



August 23, 2021

San Luis Obispo Planning Commission  
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**Re: Appeal to the Board of Supervisors, File No. DRC20150002; Sentinel Peak Resources, Arroyo Grande Oil Field, CUP D010386D/DRC2015-00002**

On behalf of the Center for Biological Diversity, (the “Center”), we are writing to inform you that the operator of the Arroyo Grande oil field, Sentinel Peak Resources (“Sentinel” or “operator”),<sup>1</sup> has drilled wells beyond what its permit and applicable laws allow. The violations documented here provide further grounds upon which the County must grant the Center’s appeal and deny Sentinel’s request to extend the time frame in which new wells may be drilled under expired Conditional Use Permit (“CUP”) D010386D and requested modification DRC2015-00002. The County must also stop facilitating—via a closed-door, questionable process using Notices to Proceed (“NTPs”)—any new wells, including so-called “replacement wells,” in the Arroyo Grande oil field until and unless it issues a new EIR and a new CUP.

## **I. Introduction**

In 2015, the County’s Planning Commission granted the operator’s request to modify its CUP for drilling in the Arroyo Grande oil field in order to finish drilling 31 of the 130 wells approved under Phase IV of the oil field expansion (“Extension Request”). The Center appealed the Planning Commission’s action because, among other issues, the extension does not comply with the California Environmental Quality Act (“CEQA”).<sup>2</sup> The Board of Supervisors has yet to hear the appeal.

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<sup>1</sup> Sentinel Peak Resources acquired Freeport McMoRan’s oil and gas facilities in early 2017. References to the operator before 2017 in this letter are to Freeport McMoRan. See Quantum Energy Partners, *Sentinel Peak Resources Announces Closing of the Acquisition of Freeport-McMoRan’s Onshore California Assets*, Globe Newswire (Jan. 3, 2017).

<sup>2</sup> Letter from Maya Golden-Krasner, Center for Biological Diversity, to San Luis Obispo Planning Comm. Re: Freeport-McMoRan Oil & Gas, LLC, Arroyo Grande Oil Field, Application to Extend Phase IV CUP #D010386D (Oct. 21, 2015); Letter from Maya Golden-Krasner, Center for Biological Diversity, to San Luis Obispo Planning

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Because the Planning Commission’s approval of the Extension Request was stayed pending the appeal, no wells could have been lawfully drilled during this time. Yet, in the years that followed—despite the pending appeal, no valid CUP, and no environmental review—the County continued to issue unlawful approvals to Sentinel to drill more wells. The number of new wells now *exceeds* even those within the scope of the Phase IV Environmental Impact Review (“EIR”) and CUP. Specifically, Sentinel improperly sought and received ostensible approvals to drill at least 37 new wells,<sup>3</sup> 21 of which have been drilled (see Appendix A).

Even the types of wells that received NTPs differ from those described in the EIR, with a sharp increase in NTPs for injection wells. While the EIR described 130 wells, including 30 injection wells, the County has allowed 136 wells, including 53 injection wells, to move forward (and the pending Extension Request seeks approval for 8 more). In other words, Sentinel is attempting to more than double the number of injection wells drilled in Phase IV compared to what was described in the EIR, even as the extreme risks that these wells pose to drinking water and the environment are now clearly understood. For example, oil spills and water contamination regularly occur at oil fields around the state due to the inherent dangers of injection wells. Ventura County imposed an emergency moratorium on drilling and re-drilling for steam injection in 2019 because the problems are so severe.<sup>4</sup>

Here, however, the County Department of Planning & Building granted these purported approvals through a series of NTPs, which had no associated notice, comment period, or hearing, and which the Center discovered only through a Public Records Act Request.

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Comm. Re: Freeport-McMoRan Oil & Gas, LLC, Arroyo Grande Oil Field, Application to Extend Phase IV CUP #D010386D – Supplemental Information (Nov. 11, 2015); Golden-Krasner, Maya, Center for Biological Diversity, Appeal from Planning Comm. Decision on November 12, 2015 to San Luis Obispo County Supervisors, File No. DRC20150002 (Nov. 25, 2015) (hereinafter “CBD Appeal”).

<sup>3</sup> We learned this information through a November 2020 Public Records Act request to the County seeking drilling authorizations. In response to our request, we received a series of NTP requests and approvals related to 37 wells. We also found information about associated state permits on public databases and learned that, in seeking these state permits, Sentinel told the state oil and gas regulator, California Geologic Energy Management Division (“CalGEM”) and previously the California Division of Oil, Gas, and Geothermal Resources, that the wells were authorized under the Phase IV EIR and 2005 CUP. *See, e.g.*, Sentinel Peak Resources, CEQA Operator Checklist for API#0407921284 (sent to California Division of Oil, Gas, and Geothermal Resources July 1, 2019) (listing the Phase IV EIR as the relevant Environmental Review documentation). CalGEM granted Sentinel’s permits and issued Notices of Determination for some of the wells (see Appendix A) stating that there are no additional impacts beyond those identified and mitigated in the Phase IV EIR, apparently without confirming whether the requested wells were actually addressed in the Phase IV EIR or whether the County conducted adequate environmental review of the potential harms from the new wells. The Center has brought a lawsuit against CalGEM for illegally evading its duty to conduct environmental review, including by issuing discretionary permits pursuant to Notices of Determination that improperly rely on inadequate or invalid environmental review, and/or do not include adequate independent review required of a responsible agency. *Center for Biological Diversity v. California Geologic Energy Management Division*, No. RG-21-090952 (Grillo, J.) (Alameda Cty. Sup. Ct., filed Feb. 24, 2021).

<sup>4</sup> Ventura County Board of Supervisors, Interim Urgency Ordinance of the County of Ventura Temporarily Prohibiting the County’s Approval of New Wells and Re-Drilling of Existing Wells, No. 4542 (Apr. 23, 2019) (hereinafter “Ventura Urgency Ordinance No. 4542”); Ventura County Board of Supervisors, Urgency Ordinance Extending for 6 Months Interim Urgency Ordinance No. 4542, No. 4544 (June 4, 2019) (hereinafter “Ventura Urgency Ordinance No. 4544”); Ventura County Board of Supervisors, Urgency Ordinance Extending for One Year Interim Urgency Ordinance No. 4542, No. 4547 (Nov. 5, 2019) (hereinafter “Ventura Urgency Ordinance No. 4547”).

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Sentinel and County staff characterize the drilling activities during the pendency of the appeal as “replacement wells,” but nothing in the Phase IV EIR or CUP—let alone County or state regulations—provide any legal basis for drilling new wells based on the novel characterization that they are simply “replacing” other wells that have been plugged and abandoned. To the contrary, every new well permit in California imposes the legal obligation upon the operator to properly plug and abandon the well at the end of its life. Plugging and properly abandoning a well in no way entitles the operator to any new well approval, let alone to drill a new well without the required environmental review. Moreover, Sentinel’s CUP and the County Code make clear that any additional wells not contemplated in the Phase IV CUP and EIR require a new land use permit and, by extension, public oversight and environmental review under CEQA.<sup>5</sup>

We therefore urge the County to do the following:

1. Grant the Center’s appeal and deny Sentinel’s 2015 Extension Request;
2. Cease issuing NTPs or any other purported approvals for so-called “replacement wells.” These new wells were not contemplated in the Phase IV EIR nor permitted by the 2005 CUP;
3. Stop enabling oil field operators to change the types of wells they drill compared to what a permit initially authorized. In addition to unlawfully allowing “replacement” injection wells, the County has also impermissibly allowed Sentinel to shift the proportion of injection and production wells relative to what was permitted in the CUP and described in the EIR;
4. Rescind all unlawful NTPs and order all operations under those approvals to cease; and
5. To the extent the County uses the NTP process to approve wells in the future, institute a public process that provides notice and opportunity for comment and ensures that all drilling activities under consideration have been permitted in a CUP and fully analyzed in an EIR.

After making these changes, to avoid illegal project segmentation, the County must consider requests for any new well approvals as part of the Phase V expansion of the oil field. In doing so, the County cannot move forward with any such approvals prior to preparation and certification of an EIR that fully discloses, analyzes, and mitigates to the extent feasible the direct, indirect, and cumulative environmental effects of the full scope of proposed oil and gas activities.

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<sup>5</sup> See San Luis Obispo Board of Supervisors, Resolution No. 2005-238 Affirming and Modifying the Decision of the Planning Commission and Conditionally Approving the Application of Plains Exploration and Production for Conditional Use Permit D010386D (Aug. 9, 2005) (hereinafter, “2005 CUP”) at Condition of Approval 3 (“A total of ten years is allowed for the development of the 95 producer and 30 steam injector wells, and the 3 steam generators.”); *id.* at Condition of Approval 4 (“At the end of the ten years, any wells or steam generators not yet completed shall require review and approval of a new Conditional Use Permit.”); see also SLO County Code § 22.34.030(B)(2) (requiring a new Minor Use Permit when “an additional well is proposed in an existing designated oil field.”).

## II. Factual Background

### A. The Oil Field Operator Had 10 Years to Drill 130 Wells in Phase IV of the Arroyo Grande Oil Field Expansion.

In 2004, the County finalized the EIR for Phase IV drilling of the Arroyo Grande oil field. This was followed in 2005 by the County's approval of CUP D010386D authorizing 130 oil and gas wells.<sup>6</sup> The CUP included a sunset clause stating that the operator had ten years to drill the wells before the permit would expire.<sup>7</sup> The ten years lapsed on August 9, 2015. At this point, the operator (at that time, Freeport-McMoRan) had drilled 99 of the 130 permitted wells—63 of 95 new production wells, 31 of 30 steam injection wells,<sup>8</sup> and all 5 authorized water disposal wells.<sup>9</sup>

In July 2015, just before the lapse, Freeport-McMoRan applied for a CUP modification to extend Phase IV by three years to drill the 31 remaining wells, including 20 production wells and eight steam injection wells.<sup>10</sup> Table 1 illustrates activities authorized under the CUP for Phase IV, drilling completed before the CUP lapsed, and the remaining wells at issue in the Extension Request.

On November 12, 2015, the Planning Commission approved the Extension Request.<sup>11</sup> Later that same month, the Center appealed the approval of the extension to the County Board of Supervisors.<sup>12</sup> The Center's appeal argued, among other issues, that the Phase IV EIR did not meet CEQA's requirements to analyze potential impacts to surrounding drinking water wells and other impacts to water resources, and that in the time since the EIR's approval, new circumstances and information had arisen about the impacts of drilling operations on the environment.<sup>13</sup> Six years later, the Board of Supervisors has yet to hear the appeal. In addition, the County has told the Center that the Planning Commission's approval is stayed pending

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<sup>6</sup> San Luis Obispo Dep't of Planning and Building, Final Plains Exploration and Production Phase IV Development Plan Environmental Impact Report (Sept. 2004) (hereinafter "Phase IV EIR") at 2-1; 2005 CUP at Ex. B, Condition of Approval 1.

<sup>7</sup> 2005 CUP, Ex. B, Condition of Approval 4 ("At the end of the ten years, any wells or steam generators not yet completed shall require review and approval of a new Conditional Use Permit.").

<sup>8</sup> The County purportedly authorized more injection wells to be drilled than were initially approved following Freeport-McMoRan's 2014 representation that "Steam injection wells take slightly less time to drill than production wells. Therefore, environmental impacts associated with this change would be slightly reduced." Freeport-McMoRan Oil & Gas, Request for Notice to Proceed Pursuant to Condition 2(B), CUP D010386D, Phase IV Development (Apr. 17, 2014), Attachment 1; San Luis Obispo Dep't. of Planning and Building, Notice to Proceed for the Freeport-McMoRan (previously PXP) Conditional Use Permit D010386D (Dec. 9, 2014) at 2 ("Regarding the 'extra' injection and disposal wells for 2015, which total 11 wells, they will have similar or slightly less impacts when compared to oil wells. . . . Furthermore, when all of the wells are considered together, the total number of new wells proposed (130) is the same as what was approved (130).")

<sup>9</sup> Freeport-McMoRan Oil & Gas, Land Use Permit Amendment to CUP #D010386D Application (July 20, 2015) (hereinafter "2015 Extension Request"), Attachment A - Project Description (July 1, 2015). Nine "replacement" wells were also drilled before the lapse. Freeport-McMoRan Oil & Gas, Request for Notice to Proceed Pursuant to Condition 2(B), CUP D010386D, Phase IV Development (Aug. 27, 2014), Attachment 1.

<sup>10</sup> Extension Request; *see also* San Luis Obispo Planning Comm., Staff Report, Conditional Use Permit DRC2015-00002 (Sept. 10, 2015) ("This request would extend the current limit for an additional 3 years for approximately 31 oil wells not yet installed.").

<sup>11</sup> San Luis Obispo Planning Comm., Meeting Minutes (Nov. 12, 2015).

<sup>12</sup> CBD Appeal.

<sup>13</sup> *See* CBD Appeal at 3-8.

resolution of the appeal and that the 31 new wells at issue in the extension have been on hold since the appeal was filed.<sup>14</sup>

<i>Table 1</i>	Phase IV Project Description	Wells Drilled as of July 1, 2015	Remaining Wells at Issue in CUP Extension Request
Production Wells	95	63	20
Injection Wells	30	31	8
Water Disposal Wells	5	5	3
<i>Total</i>	<i>130</i>	<i>99</i>	<i>31</i>

**B. After Expiration of CUP D010386D and During the Pendency of the Extension Request, the County Purported to Approve More Wells than Phase IV Allowed.**

Despite the expired CUP and pending Extension Request (and since acquiring Freeport McMoRan’s oil and gas facilities in early 2017),<sup>15</sup> the current operator of the oil field, Sentinel, received purported authorization from the County and permits from the state oil and gas regulator—CalGEM, formerly the Division of Oil, Gas, and Geothermal Resources—to drill at least 37 new wells, 21 of which have been drilled.<sup>16</sup> Of these, 15 wells were approved within the past six months. (See Appendix A, noting CalGEM approvals in December 2020 and NTP approvals in March 2021.) Many of the more recently approved wells are for steam injection.

As shown in Table 2 below, the number of injection wells drilled in Phase IV now *exceeds* the number authorized for Phase IV and described in the Phase IV EIR.

<sup>14</sup> Email from Camilla Getz, Center for Biological Diversity, to Steve McMasters, San Luis Obispo Dep’t of Planning and Building, Re: Notes from Call 1/13 (Jan. 13, 2021).

<sup>15</sup> Quantum Energy Partners, *Sentinel Peak Resources Announces Closing of the Acquisition of Freeport-McMoRan’s Onshore California Assets*, Globe Newswire (Jan. 3, 2017), <https://www.globenewswire.com/en/news-release/2017/01/03/1194568/0/en/Sentinel-Peak-Resources-Announces-Closing-of-the-Acquisition-of-Freeport-McMoRan-s-Onshore-California-Assets.html>.

<sup>16</sup> In seeking these permits, Sentinel told CalGEM that the wells were authorized under the Phase IV EIR and 2005 CUP. *See, e.g.*, CEQA Operator Checklist for API#0407921284 (listing the Phase IV EIR as the relevant Environmental Review documentation). CalGEM granted Sentinel’s permits and issued 2-page Notice of Determination forms for some of the wells that referenced the 2005 CUP and Phase IV EIR. As explained in note 3, *supra*, the Center filed a lawsuit earlier this year challenging CalGEM’s ongoing pattern and practice of neglecting its duties under CEQA. In this instance, CalGEM rubberstamped well approvals without interrogating Sentinel’s assertion that they were covered by a CEQA-compliant local environmental review and without conducting an independent review of environmental impacts. These wells were, in fact, not authorized by the County CUP or analyzed in an EIR by either the County or the state regulators.

<b>Table 2</b>	<b>Phase IV Project Description</b>	<b>Wells Drilled as of July 1, 2015 (i.e., Before the CUP Lapsed)</b>	<b>Wells Approved Through NTPs After CUP Lapsed, Since 2017</b>	<b>Wells Drilled and Approved (Before Lapse + Through NTPs Since 2017)<sup>17</sup></b>
Production Wells	95	63	15	78
Injection Wells	30	31	22	53
Water Disposal Wells	5	5	0	5
<i>Total</i>	<i>130</i>	<i>99</i>	<i>37</i>	<i>136</i>

There is inconsistency in the terms that Sentinel, CalGEM, and the County use to describe the drilling requests. Sentinel requests “new drill” permits from CalGEM even while describing the work as “re-drilling.”<sup>18</sup> CalGEM refers to the actions as “new drills” and issues new drill permits. After receiving the permit from CalGEM, Sentinel submits a request for an NTP to the County. In the NTP, Sentinel refers to its activities as “replacement wells.”<sup>19</sup> San Luis Obispo’s return of the NTP to Sentinel repeats the “replacement well” language.

As discussed further below, Sentinel must apply for “new drill” permits under state law to drill new wells. By contrast, redrill activities are authorized through rework permits.<sup>20</sup> Redrilling involves altering the “casing” or “function” of an existing well instead of drilling a new well with new casing.<sup>21</sup> If Sentinel were truly “re-drilling” wells, it would apply for rework permits, but Sentinel is not redrilling, so it must secure “new drill” permits. The terms “re-drill” and “replacement” appear designed to improperly minimize the nature of the new drilling activities and evade required environmental review. The fact that some of the so-called “replacement wells” may be relatively close to the well supposedly “replaced” cannot transform the new wells into re-drilled wells. Moreover, the top-hole location of at least one well drilled during the

<sup>17</sup> Nine “replacement wells” were also drilled before the lapse. Freeport-McMoRan Oil & Gas, Request for Notice to Proceed Pursuant to Condition 2(B), CUP D010386D, Phase IV Development (Aug. 27, 2014).

<sup>18</sup> See, e.g., CEQA Operator Checklist for API#0407921284, stating: “This project is to re-drill 7 existing wells. The Lead Agency, the County of San Luis Obispo, has determined that re-drills of existing wells are covered under the most recent and current Conditional Use Permit, D010386D, a copy of which has been submitted to your office. The Department of Conservation has previously acted as a reviewing agency for the associated EIR.”

<sup>19</sup> See, e.g., Sentinel Peak Resources, Request for Notice to Proceed for Replacement Wells Pursuant to CUP D010386D (Oct. 25, 2018) at 1 (“Replacement wells are necessary to maintain existing oil field operations by abandoning a failed well and drilling a new well to take its place in approximately the same location. Replacement wells do not result in any additional land surface disturbance; cause no appreciable increase in environmental impacts; do not increase overall well count; and do not result in any significant change to the utilization of the resource.”).

<sup>20</sup> 14 Cal. Code Regs., § 1931.1.

<sup>21</sup> *Id.*, § 1720(b).

extension stay does not even appear to be on the same well pad as the well it purportedly “replaces.”<sup>22</sup>

The semantic sleight of hand employed by Sentinel and the County with regard to “re-drilling” and “replacement wells” appears designed to mask a clear legal violation. Nothing in Sentinel’s CUP, Phase IV EIR, or state or County regulations allows continued expansion of an oil field without CUP authorization and environmental review under the CEQA, yet this is exactly what has occurred during the pendency of this appeal.

### **III. The County Must Take Immediate Corrective Actions to Prevent Further Unlawful Drilling.**

As of August 9, 2015, the CUP authorizing additional wells terminated, meaning that the operator may not drill any new wells. But since 2017, the County has enabled expansion of the Arroyo Grande oil field in contravention of the operator’s CUP, CEQA, and other state and County laws. The rapid acceleration of purported “replacement well” requests and approvals—from just nine wells from 2005-2015, to 37 wells from 2017-2020 (i.e., during the pendency of Sentinel’s Extension Request)—has allowed Sentinel to exploit an unlawful “replacement well” loophole to continue to drill wells in the Arroyo Grande oil field without the proper permits or environmental review.

The County must end its improper approvals of new wells by: (1) granting the Center’s appeal and denying Sentinel’s Extension Request to drill an additional 31 wells under Phase IV; (2) halting all “replacement well” approvals and rescinding approvals for all such wells; and (3) stopping injection well approvals now that more injection wells have been drilled than were described in the Phase IV EIR. The County should also reform its NTP process to create public transparency, avoid unauthorized drilling, ensure adequate environmental review prior to approval, and increase public confidence in the County’s regulation of dangerous oil drilling activities.

#### **A. The County Must Take Corrective Action Because Sentinel is in Violation of the CUP Conditions.**

The Extension Request (and the Center’s appeal) have been pending since 2015. But for the last six years, Sentinel has continued to drill wells. The County has illegally authorized more wells to be drilled—37—than the number at issue—31—in the extension. Under County Code section 22.62.060(C)(3), “Use or enjoyment of [a CUP] in violation, or without observance of any condition, shall constitute a violation of this title.” Further, the County Code states that “In the event of such a violation, the approval may be revoked.”<sup>23</sup> The violations of the terms of the CUP constitute ample grounds for revocation.

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<sup>22</sup> Well 13 N1 was on pad Rock 12M while well 13N1 R is on pad Rock 13L. San Luis Obispo Dep’t. of Planning & Building, Notice to Proceed for Replacement Wells Pursuant to CUP D010386D (Sept. 16, 2019) at 3 (depicting location of wells); Phase IV EIR at Figure 3-6, Table 3.4-2 (well pad and well information). It is also unclear if 9L and 9L R are on the same pad, because pad Signal 102 is shown as modified in the Phase IV EIR map (Figure 3-6) and does not match the satellite image in the September 16, 2019 Notice to Proceed from San Luis Obispo County.

<sup>23</sup> SLO County Code, § 22.62.060(C)(3); *see also* Conditions of Approval DRC2015-00002 Exhibit B, Condition 5 (“Failure to comply with these conditions of approval may result in an immediate enforcement action by the Department of Planning and Building. If it is determined that violation(s) of these conditions of approval have occurred, or are occurring, this approval may be revoked pursuant to Section 22.74.160 of the Land Use Ordinance.”).



Sentinel’s drilling activities violated the terms of the CUP because: (1) Sentinel conducted drilling activities after the expiration of the CUP and while the Extension Request was stayed pending the appeal; (2) the CUP does not authorize replacement well drilling; and/or (3) even had the Extension Request been properly granted, it would have extended the permit only through 2018, and yet Sentinel’s drilling continued past that date.

In light of these facts and those laid out in the Center’s appeal, the County should deny the Extension Request, recognize the CUP is expired per its original conditions of approval, and rescind the permits and suspend operations that were approved under the CUP since 2015.<sup>24</sup> At absolute minimum, the County must rescind all well approvals issued after the expiration of the CUP and suspend oil and gas activities authorized under those approvals.

**B. The County Must End Its Practice of Approving “Replacement Wells.”**

The County must immediately stop attempting to authorize so-called “replacement wells” under Phase IV, as these wells are not permitted by Sentinel’s CUP or contemplated in the Phase IV EIR, nor are they allowed under County or state laws.

- i. “Replacement wells” are not authorized under Sentinel’s CUP or County regulations.*

Neither the 2005 CUP nor the 2015 Extension Request mention or authorize “replacement wells.” Rather, Condition of Approval 3 of the 2005 CUP states, “A total of ten years is allowed for the development of the 95 producer and 30 steam injector wells, and the 3 steam generators.”<sup>25</sup> Condition of Approval 4 in the 2005 CUP states, “At the end of the ten years, any wells or steam generators not yet completed shall require review and approval of a new Conditional Use Permit.”<sup>26</sup> The County therefore cannot point to any authority in Sentinel’s CUP that allows ongoing drilling through “replacement well” activities.

Similarly, the County cannot ground its purported approvals of “replacement wells” in the County Code, as the Code does not mention replacement activities as authorized by a land use permit.

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<sup>24</sup> To the extent Sentinel claims it has a vested right to continue its operations, these claims are unsupported by law. A prerequisite to establishing a vested right is obtaining all required permits and good faith reliance on those permits. *Avco Community Developers, Inc. v. South Coast Regional Com.* (1976) 17 Cal.3d 785, 791. Here, Sentinel’s permit has expired, and its activities have gone beyond what was authorized. *See Hermosa Beach Stop Oil Coalition v. City of Hermosa Beach* (2001) 86 Cal.App.4th 534, 552 (finding no vested right to drill without required Coastal Commission permit and local building permit). Similarly, Sentinel cannot claim a vested right to drill when approvals were granted under misleading circumstances, *See Stokes v. Bd. of Permit Appeals* (1997) 52 Cal.App.4th 1348, 1357 (holding that a permit is not vested and may be revoked when its application contained misleading statements). In addition, because 16 wells have not yet been drilled, including 15 wells approved in March 2021, Sentinel cannot claim a vested right to drill these 16 wells when it has not completed substantial work in reliance of the County’s purported approvals. *See Appendix A.*

<sup>25</sup> 2005 CUP at Ex. B, Condition of Approval 3.

<sup>26</sup> *Id.* In the Extension Request, Condition 4 was amended to read, “At the end of thirteen years . . .”). 2015 Extension Request, Ex. B, Condition of Approval 4. In addition, according to the County Code, a new Minor Use Permit (MUP) is required when “an additional well is proposed in an existing designated oil field.” SLO County Code, § 22.34.030(B)(2).



ii. “Replacement wells” are not described by the Phase IV EIR.

As noted in section II, *supra*, between 2005-2021, the County approved NTPs for 37 “replacement wells” that were actually new wells. These so-called “replacement wells” were not mentioned in the Phase IV EIR.

First, nowhere in the Phase IV EIR is the word “replacement” mentioned, nor did the EIR contemplate such a concept. Instead, the project proposed included a specific number of producer and injector wells: “The primary components of the proposed project are 95 producer wells, 30 injector wells, modification of 31 existing well pads and construction of 4 new well pads, and construction of 3 steam generators.”<sup>27</sup> That number of wells has now been exceeded by at least six wells. *See* section II, *supra*.

Second, as described in section IV.C.ii below, the so-called “replacement wells” have significant environmental impacts beyond what the Phase IV EIR described. These new, unlawful wells effectively double the well construction-related impacts associated with the “replaced” well, including air pollution, noise, vibration, odor, and soil disturbance. The EIR’s project description was limited to the 125 producer and injector wells proposed for the CUP.<sup>28</sup> The EIR did not include or attempt to analyze the environmental impacts of additional wells. For example, estimates of the equipment, personnel and project trips, and days associated with construction were based on the number of wells proposed, without additional purported “replacement” activities.<sup>29</sup> Similarly, impacts to biological resources outlined in the EIR relate to the planned number and location of wells, without contemplating any “replacement” activities. The EIR notes that construction of wells on specific well pads could impact nearby special-status plant and animal species.<sup>30</sup> Surveys quantified potential impacts to Well’s manzanita and oak trees from drilling new wells on existing pads.<sup>31</sup> Several of the well pads where drilling new wells was noted to potentially impact these trees are the same pads as those where replacement wells have been drilled. Additional trees may therefore be impacted by the “replacement well” construction, as “replacement wells” have been drilled on Maino 18L (2 manzanita, 8 oak potentially impacted by construction of the new wells anticipated in EIR), Signal 10M (8 manzanita), Signal 9L / 101 9LI (3 manzanita), Signal 105 (12 manzanita).<sup>32</sup> Thus, the “replacement wells” cause environmental impacts beyond those from the project described in the EIR.

Finally, authorizing “replacement wells” extends the time period over which these wells will generate air pollution, threaten ground and surface waters, pose a safety threat in case of spills, and increase the amount of oil and gas produced, which when burned will contribute to climate change. This extension of use and impacts is beyond what was disclosed or approved, further necessitating that the County end the illegal oil field expansion and instead properly analyze the impacts of drilling activities under a new EIR for Phase V.

In sum, the EIR described only 130 wells, including 30 injection wells. Through the NTP process, the County has to date purported to approve 136 wells, including 53 injection wells. The

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<sup>27</sup> Phase IV EIR at 1-1.

<sup>28</sup> *Id.* at 1.1.2.

<sup>29</sup> *See id.* at Tables 3.5-1, 3.5-1a (Well drilling total days of construction = 185 days “Well Drilling durations: 4 days/producing well, 1 day/injection well”), 5.2-2.

<sup>30</sup> *Id.* at § 5.5.3.2.

<sup>31</sup> *Id.* at Tables 5.5-6, 5.5-7.

<sup>32</sup> *Id.*

operator has drilled 120 wells, including 50 injection wells. Both the County’s purported approvals and the operator’s actions are illegal. Therefore, the County should stop approving these activities and suspend all illegal operations.

iii. “Replacement wells” are not authorized by state regulations.

There is no such thing as a “replacement well” under state law, nor do state regulators issue any such permits. Instead, state law requires “new drill” permits for “any” well.<sup>33</sup> Sentinel did in fact seek and receive “new drill” permits from CalGEM for the wells (see Appendix A) (though we note that those CalGEM permits are themselves unlawful because they were issued without the required CEQA review).

Moreover, operators are legally obligated to properly plug and abandon wells in California.<sup>34</sup> That obligation comes with each well approval. It is flatly contrary to California law, and utterly irrational, to suggest that when an operator fulfills its legal obligation to properly plug and abandon one well, that it somehow entitles the company to drill another well to “replace it.” It is even more unreasonable to suggest that the operator is entitled to drill such a “replacement well” without CEQA compliance. By this logic, operators could evade environmental review of projects into perpetuity, but that is not what the law allows.

### C. The County Must Stop Approving Additional Steam Injection Wells.

The 2005 CUP and Phase IV EIR both specify that 30 new steam injection wells could be drilled between 2005 and 2015.<sup>35</sup> Steam flooding—the primary injection method in the Arroyo Grande oil field—requires large amounts of energy to heat the injected steam up to a temperature that allows oil to flow more easily.<sup>36</sup> Steam injection also generates large amounts of produced water that Sentinel disposes of by injecting it into groundwater (or Pismo Creek).<sup>37</sup> The Phase IV EIR notes that oil spills and well blow-outs “resulting in the uncontrolled release of fluids and possibly explosion and fire” can occur during steam injection activities.<sup>38</sup>

Despite the County’s recognition of the impacts associated with steam injection, it has allowed Freeport-McMoRan and Sentinel to drill *more* steam injection wells than were contemplated in the CUP and EIR. Even before the Extension Request, the County approved 31 steam injection wells—one more than was described in the CUP and EIR.<sup>39</sup> Since that time, 22 additional steam injection wells have been approved as “replacement wells” (see Appendix A). The Extension Request seeks an additional 8 steam injection wells,<sup>40</sup> which would bring the total number of injection-well approvals to *more than double* the number described in the EIR. This is manifestly unsafe and unlawful.

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<sup>33</sup> Pub. Resources Code, § 3203; *see also* Cal. Dep’t of Conservation, *Permitting, Forms, and Compliance*, [https://www.conservation.ca.gov/calgem/for\\_operators](https://www.conservation.ca.gov/calgem/for_operators) (last visited July 21, 2021).

<sup>34</sup> *See* Pub. Resources Code §§ 3208, 3228-3230, 3237(c); 14 Cal. Code Regs., § 1723 et seq.

<sup>35</sup> 2005 CUP at Ex. B, Conditions of Approval 1, 3, 4; Phase IV EIR at 2-1.

<sup>36</sup> Phase IV EIR at 3-11.

<sup>37</sup> *Id.* at 3-11 – 3-12.

<sup>38</sup> *Id.* at 5.2-7; *see also id.* at 2-38, 5.10-7 (the potential for well blow-outs “is somewhat higher in fields undergoing steam injection”); 5.10-8 (“Due to the shallow occurrence of oil at the Project Site, water or steam injection operations at the oil field could result in the migration of oil to the surface via unknown abandoned oil wells or other migration pathways, such as surface exposures of oil sands.”)

<sup>39</sup> 2015 Extension Request, Attachment A - Project Description (July 1, 2015) at 2.

<sup>40</sup> *Id.*

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In 2014, then-operator Freeport-McMoRan falsely claimed that “Steam injection wells take slightly less time to drill than production wells. Therefore, environmental impacts associated with this change would be slightly reduced.”<sup>41</sup> It appears that the County may have adopted this specious claim in 2014, when it issued an NTP to approve the 8 steam injection wells now subject to the extension appeal, noting: “Regarding the ‘extra’ injection and disposal wells for 2015, which total 11 wells, they will have similar or slightly less impacts when compared to oil wells. . . . Furthermore, when all of the wells are considered together, the total number of new wells proposed (130) is the same as what was approved (130).”<sup>42</sup>

The County purported to authorize these additional injection wells without public input and with minimal explanation. Had this authorization for additional injection wells occurred in public view, the Center would have demonstrated how this reasoning is fundamentally flawed. First, Freeport-McMoRan’s claim that injection wells take less time to drill is belied by the record, which shows that some injection wells take significantly more time to drill than production wells. The one production well drilled since 2018 for which there are drilling history records available on the state’s WellStar database took five days to drill.<sup>43</sup> By comparison, records of some cyclic steam and steamflood wells drilled since 2018 indicate that at least one well took nine days to drill.<sup>44</sup>

Second, even if steam injection wells did take less time to drill, there is no reason to assume that shorter drilling times result in less severe environmental impacts overall. The operator did not provide any supporting data to verify this assumption, and there is no record that the County has any data of its own to support this. Nor has the operator demonstrated that any decrease in these impacts would outweigh other significant impacts that the Phase IV EIR discloses as being associated with the operation of steam injection wells. Since the Phase IV EIR was certified, the mountain of evidence that injection is a dangerous, environmentally destructive practice has only grown. Around the state, including in Kern and neighboring Ventura County, oil spills and water contamination have occurred and are continuing to occur due to the inherent dangers of injection wells combined with poor regulatory oversight.<sup>45</sup> Ventura County imposed an emergency moratorium on drilling and re-drilling for steam injection in 2019 because the problems are so severe.<sup>46</sup> The County’s and operator’s actions here are not only illegal but profoundly irresponsible. These issues are further detailed in section IV.C.ii below.

Third and finally, the County’s reasoning that “the total number of new wells proposed (130) is the same as what was approved” is incorrect. Once the “replacement wells” are taken into

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<sup>41</sup> Freeport-McMoRan Oil & Gas, Request for Notice to Proceed Pursuant to Condition 2(B), CUP D010386D, Phase IV Development (Aug. 27, 2014), Attachment 1.

<sup>42</sup> San Luis Obispo Dep’t of Planning and Building, Notice to Proceed for the Freeport-McMoRan (previously PXP) Conditional Use Permit D010386D (Dec. 9, 2014) at 2.

<sup>43</sup> Cal. Dep’t of Conservation, Division of Oil, Gas, and Geothermal Resources, Well Summary Report for API# 0407921268 (June 18, 2018) (drilling commenced 4/5/18 and was completed 4/9/2018).

<sup>44</sup> Cal. Dep’t of Conservation, Division of Oil, Gas, and Geothermal Resources, Well Summary Report for API# 0407921272 (May 9, 2019) (steam flood well drilling commenced 4/21/18 and was completed 4/23/2018 – 3 days); Well Summary Report for API# 0407921285 (Jan. 7, 2020) (cyclic steam well drilling commenced 10/9/19 and was completed 10/12/2019 – 4 days); Well Summary Report for API# 0407921266 (May 28, 2018) (cyclic steam well drilling commenced 2/23/18 and was completed 3/3/2019 – 9 days).

<sup>45</sup> See *infra*, n. 88-90.

<sup>46</sup> Ventura Urgency Ordinance No. 4542; Ventura Urgency Ordinance No. 4544; Ventura Urgency Ordinance No. 4547.

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account, 136 wells have now been approved under the now-expired Phase IV CUP. (See Table 2, *supra*.)

The County must not allow any more steam injection wells to be drilled either as “replacement wells” or by approving the Extension Request. The County should also suspend all illegal injection well operations. Finally, if the County authorizes any additional drilling in the future through a new CUP, it must clarify that operators cannot later swap in injection wells for production wells (and certainly not without analyzing and mitigating the specific harms of the extra injection wells).

#### **D. The County Must Provide Public Notice and Increase Transparency Around Its NTP Well Approval Process.**

The County uses the NTP approval process for all drilling in the Arroyo Grande oil field. Since at least 2017, however, this process has failed to ensure that drilling complies with CEQA and land use regulations, as the County authorized NTPs totaling more wells than Sentinel’s CUP and Phase IV EIR contemplated. *See* section II, *supra*.

While other drilling projects require public notice and comment, through the CEQA process or County Planning Board hearings, the County’s approvals of Sentinel’s NTPs have proceeded in secrecy, and we have discovered them only through a lengthy Public Records Act process. Even now, we cannot be sure that we have a full picture of the County’s drilling authorizations and its basis for granting notices to proceed for replacement wells. The County’s decision to authorize additional injection wells beyond those contemplated in the Phase IV EIR and 2005 CUP also happened without public notice. There was no opportunity to object to new approvals under an expired CUP, or to counter the false claims provided by the operator that these wells have fewer impacts than production wells.

Going forward, the County must: (1) affirmatively inform the public—and provide for public comment—whenever *any* drilling is requested; and (2) not approve any oil and gas activity under an NTP without a CEQA-compliant review of the environmental impacts of such approval. In short, any further drilling must be the subject of a new permitting and CEQA process with public notice and participation before it can move forward.

#### **IV. The County Must Grant the Center’s Appeal, Deny Sentinel’s Extension Request, and Require the Preparation of an EIR Before Any Additional Wells Are Drilled.**

In addition to halting ongoing unlawful permitting and production activities, the County must ensure that all new oil and gas activities undergo a thorough and CEQA-compliant review process. To that end, the County must grant the Center’s appeal, deny Sentinel’s improper Extension Request, and consider any new oil and gas activities in the Phase V environmental review process.

##### **A. The 2005 CUP, County Code, and County’s Statements Preclude Additional Drilling Without a New Permit and EIR.**

The 2005 CUP is clear that additional wells beyond those contemplated in that CUP or the corresponding EIR “shall require review and approval of a new Conditional Use Permit.”<sup>47</sup> As explained, the County has already allowed oil operators to drill more wells than were described

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<sup>47</sup> 2005 CUP at Ex. B, Condition of Approval 4.

in the Phase IV EIR. Now, any future drilling must be considered under the County's review of Phase V.

The County has previously acknowledged this as well. In October 2012, the then-operator of the Arroyo Grande oil field requested a CUP from the County to allow for Phase V expansion of the oil field.<sup>48</sup> Specifically, Phase V would entail the "addition of 11 new well pads and modification of 38 existing pads to provide for up to 350 new oil wells," in addition to related infrastructure.<sup>49</sup> In November 2012, the County determined that an EIR would be required for Phase V; in 2014 the EIR was "under preparation."<sup>50</sup> In 2015, when applying for the Extension Request, the operator acknowledged that the remaining 31 wells from Phase IV could be tied into its Phase V expansion.<sup>51</sup> As a result, the County noted in its staff report that as Phase V moved forward, the "remaining Phase IV wells would be integrated into [Phase V] approval."<sup>52</sup>

**B. The County Must Analyze the Whole of the Action and May Not Segment the Larger Expansion Project by Approving the 31 Additional Wells Separate from the Planned Phase V Expansion.**

Because Sentinel has already drilled more wells than the Phase IV EIR described and it is seeking approval for even more, the County must halt the illegal drilling and analyze the drilling that has eluded analysis thus far in a new EIR. This additional drilling cannot now be segmented from the Phase V expansion plans, because doing so would obscure the full picture of Sentinel's environmental and health impacts and violate CEQA's prohibition against piecemealing a project into separate segments.

In 2015, then-operator Freeport-McMoRan noted in its Extension Request that the extra three years to drill the 31 wells would "provide a seamless transition into [Freeport-McMoRan's] proposed Phase V Development (if approved)."<sup>53</sup> But CEQA requires that an EIR identify all significant impacts on the environment of the "whole of action," and that environmental review occur along with reasonably foreseeable future phases.<sup>54</sup> Thus, CEQA requires that environmental considerations not be hidden by separately focusing on isolated parts, overlooking the cumulative effects of the whole action, or attempting to avoid responsibility for considering the environmental impact of the project as a whole.<sup>55</sup> Allowing these 31 wells to move forward ahead of Phase V blurs the different phases, obscures the wells' environmental and public health effects, and ignores the cumulative impacts of the whole action, including the planned expansion.

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<sup>48</sup> San Luis Obispo Dep't of Planning and Building, Initial Study Summary, Phase V Oil Field Expansion, Conditional Use Permit ED12083 (DRC2012-00035) at 2; *see also* Freeport-McMoRan Oil & Gas, Phase V Conditional Use Permit (DRC2012-00035) Ongoing Status Report at 1 (Sept. 23, 2015).

<sup>49</sup> San Luis Obispo Dep't of Planning and Building, Initial Study Summary, Phase V Oil Field Expansion, Conditional Use Permit ED12083 (DRC2012-00035) at 2.

<sup>50</sup> Freeport-McMoRan Oil & Gas, Phase V Conditional Use Permit (DRC2012-00035) Ongoing Status Report at 1-2 (Sept. 23, 2015).

<sup>51</sup> 2015 Extension Request, Attachment A - Project Description (July 1, 2015) at 1 ("FM O&G is requesting an extension of time for expiration of the CUP from August 8, 2015 to August 8, 2018, or until such time as a decision regarding FM O&G's pending CUP application for the Phase V Development of AGOF is made by the County.").

<sup>52</sup> San Luis Obispo Planning Comm., Staff Report, DRC2015-00002 at 4 (Sept. 10, 2015).

<sup>53</sup> *Id.*

<sup>54</sup> CEQA Guidelines, §§ 15126.2(a), 15378; *RiverWatch v. Olivenhain Mun. Water Dist.* (2009) 170 Cal.App.4th 1186; *Laurel Heights Improvement Ass'n v. Regents of Univ. of Cal.* (1988) 47 Cal.3d 376, 396.

<sup>55</sup> *Id.*; *Bozung v. LAFCO* (1975) 13 Cal.3d 263, 283.

Because Phase IV has been “open” for 16 years when it was originally approved for only 10 (or 13 had the extension appeal been heard and decided in the operator’s favor), and the operator and the County agreed that remaining Phase IV wells would be integrated into Phase V, the County must now “close” Phase IV and require a new Phase V EIR and permit for any further drilling Sentinel wants to conduct—whether for “replacement wells” or otherwise.

**C. Because the Phase IV EIR is Now Deficient, Circumstances Have Changed, and There is New Information on Impacts, the County May Not Approve the Extension Request Without a New EIR.**

Even if Phase V does not move forward, the Extension Request would still require a new or updated and recirculated EIR. As argued in our appeal submitted nearly six years ago, a new EIR is required under CEQA because the original EIR was deficient and does not account for changed circumstances and the additional 31 wells’ significant impacts. Our appeal letters in October and November 2015 detailed significant new information about the health and environmental harms of oil drilling that became known after the Phase IV EIR, including the increasing energy and water intensity required to produce oil at Arroyo Grande, the high risks injection activities pose to drinking water, and the incompatibility of continued oil and gas production with state climate goals enacted after the Phase IV approval. Since 2015, changes to the circumstances of the project, new state regulations, and additional information about the risks of drilling have also come to light. All of our arguments, therefore, apply with even greater force today. The County cannot rely on the Phase IV EIR to grant Sentinel’s Extension Request. To the degree the County wishes to consider the approval of new wells, it must do so as part of the Phase V EIR process.

- i. Changes to the circumstances underlying the project and to the project itself have led to new or more severe significant environmental impacts than those disclosed in the Phase IV EIR.*

There are several changed circumstances since the Phase IV EIR that necessitate a new EIR.<sup>56</sup> First, Sentinel and its predecessor have drilled or obtained approval for 136 wells, including 53 injection wells,<sup>57</sup> even though the Phase IV EIR described only 130 wells, including 30 injection wells.<sup>58</sup> This nearly doubling of the injection wells described by the Phase IV EIR constitutes a substantial change in the proposed project.<sup>59</sup> The drilling creates significantly more possibilities for leaks, spills, mechanical failures, and percolation of harmful chemicals from the Arroyo Grande oil field into nearby groundwater reservoirs than were considered by the Phase IV EIR. Furthermore, steam injection is a carbon intensive process due to the high fuel demand of generating and pumping high pressure steam,<sup>60</sup> and the Phase IV EIR could not have accurately predicted the air pollution and climate impact of an unanticipated doubling of injection wells in

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<sup>56</sup> Cal. Code Regs. tit. 14, § 15162(a) (2021).

<sup>57</sup> See Table 2, *supra*.

<sup>58</sup> Phase IV EIR at 2-1.

<sup>59</sup> Cal. Code Regs. tit. 14, § 15162(a)(1).

<sup>60</sup> Cal. Council on Science & Technology, An Independent Scientific Assessment of Well Stimulation in California, Vol. II at 196 (2015) (hereinafter “CCST Vol. II”), <https://cst.us/wp-content/uploads/160708-sb4-vol-II-7.pdf>.

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Arroyo Grande.<sup>61</sup> The County cannot rely upon the Phase IV EIR for the additional wells already drilled or to grant the Extension Request for 31 additional wells.

Second, CalGEM's regulatory failures with regard to underground injection in California indicates that the Phase IV EIR underestimated impacts from underground injection. In 2011, EPA found that CalGEM's (then the Division of Oil, Gas, and Geothermal Resources) Underground Injection Control ("UIC") program was not sufficiently implementing numerous requirements, "including consistent area of review analyses, accurate determination of fracture gradients for injection projects, and enforcement of appropriate maximum allowable surface injection pressures."<sup>62</sup> In response, a 2015 self-audit by CalGEM found a "lack of transparency," "inconsistent application of requirements," and "aging regulatory constructs that have not kept up with changing oil-production methods and advancements in the understanding of threats to health, safety and the environment."<sup>63</sup> In particular, the agency noted that the use of cyclic steam injection had increased dramatically and that ambiguities in the existing UIC program enabled some wells to avoid UIC requirements entirely.<sup>64</sup> These flaws and oversights led to CalGEM first adopting new regulations for underground injection in 2019, and then a moratorium on high pressure steam injection later that year as oil spills and water contamination continued throughout the state.<sup>65</sup> Given these developments and Sentinel's heavy use of steam injection in this field, a new EIR is necessary to analyze the impacts of injection here.

Third, in 2019, the operator received an exemption from the Safe Drinking Water Act to allow injection of oil wastewater into the Edna Member of the Dollie sands aquifer of the Pismo formation for waste disposal and enhanced oil recovery ("Aquifer Exemption"). The purpose of the Aquifer Exemption is to increase injection and production in the field.<sup>66</sup> As explained above, Sentinel has already increased the number of injection wells beyond what Phase IV contemplated. And as explicated below, changes in injection, production, and water volume can affect pressure, groundwater flow, zonal isolation, seismic risk and potential for subsidence. All of this must be evaluated in a new EIR before Sentinel continues to expand its activities and given Sentinel's new Aquifer Exemption.

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<sup>61</sup> Letter from Maya Golden-Krasner, Center for Biological Diversity, to San Luis Obispo Planning Comm. Re: Freeport-McMoRan Oil & Gas, LLC, Arroyo Grande Oil Field, Application to Extend Phase IV CUP #D010386D – Supplemental Information (Nov. 11, 2015) at 2-3.

<sup>62</sup> Cal. Dep't of Conservation, CalGEM, Updated Underground Injection Control Regulations: Final Statement of Reasons (2018) at 3, <https://www.conservation.ca.gov/calgem/Documents/UIC%20regulations/UIC%20Final%20Statement%20of%20Reasons.pdf>.

<sup>63</sup> *Id.* at 4.

<sup>64</sup> *Id.*

<sup>65</sup> 14 C.F.R., § 1720.1 *et seq.*; Cal. Dep't of Conservation, CalGEM, *Underground Injection Control*, [https://www.conservation.ca.gov/calgem/general\\_information/Pages/UndergroundInjectionControl\(UIC\).aspx](https://www.conservation.ca.gov/calgem/general_information/Pages/UndergroundInjectionControl(UIC).aspx) (last visited on Aug. 17, 2021); Cal. Dep't of Conservation, CalGEM, Notice to Operators 2020-02, "Moratorium on New Approvals of Cyclic Steam Above Fracture Pressure" (Jan. 7, 2020), [https://sntr.senate.ca.gov/sites/sntr.senate.ca.gov/files/nduak-joe\\_ntuk\\_cyclic\\_steam\\_moratorium.pdf](https://sntr.senate.ca.gov/sites/sntr.senate.ca.gov/files/nduak-joe_ntuk_cyclic_steam_moratorium.pdf).

<sup>66</sup> San Luis Obispo County Dep't of Planning and Building, Initial Study, Phase V Oilfield Expansion Conditional Use Permit (November 2012) (hereinafter "Phase V Initial Study") at 2; Freeport-McMoRan Oil & Gas, Application for Aquifer Exemption, Arroyo Grande Oilfield (2015), at 17 (describing the project to dewater the reservoir to increase oil output).



ii. *Oil drilling creates significant impacts, many of which were not previously analyzed in the Phase IV EIR.*

As described in the Center’s appeal, new information demonstrates that the Phase IV EIR did not sufficiently analyze impacts to freshwater resources from consumption and contamination by enhanced oil recovery (“EOR”) operations. Steam injection for EOR is an incredibly water intensive activity that, according to a 2015 California Council on Science & Technology (“CCST”) report, uses between 2-15 times as much freshwater as well stimulation operations, which are themselves water-intensive.<sup>67</sup> Steam flooding and cyclic steaming, both used in the Arroyo Grande oil field, involve injecting large volumes of superheated steam into the oil reservoir, heating the dense oil to reduce its viscosity and then pushing the oil to producing wells surrounding each injector.<sup>68</sup> While much of the water used for EOR in California is recycled produced water, CCST estimated, based on CalGEM data, that as much as 14% of EOR-injected water comes from freshwater sources, or between 15 million m<sup>3</sup> to 60 million m<sup>3</sup> of water annually.<sup>69</sup> By 2019, EOR water use in the Arroyo Grande field had increased by 220% since 2003, the last year of data available for the 2004 EIR, to roughly 652,293 m<sup>3</sup> of water.<sup>70</sup> Thus, if the Arroyo Grande oil field tracks the state average freshwater consumption, it used 19,569 m<sup>3</sup> to 91,321 m<sup>3</sup> of freshwater in 2019, enough to meet the average annual water demand of 32 to 148 California households.<sup>71</sup>

This usage is significant and directly threatens the longevity of California’s freshwater resources, which are already under threat from climate change. Over 85% of California public water systems depend on groundwater to provide part of their drinking supply.<sup>72</sup> The 2012-2016 drought, which was worsened by anthropogenic climate change,<sup>73</sup> increased dependency on groundwater reservoirs and impacted the availability and affordability of domestic water for

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<sup>67</sup> CCST Vol. II at 61.

<sup>68</sup> Phase IV EIR at 3-11.

<sup>69</sup> CCST Vol. II at 59. While the Phase IV EIR states that “[a]ll water used in steam injection comes from treating produced water,” the EIR also explains that if produced water is ever insufficient for steam injection “water pumped from existing water wells can be used to augment the water supplied to the [steam] generators.” Phase IV EIR at 5,7-9, 3-11. Taken together, these passages suggest that produced water is the primary source for steam injection wells, but the supply is augmented by freshwater wells when necessary. This interpretation is supported by CCST’s conclusion that while oil and gas operators reported an average of only 3% of injected water coming from freshwater sources, their actual use “may be as high as 14%, based on ambiguity in the reporting categories in [CalGEM’s] database.” *Id.*

<sup>70</sup> Calculated with data from Cal. Dep’t of Conservation, CalGEM, 2019 Annual Report of the State Oil and Gas Supervisor (2020) at 36; CalGEM, 2003 Annual Report of the State Oil and Gas Supervisor (2004) at 168.

<sup>71</sup> Calculated with data from Cal. Council on Science & Technology, Advanced Well Stimulation Technologies in California, An Independent Review of Scientific and Technical Information (2016) at 183, <https://ccst.us/wp-content/uploads/160708-blm-report.pdf>; CalGEM, 2019 Annual Report of the State Oil and Gas Supervisor (2020) at 36.

<sup>72</sup> Cal. State Water Resources Control Board, Report to the Legislature: Draft Communities that Rely on Contaminated Ground Water (Feb. 2012) at 6.

<sup>73</sup> Williams, A.P. et al., Contribution to anthropogenic warming to California drought during 2012-2014, 42 *Geophys. Res. Lett.* 6819 (2015).

some rural communities.<sup>74</sup> Indeed 75% of freshwater used for EOR is sourced from domestic water systems, further exacerbating the freshwater scarcity in some communities.<sup>75</sup>

Despite the fact that the aquifers underlying the oil field are adjacent to underground sources of drinking water used by residents,<sup>76</sup> the Phase IV EIR did not consider the impact from freshwater consumption for injection wells or establish a monitoring program to evaluate groundwater levels.<sup>77</sup> The preparation of a new EIR would be necessary to allow the County to adequately analyze the impact of EOR injection wells on local freshwater resources in light of the new climate change developments and declining availability of freshwater—and in light of the new areas of the aquifer opened to potential injection pursuant to the 2019 Aquifer Exemption.

The Phase IV EIR also failed to account for the fact that EOR threatens freshwater supply not only by reducing the quantity available for domestic purposes, but also by contaminating existing sources. Recent studies describe how chemical additives are routinely used in oil and gas development, including during EOR, as part of drilling and cementing of well casing, repair of formation damage, wellbore clean-outs, scale and corrosion control, and other production activities.<sup>78</sup> Of the chemical additives that are known, such as methanol, hydrochloric acid, and hydrofluoric acid, many are linked to reproductive and respiratory harms.<sup>79</sup> Moreover, produced water from production wells relying on EOR is similarly harmful to human health because it contains harmful naturally-occurring compounds such as total dissolved solids; trace elements such as boron; heavy metals including arsenic, lead, cadmium, and mercury; organics like benzene, and radioactive isotopes.<sup>80</sup> The chemicals used in EOR also contribute to air pollution, adding to other sources like the engines used for drilling, casing wellbores, and injection, as well as the vehicles and equipment necessary for drilling. “Studies from outside of California indicate that, from a public health perspective, the most significant exposures to toxic air contaminants such as benzene, aliphatic hydrocarbons and hydrogen sulfide occur within 800 m (one-half mile) from active oil and gas development.”<sup>81</sup> Recent research has found that people living near

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<sup>74</sup> Bedsworth, L. et al., Cal. Governor’s Office of Planning and Research, Scripps Institution of Oceanography, Cal. Energy Comm., Cal. Public Utilities Commission, Statewide Summary Report, California’s Fourth Climate Change Assessment, (2018) at 59, <http://www.climateassessment.ca.gov/state/docs/20180827-StatewideSummary.pdf>.

<sup>75</sup> CCST Vol. II at 59-61; U.S. Environmental Protection Agency, Draft Plan to Study the Potential Impacts of Hydraulic Fracturing on Drinking Water Resources (2011) at 20.

<sup>76</sup> See Letter from Maya Golden-Krasner, Center for Biological Diversity, to San Luis Obispo Planning Comm. Re: Freeport-McMoRan Oil & Gas, LLC, Arroyo Grande Oil Field, Application to Extend Phase IV CUP #D010386D – Supplemental Information (Nov. 11, 2015) at 3 and attached SWAPE report, noting that “there are at least 24 domestic water wells in the Edna Member of the Pismo Formation—at similar depths and in the same formation as is proposed for the aquifer exemption.”

<sup>77</sup> See Phase IV EIR at 2-33, 5.7-6 (discussing groundwater impacts); *supra* note 69.

<sup>78</sup> Stringfellow, William T., et al., Comparison of chemical-use between hydraulic fracturing, acidizing, and routine oil and gas development, 12 PLoS ONE 1 (Jan. 2017), <https://doi.org/10.1371/journal>.

<sup>79</sup> Agency for Toxic Substances and Disease Registry (ATSDR), ATSDR A-Z Index, <https://www.atsdr.cdc.gov/az/a.html> (last visited on January 3, 2019); Center for Biological Diversity, et al., Fracking and Dangerous Drilling in California Briefing Book (2017), [https://www.biologicaldiversity.org/campaigns/california\\_fracking/pdfs/fracking-and-drilling-in-california.pdf](https://www.biologicaldiversity.org/campaigns/california_fracking/pdfs/fracking-and-drilling-in-california.pdf).

<sup>80</sup> CCST Vol. II at 92-97.

<sup>81</sup> Concerned Health Professionals of New York, Compendium of Scientific, Medical, and Media Findings Demonstrating Risks and Harms of Fracking (Unconventional Gas and Oil Extraction) Seventh Edition (Dec. 14, 2020) at 433, *available at* <https://concernedhealthny.org/compendium/>; California Council on Science and Technology, An Independent Scientific Assessment of Well Stimulation in California, Vol. III (2015) at 14.

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drilling sites have a higher risk for developing cancer,<sup>82</sup> increased asthma attacks,<sup>83</sup> higher hospitalization rates, and more upper respiratory problems and rashes.<sup>84</sup>

The new EIR must consider that these above-named chemicals can, and already do, enter groundwater aquifers through percolation, direct injection, and mechanical failure of well casings and pipes.<sup>85</sup> The new EIR should also consider the risk of surface expressions and spills, which occur with troubling regularity in California. In 2015, CCST identified 575 spills of produced water between 2011 and 2014, 18% of which affected waterways; as well as 31 chemical spills including a 5,500-gallon spill of hydrochloric acid.<sup>86</sup> Kern County estimates that 613 spills and 87 well leaks occurred from 2009 to 2014, though these figures likely underestimate the true total, either because not all leaks and spills have been discovered yet, or operators have not reported them.<sup>87</sup> Oil and produced water released by injection wells can also be pushed to the surface creating what is known as “surface expressions.” In 2019 alone there were multiple such incidents spilling over a million gallons each of oil and water.<sup>88</sup> According to Chevron, three separate spills have already released 84 million gallons,<sup>89</sup> 3 million gallons, and 1.3 million gallons of oil and wastewater, respectively.<sup>90</sup> The two largest spills are still ongoing. These spills are attributed to steam injection and their frequency increased significantly after CalGEM updated the UIC regulations in 2019 to allow higher pressure injection.<sup>91</sup>

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<sup>82</sup> McKenzie, L.M. et al., Childhood hematologic cancer and residential proximity to oil and gas development, 12 PLoS One 2 (2017).

<sup>83</sup> Rasmussen, Sara G., et al., Association Between Unconventional Natural Gas Development in the Marcellus Shale and Asthma Exacerbations, 176 JAMA Internal Medicine 9 (2016).

<sup>84</sup> Rabinowitz, Peter M., et al., Proximity to Natural Gas Wells and Reported Health Status: Results of a Household Survey in Washington County, Pennsylvania, 123 Environmental Health Perspectives 21 (2015).

<sup>85</sup> DiGiulio, D.C. & R.B. Jackson, Impact to underground sources of drinking water and domestic wells from production well stimulation and completion practices in Pavillion, Wyoming, 50 Env'tl. Science and Technology 4524 (2016); Flesher, John, *Drilling boom means more harmful waste spills*, ASSOCIATED PRESS, Sept. 8, 2015, <https://apnews.com/article/39786bbf509e412a9feb9b58a6534a36>.

<sup>86</sup> CCST Vol. II at 127-128.

<sup>87</sup> Kern County, Revisions to Zoning Ordinance – 2015(C), Draft Environmental Impact Report (2015), Vol. I at 4.9-72, available at <https://kernplanning.com/environmental-doc/environmental-impact-report-revisions-kern-county-zoning-ordinance-2015-c-focused-oil-gas-local-permitting/>.

<sup>88</sup> Wilson, Janet & Lylla Younes, *Oil Companies Are Profiting From Illegal Spills. And California Lets Them*, ProPublica (Sept. 18, 2020) <https://www.propublica.org/article/oil-companies-are-profiting-from-illegal-spills-and-california-lets-them>.

<sup>89</sup> Goldberg, Ted & Dan Brekke, *State Launches Probe Into Oil Field Spills – Including One That's Been Flowing Since 2003*, KQED, Aug. 26, 2019, <https://www.kqed.org/news/11769850/state-launches-probe-into-oil-field-spills-including-one-that-started-in-2003>.

<sup>90</sup> Cal. Dep't of Conservation, CalGEM, “Oil Field Surface Expressions,” <https://www.conservation.ca.gov/calgem/Pages/Chevron-Cymric-oil-spill.aspx> (Last visited July 2, 2021); Cal. Governor's Office of Emergency Serv., Hazardous Materials Spill Update 19-7186 (Nov. 8, 2019), <https://w3.calema.ca.gov/operational/mal haz.nsf/f1841a103c102734882563e200760c4a/449bb5a915083a15882584b10006923e?OpenDocument>; Cal. Governor's Office of Emergency Serv., Hazardous Materials Spill Update 20-1649 (Mar. 23, 2020), <https://w3.calema.ca.gov/operational/mal haz.nsf/f1841a103c102734882563e200760c4a/bbc62a1498cf0000882586080071449e?OpenDocument&Highlight=0,20-1649>.

<sup>91</sup> See Cal. Code Regs, tit. 14, § 1724.10.3 (Apr. 1, 2019); see also Cal. Dep't of Conservation, CalGEM, Updated Underground Injection Control Regulations: Final Text of Regulations (2018) at 5-10 [https://www.conservation.ca.gov/calgem/general\\_information/Documents/UIC\\_regs\\_workshop/Final%20Text%20of%20the%20UIC%20Regulations%20\(Marked\).pdf](https://www.conservation.ca.gov/calgem/general_information/Documents/UIC_regs_workshop/Final%20Text%20of%20the%20UIC%20Regulations%20(Marked).pdf), (last visited Jul. 27, 2021).

These new reports have prompted action by at least one county. In 2019, Ventura County imposed an emergency moratorium on drilling and redrilling for steam injection in the vicinity of potable groundwater after a USGS study found petroleum related gases had migrated into groundwater aquifers.<sup>92</sup> Ventura County noted that heat and pressurized steam used in EOR to thin dense oil could “create risk factors for corrosion and deterioration of pipes, concrete, and even rock itself.”<sup>93</sup> Although there is now a statewide moratorium on new approvals of cyclic steam above fracture pressure,<sup>94</sup> the moratorium’s focus on injection pressure does not address all of the root causes of spills. Reducing the maximum injection pressures without also addressing the growing number of injection wells does not reduce the pathways through which oil and wastewater can travel through nearby groundwater aquifers and up to the surface. The Phase IV EIR did not adequately discuss surface expressions nor establish a regular monitoring program for chemicals in nearby drinking water.<sup>95</sup> Before the County could grant the Extension Request, a new EIR would need to analyze whether the recent explosion of injection wells in Arroyo Grande has allowed for—or may allow for—the migration of any harmful chemicals into groundwater aquifers and whether a similar moratorium as that passed in Ventura would best protect the surrounding area.<sup>96</sup>

Lastly, the County would need to reevaluate climate change impacts from fossil fuel extraction in a new EIR, as climate science has greatly advanced since the Phase IV EIR. Overwhelming scientific consensus has shown that without deep and rapid emissions reductions in the coming decades, global warming will exceed 1.5 degrees Celsius compared to preindustrial levels, resulting in catastrophic damage around the world.<sup>97</sup> Only by limiting greenhouse gas emissions can we hope to minimize future climate extremes such as heavy precipitation, intense tropical cyclones, agricultural and ecological droughts, extreme heat, and reductions in Arctic sea ice, snow cover and permafrost.<sup>98</sup> Because 85% of U.S. emissions come from fossil fuels,<sup>99</sup> phasing

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<sup>92</sup> Ventura Urgency Ordinance No. 4542; Ventura Urgency Ordinance No. 4544; Ventura Urgency Ordinance No. 4547.

<sup>93</sup> Ventura Urgency Ordinance No. 4542.

<sup>94</sup> Cal. Dep’t of Conservation, CalGEM, Notice to Operators 2020-02, “Moratorium on New Approvals of Cyclic Steam Above Fracture Pressure (Jan. 7, 2020), [https://sntr.senate.ca.gov/sites/sntr.senate.ca.gov/files/nduak-joe\\_ntuk\\_cyclic\\_steam\\_moratorium.pdf](https://sntr.senate.ca.gov/sites/sntr.senate.ca.gov/files/nduak-joe_ntuk_cyclic_steam_moratorium.pdf).

<sup>95</sup> See Phase IV EIR at 2-33. The Phase IV EIR establishes groundwater monitoring as a mitigation method but does not detail a process or regular timeframe for that monitoring.

<sup>96</sup> See Letter from Maya Golden-Krasner, Center for Biological Diversity, to San Luis Obispo Planning Comm. Re: Freeport-McMoRan Oil & Gas, LLC, Arroyo Grande Oil Field, Application to Extend Phase IV CUP #D010386D – Supplemental Information (Nov. 11, 2015) at 3 and attached SWAPE report; Freeport McMoRan Application for Aquifer Exemption, Arroyo Grande Oilfield (2015), at 17 (describing the project to dewater the reservoir to increase oil output); see also Appendix A (listing additional injection wells drilled since 2017).

<sup>97</sup> Intergovernmental Panel on Climate Change, Global Warming of 1.5°C, An IPCC special report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty (2018), available at <https://www.ipcc.ch/sr15/>; Intergovernmental Panel on Climate Change, Summary for Policymakers. In: Climate Change 2021: The Physical Science Basis. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change (2021) at SPM-17.

<sup>98</sup> Intergovernmental Panel on Climate Change, Summary for Policymakers. In: Climate Change 2021: The Physical Science Basis. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change (2021) at SPM-19 and SPM-36.

<sup>99</sup> U.S. Global Change Research Program, Overview, Ch. 1 in Impacts, Risks, and Adaptation in the United States, Fourth National Climate Assessment, Volume II (2018) at 60, <https://nca2018.globalchange.gov/>.

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out fossil fuel extraction and combustion is of urgent necessity to avert climate catastrophe. As the U.N. Secretary General made clear in his statement about the August 2021 Intergovernmental Panel on Climate Change 6<sup>th</sup> Assessment Report, the “evidence is irrefutable” that “greenhouse gas emissions from fossil fuel burning . . . are choking our planet and putting billions of people at immediate risk. . . . This report must sound a death knell for coal and fossil fuels, before they destroy our planet. . . . Countries should [] end all new fossil fuel exploration and production . . . .”<sup>100</sup>

For these reasons as well as those discussed in our earlier letters, the County cannot rely upon the outdated Phase IV EIR to grant the Extension Request.

## **V. Conclusion**

Even though its CUP expired in 2015, Sentinel has expanded its activities in the Arroyo Grande oil field in violation of the CUP and all applicable law. The County must halt the illegal drilling activities, deny the Phase IV Extension Request, and enact the proposed changes outlined in this letter.

Should you have questions or wish to discuss this matter further, we can be contacted per the addresses below. A list of references is included in this letter, and the full text of references is attached.

Thank you,

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<sup>100</sup> United Nations Secretary-General, Secretary-General’s statement on the IPCC Working Group 1 Report on the Physical Science Basis of the Sixth Assessment (Aug. 9, 2021), <https://www.un.org/sg/en/content/secretary-generals-statement-the-ipcc-working-group-1-report-the-physical-science-basis-of-the-sixth-assessment>.

Appendix A<sup>1</sup>

Replaced Well					Replacement Well					County Approval		CalGEM CEQA Review
API #	Well Type	Well	Last Production Listed in NTP Approval	Current Status on WellSTAR	API #	Well Type	Well	CalGEM Permit Approval	Spud Date	Date Requested	Date Approved	
407920674	CS	Rock 11J	Dec 2018	Abandoned	407921281	CS	Rock 11J R	12/19/2018	10/23/2019	12/20/2018	9/16/2019	Appears to be no CEQA notice - Posted CEQA checklist does not include Rock 11J R
407920801	OG	Rock 12 SPL	June 2009	Abandoned	407921284	CS	Rock 12 SPL R	9/24/2019	10/17/2019	NTP request not in PRA response	9/16/2019	Notice of Determination (NOD) 7/5/2019
407920800	OG	Rock 13 SPL	Jan 2011	Abandoned	407921287	CS	Rock 13 SPL R	9/24/2019	10/20/2019	NTP request not in PRA response	9/16/2019	NOD 7/5/2019
407920799	OG	Rock 13 SPM	Oct 2020 (Aug 2019 in 2019 NTP approval, but revised in 2020 NTP request)	Active (Abandonment approved Aug 2019)	407921289	CS	Rock 13 SPM R	9/24/2019	N/A (permitted)	12/9/2020 (request associated with 2019 approval not included in PRA response)	9/16/2019; 3/10/2021	NOD 7/5/2019

<sup>1</sup> Information is from WellStar well records, Sentinel Peak Resources, Request for Notice to Proceed (NTP) for Replacement Wells Pursuant to CUP D010386D (Dec. 21, 2017), NTP Request (Oct. 25, 2018), NTP request (Dec. 20, 2018), NTP request (Dec. 9, 2020); San Luis Obispo Dep’t of Planning & Building, Notice to Proceed for Replacement Wells Pursuant to CUP D010386D (Jan. 11, 2018), NTP (Nov. 2, 2018), NTP (Sept. 16, 2019), NTP (Mar. 10, 2021). This Appendix does not include information about the nine “replacement” wells drilled between 2004 and 2015. Details about those wells were not included in the records provided and were mentioned only in passing in Freeport-McMoRan Oil & Gas’ Request for Notice to Proceed Pursuant to Condition 2(B), CUP D010386D, Phase IV Development (Aug. 27, 2014).

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Replaced Well					Replacement Well					County Approval		CalGEM CEQA Review
API #	Well Type	Well	Last Production Listed in NTP Approval	Current Status on WellSTAR	API #	Well Type	Well	CalGEM Permit Approval	Spud Date	Date Requested	Date Approved	
407920648	CS	Rock 13 N-1	Aug 2019	Idle (Abandonment approved July 2019)	407921283	CS	Rock 13 N-1 R	9/24/2019	10/14/2019	NTP request not in PRA response	9/16/2019	NOD 7/5/2019
407920673	OG	Signal E.T.S. 9L	Aug 2019	Observation	407921286	CS	Signal E.T.S. 9L R	9/24/2019	10/27/2019	NTP request not in PRA response	9/16/2019	NOD 7/5/2019
407920032	OG	Signal E.T.S. 83	April 2015	Abandoned	407921288	CS	Signal E.T.S. 83 R	9/24/2019	11/1/2019	NTP request not in PRA response	9/16/2019	NOD 7/5/2019
407920392	CS	Hyla 12	Jan 1998	Abandoned	407921285	CS	Hyla 12 R	9/24/2019	10/9/2019	NTP request not in PRA response	9/16/2019	NOD 7/5/2019
407920277	OG	Signal E.T.S. 105	Oct 1985	Abandoned	407921269	CS	Signal E.T.S. 105 R	Unknown	4/16/2018	12/21/2017	1/11/2018	No CEQA review posted in WellStar or State Clearinghouse
407920785	SF	Signal E.T.S. 10-5K	NA	Abandoned	407921272	SF	Signal E.T.S. 10-5K R	Unknown	4/21/2018	12/21/2017	1/11/2018	No CEQA review posted in WellStar or State Clearinghouse
407920499	OG	Signal E.T.S. 163	-	Abandoned	407921270	CS	Signal E.T.S. 163 R	Unknown	4/11/2018	NTP request not in PRA response	1/11/2018	No CEQA review posted in WellStar or State Clearinghouse
407920781	SF	Signal E.T.S. P1-11	NA	Observation	407921271	CS	Signal E.T.S. P1-11 R	Unknown	3/28/2018	12/21/2017	1/11/2018	No CEQA review posted in WellStar or State Clearinghouse
407920839	OG	Rock 11 SPK	Dec 2013	Observation	407921267	CS	Rock 11 SPK R	Unknown	3/17/2018	NTP request not in PRA response	1/11/2018	No CEQA review posted in WellStar or State Clearinghouse
407920764	OG	Rock 12L	Feb 2013	Abandoned	407921268	OG	Rock 12L R	Unknown	4/5/2018	12/21/2017	1/11/2018	No CEQA review posted in



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Replaced Well					Replacement Well					County Approval		CalGEM CEQA Review
API #	Well Type	Well	Last Production Listed in NTP Approval	Current Status on WellSTAR	API #	Well Type	Well	CalGEM Permit Approval	Spud Date	Date Requested	Date Approved	
												WellStar or State Clearinghouse
407920656	OG multi	Maino 18M	May 2007	Abandoned	407921273	OG	Maino 18M R	Unknown	4/26/2018	12/21/2017	1/11/2018	No CEQA review posted in WellStar or State Clearinghouse
407920819	OG	Maino 17-6 SPL	Jan 2017	Abandoned	407921266	CS	Maino 17-6 SPL R	Unknown	2/23/2018	12/21/2017	1/11/2018	No CEQA review posted in WellStar or State Clearinghouse
407920609	OG	Maino 18K	Dec 2013	Abandoned	407921274	CS	Maino 18K R	Unknown	3/5/2018	12/21/2017	1/11/2018	No CEQA review posted in WellStar or State Clearinghouse
407920832	CS	Hyla 16 SPN	Oct 2018	Abandoned	407921280	CS	Hyla 16 SPN R	10/8/2018	1/19/2019	10/25/2018	11/2/2018	CEQA checklist on WellStar but no NOD posted on WellStar or State Clearinghouse
407920894 <sup>2</sup>	OG	Maino 11 RD	April 2016	Abandoned	407921275	CS	Maino 11 RD R	10/8/2018	1/9/2019	10/25/2018	11/2/2018	CEQA checklist on WellStar but no NOD posted on WellStar or State Clearinghouse
407920720	OG	Maino 18 LL	Feb 2018	Idle (TO conversion approved 2019)	407921279	CS	Maino 18 LL R	10/8/2018	1/14/2019	10/25/2018	11/2/2018	CEQA checklist on WellStar but no NOD posted on WellStar or State Clearinghouse

<sup>2</sup> This well was identified as well number 407920202, which corresponds to Maino 11 rather than Maino 11 RD, in the NTP request and approval.

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Replaced Well					Replacement Well					County Approval		CalGEM CEQA Review
API #	Well Type	Well	Last Production Listed in NTP Approval	Current Status on WellSTAR	API #	Well Type	Well	CalGEM Permit Approval	Spud Date	Date Requested	Date Approved	
407921090	OG	Rock 12-2J	Oct 2017	Abandoned	407921277	CS	Rock 12-2J R	10/8/2018	N/A (permitted)	10/25/2018	11/2/2018	CEQA checklist on WellStar but no NOD posted on WellStar or State Clearinghouse
407920473	CS	Rock 802	Dec 2017	Observation	407921278	CS	Rock 802 R	10/8/2018	1/30/2019	10/25/2018	11/2/2018	CEQA checklist on WellStar but no NOD posted on WellStar or State Clearinghouse
407920694	OG	Signal E.T.S. 10 M	-	Observation	407921276	CS	Signal E.T.S. 10 M R	10/8/2018	1/25/2019	10/25/2018	11/2/2018	CEQA checklist on WellStar but no NOD posted on WellStar or State Clearinghouse
407920728	OG	Hyla 15 M	Aug 2018	Idle (Abandonment approved March 2020)	407921291	OG	Hyla 15 MR	3/13/2020	N/A (permitted)	12/9/2020	3/10/2021	NOD 3/13/2020
407921233	SF	Hyla 15 SIP	March 2016	Idle (Abandonment approved March 2020)	407921304	SF	Hyla 15 SIP R	2/20/2020	N/A (permitted)	12/9/2020	3/10/2021	CEQA checklist on WellStar but no NOD posted on WellStar or State Clearinghouse
407920614	OG	Hyla 5 R	Oct 2020	Active (Abandonment approved March 2020)	407921292	OG	Hyla 5 R R	3/13/2020	N/A (permitted)	12/9/2020	3/10/2021	NOD 3/13/2020

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Replaced Well					Replacement Well					County Approval		CalGEM CEQA Review
API #	Well Type	Well	Last Production Listed in NTP Approval	Current Status on WellSTAR	API #	Well Type	Well	CalGEM Permit Approval	Spud Date	Date Requested	Date Approved	
407920283	OG	Maino 13	Nov 1997	Idle (Abandonment approved March 2020)	407921293	OG	Maino 13 R	3/13/2020	N/A (permitted)	12/9/2020	3/10/2021	NOD 3/13/2020
407920873	OG	Maino 17-5 SPK	Oct 2020	Active (Abandonment approved March 2020)	407921294	OG	Maino 17-5 SPK R	3/13/2020	N/A (permitted)	12/9/2020	3/10/2021	NOD 3/13/2020
407920827	OG	Maino 17-5 SPM	July 2005	Idle (Abandonment approved March 2020)	407921295	OG	Maino 17-5 SPM R	3/13/2020	N/A (permitted)	12/9/2020	3/10/2021	NOD 3/13/2020
407921122	OG	Maino 17 H-2	Oct 2018	Idle (Abandonment approved March 2020)	407921296	OG	Maino 17H-2 R	3/13/2020	N/A (permitted)	12/9/2020	3/10/2021	NOD 3/13/2020
407920890	OG	Rock 12-2 SPL	May 2013	Idle (Abandonment approved June 2020)	407921297	OG	Rock 12-2 SPL R	3/13/2020	N/A (permitted)	12/9/2020	3/10/2021	NOD 3/13/2020
407920722	OG	Rock 13 M	Sept 2016	Idle (Abandonment approved March 2020)	407921298	OG	Rock 13-M R	3/13/2020	N/A (permitted)	12/9/2020	3/10/2021	NOD 3/13/2020
407920886	OG	Rock 14-5 SPM	Dec 2018	Active (Abandonment approved March 2020)	407921299	OG	Rock 14-5 SPM R	3/13/2020	N/A (permitted)	12/9/2020	3/10/2021	NOD 3/13/2020
407920889	OG	Rock 14-5 SPN	Aug 2018	Idle (Abandonment approved March 2020)	407921300	OG	Rock 14-5 SPN R	3/13/2020	N/A (permitted)	12/9/2020	3/10/2021	NOD 3/13/2020

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Replaced Well					Replacement Well					County Approval		CalGEM CEQA Review
API #	Well Type	Well	Last Production Listed in NTP Approval	Current Status on WellSTAR	API #	Well Type	Well	CalGEM Permit Approval	Spud Date	Date Requested	Date Approved	
407920475	OG	Rock 804	Nov 2017	Idle (Abandonment approved March 2020)	407921301	OG	Rock 804 R	3/13/2020	N/A (permitted)	12/9/2020	3/10/2021	NOD 3/13/2020
407920031	OG	Rock 82	April 2019	Idle (Abandonment approved June 2020)	407921302	OG	Rock 82 R	3/13/2020	N/A (permitted)	12/9/2020	3/10/2021	NOD 3/13/2020
407921094	OG	Signal E.T.S. 10L	April 2019	Idle (Abandonment approved June 2020)	407921303	OG	Signal E.T.S. 10L R	3/13/2020	N/A (permitted)	12/9/2020	3/10/2021	NOD 3/13/2020

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*Re: Arroyo Grande Oil Field Phase IV, CUP D010386D/DRC2015-00002*

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*Center for Biological Diversity*

*Re: Arroyo Grande Oil Field Phase IV, CUP D010386D/DRC2015-00002*

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