data maintained by the U.S. Geological Survey indicates that, since the commencement of well stimulation treatment, an earthquake of magnitude 2.0 or greater has occurred within 5280 feet ~~area~~ of the well stimulation treatment envelope ~~radius~~ analysis required under Section 1784(a)(4), then the occurrence of that earthquake shall be noted analyzed with regard and related to the field, any UIC projects, and the envelope in the report prepared under subsection (a).

	Response to comments 3355-3358: Rejected. The originally proposed Section 1789(b) was removed because Section 1785.1 was added requiring monitoring of the California Integrated Seismic Network during and after hydraulic fracturing. Under Section 1785.1, if an earthquake of magnitude 2.7 or greater occurs within a specified area around the well, then further hydraulic fracturing in the area are suspended until the Division, in consultation with the California Geological Survey, determines that there is no indication of a heightened risk of seismic activity from hydraulic fracturing.
	Listed as concerns with no other input
3359	13203-15, 013194-14 Below are the specific sections which are of concern: · Sec 1781. Definitions: removes "Protected Water." · 1783.1 (12) Application for Permit to Frack: no longer requires the true vertical depth and wellbore path for directionally drilled wells. · 1783.1 (16): removes identification of any existing wells that may be impacted by these fractures and modifications. · 1783.1 (17): removes requirement to disclose depth of protected water, including method used to determine protected water. · 1783.1 (21): removes requirement for water identification and analysis within the area of well stimulation treatment. · 1783.1 (DIII) Diverting Surface Water: removes disclosure of how and where the water used during fracking will be acquired. · 1783.2: removes requirement for notice before commencing well stimulation treatment. They do not have to alert property owners before fracking within 500 feet of their land. · 1783.3 (A): removes requirement for follow-up sampling 30-60 days after the well stimulation is completed. · 1784 (5): lessens requirement to assess and identify water sources near fracking area. · 1785 Monitoring During Fracking Ops: redacts requirement for disclosing chemical constituents of the fracking fluid in the event of well breach. · 1787 Well Monitoring After Fracking: removes requirement to "immediately take all appropriate measures to prevent contamination of all underground sources of protected water, hydrocarbon zones, and all surface waters in the area of the well and shall provide the Division and the Regional Water Board with the information described in section 1785(d)." This section also reduces operator monitoring requirements for fluid flowback. · 1789 Post-Fracking Report: removes earthquake reporting requirements in vicinity of fracking activity. Article 4 - Section 1784: Well Stimulation Treatment Area Analysis and Design. The paragraphs (a) and (1) completely omitted. Article 4 - 1785: #3 In terms of well breach failure, points (A), (B), (C), (4), &, (5) were removed Article 4 - 1787: Well Monitoring After Well Stimulation Treatment Parts (a) & (b) #3 Article 4 - 1789: Post- Well Stimulation Report #1 the results of the well stimulation treatment #6(b). These portions within the regulations need to be maintained, and the public hopes the department will put them into consideration.
	Other Comments
3360	13361-1 Why were the following sections deleted? Article 1- Section 1751: "Specify what operations are approved by a single project authorization and the conditions under which the operations are approved." Article 4- Section 1781: (h) Chemical Disclosure Registry

	Article 4 - Section 1783.1 #16 & #23 "How the water will be acquired, where the water will be acquired, and, if the water will be purchased, from whom the water will be purchased. Article 4 - Section 1783.2 and 1783.3
	Response to comment 3360: Each of the referenced deletions were replaced by revised language.
	<u>Call for a Ban or Moratorium</u>
3361	13226-3 In most areas of California a “land-use” permit is not required, and only the state permit from DOGGR is necessary. A simple explanation is DOGGR grants the permit for everything that occurs underground, and in some locations a separate regulatory body approves the permit for what occurs above the ground at the surface.
3362	13386-6 The permit holder should be required to perform frequent safety checks on a daily basis throughout a 24-hour period, and to report findings to the company and issuing agencies daily. The hazardous risk of this activity and damage it can cause mandates increased surveillance of it by all interested parties.
3363	13458-2 Permits are being issued in spite of the scarcity of clean water availability, and the companies are not doing their best to prevent the wastewater from going into the ocean and into agriculture land, which has been dumped into the agriculture land. The companies must be made to clean up after themselves and not be allowed to dump into the oceans.
3364	13552-24 The proposed regulations provide various opportunities for oversight. As permit applications increase and well stimulation treatments expand, citizens recommend the DOC reserve authority to suspend new applications if the capacity and funding for oversight and witnessing of operator activities is not sufficient to ensure adequate protection of ecological resources and public health/safety.
3365	13580-3 The wording, “continued injection” is open to scrutiny. There is nothing that would prohibit the company doing the well injection from extending the period of tests, regardless of outcome. The limits as to the company’s ability to secure oil or gas should be explored under a definitive timeframe.
3366	13199-1 Grey water should be collected and used for approved fracking. Using fresh water is an unwise waste of this essential resource and should be stopped immediately. As Californians move toward natural energy, the grey water can then be used for crops, public gardens, etc.
3367	13538-2 These regulations could be used by DOGGR to bypass CEQA's bedrock environmental review and mitigation process and requirements. This language could also prevent air and water boards, local land use jurisdictions and other agencies from carrying out their own CEQA reviews of fracking.

3368	13227-4, 13228-4 If regulators choose to bend to the fossil fuel industry “lobbying” efforts and still allow resource extraction using “well stimulation,” adjacent property owners should have the right to be relocated to an equivalent property at the expense of the well operator.
3369	13201-2 What good is it to have a list of chemicals used at fracking sites when the US Environmental Protection Agency has to wait five days before receiving a full list of chemicals used as occurred at the site by Halliburton, Ohio?
3370	13101-1 California residents have a right to know exactly what chemicals are going into the groundwater before there is a problem.
3380	13505-1 Although the word "fracking" only appears in the small Section 1785.1 of the 32-page report, it seems clear that fracking is the true subject of the whole.
3381	13509-6 Asking the oil companies to estimate "axial dimensional stimulation area" (ADSA) seems preposterous to Californians. Once this type of activity starts in one area of the state, no one knows for sure what it can set off along the many fault lines. No one knows for sure - period - but the people know fracking uses obscene amounts of precious water and pumps deadly chemicals into California’s soils.
3382	13373-5 Too much discretion is left to the operator to do the right thing.
3383	13560-20, 13560-13 Indefinite storage of hazardous substances is not a solution, it is only allowing current State officials to put their heads in the sand, requiring future civil servants to come up with a solution; and allowing current corporate profits to take precedence over the future health of the planet and children.
3384	13560-14 Storage of toxic fracking materials has always been a loathsome issue for property owners and residents near any storage sites. Such sites are often located near financially poor residents, or in remote locations where it is hoped nobody will know what is going on. It is felt that indefinite storage is still not proven to be safe.
3385	13560-12 Current food manufacturers are not allowed to dump their wastes, even if they are biodegradable and natural. Any waste grease has to be removed and disposed of correctly. Other food waste products have to be broken down. Citizens want to know why oil and gas companies are allowed to store the liquids altered with foaming agents, surfactants, lubricants, gels, acids, and distillates for an indefinite period. They want to know where the insurance requirements are to keep such substances from leaking out of aging storage facilities several generations from now and where the insurance deposits are to help offset the future health issues that will come from polluting the planet.
3386	13560-16 Only two disposal sites for radioactive liquids exist in the United States.

	Response to comments 3361-3386: Thank you for your comments.
3387	004066 The Department received 205 comments calling for a ban or moratorium on fracking by way of mass emails from 350.org. A majority of the 205 comments were exactly the same, but some commenter's expanded on their reasoning for a ban or moratorium on fracking. The summary of those comments is as follows: There is disappointment with the government with its decision to allow fracking. California is the top producing agricultural state in the country, leader in alternatives to fossil fuels, at the forefront of efforts against climate change, environment sustainability and continues to be the international leader in the clean energy movement. Since humans care about the stewardship of the biosphere there should be a ban or moratorium on oil, gas and coal extraction. Fracking is not covered under the Clean Water Act so it is essentially unregulated. Fracking goes against the Public Utility Commission which sets its priorities for energy generation as conservation first. A strong carbon tax may slow down fossil fuel use enough to maintain the climate. An environmental impact report should be required for each local area in California. Fracking works well with using finely ground sand and water only. Fracking should be allowed everywhere but near local water tables which would promote California's energy independence. California's oil should not be exported. There are many concerns regarding the resource intensive fracking to California's water, fault lines, health, economy, carbon levels in the ground, atmosphere, oceans, agriculture, animals, plants, fish, air, soil, wildlife, marine life, pollution (air and water), climate, natural resources, the environment and how all this will now affect the workers and residents of California. Commenter's are concerned about contamination of aquifers, land, crops, wastewater injection wells, drinking/bathing water, oceans, groundwater, freshwater resources and surface water. California is in a drought so any amount, type or right to water should not be wasted or diverted to other parts of California. Water management needs to be addressed. Political gain, greed, unethical, immoral or profitable gain should not be the reason fracking is allowed in California. There is distrust in industry to disclose the contents in the fracking fluids. There are concerns regarding leaks in drilling equipment of gas or any spilled or seepage of toxic chemicals or radiation since well construction standards are not failsafe. Extreme weather conditions can disrupt and break fracking infrastructure. California should not be drilling its way to energy dependency. Tracking contamination or leaks back to the source is another key concern. There are unintended impacts of fracking such as an increase in health care costs and needs due to carcinogenic and radioactive substances causing chronic health problems, homelessness, pushing businesses out of the state, environmental disasters (wildfires, drought, extreme heat, rising sea levels, Dengue Fever and Valley Fever), externalized costs, death, over-industrializing communities, increase in illegal dumping, ocean levels rising, ocean acidification, earthquakes, seismic activity and tectonic stability. Fracking will also create toxic by-products, destabilization of the ground structure, and an increase in unusable water, flammable drinking/bathing water and a decline in tourism. Climate change is of another concern due to the amount of methane emissions, carbon dioxide and other greenhouse gases. Natural gas emissions are worse than coal and that is why California needs to leave the oil in the ground. Transportation or dumping of the oil or of fracking by-products is explosive and dangerous. California is still suffering the consequences of the Gold Rush, Redwood forest harvesting and fisheries are virtually non-existent now. The U.S. is a net exporter of hydrocarbons yet we are willing to use methods that can endanger our water supply for future generations. Overall, fracking in California is not only dirty and dangerous but it is making California into a wasteland setting limits for future generations.

	California should learn from other states examples based on the variety of incidents as to why fracking should not be allowed. Let's invest money and/or focus on renewable sustainable energy sources, an electric grid, tidal, geothermal, the electric bullet train, clean solar, carbon pricing, using more grey water, solar arrays on private homes, solar feed in tariff required utilities to pay homes for feeding solar on the grid, low cost energy, small modular reactor nuclear technology, solar panel use, wind, electric or hybrid cars, bio-fuels from algae and other non-destructive/non-polluting methods of energy. The risks of fracking need to be studied along with resolutions, data and costs to prove that fracking is harmless and the protocols are safe. California needs to figure out how to safely use or reduce amounts of oil and gas used or get new technology that rids California of using fossil fuels. Research needs to be done on how much harmful radiation and gases are released into the atmosphere.
3388	000343-000644 The Department received 5,996 comments by way of mass emails with the title "Ban Fracking in California." A majority of the 5,996 comments were exactly the same, however, this is a summary of 302 variations where commenter's expanded on their reasoning for a ban on fracking, acidization and other well-stimulation processes. The summary of those comments is as follows: There is disappointment with the government with its decision to allow fracking. California needs to preserve its legacy of environmental leadership, be a leader in greenhouse gas emissions and be more progressive and pro-environment. New fracking and acidization technologies are also opening up huge new sources of dirty oil to extraction and combustion. Regulations should require operators to monitor relevant air pollutant concentrations in the vicinity and during fracking operations before commencement of operations and establish baseline levels. The air pollutants monitored should include but not be limited to methane, ozone, benzene, PM2.5, PM10 and radioactivity. Upper limits on allowed pollutant concentrations should be in compliance with California's air quality standards. Operations should cease if the pollutant concentrations exceed allowable levels. The regulations need to address how they fast-track multiple well-stimulation jobs with a single approval and without adequately studying the impact of each frack. California needs an oil severance tax. There are many concerns regarding fracking to California's water, air quality, ozone, health, fisheries, the biosphere, soil, the ecosystem, environment, geological faults, pollution (ground, air and water), and agriculture and how all this will now affect the people of California. The Safe Drinking Water Act being amended to accommodate fracking gives doubts to commenter's about the safety of the extraction process. Commenter's are concerned about contamination of groundwater, the water table, oceans, wells, aquifers and drinking/bathing water. California is in a drought so water should not be wasted but used for our agriculture that will eventually feed Californian's. Tunnel construction and the diversion of water to Southern California will add more impacts to the water supply. Political gain, greed, unethical, immoral, profitable gain or loopholes (Environmental Protection Agency's Cheney) in the system should not be the reason fracking is allowed in California. There is distrust in industry to disclose the contents in the fracking fluids that could contain radioactive substances or potentially toxic chemicals that are being pressure injected. There are concerns regarding the impacts on private well owners as well as others of gas leaks due to poorly constructed wells which can emit odors or even flammable gases. There are unintended impacts of fracking such as an increase in health care costs due to carcinogenic and radioactive substances causing chronic health problems (these substances can be airborne and then be inhaled), an increase in air pollutants, earthquakes and sinkholes. Fracking will also create a decline in tourism, water rationing and decline in the lubrication of high-tension plate boundaries. Climate change is of another concern due to the amount of methane emissions,

	carbon dioxide and other greenhouse gases. California should not be drilling its way to energy dependency. The quality of oil drilled will have an even higher load of heavy metals. Transportation of oil or fracking by-products on barges or by any other means is hazardous. Fracking in California will affect future generations. California should learn from other states examples based on the variety of incidents as to why fracking should not be allowed.Let's invest money and/or focus on infrastructure, wind, algae oil, wave, hydro, solar, bio-fuels from waste, German-style feed in tariff for PV systems, conservation stewardship, use carbon emission fuels, sustainable renewable energy, methane capture from waste, clean energy, all electric transportation and green technology. California can explore turning plastic into gas for cars as done by a Japanese scientist. We should be leading the country into a sound energy model: efficiency, reduction of use and local appropriate alternatives. California needs to toughen up the states demands regarding safety, clean air, clean fuel and reserves for cleanup after spills and other disasters. California needs to increase research and generate new studies.
3389	007704 The Department received 7,651 comments by way of mass emails with the title "Ban Fracking in California." A majority of the 7,651 comments were exactly the same, however, this is a summary of the variations where commenter's expanded on their reasoning for a ban on fracking, acidization and other well-stimulation processes. The summary of those comments is as follows: The regulations are inadequate, therefore, commenter's are urging for a ban on fracking.
3390	007702 The Department received 84 comments by way of mass emails from the Center of Race, Poverty and the Environment on Ban Fracking in California. A majority of the 84 comments were exactly the same, however, this is a summary of 84 variations where commenter's expanded on their reasoning for a ban on fracking, acidization and other well-stimulation processes. The summary of those comments is as follows: The regulations will not protect California and Californian's, therefore, commenter's are urging for climate leadership and a ban on fracking.
3391	007703 The Department received 446 comments by way of mass emails from the Center of Race, Poverty and the Environment on Ban Fracking in California. A majority of the 446 comments were exactly the same, however, this is a summary of 446 variations where commenter's expanded on their reasoning for a ban on fracking, acidization and other well-stimulation processes. The summary of those comments is as follows: The regulations will not protect California and Californian's, therefore, commenter's are urging for climate leadership and a ban on fracking.
3392	006364 The Department received 18 comments by way of mass emails on Fracking. A few of the 18 comments were exactly the same, however, this is a summary of 13 variations where commenter's expanded on their reasoning for a ban on fracking, acidization and other well-stimulation processes. The summary of those comments is as follows: The draft regulations fall short of protecting California from fracking, therefore, there needs to be a moratorium on fracking at least until the results from the independent scientific study and environmental analysis on fracking is completed.

3393	000645-000649 The Department received 18 comments by way of mass emails on Fracking. A majority of the 18 comments were exactly the same, however, this is a summary of 5 variations where commenter's expanded on their reasoning for a ban on fracking, acidization and other well-stimulation processes. The summary of those comments is as follows: . The draft regulations fall short of protecting California from fracking, therefore, there needs to be a moratorium on fracking at least until the results from the independent scientific study and environmental analysis on fracking is completed. Let's protect Californians' interests ahead of any political gain or greed that'd cause a few to benefit from fracking proceeds.
3394	006365 The Department received 1,703 comments by way of mass emails with the title "Comments on Proposed Oil & Gas Regulations." A majority of the 1,703 comments were exactly the same, however, this is a summary of variations where commenter's expanded on their reasoning for a ban on fracking, acidization and other well-stimulation processes. The summary of those comments is as follows: Stronger regulations will not protect California from the direct and immediate threat of fracking, therefore, California needs to ban fracking.
3395	008325, 010814-013073 The Department received 52,964 comments by way of mass emails from CREDO with the title "Ban Fracking in California." Some of the 52,964 comments were exactly the same, however, this is a summary of 2,260 variations where commenter's expanded on their reasoning for a ban on fracking, acidization and other well-stimulation processes. The summary of those comments is as follows: There is disappointment with the government with its decision to allow fracking. California needs to preserve its legacy of environmental leadership, and be a leader. Either place a ban on fracking or at least a moratorium. California is regulating a process that cannot be safely regulated, and it is questioned on how it's allowed to proceed. SB4 should institute the most restrictive conditions on permits, pending fuller understanding of the impacts. There is no regulation requiring a minimum depth above which fracking would not be allowed. More protections should be put into place to protect California's clean water supply. Make Industry state their water source and how they plan to restore it for drinking. California needs to tax fracking heavily and limit the amount of new profit that companies associated with fracking may recognize. Industry needs to pay taxes or fees to export California's natural resources. The excess money can be used to fix schools and eliminate debt. Fracking is a violation of the Porter-Cologne Water Quality Control Act because fracking fluids meet the definition of "waste" in Cal. Water Code Section 13050(d). Typical fracking operations affect connate waters--waters trapped in layers of sedimentary rocks. Discharge of waste to waters is prohibited without a permit under Cal. Water Code Section 13260. While injection wells may be permitted the current regulatory scheme proposed in the regulations does not adequately address contamination of connate waters or their potential connectivity to other ground and surface waters. For these reasons these regulations violate the public trust doctrine because water allocated for fracking benefits a small minority and potentially harms subsurface waters and hydrologically connected groundwater basins and surface waters. Courts have held that resources should be allocated to benefit the public trust. The regulations fail to adequately

address potential contamination of subsurface and connected surface waters in a manner that would harm ecosystem functions and thus and thus harm to the public trust interests. California law is replete with reinforces and reiterates the hierarchy of beneficial uses for water. An exhaustive summary is not possible but Cal. Water Code Section 1254 specifically states that domestic use is the highest use (most protected). The potential contamination of water for domestic users associated with fracking allowed under these regulations is thus contrary to existing policy and privileges uses that are lower in hierarchy than domestic use.

The regulations should put a state and county cap on the total amount of good water used and require maximum reuse of any water used in fracking. The regulations should require submission to the state of samples of chemicals used down the well and of samples of return liquids coming back up, funds for state testing of the samples, and reporting of results on a public website. The state should test nearby well water upon request of the owner. The regulations should include monitoring of impacts on habitat. All water users (industrial, agricultural, or residential) should be charged the "true" cost of water considering its ecosystem benefits and the impossibility of decontaminating drinking supplies once polluted.

Tracers need to be attached to the fracking chemicals to allow them to be traced to the specific company that used the chemicals and the specific field where they are used, and those companies need to be required to put up bonds for any and all damage that might result from the chemicals they use, with no limits in amount or time. The liability should include at least all of the income generated from the fracking business, and all of the executive pay and bonuses paid by those companies, so if damage results those incomes could be clawed back and used to remediate the problems that result. This should be done for a five year period. Then the state or an independent group can monitor for damage. If the tracers are detected anywhere then fracking should be shut down and start clawing money back from the companies to remediate. Fracking should be banned until new technology has been created that can extract oil and gas safely.

SB4 entirely neglects to mention either the terms Naturally-Occurring Radioactive Materials, “NORM” or “shale”, in regard to the Required Public Disclosures section and it only refers to “recovered well stimulation fluids”. Section 1788 of SB4 mentions tracers used in well stimulation fluids, stating that “within 60 days after the cessation of a well stimulation treatment, the operator shall publicly disclose all of the following information [about].” Any radiological components or tracers injected into the well as part of the well stimulation treatment, a description of the recovery method, if any, for those components or tracers, the recovery rate, and specific disposal information for recovered components or tracers; The radioactivity of the recovered well stimulation fluids;” Fracking water used remains underground, but about ten percent resurfaces within 30 days, amounting to between 300,000 to 800,000 gallons of flow back wastewater per each well drilled. Other estimates of flow back wastewater are higher, but flow back always decreases markedly within the first year in a shale well and along with the oil, both almost completely stops within three years. Not to be confused with flow back water, produced water is high-salt, briny formation water eluted during the full productive life of an oil or gas well. Depending on the geologic formation, water produced from a well can continue for years at a daily flow rate of 30 to 500 gallons per day. Long-term produced shale wastewater recovery can be 30% to 100% of the original injected volume of fracking fluid, potentially millions of gallons per well. The EPA allows a maximum radioactivity of 5 picocuries of radium per liter of drinking water. Produced water has been found to contain radium levels as high as 9,000 picocuries per liter, with pipe and tank scale sometimes over 100,000 picocuries per liter, according to the EPA, the Official Non-Hazardous Designation of NORM from All Drilling Wastes, a priori. The well stimulation fluids referred to in SB4, although containing mildly radioactive tracers, are expelled from the well before most of the NORM-containing shale-derived wastewater, that is co-produced along with the majority of the recovered shale oil. SB4’s oversights specifically pertains to the: 1) detection, 2) handling, 3) treatment, 4) storage, 5) transport and 6) disposal of shale drilling

	wastewater and solid waste with high concentrations of NORM. One important state-level goal should be to immediately make obsolete the Wilson Administration era oil drilling wastewater study and undertake a new study to investigate current levels of wastewater radioactivity from horizontal or directional shale wells. The regulations neglect to mention potentially radioactive wastewater from subterranean shale brine that is frequently produced from shale oil- and gas-well drilling. Neither does SB4 mention the proper handling of radioactive shale waste material frequently derived from shale wells in elevated amounts, above the amounts adequate to precipitate a significant health and safety concern. Regulations need to address surface users or owners that claims for damage by subsurface extraction would be honored. There should be a claims board with a 60-day decision timeline, and a presumption for the surface user. If the oil company doesn't like the result, then they can go to court, with an automatic class for similar cases above the same property. In addition, there should be required surface monitoring for methane and other products, and if methane or other volatile gasses increase significantly then there should be mandatory collection, with allowance for flaring until collection systems can be set up. Right now these can seep into existing uses, including buildings and explosives and chemical storage facilities, without warning, potentially causing illness or even serious disaster. Even when (as in most cases) these chemicals escape into the atmosphere, when un-burned they contribute at much higher levels to global warming. Water sources should also be monitored above and around the surface, at the expense of the producer but it should be under the control of the state. Requiring disclosure of chemical information to the public 60 days after fracking has occurred is grossly insufficient. The regulations limit direct notification and the right to request baseline water quality testing to a “tenant” with a written lease within a radius of 1500 feet from the wellhead and 500 feet from any part of the well. People who live much further away and who don’t have a written lease are still harmed by fracking. Water quality monitoring should be required in every case, not just when a resident immediately adjacent to the well requests testing. More complete follow-up testing and monitoring should also be required. The Regulations should not create a reporting loophole for so-called “exploratory wells.” The regulations should specify the procedures for spill reporting, and should require immediate and direct reporting to nearby residents. Regulations need to be clear that chemical identities may not be withheld under a trade secret claim. Industry should be paying an extraction tax, fee or royalty on production. Industry should share profits from the acquisition of the cost. An excise tax should be collected to sufficiently fund effective government regulation and monitoring. Oil companies that want to drill or frack in California should put up a $20 billion dollar bond for environmental protection paid in advance. The environment needs a $100 billion dollar defense fund readily accessible at any time. Companies that benefit from fracking should maintain a fund to cover the risks of prolonged damage to the water table and the atmosphere. Industry needs to be required to clean up the left behind chemicals and residues. The chemical and amount used should be listed. Industry should pay for a chemical test for safety. The state can verify the chemicals safety. A commenter supported the regulatory process and stated it was a strong approach to preventing the environment from harm while helping California and the United States to approach energy independence. There are many concerns regarding fracking to California’s safety, water, community, air quality, rain, snowpack, climate, land, landscape, beaches, coastline, farms, and health, plants, forestry, animals, parks, wildlife, ecology, fisheries, soil, economy, non-polluting energy generation, food, and water supply, environment, economy, geological faults, pollution (ground, air, atmospheric, noise, and water), agriculture, and the damages fracking will do long-term for the short-term gain to California. There are concerns regarding the impacts of the questionable injection, chemical leaks causing corrosion in pipes and the rise of toxic gas plumes, casing leaks, the concentration

	levels of gases that are being released into the air, the spin the media puts on fracking, and the mining of the mineral sands used in fracking. Industry is using toxic chemicals and with their powerful lobby is immune from EPA regulations. There are unintended impacts of fracking such as an increase in seismicity activity, industrialization of communities, increase in crime, increase in abandoned children, decline in tourism, increase in instability of California's geology and faults, oil spills, increase the active section of the Ring of Fire, tremors, sinkholes, interferes with migration and reproduction, increase in fires, Industry's lack of road maintenance, decline in people's health (death, illness, cancer, skin rashes/lesions, sinus infections, asthma, emphysema, Autism, genetic mutation, heart troubles, birth defects, oozing blood from the eyes, respiratory problems, immune disorders, and neurological damage), increase in medical costs, health care system becoming over taxed, increase in exponential eco-social costs, hollowing out of the Earth's mantle and core, burning down forests for fuel once fracking extracts all of California's oil, divert water from agriculture, reduce agriculture production, deplete our ground water, increase land subsidence (sabotaging hi-speed rail), decrease in bee populations, increase in criminal negligence cases, road damage, devaluation of home prices in fracked areas, inability to purchase home insurance on homes in fracked areas. California should not be drilling its way to energy dependency. Subjecting the earth's crust to large amount of hydraulic pressure will destabilize it. California needs to give up on petroleum fueled personal use motor vehicles. Commenter's are concerned about contamination of groundwater, streams, ponds, rivers, the water table, oceans, wells, aquifers, and drinking/bathing water (flaming water). California is in a drought so water should not be wasted on fracking but used for drinking and regular uses as well as for agriculture. Commenter's are concerned that when a water shortage occurs the possibility of how rationing of it will occur, and where the water will come from. Water should be used for our firefighting, drought relief, agriculture to irrigate crops that will feed Californian's, river conservation and rehabilitation. Let's not spend ten billion dollars on water diversion schemes around the Delta. Citizens need to start getting fined for wasting water. With population growth and agriculture expansion, California needs to build high capacity water infrastructure. Industry will take advantage of the water shortage and sell people bottled water. Recycled municipal wastewater should be used by industry to frack as well as farmers to irrigate agriculture. Other types of water that commenter's think Industry should use is recycled water, and grey water. California is diverting Delta water so Southern California can continue to have water for fracking. Commenter's are concerned about Industry's oversight, best practices, and self-inspection/self-regulation being enough to protect California's groundwater supplies. A water emergency should be declared. Fracking removes water permanently out of the water cycle. Political gain, greed, to get California out of debt and on budget, unethical, immoral, Halliburton loophole (exemption from the Clean Water, and Air Act), profitable gain and loopholes should not be the reason fracking is allowed in California. California can learn from Prop 13 and avoid short term gain at the expense of rational forethought. There is not enough integrity in Industry to voluntarily report or follow the regulations. Despite fracking bringing incentives to California (jobs, lower gas prices, money), the price of its impacts are not worth any compensation California will receive. There is a concern for California because the regulations do not require disclosure to the public of chemical concentrations if industry claims trade secret. Non-disclosure agreements, sealed court complaints, gag orders, and legal settlements that prevent families from discussing results or legitimate concerns. Climate change is of another concern due to the amount of methane, carbon dioxide, and other greenhouse gases that create global warming from fracking. Natural gas is more like 86 times worse when its effects are looked at in the short term, which is the time frame we have to really turn the tide on climate change. This means that a leakage rate of just over 1% or 2% negates

	any environmental gains when replacing coal or oil. Commenter's are concerned about the leakage of methane gas from well seals jeopardizing air quality. Fracking isn't the solution to California's energy needs. Fracking undoes the work done on AB 32. Transportation of oil is hazardous (explosions), and when it's getting transported overseas it's not lowering gas prices. Disposal of fracking wastewater in plastic lined pits is of concern. Fracking by-products are hazardous, and commenter's want to know where fracking waste will be disposed. An environmental impact report, further research, long-term studies, and a peer review needs to be done prior to fracking to confirm its safety. There are too many unknowns still regarding fracking that will affect future generations. California should learn from other states, and countries examples based on the variety of incidents as to why fracking should be banned or a moratorium be put in place. Let's invest in wind, solar, electric autos, algae bio-fuel, ocean wave, solar and wind generators, desalinizing salt water (state funded), home based solar energy that will run electric cars, thorium nuclear power plants can do massive desalination (molten salt reactors), geothermal, oceanic thermal energy, retrofit existing buildings with energy and water efficiency, sustainable renewable energy, clean energy, and other alternative energy sources. Promotion of conservation of energy, fuel efficiency, public transportation, driving less, walking, biking, recycling, non-motorized travel, mass transit, and having a four day work week. There are other ways to solve California's oil dependency that will also create jobs. California can subsidize long term, clean sources of energy, and have incentives for solar and wind. Support projects that put rain water being put into aquifers. California as well as the federal government need to overhaul their energy policies immediately if California has any hope of stabilizing the climate and reducing fossil fuels. California has to get away from greenhouse gas emissions which means no new oil wells, no tar sands oil, no mountaintop coal removal, and no fracking. Public funds should go towards green energy.
3396	007705 The Department received a 224 pages of Petition signers from the Food & Water Watch on Ban Fracking in California. A summary of those comments is as follows: The regulations will not protect California and Californian's, therefore, commenter's are urging for a ban on fracking.
3397	009325-010812 The Department received 23,981 comments from Friends of the Earth by way of mass emails with the title "Ban Fracking in California." A majority of the 23,981 comments were exactly the same, however, this is a summary of 1,486 variations where commenter's expanded on their reasoning for a ban on fracking, acidization and other well-stimulation processes. The summary of those comments is as follows: There is intense disappointment with the oil industries, the government, and former Vice President Dick Cheney with their decision to allow fracking, the lack of safeguarding farmland and open-space resources. Current proposed fracking regulations have been described as being "narrow, oil industry-friendly," "very bad," "irresponsible," "lazy," "lame" and the fracking process is "tragically stupid." Many commenters have requested a moratorium so that further research can be done regarding fracking and its level of safety. In New York, the governor has a long-term hold on fracking development while his administration studies the health and environmental impacts, an example worth emulating. Permitting fracking, GMO's and chemtrails are inconsistent with California's strict automobile omission laws. California needs to preserve its legacy of environmental leadership, be a leader in greenhouse gas emissions and be more progressive by fighting the degradation of the environment. Proposed fracking and acidization technologies are opening up huge new sources of dirty oil to extraction and combustion. Energy policy should be

	considered with a serious look at the long-term costs and ramifications as well as the near-term profits. Current proposed regulations will do nothing to reduce the climate impacts of extracting and burning up to fifteen billion barrels of dirty oil. In addition, these regulations place unwanted restrictions and burdens on nearby residents of fracked wells. A more serious commitment to energy conservation and renewables is the best way to progress in a globally positive direction. Regulations should require operators to monitor relevant air pollutant concentrations in the vicinity and during fracking operations before commencement of operations and establish baseline levels. The pollutants monitored should include but not be limited to methane, ozone, benzene, radon, Ethylene Glycol (aka antifreeze), ethanol, isopropyl alcohol, acetic acid, hydrochloric acid, PM2.5, PM10 and radioactivity. Methane is 25 times more potent and able to trap heat than Carbon Dioxide and according to the Wilderness Society, more than 600 chemicals are used or released in the fracking process, many of which are not revealed because of protective loopholes in federal law. Upper limits on allowed pollutant concentrations should be in compliance with California's air quality standards. Operations should cease if the pollutant concentrations exceed allowable levels. The regulations need to clearly provide for full disclosure of all environmental and health risks or for public participation prior to the approval of a permit to frack. Overall, the consensus is that the only sufficient regulation would be a prohibition on fracking and other extreme fossil fuel extraction techniques for California. There are many concerns regarding fracking and California's water, air quality, ozone, climate change, health, fisheries, the biosphere, soil, the ecosystem, environment, geological faults, pollution (ground, air and water), and agriculture and how all this will now affect the people of California. Fracking near or on fault lines puts California in a hazardous position. Ventura, CA is extremely afraid that a potential 7.3-8.1 earthquake could occur on a big and deep fault along their downtown area. One of the key conceits of allowing fracking to catalyze the natural gas boom is that it gives a fatally flawed sense of energy security and extended timeframe. 80% of all known fossil fuel reserves must remain undisturbed if we are going to keep global warming below the two degree Celsius red line. Modern civilization is addicted to fossil fuels but a survivable future requires us to stop using fossil fuels. The oil industry has repeatedly shown that it cannot control its own activities with respect to fracking, nor does it show any responsibility for debris and destruction left behind. Corporations cannot be trusted to regulate the health of communities at the expense of their bottom line. Jerry Brown, humanist, has been quoted as stating that "every resident counts, even those without [immigration] documentation." Every resident of California has the right to clean and untainted resources and the most valuable liquid on earth is water, not oil. Fracked water is too expensive to recycle. Every cubic foot of future gas extraction is already destined for China, not California. Forefront on the list of concerns is the potential fault disturbances and subsequent increase of earthquake activity. Each frack job requires 2-8 million gallons of water and a projected fifteen billion barrels of dirty oil will be extracted and burned. California is experiencing a serious drought, only getting 3.6 inches of rainfall, so water should not be wasted on fracking but instead used for agriculture that will eventually feed Californians. The Safe Drinking Water Act being amended to accommodate fracking gives doubts to commenters about the safety of the extraction process. Commenters are concerned about contamination of groundwater, the water table, oceans, wells, aquifers and drinking/bathing water. Well water contaminated with disposed fracking liquids can poison and burn due to its radioactivity. Frackers are exempt from the Clean Water Act, which grants them a free ticket to use and render useless all of the ground water they wish and people are being denied access to their own fresh water by the fracking industry. Tunnel construction and the diversion of water to Southern California will add more impacts to the water supply and destroy viability of farmland by salt water incursion. Political gain, greed, unethical, immoral, profitable gain or loopholes (Environmental Protection Agency's Cheney) in the system should not be the reason fracking is

	allowed in California. Goldman Sachs is betting against coal and the deleterious Fracking process. There is distrust in industry to disclose the contents in the fracking fluids that could contain radioactive substances or potentially toxic chemicals that are being pressure injected. Offshore fracking is planned for California; release of fracking chemicals into the Pacific Ocean provides a whole new level of threat, as they are far less contained than they would be in land-based fracking. Pennsylvania is pursuing criminal charges against Exxon for contaminating water supplies throughout the fracking processes. There are concerns regarding the impacts on private well owners as well as others of gas leaks due to poorly constructed wells which can emit odors, flammable gases and render millions of gallons of water poisonous. Misallocation of private and public properties, rights and resources upsets many. Unintended impacts of fracking include increase in health care costs due to carcinogenic and radioactive substances causing chronic health problems (these substances can be airborne and then be inhaled), an increase in air pollutants, earthquakes and sinkholes. Asthma attacks, sleeplessness, sounds of well explosions, oil trucks clogging up and spilling polluted fracking fluids on neighborhood roads and highways as well as pet death are some experienced annoyances and threats that occur as a result of fracking. Fracking is environmental terrorism that kills and causes cancer. The pollution can physically manifest as liver or kidney necrosis. Fracking will catalyze a decline in tourism, water rationing, food quality, organic food declaration, winery vintages, and cause a decline in the lubrication of high-tension plate boundaries. Climate change is of another concern due to the amount of methane emissions, carbon dioxide and other greenhouse gases. California needs to reverse the mentality of putting the economy first and above all. California should not be drilling its way to energy dependency. The quality of oil drilled will have an even higher load of heavy metals. Transportation of oil or fracking by-products on barges or by any other means is hazardous. Fracking practices in California will aversively affect future generations. The prospect of natural resource depletion and battles over limited existent resources is of high public concern. Additional fracking-related concerns include lack of housing availability, increase in use of public assistance programs, traffic congestion, increased crime and arrests, alcoholism, sexual assaults and higher incidence of sexually transmitted infections and birth defects. In a recent study, fracking towns' crime statistics have grown immensely, with a 70% increase in theft, rape and aggravated assault. California should learn from other states examples based on the variety of incidents as to why fracking should not be allowed. Entire countries have said "no" to fracking. California must set the example for our country and follow their lead. Citizens across America are convinced that what decisions California makes with regards to fracking will directly affect their own states of residence. Fracking-related radioactive waters and greenhouse gases released in Pennsylvania are disrupting and destroying ecosystems. There are reports of widespread and heightened seismic activity among other environmental implications due to fracking; earthquakes were reported in Colorado, Ohio, Oklahoma, Pennsylvania and Arkansas. Two to three hundred thousand residents of West Virginia are now without potable water due to coal industry chemical contamination and this should signal the vulnerabilities to extreme danger presented by the fossil fuel industry. Permanent damage has been done to aquifers and surface water for temporary energy supply in Wyoming and concern for California is widespread across the states. People from Pennsylvania to Wyoming can light their water taps on fire. Texas is a leading polluter in the country and worry for lack of agricultural growth where oil is extracted from the earth has been made evident. Cattle and other wildlife creatures are dying. Utah is under siege from the extraction industries. Illinois and Florida are in a similar position as California regarding fracking and looks to us to lead them in a new direction. Wisconsin is being tapped-out for fracking sand. Frack sand contains crystalline silica and water wells can become contaminated with arsenic, copper, vanadium and other elements. Something

	to consider is the high cost of cleaning abandoned fracking wells, as seen in other states. Property values in fracking regions are suffering and some banks are not electing to provide mortgages on properties in such areas. If California denies fracking, other states will undoubtedly follow suit, benefitting the land and its people. France has already banned fracking. States across America will experience a loss of economic activity and tourism, all crucial factors in California. Prince Charles himself made it a priority to visit Marin County when he came on a rare trip to the United States; he toured many organic and sustainable companies and farms. California is of global importance as a world leader of responsible food production and living. Fracking is never going to be part of a vision for a better America or world. Bill McKibben warns in his Rolling Stone article, "Global Warming's Terrifying New Math," that 'our entire fossil-fuel-based economy stands precariously on the shoulders of extracting and burning five times more fossil fuels than life on Earth can sustain.' Our best chance for healthy survival depends on our ability and willingness to invest money and/or focus on infrastructure, wind, algae oil, tidal, hydro, geothermal, solar, bio-fuels from waste, conservation stewardship, using carbon emission fuels, sustainable renewable energy, methane capture from waste, clean energy, desalination, all electric transportation and green technology. We should be leading the country into a sound energy model: efficiency, reduction of use and local appropriate alternatives so that we do not become an industrialized landscape where farms and forests once stood. No form of energy use is perfect but there are certain forms that are much less damaging than fracking. Unborn Californians deserve access to clean water. California needs to toughen up the state's demands regarding safety, clean air, clean fuel and reserves for cleanup after spills and other disasters. California must increase research and generate new studies; according to many commenters, a viewing of Gasland I and II explains it all. By banning corporate donations, political bribes and making environmentally sound decisions on behalf of the planet and its people, California's current state will become less dire. In addition to the above, people's requests for the positive progression of California's future include farming without GMO's, legalizing hemp for money, profit sharing for roads and bridges, building more hospitals, better lawmakers sworn into office, the government keeping its hands off of the public's bodies, making birth control and abortion options readily available, providing affordable child and mental health care and prohibition of guns. Also, see if any steps can be taken to prevent Westerners from being irradiated from the Fukushima fallout.
3398	007707 The Department received a 1,770 page petition via email from MoveOn.org. Some of the petitioners chose to add their own comments to the petition. Variations where commenter's expanded on their reasoning for a ban on fracking, acidization and other well-stimulation processes are summarized as follows: The regulations do not address air pollution that results from fracking. Many areas in the state, such as the Bay Area, Central Valley and Los Angeles Basin, have had bad air quality for many years. Increased oil production and fracking will increase air pollution and worsen people, animal and plant health. Fracking will release harmful toxins into the air. We already have spare the air days and wood burning fireplace restrictions but fracking won't be subject to these days. California is an agricultural treasure, providing most of the nation's fruit and vegetables, along with major dairy, livestock, poultry, duck, and a host of organic agricultural products to the U.S. food supply. Fracking puts this industry at risk by poisoning aquifers and soils. Agriculture, not oil, is the number one industry in California and it is sustainable. Allowing fracking in agricultural areas will devastate California's agricultural industry. MoveOn.org urge Governor Brown to reconsider the draft proposed for regulating fracking, acidization and other well-stimulation processes. The safest way forward for California is a ban

	on these inherently dangerous extraction methods. Fracking contributes to climate destabilization by increasing the greenhouse gasses of carbon dioxide and methane and interferes with cloud formation. Fracking at Santa Maria's newly approved 136 oil wells will add 88,000 mega tons of greenhouse gases to the atmosphere. The methane that is released into the atmosphere while fracking, is some 22 times as damaging as carbon dioxide and makes CO2 emissions look green. Fracking puts natural gas in the same column as coal and oil which is counter to emissions reduction goals set forward in SB 375 and undermines the commitment California made to climate change under AB 32. The atmosphere cannot sustain more carbon dioxide. The proposed regulations would do nothing to reduce the climate impacts of extracting and burning up to 15 billion barrels of oil. Ultimately fracking will accelerate global warming. Our coastal communities (and the hundreds of inland miles that lead to them) are fragile ecosystems that cannot handle fracking with chemicals and high pressure. Fracking has already caused untold damage to land and water as well as contributing to air pollution and is destroying the planet and other living things. There is no mitigation for damages caused by fracking to resident. Damages would include health injuries, contamination to our precious water supplies, soil contamination from the chemicals to the soils use dc for agriculture, degradation of property values, and the increased threats to seismic activity generated by fracking. Fracking has the potential to damage underlying bedrock that is topped with the various layers above it. Fracking is a dangerous and shameful procedure that belongs back in the Dark Ages - when the world did not understand the dangers of pollution and the finite nature of resources. The more fracking allowed will be an exponential increase in the rate of destruction of our environment, a danger to the people, as well as to global warming. Fracking fluid has chemicals such as, toluene and benzene, and is carcinogenic to wildlife. Mercury contamination has been found in tar sands. Fracking could result in an ecological disaster and killing endangered species. Fracking the Monterey shale without understanding the implications to earthquake stimulation. What happens to the fish and wildlife when water is polluted? The natural environment is California's greatest resource. Please don't allow our lands to be exploited by the side of the energy industry that doesn't care about the environment that is so dear many Californians. Fracking has resulted in environmental damage in the Dakotas, Colorado, West Virginia, Montana, Utah, Louisiana, Alaska and Parker, Texas. The damage resulting from the fracking process has been compared to Fukushima disaster in Japan and the Love Canal in New York. In West Virginia hydraulic fracturing is destroying people's homeland. People lived on the same farm for over 200 years undisturbed until Chesapeake Energy came along and clear cut the forests and poisoned water sources with the company's leaky pipelines. In West Virginia further environmental damage occurred when fracking chemicals spilled into a river. In western Pennsylvania people can no longer use their wells because of contamination while their farms are still being irrigated with the same water source. People in Europe are protesting against this dangerous extraction method that is so harmful to our fragile environment. Germany has banned fracking. A person need only talk to Canadians where this fracking is going on to understand why fracking should never be allowed the United States. Illinois has the strictest regulations in the US, but that's not enough. Fracking is slow genocide, environmental suicide, and madness.

	People find it hard to believe that Governor Brown is supporting fracking. People though that Brown cared about the environment and support of Fracking is counter too much of what Brown as espoused in the past. Many people believe that Brown is being bought off by the oil and gas industry. People are losing faith in the Governor and will not vote for him again unless he places a moratorium or ban on Fracking. What would Brown's father think of this or John Muir. New oil extraction methods like fracking have already proven that they put human health and safety at risk. We've already heard about entire towns in other states being poisoned from fracking fumes. It's bad enough we allow this in California, but fracking (let alone oil drilling) next door to residential areas is in unconscionable. I do not want acid and dangerous chemicals pumped into the ground beneath homes and in close proximity to schools. Our children's health depends on it. It makes absolutely no sense to allow an industry that has the potential to make thousands of people sick and significantly increase health care costs. No one's life is worth fracking. Leukemia is already appearing in fracking areas, as are birth defects. Healthcare costs in California will skyrocket, not to mention, many, if not all of us will suffer the long-term consequences of chemical contamination of our water supply. It is simply not safe to frack when we don't know the long term effects. We do not know enough about the environmental and health consequences to allow fracking in California or anywhere else. New fracking and acidization technologies are also opening up huge new sources of dirty oil in California's Monterey Shale formation to extraction and combustion. These proposed regulations fall far short of protecting California's air, water, wildlife and communities. A temporary moratorium on fracking is in the best interest of the people of California. Please put a 10 year moratorium on this matter until we know if we are in one of those 50-60 year droughts our oak tree rings have shown to be frequent in past centuries. Oil companies are some of the biggest polluters on the planet. Fracking will benefit no one except the oil companies as the damage that will be caused the soulless energy industry cannot be repaired. The fracking industry is fraught with deception. They do not care about our safety and won't ensure safety under any conditions. The industry cannot be trusted to keep water and air safe. Oil and gas companies are not considering the impact it has to future generations who have to deal with the consequences and aftermath of current drilling practices. Oil companies will internalize all of the profits (take all of them) and then externalize all of the cost of cleaning all of the environmental damage that they do. In other words, they will walk away from and leave the cost of cleaning up their messes to us. We need to make the fossil fuel industry pay for all of the costs of fossil fuels, including the full cost of any contamination of ground and surface waters. Also the cost of air pollution, including the medical costs to treat people who are adversely affected by air pollution, and the cost of their carbon releases to the atmosphere the same as any other stationery source of greenhouse gasses. Alternatively, how about requiring all these companies to have insurance that covers all damages, including environmental ones? Or allow citizens to get large penalty style compensation if fracking chemicals are found in water supply. At the end of the day, a very determined and powerful energy industry will find ways to undermine or circumvent regulations. California is striving to be a green progressive State. Fracking is contrary to that goal. Rather than fracking, people would rather California invest in renewable sources of energy such as, solar power, wind, wave, and biofuels. Other ideas for sources of energy include the following:

1. The state could try using old wells to create geo thermal flows that could heat, cool or run turbines.

2. Californian should also invest in fuel cell development and make the state the electric car capital of the world.

3. Natural gas is in abundant supply from landfills, wastewater treatment plants and cattle ranches… more infrastructure is put in place to capture the natural gas that is going into the atmosphere,

4. The State could use Molten Salt Reactors (MSRs) to produce energy. MSRs are different than light-water nuclear reactors. They can't blow up because they don't use superheated water. They run at atmospheric pressure. They can't melt down because they use a liquid salt solution instead of solid fuel rods. They don't produce any free hydrogen. This concept was proven at Oak Ridge National Labs in the1960s with the MSR Experiment.

5. Passing a solar feed-in tariff in each city, like LA has, only that pays a high enough rate to make it attractive to home owners to install solar, like $0.49 kwh, and which is open to anyone, and which gives a priority to solar over fossil fuel, we can ban fracking.

SB4 notice was insufficient. Only a few from District 1 were aware of the public hearings. The regulations do not go far enough. Technology changes so laws can never be strict enough to adequately protect the environment. The regulations also fast-track multiple well-stimulation jobs with a single approval and without adequately studying the impact of each frack job -- and the regulations do not clearly provide for full disclosure of all environmental and health risks prior to the approval of a permit to frack, as required by existing law. There is no safe way to contain all of the toxic waste. Containment ponds can overflow with substantial rainfall, storage tanks can't last indefinitely, and underground storage is really stupid given the earthquakes. The regulations do not clearly provide for full disclosure of all environmental and health risks prior to the approval of a permit to frack, as required by existing law. The regulations do not require disclosure of complete chemical information to the public until after fracking. What good is disclosing AFTER the fact? The difference between horizontal or vertical drilling has been cited as part of the reasoning for allowing this. In reality both of these techniques equate to pumping the earth full of toxic chemicals which is a scheme based on hubris and greed.

Hydraulic fracturing has caused earthquakes on the East Coast, in the Midwest, Pennsylvania, Oklahoma, and Ohio and in Texas where one town has had over thirty earthquakes. It is possible that the process has caused earthquakes in Kentucky.

California faces serious issues with the quake faults and potential destruction. Injecting chemicals into the ground with high force doesn't will result in more earthquakes which will be incredibly expensive to repair resulting damage. California experiences 600-800 earthquakes every day, twice the rate as in past years. One only has to look at the earthquakes in Coalinga and Kettleman area of our state and to see how removing oil may have helped increase ground movement along the San Andreas Fault. Further fracking can only damage the already fragile coastline. Earthquakes can also be caused by the underground explosions that occur when a well is fractured.

To my knowledge, big oil and gas are not replacing any solid material where they drill and eventually the ground will become unstable and cave-in. Can you imagine driving down the road and all of a sudden you are swallowed up by the earth and there is nothing you can do about it except die!

	I think your comments were very, very good. I do think you need to remind people constantly of the "social contract," getting to the basic philosophical underpinnings of progressivism. What makes a society great is that each of us contributes to the society to benefit all of us. Without a substantial governmental structure, the less fortunate among us will be left to beg and to be homeless, and this can happen to anyone at any time through illness, old age, loss of employment, etc. We must disabuse the notion that government deprives wealthy (read deserving) people of their "hard-earned" money. It is the fabric of society that makes it possible for the wealthy to have accumulated their wealth. They literally owe a debt back to that society --- a debt that cannot be satisfied by their selective voluntary charitable giving, but to the institutions that protect us all and enhance or lives every day (when working properly) --- our government. California basically gives these resources away, rather than tax them heavily like Alaska, Texas and most other states do. California should follow other states' lead. If you want more revenue take the Colorado, Washington state approach. California should ban the transport of fracked oil by tractor trailers and by train. The oil and products are highly volatile and far too dangerous to transport as they can explode and catch on fire when accidents or derailments occur. California is in one of its worst droughts in its history as a state. There is not enough water for agricultural uses. Ground water tables are dropping to new lows throughout the state. Fracking uses millions of gallons of water per well that is permanently lost due to fracking chemicals. Oil companies have money than agriculture to buy the water they need for fracking. The little water that is available this year and in drought years should be used for agriculture rather than fracking. Lots of Californians are dependent of groundwater for their source of water. Fracking increases the pressure on well casing which can lead to it cracking, thereby providing a path for frack fluid, waste water and oil and gas getting into aquifers. The Eastern US has experienced fracking chemicals seeping to aquifers, sometimes resulting in water so toxic that it can be lit on fire. If oil companies and regulators can't guarantee that no aquifers will be contaminated from fracking then the process should be banned. Now, even Disney has a road show for kids, promoting fracking and other fossil fuels, on which we are already too dependent. It's ridiculous. New fracking and acidization technologies are also opening up huge new sources of dirty oil in California's Monterey Shale formation to extraction and combustion. It is time to work on stimulating our economy by fixing all our roads and bridges and levees, putting money into our airports so they are up to date and be sure our Ports of Call are also up to date. US House passed bill ravaging toxic-waste law - on same day as W. Virginia chemical spill- Please let it stop. California's bounty and future is tied to its natural beauty and the financial benefits of agriculture and tourism. When considering fracking projects, each should be considered separately, not a carte blanche for fracking in mass. Give it 2 more years of research and fact finding before you sign into law. Fracking is not understood well and is incredibly inefficient means of collecting propane gas. 50% is lost through collection and is lost in storage at a rate of 0.5% a day.

	Fracking is often justified as part of the pursuit for "cheap natural gas" as a gateway fuel to a clean energy future. That rationale leads to a foolish pursuit that only perpetuates our fossil fuel addiction and risks the integrity of our most precious resource - water. In fact there is a huge glut of natural gas in this entire state and entire country Our generation should not have this as our legacy - we will be the "worst generation". For good measure, also ban "hydro-shearing," (that's the fracking of dormant volcanoes for geothermal energy). Fracking provides temporary jobs. California oil should be saved for the nearby future when world supplies are low and the essentials we get from it (not driving around in cars) like plastic medical devices have made it extremely valuable. And improved technology may provide us for a less environmentally damaging way to extract it. Fracking has been around for a long time most of the time without incident. However, that fracking was in depleted oil reservoirs or traps and products of that fracking were and are contained within the reservoir or trap. Fracking shale like the Monterey Shale is whole different game. The oil shale is a leaky container which cooked, with heat and pressure, the organic material that was trapped within the shale into oil and gas. Some of that oil and gas leaked out of the shale to form oil reservoirs or oil seeps like the La Bra tar pits. Fracking shale is fracturing an already leaky container in hopes that the residual saturation, oil and gas that did not leak out, is sufficient to warrant the fracking and oil production plus profit. In fracking shale you are shattering the container unlike fracking in oil reservoir or trap. The products of fracking, oil, condensate, gas liquids, gas and fracking fluids will, with time, migrate from the shattered shale to the surface just sure as the sun will comes tomorrow. Fracking shale is like shattering a glass of water on a table and not expecting the table to get wet. Only in you're only in your wish full thinking dreams. There are no regulations that can be enforced that will stop the shattered shale from leaking oil and gas; except the total probation of fracking oil shale. Fracking within an oil reservoir is ok so long they do not undertake fracking the trap itself. Once the shale is shattered it will resume leaking oil and gas even more than the shale has leaked in the pasted. That leaking shale oil and gas with time will make farm land unfathomable and turn residential land into an uninhabitable stinking mess. But that is not all: They say that they only recover 2% to 5% of the oil in the shale which means 92% to 95% of the oil at abandonment will be left leak out and surface over eons. If it were me I would sue to make the wood be frackers show how it is that they going to contain all of the oil within shattered shale and not some of the oil leak to the surface.
3399	007706 The Department received 5,438 comments from the Oil Change International by way of mass emails with the title "Ban Fracking in California." A majority of the 5,438 comments were exactly the same, however, this is a summary of variations where commenter's expanded on their reasoning for a ban on fracking, acidization and other well-stimulation processes. The summary of those comments is as follows: The regulations are inadequate, therefore, commenter's are urging for a ban on fracking.
3400	4083-4089 The Department received 20 comments by way of mass emails with the title "There Is No Such Thing as Safe Fracking." A few of the 20 comments were exactly the same, however, this is a summary of 16 variations where commenter's expanded on their reasoning for rejecting the proposed fracking regulations in California. The summary of those comments is as follows:

	The proposed regulations must be rejected in order to protect California's public health, water and climate. Californians call for a statewide ban on fracking as they feel that there is no way to make fracking safe.
3401	006366, 000650-001643 The Department received 10,090 comments by way of mass emails with the title "Please Enact an Immediate Statewide Ban on Fracking." A majority of the 10,090 comments were exactly the same, however, this is a summary of 994 variations where commenter's expanded on their reasoning for a ban or moratorium on hydraulic fracturing or fracking and related extreme drilling techniques (acidizing and gravel packing).. The summary of those comments is as follows: There is disappointment with the government with its decision to allow fracking. California is usually the leader on important environmental and social issues. Regulations should be enacted and inspections for compliance and enforcement with fines, penalties or restitution should occur so taxpayers are not paying any external costs. The proposed regulation, 1783.1 (23), requires "the anticipated source of the water to be used in the treatment", however, the source should be very specific. The regulation should ban the use of any of the freshwater from the Delta and possibly allow salt water or recovered water from previous operations or grey water. Reporting on spills is mandatory but the regulations fail to define the consequences. The source(s) and amounts of freshwater to be made toxic should be published as well as the process by which the polluter will restore the water to its pre-fracking condition. Cessation should be defined on how it is determined. Oil and gas development should be mandated to develop projects that incorporate cradle to cradle energy development and reduces our oil dependency. They should incorporate comprehensive life cycle accounting for energy research, development and refining. These companies should not be allowed to obtain short term profits at the expense of taxpayers, by ignoring or omitting costs incurred upon public health, natural resources, public property and community quality of life. Fracking should have to adhere to the California Environmental Quality Act. There is also a lack of a long term Environmental Impact Report. There should be geologic and hydrologic isolation before wells are stimulated. Operators may say that they plan to stimulate repeatedly over a period of a year so there is no reason why public disclosure of the approved permit should not be required as part of the permitting process and before stimulation occurs. Rather than putting responsibility on property owners to request baseline testing before stimulation, all groundwater for all wells should be required to be tested by the operator as part of the permit process. It should also be required post-stimulation to assure that there are no public health impacts. Industry needs to be taxed so California can purchase the energy it needs. Petroleum gel fracking is another option California can use. There are many concerns regarding the resource intensive fracking to California's water, health, property, parks and recreation, reservations, agriculture, ecology, woodlands, snowpack, wildfires, animals, fish, air, soil, pollution (air, water, light and noise), climate, the environment and how all this will now affect the workers and residents of California. Commenter's are concerned about contamination of aquifers, rivers, creeks, wells, drinking/bathing water, groundwater, freshwater resources, wastewater, beaches, lakes, streams, air contamination by emissions from venting and California's entire watershed. California is in a drought so water should not be wasted but used for our agriculture that will eventually feed Californian's. Political gain, greed, unethical, immoral, profitable gain, patent rights or loopholes (Halliburton) in the system should not be the reason fracking is allowed in California. There is distrust in industry to disclose the contents in the fracking fluids that could contain radioactive substances or potentially toxic chemicals. There are concerns regarding pipeline leaks of gas when there's compression of the concrete well or during injection of pressurized water and leaks into our seaboards due to the cement casing having a 5% failure rate in the first year alone and then over a 30 year span half will fail. There are unintended impacts of fracking such as an increase in health care costs

	due to carcinogenic and radioactive substances causing chronic health problems (these substances can be inhaled, swallowed and absorbed through the skin), decline in mental health of citizens, earthquakes, isotopes lasting generations and sinkholes. Fracking will also create high speed convoys, compressor stations and the intense truck traffic required over each well's life-cycle, destabilization of the ground structure, an increase in welfare demand, an increase in crime, a decline in property values, inability to secure insurance and/or mortgages, a decline in tourism, a decline in economic growth and a decline in the rights of homeowners. Climate change is of another concern due to the amount of methane emissions, carbon dioxide and other greenhouse gases. Transportation of the oil or of fracking by-products to refineries or wastelands is explosive and dangerous. Shipping oil from fracking to other countries may help California's gross domestic product but it harms California, especially if California can't sell it or refine it. California should also not be giving away, leasing, selling or allowing fracking on public lands. Overall, fracking in California is not only dirty and dangerous but it is making California into a wasteland for future generations. California should learn from other states examples based on the variety of incidents as to why fracking should not be allowed. Let's invest in ways to use less energy, clean sources of renewable energy, solar, wind, nuclear power, bio-fuels, electric, tidal power, automotive batteries, geothermal, solar powered cars and buses, free energy, anti-gravity propulsion and harvest rainwater. California needs more efficient appliances, better windmills, to ride bikes more, improve roofing and insulation and have better building practices. Let's save the oil and permanently bank it for a rainy day. California needs to increase research for alternative energy and stop subsidizing coal, gas and oil industry by not only encouraging fracking but also externalizing future costs of drilling cleanup, site remediation, habitat restoration, negative health effects and groundwater pollution. Subsidies then could be used to build the renewable energy industry. Demand immediate international engineering collaboration to take down the threat of a meltdown in Fukashima, Tokyo.
3402	006367, 001644-001665 The Department received 316 comments by way of mass emails with the title "Protect our Health, Environment and Natural Resources." A majority of the 316 comments were exactly the same, however, this is a summary of 22 variations where commenter's expanded on their reasoning for a moratorium, ban or the Division making the regulations stronger. The summary of those comments is as follows: Regulations should cover all forms of well stimulation as well as specify full compliance with California Environmental Quality Act on a well by well basis. Stimulation of confidential or exploratory wells should be prohibited. The definition of protected waters should include waters as consistent with the Clean Water Act and the Safe Drinking Water Act. Seismic monitoring for baseline and post stimulation seismic activity should be required surrounding all wells. There are concerns regarding impacts to California's water, land, pollution, air, health, farms, safety, environment, natural resources and how this will now affect Californians. Commenter's are concerned about contamination of land and water. California should not be wasting water. There are unintended impacts of fracking such as earthquakes. Let's protect Californians' interests ahead of any business or political gain, greed, fascism or loopholes (Halliburton) that would cause a few to benefit from fracking proceeds. Let's focus on developing clean and renewable energy sources.
3403	006368, 001666-001685 The Department received 226 comments by way of mass emails with the title "Public Comment of Draft Regulations for Well Stimulation." A majority of the 226 comments were exactly the same, however, this is a summary of 20 variations where commenter's expanded on their reasoning for California to protect Californians' from frackings risky processes by implementing an immediate moratorium on all fracking, acidizing and other forms of oil and gas well stimulation. The

	summary of those comments is as follows: A full environmental review should be performed prior to any well stimulation projects. There are concerns regarding frackings impacts to California's water, geological stability, health and how this will now affect Californians. Commenter's are concerned about contamination of groundwater, drinking water and freshwater resources. There are also concerns about fracking wastewater as well as spilled fracking fluids that contain chemicals and toxins. California is in a drought so water should not be wasted. Let's protect Californians' interests ahead of any political gain or greed that'd cause a few to benefit from fracking proceeds. Laws need to be enacted to force disclosure of chemicals used and not hide behind the words patent or proprietary in fracking. There are unintended impacts of fracking such as earthquakes and long term health problems. California should learn from other states examples based on the variety of incidents as to why fracking should not be allowed. Let's focus on energy conservation, renewable sources of energy and other sources other than fossil fuels. Fracking in California will affect future generations.
3404	007697, 001686-003736 The Department received 7,287 comments by way of mass emails with the title "Public Comments Requested on Fracking." A majority of the 7,287 comments were exactly the same, however, this is a summary of 2,105 variations where commenter's expanded on their reasoning for saying the proposed regulations prioritize oil industry profits and are not strong enough to protect our environment, health and safety of our communities, instead, California needs a moratorium or ban on risky fracking. The summary of those comments is as follows: There is disappointment with the government with its decision to allow California to frack and be oil dependent. California should wait for a federal law to cover this technology nationally. The regulations need to place an immediate moratorium, followed by a total ban on all mineral extractions. California is usually the leader on the environment and a full statewide environmental impact report (EIR) and geological study (science based controls) to properly access the impacts and cumulative impacts on the environment needs to be done prior to fracking and to determine if it should be done. SB 4 was severely weakened by adding a loophole exempting all fracking from review under CEQA. All negative impacts should be mitigated. Commenter's want regulations enforcement with fines and higher penalties which are figured based on the cost of doing business. California must set a precedent for the rest of the nation by properly enforcing regulations by DTSC or EPA to prevent the spread of contaminants involved with oil and gas extraction. Restitution or compensation should occur so taxpayers are not paying any external costs or even cleaning up any mess. A tax (severance/surtax) on extraction (other states pay 4.6% to 25%) can pay for an EIR. Raise the rates for extraction of natural resources to help fund our education system, cleanup and restoration. All current extraction should be subject to a 50% royalty to pay for energy efficiency, renewable energy and electrification of transportation. Corporations should post significant secure bonds and face treble damages in court for not following regulations or the government can use the money to cleanup any mess created from fracking. Companies can cause long-term hidden environmental impacts and then declare bankruptcy to avoid responsibility when they occur. There needs to be an escrow fund to which they must contribute to cover the risks, such as there was for nuclear power plants. Criminal penalties should extend to corporate officers and all supervisors in the field and not in the field. The bond needs to fund all cleanup with no statute of limitation on discovery of contamination and no liability limit. California needs to stop subsidizing the oil industry. The regulations prevent proper modeling and testing before fracking in a specific hydrogeologic

	system. All drilling be preceded by groundwater testing to establish a baseline near the drilling site and all drilling be followed by annual groundwater testing near that site. The results of these tests be made available to responsible government agencies and to the public. Any private well owners who have suffered contamination after fracking has begun, should receive a supply of fresh water for as long as their wells remain contaminated. All drilling be conducted utilizing adequate protections for groundwater quality, proper drilling casings, etc. All recovered fracking toxic water be stored off-site in completely contained flood-proof and earthquake proof storage units. That all of the costs of the above provisions be borne by the drilling companies and their investors and none of those costs be borne by the taxpayers of the state or the U.S. There needs to be a safe way to dispose of wastewater products. There should be a government funded cleanup fund to aid in first response. Companies need to be properly insured for these risks and state what risk projections to the environment and state their emergency actions will take in an emergency. California must take proper care of all water sources and therefore require onsite preventative measures of all such operations as per a permitting process. Permits need to be put in place or taken away in favor of a ban. No permits should be issued before the environmental impact report is completed in 2015. The permit process needs to make absolutely sure that there are not releases into the air that endanger people and wildlife in the area. Every cracked well should be required to have a $100 million dollar deposit/application fee to help cover potential adverse outcomes. There should be continuous third party inspections during all fracking operations to monitor the process. There needs to be enough funds to hire an adequate amount of field inspectors. All regulations should make mandatory a description of the fracking recipe, including relative amounts, and justification of every chemical included in the recipe. Industry should provide a clear, complete date on their fracking plans and materials for each proposed well. It's hard to prove liability for environmental pollution if one doesn't have access to the recipe of chemicals that fracking uses. The fracking recipe prior to fracking and after fracking needs to be the same. Disclosure of chemicals used after the fact is not adequate. Having industry post their chemicals on a voluntary and hosted website of the Interstate Oil and Gas Compact Commission doesn't sound too independent. Water and sand should be the only substances used for vertical drilled wells. Additives are not allowed under Germany laws. This law is to protect the health and environment of the people of that country. Any claim of trade secret status for more than a dozen chemicals can be shown to be false if relative amounts are taken into account. Since fracking formulas that contain 100+ chemicals or even 15+ chemicals, cost more money to manufacture but cannot be shown to be any better than other fracking mixtures, oil companies must be using these formulas to get rid of toxic waste which should otherwise require costly efforts to render harmless. DOGGR should therefore investigate the dumping of toxic waste concealed as fracking fluid. The regulations will lead to an increase in greenhouse gas emissions preventing California from meeting its AB32 emission reduction goals. Don't consider raising atmospheric CO2 levels by enabling the extraction of large amounts of previously sequestered hydrocarbons while California is attempting to limit its own emissions. California needs to close the loopholes--especially the one exempting billions of gallons of toxic fracking waste from our nation's hazardous waste law; ban processing facilities from our ports and waterways; keep transportation away from population centers; enforce strict new quality control laws so there will be no more spills, no ecological systems damaged by their infrastructure, no explosions ripping apart towns in the dead of night; hold their executives personally responsible for damages made by decisions to cut corners to increase profits that result in deaths or property damage; keep fracking out of our national forests and away from our national parks and drinking water sources; and keep fracking away from earthquake zones where

	the injection of chemicals and fluids may cause a shift resulting in billions in damage and many lives lost. The regulations do not reduce the risk of increased seismic activity. Fracking should never come as close to 25 miles from a residential area. Private land must not be seized by eminent domain for the benefit of oil corporations. It should be a requirement for all public officials supporting fracking to live with their families in government housing next to an active fracking site for a verified number of years such as five plus. Underground water contamination needs to be addressed. Industry should be forced to use gray water or desalinated water or other reclaimed water. There are many concerns regarding the resource intensive fracking to California's water, health, safety, protection, wildlife, wells, soil, ocean's, coastline, property, forests, food supply, animal migration, public lands, national parks, agriculture, habitat, estuaries, natural springs, farming, ecology, snowpack, wildfires, animals, fisheries, air, atmosphere, habitats, soil, plant life, ecosystem, aquifers, pollution (air, water, carbon and noise), climate and all the residents of California. Commenter's are concerned about contamination of agriculture, food supply, communities, the water table, aquifers, rivers, irrigation waters, wells, soil, land, drinking/bathing water (causing it to become flammable), air, aquifers, groundwater, surface waters, lakes, streams, California's entire watershed, re-entry of contaminated water into the water system and contaminated land not being able to produce edible food. There are many concerns about contamination but also the fear that state agencies are already overwhelmed by the monitoring of contaminated sites. California is in a drought so water should not be wasted or lost but used for our agriculture and people. The amount of wells that are fracked is depleting our primary water source. Aquifers are at an all-time low and are below the reach of many wells. Political gain (campaign support), greed, unethical, immoral, anti-democracy, anti-American, corrupt, profitable gains with huge payoffs with little risk to industry, should not be the reason fracking is allowed in California. Fracking is not safe, however, there are exemptions in the Clean Water Act, Safe Drinking Water Act, Clean Air Act, Resource Conservation and Recovery Act, Emergency Planning Community Right to Know Act and the National Environmental Policy Act which is called a Halliburton loophole. The oil company has/is paying people off for their silence, having people sign settlement agreements or gag orders to withhold the impact fracking has had on them and their families which has caused studies regarding fracking impacts to be skewed and inaccurate. State EPAs are paid to look the other way. The oil industry should not be allowed to regulate itself. There are concerns regarding the short term profit and long term risks involved, new gas fired power plants, the high pressure injection of chemicals and fluid, mercury contamination, wastewater laced with corrosive salts, fumes, radon gas being a byproduct, dead zones off the Sonoma coast and fracking chemicals getting mixed into these zones, a drilling station failure, flaws in the concrete well lining, destabilization of the surface structure of the earth, fracking water not being reclaimed or purified, injection of wastewater into the ground, oil barons, altering bedrock, wastewater being stored in unlined pits, offshore drilling, downstream effects, chemicals or wastewater leaching/seepage into the water system (radioactive isotopes, radiation, 4-methycyclohexane methanol and chromium 6), manmade shaking of the ground mixed with having underground explosions to locate oil, fracking in an earthquake prone state, fracking along volcanoes and fault lines, pipeline leaks which increases the global warming effect and explosions and corrosion/rot of pipes due to the chemicals within the pipes along with the pressure and malfunction of the casings or well-heads. The following health concerns are regarding prenatal development, birth defects, learning disabilities arising, high levels of endocrine or hormone disruptors in fracking areas and contact skin burns. Because of "trade

	secrets" there is distrust in industry to provide full disclose of the contents in the fracking fluids and giving notice to residents regarding possible damage to their homes, pollution and water supplies. Pressurized steam injections of liquids has no boundaries because they can leach and spread underground into areas where they were not intended to go. Oil industry lobbyists are going all out to eliminate competition from renewables. They have succeeded in some states, which are considering legislation that would reduce the need for wind and solar power. If the oil industry is successful in digging up even a small portion of all 15 billion barrels, California will be unable to meet our recently implemented low-carbon fuel standard. Fracking provides only short term jobs. The U.S. is exporting record amounts of oil so other countries have all the jobs in the world. California is allowing China to suck up the world's resources, instead, California needs to keep its resources and dollars at home. There is also a lack of independent audits, studies and scientific research/data/analysis. There are unintended impacts of fracking such as an increase in seismic activity, a depletion in aquifers at a rapid rate, increase in water prices, international conflict and natural disasters on an epic scale, no healthy consumers to buy corporate products, increase in litigation, population displacement and the costs of relocation of humans/animals to safe homes and communities or habitats, farmers having a limited water supply and not being able to afford water, stress on fault lines, having water trucked into a city, war, nuclear accidents, sickness or death, destruction of dams and/or infrastructure, an increase in testosterone levels, higher energy costs for citizens, an increase in health care costs due to chronic health problems, earthquakes, decrease in agricultural profits, loss of clean water, years of cleanup from groundwater contamination and sinkholes. Along with fracking comes the intense truck traffic, destabilization of the ground structure, a decline in property values, inability to secure insurance, loans and/or mortgages, a decline in tourism and a decline in economic growth. The surfactants cause huge amounts of gray, foamy and smelly water to be discharged. The same impacts hydraulic mining for minerals and the environmental destruction that took place then is also comparable to fracking now. Displacement occurs when oil is being pumped out of the ground which causes the earth to settle and then sink several feet. It'll take more tax dollars to fix damages fracking has caused. Higher prices for gasoline and oil will actually help stimulate the development and use of other energy technologies. Climate change is of another concern due to the amount of methane emissions, carbon dioxide and other greenhouse gases. Fracking is also acting like a catalyst for climate change. Methane Gas is released during the fracking process through the pipes and excavation openings. Methane gas is 100 times as strong of a greenhouse gas as carbon dioxide. The atmosphere already has the highest level of carbon dioxide level ever. California is accelerating global warming. Due to an increase in atmospheric carbon ranging from extreme heat the following will occur: increase in electricity demands, lower crop yields, increased irrigation demands, reduced chill hours for fruit and nut trees, diminished productivity of mixed conifer forests, temperature impaired wine-grape quality and heat stressed dairy herds. The harmful Volatile Organic Compounds (VOC) that are being emitted into the atmosphere from fracking are producing acid rain and ground level ozone which is contributing to even more warming of our precious planet. Transportation, dumping or spillage of the oil or of fracking by-products (hazardous and radioactive) to refineries or wastelands is explosive and dangerous via truck, train or ship. Exporting and shipping oil from fracking to other countries or states may help California's gross domestic product but it harms California, especially if California can't sell it or refine it. If not already done, it would be a good idea to form a coalition of LA County Supervisors, the L.A. City Councilmembers of abutting CD5 and CD11, and the elected officials of Culver City and Inglewood, to jointly commission an independent, comprehensive geotechnical & seismicity assessment of all the Baldwin Hills oil industry operations and detail the relative impacts on the Newport Inglewood earthquake fault, which runs beneath and is considered "active and

	dangerous". The final report should include a thorough peer review process to be published with a summary of the principal findings, and it should explicitly address any current or past claims of public safety issued by the fracking & oil industry interests. The history of California needs to be looked at to realize the comparable negative impacts other choices has made on California. Overall, fracking in California is not only dirty and dangerous but it is making California into a wasteland for future generations that will be impossible to reverse the damage. California should learn from other states and countries examples based on the variety of incidents and impacts as to why fracking should not be allowed. Let's invest in ways to use less energy, clean sources of renewable energy, hemp, hydrogen cell technology, hydrogen, solar or electric cars, solar power, state-wide electric rail system, thermal power plants, wind, water power, bio-fuel plant from California's algae ponds, green energy, use hemp for energy, public transit, hydroelectric, other types of businesses for profit and geothermal. Californians' need to change the oil and gas consumption way of life. Use less oil products. California needs the government's aid in funding alternate sources of energy and fuel. California needs to free its investment budget. Let's emphasize conservation measures such as ending all private HOA regulations on outdoor clotheslines and encourage Californians' to use less energy in all things. There's support for moving away from developing new sources of greenhouse gases so additional carbon is not released into the air. Give bigger incentives to the wind and solar power industry. Leave carbon in the ground. Let California wait until other states run out of petroleum and then start extraction. The price of petroleum will be worth so much more if California would wait. California needs to increase scientific research for alternative energy. Consult expert scientific advice from environmental groups. Use residential solar to power coupled with a residential and commercial feed in tariff, the RPS is the allocation method that is used to set aside a certain percentage of electrical generation for renewable energy in the state and with this California can solve some of these environmental and electrical generating problems. Feed in tariff policies can be implemented to support all renewable technologies including: wind, photovoltaics, solar thermal, geothermal, biogas, biomass, fuel cells, tidal and wave power. California law needs to be changed so that homeowners can oversize their renewable energy and sell the electricity obtained by renewable energy for a fair pro-business market price. Follow Spain's and Germany's solar power model. Germany has affordable solar panels installed on all new construction. Demand solar panels on all big buildings, shopping centers and parking lots. Newer designs of solar technology have emerged that are more efficient and effective. Subsidies given to help business and property owners install more solar panels. Switch over to organic methods of growing our food which will drastically reduce the use of chemical fertilizers and pesticides. Electric cars need to be priced more affordably so mass amounts of people can purchase them. Natural gas waste can be captured from feeding lots and gestated it into methane gas. There are other ways to minimize our energy use. California can eliminate alternate left turns except where the volume of traffic warrants them. Re-program traffic lights to blink yellow or red during late night periods of light traffic. Dissuade auto dealers from leaving their high-intensity parking lot lights on all night. Turn off parking lot lights that have virtually no cars in them after hours. Californian's can ride more bicycles. All the people exercising at the gym on stationary bicycles are generating electricity which could be harnessed to run the gym's lights. Vehicle 2 Grid storage of power from the batteries of cars could be developed and installed with subsidies for multiple family dwellings, on site in public/business parking as well as for individual

	homeowners and at Park and Ride stations.
3405	007698 The Department received 1,845 comments by way of mass emails with the title “Well Stimulation Regulations Dear DOGGR.” A majority of the 1,845 comments were exactly the same, however, this is a summary of 484 variations where commenter’s expanded on their reasoning to support the regulations. The summary of those comments is as follows: The proposed regulations are necessary to implement Senate Bill 4, therefore, commenter’s are writing in support of hydraulic fracturing and other well stimulation technologies.
3406	007699 The Department received 1,845 comments by way of mass emails with the title “Well Stimulation Regulations Dear DOGGR.” A majority of the 1,845 comments were exactly the same, however, this is a summary of 229 variations where commenter’s expanded on their reasoning to support the regulations. The summary of those comments is as follows: The proposed regulations are necessary to implement Senate Bill 4, therefore, commenter’s are writing in support of hydraulic fracturing and other well stimulation technologies.
3407	007700 The Department received 1,845 comments by way of mass emails with the title “Well Stimulation Regulations I urge you.” A majority of the 1,845 comments were exactly the same, however, this is a summary of 707 variations where commenter’s expanded on their reasoning for a statewide moratorium on fracking, acidization and other well-stimulation processes. The summary of those comments is as follows: California needs to be protected, therefore, commenter’s are urging for a statewide moratorium on fracking, acidizing and all forms of oil and gas well stimulation.
3408	003737-004065 The Department received 1,845 comments by way of mass emails with the title “Well Stimulation Regulations.” A majority of the 1,845 comments were exactly the same, however, this is a summary of 329 variations where commenter’s expanded on their reasoning for either commenting in support or urging for a moratorium on hydraulic fracturing or other well stimulation technologies. The summary of those comments is as follows: There is some disappointment and some support with the government with its decision to allow fracking. Supporters of SB 4 comment that California will now have the most stringent controls on hydraulic fracturing and other well stimulation technologies in the country, ensuring they can be employed safely and still protect California by maintaining an environmental balance given the immense diversity of California's oil and gas fields. Non-supporters comment that applying a "one size fits all" model for regulation is not appropriate but a specific regulation tailored at a field by field (or lease by lease) basis, with a statewide framework to ensure uniformity, can provide maximal protection of our environment with minimal impact on our state's productive potential. DOGGR should continue to stress the success of the existing casing requirements and record compliance by industry. A mandate should be made stating that before and after air and water testing should be done by industry. Commenter’s support reasonable threshold volumes or limit regulation on wellbore or near-wellbore stimulation treatments that allow for routine near-well bore cleanup. California should reevaluate the Cap and Trade Program to ensure that both California’s environment and economy are protected. Let’s not allow any commercial or open fracking except for a single controlled site circumstance, running on-site tests for all aspects of effects to the environment (seismic disturbance/water table/runoff/leaching/local air quality

	effects/all other emission consequences). Mitigation should occur. Fracking should occur with water only and have strict punishments for any form of violation. Permits should not be issued for fracking. Restrictions on exploration and production should be reconsidered. Industry should not be allowed to obtain short term profits at the expense of taxpayers. Drilling should be moved to the middle of nowhere so California can progress safely without incident. There is support on the regulations regarding fracking in California because of the necessity oil is as a resource, the economic gain and energy independence that California will establish. Industry places their highest values in the safety of their employees, proposed project location so it will not affect the water table or the community, the environment and it promotes economic growth as it creates jobs in California. Industry also operates a Reverse Osmosis plant which turns unusable oil zone water into usable water which can be made available for agriculture. The benefits outweigh the risks in the case of fracking in California. An increase in natural gas usage has decreased carbon dioxide levels. California is only contributing 1% to the world's greenhouse gases. Fracturing fluid leaking into the groundwater is nearly impossible because the well casing regulations are well crafted and adequate. Oil is as natural as water and won't harm our water tables, ground water resources or human health. Tap water that can catch on fire is not of petroleum-related origin but of swamp origin. By lessening our dependence on foreign oil California will achieve numerous benefits such as: becoming immune to oil embargos, having money to circulate, increase the tax base, invest in education and the underprivileged thus investing in our future and invest in alternative energy that will eventually become necessary. There are many concerns regarding the resource intensive fracking to California's water, health, economy, agriculture, ecosystems, pollution (air and water), climate, animals, the environment, the aesthetics and infrastructure of communities, travel and commerce and how all this will now affect the workers and residents of California. Commenter's are concerned about contamination of aquifers, drinking/bathing water, groundwater, freshwater resources and wastewater. California is in a drought so water should not be wasted or fought over but used for our agriculture that will eventually feed Californian's. Political gain, greed, unethical, immoral or profitable gain in the system should not be the reason fracking is allowed in California. There is distrust in industry to disclose the contents in the fracking fluids. There needs to be a way to track fault and liability of contaminants or any substances used in the process. There are concerns regarding the injection of pressurized water due to the cement casing having a 6% initial well failure. The injected water may be contaminated with chemicals and water may leave the expected project location. There are unintended impacts of fracking such as an increase in health care costs, an increase in welfare demand, flood plains growing too much hardscape reservoirs, spills from transportation of by-products or spillover, ocean levels rising, shifts in tectonic plates, earthquakes, increase in unemployment, loss of business to other states and an increase to the state's debt. Fracking will also create destabilization of the ground structure, a decline in tourism and commerce, a decline in economic growth and a decline in small business owners. Climate change is of another concern due to the amount of methane emissions, carbon dioxide and other greenhouse gases. Fracking in California will affect future generations. California should learn from other states examples based on the variety of incidents as to why fracking should not be allowed. Let's do more to encourage clean self-sufficient energy, geothermal, solar, domestic hydrocarbon production, wind power and use renewable kinds of energy that are by-products of useful processes (garbage and sewage). California needs alternative energy resources that are fully developed, available, reliable and affordable for all domestic needs and uses. California can phase out extractive practices and combustible fuels in favor of clean energy (no nuclear or radioactivity) production to keep the foreign oil use to a minimum.

3409	007701 The Department received 1,845 comments by way of mass emails with the title "Well Stimulation Regulations We need the." A majority of the 1,845 comments were exactly the same, however, this is a summary of 96 variations where commenter's expanded on their reasoning for a statewide moratorium on fracking, acidization and other well-stimulation processes. The summary of those comments is as follows: California needs to be protected, therefore, commenter's are urging for a statewide moratorium on fracking, acidizing and all forms of oil and gas well stimulation.
3410	004704-006362 The Department received 21,299 comments by way of mass emails with the title "CREDO's Ban Fracking in California." A majority of the 21,299 comments were exactly the same, however, this is a summary of 1,619 variations where commenter's expanded on their reasoning for a ban on fracking, acidization and other well-stimulation processes. The summary of those comments is as follows: There is disappointment with the government with its decision to allow fracking. California needs to preserve its legacy of environmental leadership, and be a leader. Either place a ban on fracking or at least a moratorium. California is regulating a process that cannot be safely regulated, and it is questioned on how it's allowed to proceed. There should be a ban on developing by zones, and only opening up new areas when the existing ones have played out wells that have been permanently capped, aquifers verified untainted, and the industrial landscape returned to its prior appearance. There also needs to be a legal framework to protect affected stakeholders from the will of a single neighbor. The money from fracking should be spread around, and help fund the transition to sustainable sources of energy. Industry needs to pay or mitigate for any damage that is incurred before, during, and after fracking. All cleanup should be cleaned up, and not sequestered. All cleanup should be paid for by Industry, and not taxpayers (setup an escrow account). There should be hefty financial penalties to companies that do not cleanup. It is sometimes more financially sound for Industry to pay a fine than to properly line a pond or case a well the proper way. Provisions should also be put in place for companies that go bankrupt prior to cleanup. There should also be a medical liability fund setup by Industry to support public health. There will never be enough inspectors to keep energy companies in line. There is not enough inspectors to handle current installations. There should be public notification, and input, and unbiased expert environmental reports on geological impact, especially near earthquake fault lines, water quality, and pollution potential, public health records (health trends), air, toxins (before, and after fracking), and increased demand as well as land use before it happens. This should be done by both California, and the EPA. Fracking should occur no less than ten miles away from every known aquifer. There should be a drinking water disease control, and prevention program in each city. California needs strong anti-contamination regulation coupled with incentives to acquire renewable energy sources. Industry should be paying an extraction tax. Gas, and petroleum resources should be considered as owned by the people of the state, and they should be paid an extraction fee for taking what the people really own. The regulations do not address proppant sources, water sources, and fracked fluid disposal.

	A commenter believed that since fracking is nothing new, and has existed for decades that it will continue to benefit California, and should continue. There are many concerns regarding fracking to California's safety, water, community, air quality, rain, snowpack, climate, farm, and health, plants, forestry, animals, soil, the ecosystem, business, recreation, economy, food, and water supply, environment, geological faults, pollution (ground, air, noise, and water), and agriculture, and how all this will now affect the people of California. There is no way to mitigate the damages fracking will do long-term for the short-term gain to California. There are concerns regarding the impacts of the questionable injection process (hydraulic fracturing, acid well stimulation, hydro shearing, and cyclic steam injection), companies that are exempt to the clean water rules, 6-12% of all wells leak from the very beginning, and within 30 years 50% of the wells will be leaking because there are engineering problems such as well casing, and cement impairments that cannot be prevented. California should require operations to properly remediate leaks of gases. There are unintended impacts of fracking such as an increase in seismicity activity, decline in tourism, desertification, increase in the cost of public assistance, increase in instability of California's faults (San Andreas fault), the fate of proppants in an earthquake, oil spills, sinkholes, because of sinking the high-speed rail tracks will become unsafe, endless drought, super storms, dead oceans, lost costal cities, increase in the depletion of natural reserves, increase in fires, decline in people's health (death, illness, cancer, miscarriage, sensory, respiratory, neurological damage), devaluation of home prices in fracked areas. Many additional risks, and harms arise from associated infrastructure, and industrial activities that necessarily accompany drilling, and fracking operations. These include pipelines, compressor stations, oil trains, and mining operations, cryogenic, and liquefaction facilities, processing, and fractionation complexes, and import/export terminals. California should not be drilling its way to energy dependency. Commenter's are concerned about contamination of groundwater, geysers, streams, rivers, the water table, oceans, wells, aquifers, and drinking/bathing water (flaming water). Currently California's water is contaminated (toxic chemicals, radioactivity) so it has to be shipped into California. California is in a drought so water should not be wasted or sold to Nestle. Commenter's are concerned that when a water shortage occurs the possibility of how rationing of it will occur, where the water will come from, as well as whether the cost of water will be affordable to purchase. Aquifers have gone down 43% in size. Another water capacity should be built. Since citizens are being fined for overuse of water then Industry should not be allowed to use freshwater (instead recycled water or zero water) on fracking, and new homes or apartments should not be built. Water should be used for our agriculture to irrigate crops that will feed Californian's. Political gain, greed, unethical, immoral, Halliburton loophole (exemption from the Clean Water, and Air Act), profitable gain with tax loopholes should not be the reason fracking is allowed in California. Despite fracking bringing incentives to California (jobs, money), the price of its impacts are not worth any compensation California will receive. There is a concern for California to be protected from the potentially toxic chemicals that are being pressure injected, and some injection being done without disclosure to the public (trade secret, MSDS information). Non-disclosure agreements, sealed court records, and legal settlements that prevent families, and their doctors from discussing injuries results in a non-comprehensive inventory of human hazards, yet it exists. Climate change is of another concern due to the amount of methane, carbon dioxide, and other greenhouse gases that create global warming. Methane released or leaked from wells can be captured by water reservoirs or be released back into the atmosphere contributing to global

	warming. Methane concentrations are seventeen times higher in drinking water wells than in normal wells. It's universally recognized that 2/3 (70%) of the known fossil fuel reserves must be left in the ground to avoid catastrophic climate change. AB32 was sound legislation to take action on the climate change. Fracking needs to stop to help save the climate from the fossil fuel Industry. There has been a shift of the polar vortex creating record levels of cold across the country. Fracking isn't the solution to California's energy needs. Industry is postponing, and hindering California's sustainable energy development. Transportation of oil is hazardous (fires, train derailments), and when it's getting transported overseas it's not lowering gas prices. The oil produced in California needs to stay in California. Disposal of fracking by-products is hazardous, and commenter's want to know where fracking waste will be disposed. Some commenters feel all effluent should be treated while some believe it shouldn't be reused or reincorporated into waterways. There are concerns that off-shore drillers are disposing of fracked fluid waste into the ocean. California needs to ban off-shore drilling again. Long-term studies, and a peer review needs to confirm the safety of fracking. There are too many unknowns still regarding fracking that will affect future generations. California should learn from other states, and countries examples based on the variety of incidents as to why fracking should be banned or a moratorium be put in place. Let's invest in wind, algae oil, hemp, mushrooms, biochar, wave, hydro, windmills, solar (on homes, parking structures, businesses, and any roof), batteries (lithium ion), liquid fluoride thorium reactor (molten salt reactors), Cavitation hydrovibration, propane fracking, battery propelled or electric autos, light rails, desalinizing salt water, hemp fuel, ocean thermal energy conversion, geothermal, air seal homes, insulation, sustainable renewable energy, clean energy, other alternative energy sources, and renewable non-carbon or carbon neutral energy sources. Promotion of fuel efficiency, public transportation, and energy smart policies are other ideas for California's future. California needs to toughen up the states demands regarding safe, clean energy. There are other ways to solve California's oil dependency that will also create jobs. Germany is still ahead of us here in California both in terms of renewables in general, and solar photovoltaics in particular. California can subsidize long term, clean sources of energy, and bring back incentives for solar. Agriculture should use recycled water, and cut back on their tremendous water waste. Water policy, and environmental policies need to be more consistent. State universities can do research on industrial hemp research. California can negotiate a purchase of carbon fuels from Russia. Population growth needs to be slowed down, and people need to be educated on our precious natural resources, conservation, and the connection between human activities, and environmental degradation.
3411	008451, 008587-008630 The Department received 202 comments by way of mass emails with the title "Dear Well Stimulation." A majority of the 202 comments were exactly the same, however, this is a summary of 45 variations where commenters expanded on their reasoning for supporting or opposing fracking, acidization and other well stimulation processes. The summary of those comments is as follows. DOGGR has a one-time opportunity to craft a "both/and" solution to the hydraulic fracturing issue, the opportunity to enhance environmental and safety stewardship while preserving high-quality jobs and a major source of contribution to the state's economy. California currently has the safest, most responsible and environmentally sound well-stimulation practices in place. Well stimulation regulations that provide transparency, oversight, environmental and safety protections necessary for responsible energy development are supported by many. There is a way to establish safe operations with no negative environmental effects, and looking at the facts when considering new laws is of great importance.

Regulations that are so restrictive that they would effectively ban well stimulation practices will also be responsible for preventing future production and elimination of oil and gas operations in California. Imposing more stringent regulations would destroy Cuyama County, Kern County and Bakersfield's economy. People in working a variety of jobs within the oil industry fail to see a problem in the fracturing process of wells and feel there are too many regulations on oil production already. A number of California's citizens feel that oil industry workers' financial independence and well-being is in the crosshairs of liberal lawmakers and ultra-extreme environmentalists. Backdoor political tactics that rely on manipulation of the unsuspecting public circumvents the proper governing agencies who have the knowledge to make informed decisions.

Conversely, at the previous DOGGR hearing in Monterey, staff stated that the department had decided to pursue regulations other than a ban and people are disturbed by the internal staff decision without taxpayer consultation as it was an unauthorized use of taxpayer money and staff time in pursuing an alternate regulatory approach to the well stimulation issue. Many people are opposed to hydraulic fracturing, acid fracturing and acid matrix stimulation and call for a ban rather than a regulation of harmful practices.
Oil is the foundation of the California economy and its mobility for 30 million citizens. More than 97% of California's 32,000,000 vehicles do not run on electricity or other alternative fuels. Fuel demand is projected to decrease slightly from the current 50,000,000 gallons per day mostly as a result of more fuel efficiencies, and a slight impact by the small number of vehicles run on electricity or other alternative fuels. However, every California industry is dependent on petrochemical energy as well as products from oil to support lifestyle standards that we have become accustomed to maintaining. Considering the fact that the oil supply from California and Alaska is now less than 50%, it would be less expensive and more environmentally effective to implement well stimulation practices and responsible regulations in California rather than meeting our needs with crude oil by barge, trucks or rail into California from elsewhere.

New fracking and acidization technologies are creating more job opportunities, will enhance state revenue and Californians would not be dependent on out-of-state and foreign sources to meet energy needs. Sound scientific findings ought to be defended and should be used to dictate policies in the technical world of oil and gas production. Should bill SB4 pass, drilling businesses will be forced to close their doors. Industry business owners and employees would be out of work as a result, and would have to rely on unemployment and welfare to support their families. We cannot afford to be at the mercy of any other nation for our oil and gas needs. There is no reason to rely on others' resources when we are sitting on enough to sustain us for generations to come. Though being energy efficient is crucial to the survival and success of the United States of America, we are in a time of global crisis and it is imperative for any nation to be energy independent.

Regulations have already affected oil production and driven up the cost to produce it and people worry that California's well stimulation regulations adoption could have a domino effect on the nation's economy. More regulations will force most businesses in the industry out of state. Branches are opening in Texas and other states who are fracking friendly. Moving from California negatively impacts local economics. Many people in the industry do not oppose alternative renewable fuel sources, but those technologies are currently not a viable solution to meet our energy demands. Oil products are in a great number of items used every day and the cessation or over-regulation of well stimulation practices would have an effect on those products as well. It would be irresponsible to pass any type of regulation that is going to harm and hinder our already fragile economy. Well stimulation work is always present and available, rain or shine as opposed to other lines of work such as in housing and heavy equipment operation. It is through secure jobs such as hydraulic fracturing that a person can provide a real, sustained income and security for his or her family. Inordinate delays caused by petulant dissidents who failed to make a case in

	Sacramento is an insult to hard working California taxpayers; their relentless attacks on the petroleum industry in California affects the economic well-being of the state and impacts our already shaky job market. The current public panic regarding oil and gas hydraulic fracturing and other injection practices is without merit and is not substantiated by damages or health impacts. It has been a common oilfield practice since the 1950's and if there was a valid risk to public health and resources, it would have been well-documented decades ago. Giving into the irrational demands of a minority special interest group who base their views strictly on emotion without regard to history or science is unacceptable. The Narrative Description of Well Stimulation Draft Regulations defines fracturing as creating fissures in strata to break the geologic formation. Can you isolate by breaking? Zonal isolation means gas and oil come up from a well while it is in a pipe. Operators can encase drilled holes but are not blasting within the holes they create. Fracturing creates conduits; there are layers of oil, gas and fresh water. The high levels of water that will be contaminated and released, so none of the water is protected. Fluids used in the fracking process are "pumped to the surface along with the produced water, making separation of the stimulation fluids from the produced water impossible. The stimulation fluid is then co-disposed with the produced water." Neighbors are only notified within a certain circumference and those with wells on aquifers adjacent to wells are not notified. Downstream neighbors are not notified. The only chemicals that are required to be listed on permit applications are those that are anticipated and the operator of the fracking job is the only person monitoring these substances during the operation. According to Regulation Section 1785.1, the operator is required to monitor the California Integrated Seismic Network but is not required to notify the CISN beforehand when and where hydraulic fracturing happens. The operator is to notify the division and the CGS if seismic activity is occurring or the well has been compromised as a result of earthquake activity. The onus is on the operator to report and to monitor. Section 1786 regarding storage and handling states that once chemicals are released into the environment, there is no guarantee; it is next to impossible to clean up the contaminated air, soil, water or deep underground with migrating plumes. Section 1788 states that it is only after the cessation of a well treatment that an operator is required to disclose what he or she actually put down the well, and that is up to sixty days later. According to these regulations, public protection is minimal and no chemicals are listed as banned. Americans have always been the leader in everything: oil exploration, computer technology, car manufacturing, et cetera. As a nation, we should not allow ourselves to be put into second place by a small number of biased people with no agenda but their own. Running oil and gas companies out of California only shifts the production burden to other states and increases the flow of imported goods via oceans and ports. The nuclear waste disposal site near Carlsbad, New Mexico is a perfect example of how "safe" failed and how projections were based on fiction. We need to examine our energy needs and address our habit of oil consumption but not blindly go to extreme measures to cut off energy supplies without an economically viable source of substitutes. Tar sands' oil and fracked natural gas are being exported overseas for profit, not to ensure greater domestic supplies. Though many of our ways are profitable, they also harm all life and our future.
3412	008631, 008880-008891 The Department received 265 comments by way of mass emails with the title "Director Nechodom." A majority of the 265 comments were exactly the same, however, this is a summary of 12 variations where commenters expanded on their reasoning for supporting implementation of stringent regulations on well stimulation practices in California. The summary of those comments

	is as follows: California needs stronger regulations to protect the long-term health and safety of the public and the environment on which we depend for our lives and livelihoods. Current regulations on fracking and acidizing do not go far enough to protect Californians from air and water pollution. Further, they do nothing to protect the people who reside near fracking sites. Rigorous environmental reviews should be done on anything related to fracking and acidization prior to permitting it. Fracking is linked to increased air pollution, water contamination, negative health impacts and induced seismicity. Severe drought and earthquakes are side effects of fracking and will only be worsened with the tremendous amount of water required to perform this practice. Single project approval for multiple wells that results in fewer environmental reviews is an oversight that no one can afford. There have been too many instances of the oil and gas industry cutting corners to increase profits, leaving environmental disasters in their wake, after which there is minimal clean up and maximum damage-control public relations. Property owners and tenants should be afforded the same level of protection and to do otherwise is very clearly discriminatory and exploitative of socioeconomically marginalized individuals and communities. Put our communities first, not corporate profits. Well stimulation should not occur near homes, schools, sources of water, protected areas or other protective receptors due to its use of highly toxic, carcinogenic chemicals. These chemicals are endocrine disrupters. Strong air quality protections must be enacted at every phase. At a time of extended drought, we must do everything possible to protect our water from contamination, which means that we need to prohibit the use of unlined or open-air pits. Millions of gallons of our water per well are being contaminated with toxic chemicals. Climate change is the result of human activity related to fossil fuel production and consumption. California needs to be gathering data regarding the real, long-term costs of fracking and acidification which must include its contribution to climate change, which threatens our health, food safety, and survival.
3413	008892-008895 The Department received 4 comments by way of mass emails with the title “In Response.” This is a summary of 4 variations where commenters expanded on their reasoning for more stringent fracking, acidization and other well-stimulation processes. The summary of those comments is as follows. There is disappointment with the government with its decision to allow fracking. There are serious problems with the regulations and Californians believe that all fracking should cease until the oil industry’s technology and willingness to cooperate and commit to a level of transparency. They should be required to catch up with standards that will ensure the long term safety of the people and the environment. Regulation Section (1715.1) could be used to initiate and maintain a centralized list of the number and location of wells being fracked in different areas in case of a natural disaster. Section (1780) states regulation is for on and offshore fracking; offshore fracking needs specialized requirements for depth regulation, shipping accidents, tectonic events and other natural events. It should include requirements for waste and water disposal projects rather than just stimulation treatment wells. Waste water handling, storage and treatment must be included in this regulation. (1785) addresses what to do in case of a breach in the concrete—regulation wording is vague. The wording regarding the list of chemicals used in the fracking process as well as an establishment of the volume of fluids lost in concrete breaches was removed from this section. Without knowing what chemicals have been pumped into the shale, determining the precise source and kind of contaminants being leaked into the soil, ocean or water table will be severely impeded. (1786) refers to Section 1773.1 for the disposal of treatment fluids. No part of this section is included in the original or amended documents online. It is important to know what is being approved for the

	disposal of treatment fluids. The regulations should include where and what kids of water are being used to mix with the chemicals. Not one mention is made about addressing air pollution at the well heads. Air emissions monitoring, scrubbing and control should also be addressed and included in the regulation. There are many concerns regarding fracking to California's water, air quality, and health. Fracking is not benign and earthquakes are a constant in the state of California. Californians regularly experience natural disasters powerful enough to crack well cement shafts or spill fracked fluids and release them into the ground, water and atmosphere. Increases in traffic during the fracking process worry citizens. Citizens ask that profits not be valued more than the overall wellbeing of the people.
3414	008896 The Department received 1 comment by way of mass email with the title "Please Enact a Statewide Ban." This is a summary of 1 variation where the commenter expanded on their reasoning for a ban on fracking, acidization and other well-stimulation processes. The summary of this comment is as follows: There is disappointment with the government with its decision to allow fracking and a ban has been requested. The proposed regulations won't protect Californians from exposure to carcinogenic chemicals. Fracking is detrimental to the public's health, the water supply, properties, agricultural industry and our climate. There is no way to make fracking safe.
3415	008897, 009248-009266 The Department received 360 comments by way of mass emails with the title "Stop Fracking California." A majority of the 360 comments were exactly the same, however, this is a summary of 19 variations where commenter's expanded on their reasoning for a ban on fracking, acidization and other well-stimulation processes. The summary of those comments is as follows: There is disappointment with the government with its decision to allow fracking since regulations do not ensure that California's water, air, environment, climate and citizens' health will be protected. Citizens urge for Director Nechodom to implement an immediate moratorium on all well-stimulation projects since we don't have a real understanding of its overall consequences and California is experiencing a drought. Californians see corporate morality as being nonexistent and a regulator's responsibility is to verify the safety and integrity of well systems and operations. To not do so would be an abdication of fundamental responsibility as a regulator. Fracking is not permitted in Germany and California should do the same and preserve its clean water supplies. There is growing evidence that fracking is dangerous, polluting, wasteful of clean water and is costly. It is beyond comprehension that anyone can justify the use of water for 'fracking' this year considering that California is experiencing major drought conditions. Concerns about the potential negative and potentially devastating repercussions of not looking carefully at the possible negative outcomes of fracking on our ground and surface waters, our soil and agricultural lands, earthquake faults, our production of 'greenhouse gases' and the physical health of the citizens of our state are prevalent. California does not need dirty fossil fuels to power the economy. Photovoltaic systems can be used to charge vehicles. 6% of fracking wells lose their integrity in the first year and the rate increases over time. Considering that millions of gallons are used in each well, gross contamination of our most precious resource is unacceptable and intolerable. There is no known remediation. The industry has denied that any leaks have occurred. Suspicion about the unknown chemicals which are dumped as being those which are most difficult to dispose of is prevalent. Some of California's aquifers are depleted and all are being consumed at unsustainable rates. We cannot afford to

	contaminate water for extreme energy. The inability to clean up the groundwater will be prohibitive for future generations, if not impossible to do. Agriculture cannot grow food in fracked waste water, nor can anyone drink it. No food can be grown in oil or natural gas. Fracking is poisoning the Earth. Lots of little fractures can lead to a big one. Fracking and significant earthquake activity have been linked in areas that do not commonly experience seismic activity. There is no turning back once fracking has been taken into practice. Californians have reported skipping showers, using the restroom and not flushing in order to save water. Some do not own cars and rarely use their heating in order to conserve energy. They ask that Director Nechodom do his part to place a moratorium on irresponsible practices, such as fracking, until some unbiased science can be undertaken to prove it is not detrimental to public health and the environment.
	Response to comments 3387-3415: The Division's primary statutory mandate, Public Resources Code section 3106, is that the Division permit operators "to utilize all methods and practices known to the oil industry for the purpose of increasing the ultimate recovery of underground hydrocarbons," but regulate operations so as to prevent, as far as possible, damage to life, health, property, and natural resources, including underground oil and gas deposits and water suitable for irrigation or domestic purposes. Specifically, Public Resources Code section 3106, subdivision (b), contemplates that the Division will regulate, but allow, "the application of pressure heat or other means for the reduction of viscosity of the hydrocarbons, the supplying of additional motive force, or the creating of enlarged or new channels for the underground movement of hydrocarbons into production wells." In recent years the Legislature has considered several legislative proposals that explicitly banned or placed a moratorium on well stimulation activities in the state. Each of these legislative proposals have failed passage in the Legislature. Senate Bill 4 does not contain any explicit ban or moratorium on well stimulation treatments. Rather it contains explicit direction to the Division to regulate well stimulation treatments. Consistent with this statutory mandate of Public Resources Code 3106 and Senate Bill 4, the Division has established regulations that address environmental risks and respond to public concerns, but do not prohibit methods and practices that are proven to increase hydrocarbon recovery. These regulations have been developed to supplement the Division's existing oil and gas regulatory framework to meet the intent and requirements outlined in Senate Bill 4. These regulations also respond to the feedback the Division has received in ten public comments hearings held throughout the state, tens of thousands of public comments submitted in written format, and in scientific and policy papers, which are listed in the Final Statement of Reasons. These regulations include monitoring, evaluation, and testing requirements for before, during, and after well stimulation treatment to ensure the integrity of the well and the geologic and hydrologic isolation of the stimulated hydrocarbon formation. These regulations also implement the public disclosure, neighbor notification, water testing, and permitting requirements established by Senate Bill 4. The Division believes that these regulations provide an effective framework for a level regulatory scrutiny that is commensurate with the level of public concern with well stimulation treatment operations.