



October 7, 2022

Via electronic mail ([calgemorphanwells@conservation.ca.gov](mailto:calgemorphanwells@conservation.ca.gov))

Supervisor Uduak-Joe Ntuk  
California Geologic Energy Management Division  
801 K Street, MS 24-01  
Sacramento, CA 95814

*RE: Recommendations for CalGEM's Draft Orphan Well Screening Methodology*

Dear Supervisor Ntuk,

As members of the undersigned organizations who represent hundreds of thousands of members and supporters in California, we thank you for this opportunity to comment on California Geologic Energy Management division's (CalGEM's) 2022 Draft Orphan Well Screening Methodology (Methodology).

We appreciate that you submitted the Methodology earlier this year as a discussion draft, and that you have incorporated many of our suggestions. In particular, we note that you have improved on the initial draft by using a broader risk point spread to diminish the likelihood of ties, addressing with more specificity possible means of prioritizing vulnerable communities, including groundwater vulnerability as a component of risk, and adding in an opportunity for public input following the initial scoring.

Despite these improvements, however, there are multiple flaws in the proposed approach that need to be addressed. As discussed in more detail below, first and foremost CalGEM needs to incorporate the 3,200-foot setback buffer into its prioritization metrics. That risk-based criterion is critical to protecting public health, and fully supported by the extensive scientific analysis that went into defining that distance for purposes of the proposed setback regulation. Beyond that, CalGEM needs to restructure its risk criteria to more accurately zero in on vulnerable communities at risk; to include and properly factor in all relevant risk criteria; and to address lack of information concerning identified risk factors. Finally, as an overall matter, while we appreciate that CalGEM has provided us with a demonstration of how point scoring would look in principle under different scenarios, it is very difficult to judge the rationality of CalGEM's proposal without seeing the raw data reflecting its application.

## **I. CALGEM SHOULD INCORPORATE THE 3,200-FOOT SETBACK AS A CATEGORICAL PRIORITIZATION CRITERION**

CalGEM has engaged in recent years in an extraordinary effort to delineate the minimum setback from oil and gas drilling operations needed as a public health and safety buffer. That effort, and its conclusion that 3,200 feet is the proper distance, was grounded in the work of the highly qualified panel of public health scientists on the Scientific Advisory Panel, who vetted more than a decade of studies establishing that risks to the public are significantly heightened within the buffer zone. The California Legislature, and Governor Newsom, displayed their confidence in the Panel's work by enacting the 3,200-foot setback buffer as SB 1137, recently signed into law (and, of course, the pending request for a referendum has no bearing on the scientific merits of the 3,200-foot setback or CalGEM's authority to implement it).

For this reason, we were disappointed to see that the 3,200-foot buffer was neither relied upon nor referenced in the Methodology. Instead, the Methodology – to the extent it incorporates proximity at all – relies upon the criteria underlying a “critical well” designation pursuant to Cal. Code Regs. tit. 14 § 1720. This designation, which long predates CalGEM's focused analysis of setbacks and public health, is a mismatch to the goal of prioritizing public safety. The 300-foot criterion is less than one-tenth the distance that CalGEM, supported by its science advisors, identified as a minimum protective distance. The critical well definition was based on risk from major catastrophic events such as blowouts; and while it remains relevant for that purpose, it is not designed to capture the chronic risk to populations of proximity to well operations and leaks. We note also that the reference to buildings “intended for human occupancy” is less precise than the draft setback regulation, which identifies particular types of buildings as sensitive receptors, including but not limited to private homes, education resources such as preschools and kindergarten through grade twelve schools, daycare centers, any building housing a business that is open to the public, and health care facilities.

We therefore recommend that CalGEM adjust its criteria such that the 3,200-foot setback defines an initial category of wells that will be prioritized. Wells outside the setback would be remediated ahead of wells within the setback only if they could be shown to pose an extraordinarily high risk to the public or an environmentally sensitive area despite their more remote location.

We recognize that simply prioritizing wells within the 3200-foot setback would not end the inquiry and need to further prioritize. By our estimation, roughly 75 percent of the 5,287 orphan wells reported with GIS information are located within that setback. Wells within the setback would thus need to be prioritized by more refined risk criteria, along the lines CalGEM is proposing but improved in the ways we are suggesting below. In that more refined screening within the setback buffer, we do see a place for incorporation of components of the critical well designation, as discussed below. Location within 300 feet from human-occupied structures could, in principle, serve as the basis for an additional risk factor to be considered for wells within the 3,200-foot setback. However, we caution that this number should not simply be adopted by virtue of its presence as part of the critical well definition if a larger distance (e.g., 500 feet) is a more scientifically supportable number.

## **II. THE METHODOLOGY SHOULD BE ADJUSTED TO MORE RATIONALLY AND ACCURATELY PRIORITIZE DISADVANTAGED COMMUNITIES**

We appreciate CalGEM's effort and commitment to identifying a scenario that prioritizes disadvantaged communities. However, we are concerned that the Methodology does not achieve this end. There are multiple problems we have identified with it that need to be addressed.

In the first instance, it is unclear from the information provided how Scenario 1 achieves prioritization of disadvantaged communities at all. In the chart you have provided illustrating point scores, the criteria relevant to assessing population vulnerability – the CalEnviroScreen values – are weighted equally across all scenarios. We request clarification of how, in CalGEM's view, Scenario 1 effectuates vulnerable community prioritization.

Regardless, the delineation of criteria for determining vulnerability is not set up in a way that will accurately identify vulnerable populations at risk.

### **A. The Disadvantaged Community Scenario Should More Effectively Identify Population Proximity to Wells**

Scenario 1 does not effectively identify wells that are *proximate* to vulnerable communities, in addition to those located actually *within* them. A significant part of the problem is that the Methodology places inordinate reliance on census tracts, which are not a good tool for measuring proximity and specific population centers at risk. As the draft Methodology more or less acknowledges, census tracts are far too blunt an instrument to identify the dense pockets of disadvantaged residents who need to be protected from the health risks of idle wells (the draft notes at p. 9, "After evaluating preliminary results from Scenario 1, it was found that some census tracts are so large that wells in rural areas, away from large populations of people, are ranked highest").

We note, in this context, that a particularly significant challenge when using any census data is the impact of edge effects. Census areas very often follow the same demarcations as zoning districts. A good example of the problem is the community of Shafter. Active wells in the Shafter field are generally located in wealthier estate zoned and agricultural areas that surround the city of Shafter, whose demographic is overwhelmingly Hispanic and largely low-income. While oil wells in the Shafter field are very close to homes in residentially zoned areas, the wells themselves are located in neighboring block groups. It is possible that CalGEM proposes in the Methodology to use census tracts as a means of diluting the impact of edge effects, but unfortunately that approach does not work. Both census tracts and block groups generally follow the same zoning district boundaries. While census tracts cover more area they often share a common outer boundary with block groups and therefore suffer from the same flaw when considering the intersection of residentially zoned areas and agricultural/estate/industrially zoned areas that house orphan wells. Considering only the demographics of census tracts (or block groups) that technically house the wells would miss the nearby populated areas, and leave the community unprotected.

While use of census block groups rather than census tracts does not by itself eliminate edge effects, we believe it is the better approach here as a way to zero in on identifying wells proximate to vulnerable communities. Census block groups are smaller than census tracts, and are also utilized by CalEnviroScreen 3.0. Census block groups will also allow for a higher resolution of analysis. In order to address edge effects, the census data or CES scores of census block groups containing the communities and population dense areas closest to the wells must be the focus of the analysis, rather than the census block group that actually contains the orphan wells themselves. This methodology is more sophisticated, and also calls for greater knowledge of and engagement with frontline communities. While this adds complexity to the analysis, it is necessary to accurately address communities most at risk.

Scenario 2, designed to consider both CalEnviroScreen data and proximity to population, represents a step toward addressing the problem of identifying wells proximate to (and not just within) marginalized communities. However, as discussed above, the CalEnviroScreen data would need to be applied not on a census tract level but rather to the frontline community block groups, to ensure that the process does not miss vulnerable populations that are part of a larger and less vulnerable census tract. Additionally, the “critical well” criterion for assessing proximity should be revised and applied to prioritize proximity to sensitive receptors, as a secondary proximity risk factor within the overall-prioritized 3,200-foot buffer zone.

### **B. Appropriate Risk Factors in Addition to Proximity Should be Considered**

In addition to the census-related issues, we are concerned that both Scenario 1 and Scenario 2 are unnecessarily reductive as a means of assessing risk to vulnerable communities. Certainly, a nearby community’s CalEnviroScreen score is one essential metric (when applied properly, as discussed above, to communities in *proximity* to wells, not just with wells actually within them). But community vulnerability is also a function of some – albeit not all – of the well condition issues addressed and prioritized in Scenario 3; in addition to well condition issues that should be addressed but are not, most notably methane leakage. Well condition problems that are directly of concern to community safety include, *inter alia*, wellhead pressure, geologic hazard, risks to drinking water, and age of well and period of idleness (which are predictors of risk degree). Well condition issues that are less pertinent to community safety would include damage depth, fish/junk depth, and wellsite accessibility (as discussed below).

Additionally, we do not believe it is appropriate to include vulnerability to sensitive environments – as is done currently in Scenario 2 – in a scenario purporting to prioritize wells creating risk to vulnerable communities. That is not because we do not think CalGEM should be considering those environments in its Methodology – it certainly should – but because we believe it is essential that CalGEM define a Scenario that specifically prioritizes vulnerable human populations. Once that has been done, and models have been run to assess how that Scenario plays out in detail (see Point V below), it will be possible to add in other factors such as impact on the natural environment. The same rationale applies to damage depth and fish/junk depth – these factors should be considered as part of a discrete cost analysis *after* the health and safety prioritization analysis is complete.

### C. Recommendations for a Revised Disadvantaged Community Protection Scenario

Accordingly, what we are recommending is that CalGEM develop a new scenario prioritizing risk to disadvantaged communities that includes the following elements:

- Prioritize wells within the 3,200-foot buffer.
- Within the 3,200-foot buffer, prioritize wells that are within a closer identified “critical” distance from disadvantaged community population centers. This distance could be 300 feet, reflecting the “critical well” definition, but need not be if the science supports a different critical distance to address chronic health risks.
- Apply the CalEnviroScreen criteria at the census block group level rather than census tracts.
- To address edge effects, focus analysis on communities and dense populations located in proximity to wells, rather than solely on the census block containing the wells.
- Include consideration of well condition issues that impact risk to communities (e.g., methane leakage, age, years idle, casing integrity, wellhead pressure, risk to drinking water). Do *not* include consideration of well condition issues that are less relevant to community health and safety (e.g., fish/junk depth, damage depth, accessibility). Per Section IV below, however, well condition metrics for which data is lacking should be handled in a way that does not distort the analysis.
- Adjust the point system to assign a greater risk point value in this scenario to factors relevant to disadvantaged community risk, rather than applying the same point value to all scenarios across the board.

### III. CALGEM SHOULD IMPROVE ITS IDENTIFICATION AND APPLICATION OF CONDITION-BASED RISK CRITERIA

We have identified multiple questions and concerns with the definition of condition-based risk criteria.

- *Wellsite accessibility.* We do not see any rationale for assigning a high prioritization value to wellsite accessibility. This factor has no bearing on human or environmental health risk. If a well is less accessible but not near a sensitive receptor (or environment), there is no particular reason to prioritize it. CalGEM presents the conclusion that “A higher risk score is assigned to a well with impediments to surface access because the well poses a greater risk to health, public safety, and the environment,” but provides no explanation or support for it. While CalGEM is correct that an inaccessible well is a greater risk “in urban areas,” that is true for *any* well in an urban area, accessible or not. We understand that well accessibility may be a factor in determining the most efficient use of resources, but we believe these cost factors should be identified and considered separately from risk factors.
- *Methane leak hazard.* The Methodology still does not account specifically for the risk of methane leaks – despite our request in our comments on the discussion draft that it do so, and more importantly despite the massive problem with idle well methane leaks identified in the intervening time. A well leaking methane – and most likely with it,

hazardous air contaminants – is indisputably a greater risk to the surrounding community than one that is not. While we understand that CalGEM is still gathering data on leaking wells, it is essential that it incorporate the data it does have – and the data it acquires on an ongoing basis – into its prioritization.

- *“Other” category for geologic hazards.* The discussion draft methodology included an “other” category for addressing geologic hazards, which appears to have been eliminated in the risk scoring, which addresses only location within a fault zone, landslide area, or seismic hazard zone. The “other” category would allow CalGEM to also take into account such factors as nearby historic wells, flood zones, and public water supply drinking water wells.
- *Basis for numeric criteria.* The Methodology includes numeric criteria without a rationale presented to support them. Specifically, it includes 200 psi as a wellhead pressure metric, without reference to the derivation or basis for this number. Additionally, age of well includes only 3 categories (< 25, 25-50, and > 50) which are unexplained and appear arbitrary. The same issue attends 15 years as a cutoff point for factoring in years idle – no explanation is provided, and there may be reason to conclude that heightened risk attends periods of idleness of less than 15 years. We support risk classifications based on the age of wells, but they should be science-based rather than arbitrary; and established in small enough increments to capture gradations of risk associated with age.
- *Need to address re-abandonment.* The condition-based risk criteria that CalGEM presents are largely directed toward assessing prioritization for initial plugging and abandonment. However, improperly plugged and abandoned wells – the majority of them likely orphaned – will need to be remediated as well. CalGEM’s risk scoring should identify criteria relevant to prioritizing improperly plugged wells for re-abandonment.

#### **IV. CALGEM SHOULD ADDRESS THE PROBLEM OF MISSING WELL CONDITION DATA**

While the Methodology attempts to identify well condition criteria to bear on a prioritization assessment, CalGEM does not have this data for roughly 95 percent of orphan wells. As CalGEM acknowledges in the draft, “While most wells have data pertaining to the well’s age and long-term idle well status, less than 5 percent of wells have data available for the other relevant criteria.” The only reliably available data that CalGEM has concerning well condition is age and duration of idleness.

Certainly, CalGEM should actively obtain the additional data, and incorporate it on a rolling basis into the prioritization – where relevant, as discussed above – or into a separate cost analysis where appropriate, as it is received. We note that in our comments on CalGEM’s proposed well remediation cost estimation methodology dated May 20, 2022, we recommended that CalGEM actively collect this type of information rather than simply relying on well operators to attest to it, and we reiterate that recommendation now.

Additionally, CalGEM should address the current absence of complete information on well condition as conservatively as possible. Criteria for which CalGEM lacks information for a large percentage of wells risks skewing the risk assessment toward wells that are better monitored and managed, calling into question the extent to which such data should be used before CalGEM actually obtains it. To the extent this data is used at all, CalGEM should consider using a worst case scenario assumption in the absence of data.

CalGEM does specifically address missing data in one instance we identified – “Missing BFW/USDW Value” – but we do not believe it has done so properly. It does not make sense in our view to simply assign additional risk points where data are missing. The more conservative, and we believe correct, approach is to assume that the well is above freshwater/underground drinking water if the data are not available and the well is not located in an aquifer exemption zone. Similarly, an overdue casing integrity test should not be assigned a lower point score than a failed integrity test. Where the test is overdue, failure should be assumed until data become available that prove otherwise.

We are concerned as a practical matter that in the current prioritization formulation, consideration of well condition factors for which data is lacking threaten to distort the prioritization process by factoring in an excessive number of points that do not reflect actual known data. In the current formulation, even in Scenarios 1 and 2, which purport to prioritize risk to communities over well condition, the well subsurface criteria – for which data are in many cases unavailable at this time – account for almost as many potential risk points as the CalEnviroScreen characteristics.

#### **V. CALGEM SHOULD PROVIDE THE PUBLIC WITH THE RAW DATA FROM APPLICATION OF ITS SCORING SYSTEM**

We appreciate CalGEM’s plan to post the initial results of its technical screening on its website and solicit public input. CalGEM suggests that when the technical run is complete, local governments and the public “may provide any feedback they wish on the screened wells,” and that it will consider the impact of the prioritization on particular communities.

While these are all positive steps, we also suggest that CalGEM provide the public with a full breakdown of the application of its scoring Methodology before soliciting input in this manner. It is difficult for the public to rationally comment on the Methodology – and in particular the three different Scenarios – without seeing how the scores are applied to individual wells at the community level.

We therefore request that CalGEM take the interim step of publishing the raw data for statewide public comment. It should then revise the Methodology in line with those comments; and only after that focus on fine tuning it to break ties and assess more granular local impacts of its application. That is what was meant in our comments on the discussion draft recommending that CalGEM present modeling of its methodology.

Seeing the raw point score data would provide added insight into the overlap between wells in poor condition and near sensitive populations. If the vast majority of wells in poor

condition are also proximate to disadvantaged populations, that leads to a different approach than if they are largely separate categories of wells. The same can be said for risks to sensitive environmental areas: we have no idea at this point the extent to which the wells creating such risk are co-terminus with wells in poor condition, or near sensitive populations. In this way, seeing the raw point score data would be particularly helpful with respect to evaluating the new scenario we propose in Section II to address risks to disadvantaged communities. While one can make educated guesses at these relationships based on the tiering data that CalGEM has provided, the raw data would be significantly more informative.

Thank you for considering these comments. We appreciate the hard work that has gone into working through the difficult problem of prioritization, and look forward to continuing to work with CalGEM on refining the Methodology.

Respectfully submitted,

Ann Alexander, Senior Attorney, Natural Resources Defense Council

Elizabeth Fischer, Senior Attorney, Earthjustice

Dan Ress, Staff Attorney, Center on Race, Poverty, and the Environment

Amy Moas, Ph.D., Senior Climate Campaigner, Greenpeace USA

Shannon Smith, Executive Director, Fracktracker Alliance

Sakereh Carter, Senior Policy Advocate, Sierra Club California

Haley Ehlers, Associate Executive Director, Climate First: Replacing Oil & Gas

Deborah Silvey, Collaborating for Climate Justice Team Lead, Fossil Free California

Lendri Purcell, President, Families Advocating for Chemical and Toxics

Shoshana Wechsler, Coordinator, Sunflower Alliance

Haleemah Atobiloye, Program Manager, Breast Cancer Action

Valerie Ventre-Hutton, Legislative Analyst, 350 Bay Area

Ramona du Houx, Communications Director, Elected Officials to Protect America