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Submitted by Email and FedEx

Re: Public Notice No. 2011-00065N – Hunter’s Point Natural Gas Well Drilling Project

To the San Francisco District Army Corps of Engineers:

On behalf of the Center for Biological Diversity, Friends of the Earth, Fresh Air Vallejo, Sunflower Alliance, San Francisco Baykeeper, Sierra Club Redwood Chapter, Climate Protectors, Benicians for a Safe and Healthy Community, 350 Bay Area, Communities for a Better Environment, Good Neighbor Steering Committee of Benicia, and Natural Resources Defense Council, we are writing to urge the Army Corps of Engineers, San Francisco Division (“Army Corps” or “Corps”) to reject permit application 2011-00065N (the “Application” or “Project”), which proposes dangerous new gas exploration in the middle of a wetland.

The applicant proposes to fill a portion of Suisun Bay wetlands that provides habitat for multiple endangered, threatened, and fully protected species in order to drill an exploratory gas well, and add production facilities, tanks, and a mile-and-a-half pipeline once the well begins production. The well pad would be adjacent to Suisun Bay, part of a critical ecosystem supporting a multitude of imperiled species, and a vital body of water that provides the region with jobs, recreation, and natural beauty that draws tourism from around the world.

Approving new gas development would cause significant harm to air and water quality, the surrounding ecosystem, and the climate. Issuing permits for new fossil fuel development is fundamentally incompatible with a safe and healthy future. We urge the Army Corps to consider the attached comments, which discusses why the application for this Project is grossly inadequate and does not meet the minimum standards of state and federal environmental laws. We strongly urge the Army Corps to reject this dangerous and short-sighted Project and work instead to protect communities and the environment from industry pollution. At minimum, the Army Corp must not approve this Project without a full environmental impact study, at least one public hearing, and further opportunities to submit comments on this harmful Project.

Respectfully Submitted,

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Victoria Brandon, Chair, Sierra Club, Redwood Chapter

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Hollin Kretzmann, Senior Attorney, Center for Biological Diversity

Enclosure: Center for Biological Diversity Comment Letter

I. Background

The subject property lies within the Suisun Marsh (“the Marsh”), located in Solano County. The Marsh is the largest contiguous brackish water marsh on the west coast of North America,¹ and its 88,000 acres² of managed wetlands, upland grasses, tidal wetlands, and bays and sloughs make up more than 10 percent of the remaining natural wetlands in California.³ It is part of the San Francisco Bay-Sacramento/San Joaquin River Delta estuary ecosystem,⁴ which provides water to more than 25 million California residents, farmlands, and key fish and wildlife habitats.⁵

The Marsh provides habitat for federally and state-listed endangered plant and animal species, including the salt marsh harvest mouse, California Ridgway’s (clapper) rail, California black rail, Soft bird’s beak, and Suisun thistle.⁶ The Suisun thistle is endemic to California and is currently only found within the boundaries of the Marsh.⁷ In total, the Marsh provides habitat to 221 bird species, 45 mammal species, 16 reptilian and amphibian species, and 40 fish species.⁸ It also provides essential resting and feeding grounds for waterfowl and birds migrating on the Pacific Flyway.⁹ The Grizzly Island Wildlife Area, which constitutes 12,900 acres of the Marsh, is a popular recreational site for residents of the San Francisco Bay Area. Because of its proximity to many major cities, the area is regularly used for nature and wildlife viewing, hiking, canoeing, and other recreation activities.¹⁰

Multiple environmental justice communities already overburdened by pollution surround the Marsh, including Suisun City, Fairfield, Vallejo, and Benicia. These cities are predominately communities of color with large Black, Latinx, and Asian communities and a significant portion of the population that are categorized as low-income: Suisun City has a population of 29,663, of

¹ California Dep’t of Fish and Wildlife, Suisun Marsh Atlas, <https://wildlife.ca.gov/Regions/3/Suisun-Marsh/Atlas> (last visited Feb. 17, 2021) (“CDFW SM Atlas”).

² *Id.*

³ Baginska, Barbara, Suisun Marsh TMDL for Methylmercury, Dissolved Oxygen and Nutrient Biostimulation, San Francisco Bay Regional Water Quality Control Board (Sept. 2012) at 1-1, https://www.waterboards.ca.gov/sanfranciscobay/water_issues/hot_topics/PointBuckler/Plans%20&%20Technical%20Reports/Sept_2012_Suisun_Marsh_TMDL.pdf.

⁴ *Id.*

⁵ U.S. Geological Survey, San Francisco Bay and Sacramento-San Joaquin Delta Estuary, <https://www.usgs.gov/special-topic/san-francisco-bay-and-sacramento-san-joaquin-delta-estuary> (last visited Feb. 17, 2021).

⁶ WRA, Inc., San Francisco Bay Conservation and Development Commission (“BCDC”) Application: Hunter’s Point Natural Gas Well Drilling Project, Sunset Exploration, Inc. (Nov. 2020) (“BCDC Application”) at 9.

⁷ CDFW SM Atlas.

⁸ U.S. Dep’t of the Interior et al., *Executive Summary*, in Suisun Marsh Habitat Management, Preservation, and Restoration Plan Final Env’tl. Impact Statement/Env’tl. Impact Report, Vol. 1a: Main Report, Executive Summary and Chapters 1-5 (Nov. 2011) at ES-2, https://www.usbr.gov/mp/nepa/includes/documentShow.php?Doc_ID=8683.

⁹ *Id.*

¹⁰ *Id.*; California Dep’t of Fish and Wildlife, Grizzly Island Wildlife Area, <https://wildlife.ca.gov/Lands/Places-to-Visit/Grizzly-Island-WA> (last visited Feb. 17, 2021).

which approximately 65 percent are people of color and 34 percent are low-income;¹¹ Fairfield has a population of 117,113, of which approximately 76 percent are people of color and 41 percent are low-income;¹² Vallejo has a population of 121,692 of which approximately 77 percent are people of color and 56 percent are low-income;¹³ and Benicia has a population of 28,240, of which 31 percent are people of color and 19 percent low-income.¹⁴ Numerous oil and gas facilities are located in or near these communities, including the Valero Benicia Refinery, Shell Martinez Refinery, Tesoro Golden Eagle Refinery, Phillips 66 San Francisco Refinery, and Chevron Richmond Refinery, along with a multitude of natural gas wells and pipelines that are located in and around the Marsh. In addition, multiple applications have recently been submitted to the California State Lands Commission for leases to use pipelines in neighboring counties to transport natural gas.¹⁵ These cities, like many Black, Indigenous, and other low-income communities of color, have suffered disproportionately from the adverse health impacts that are the result of toxic air pollutants emitted from oil and gas operations at every stage of production. Oil and gas production emits significant amounts of particulate matter smaller than 2.5 microns (PM 2.5), nitrogen oxides, and other types of air pollution, and those pollutants can travel far from wells and other oil and gas facilities to nearby homes and other sensitive receptors. The U.S. Environmental Agency’s Environmental Justice Index shows that most of these communities are already disproportionately affected by existing pollution.¹⁶

<u>Selected Variable</u> EPA EJ Index	<u>Suisun City</u> Regional Percentile	<u>Fairfield</u> Regional Percentile	<u>Vallejo</u> Regional Percentile	<u>Benicia</u> Regional Percentile
Particulate Matter (PM 2.5)	50	63	70	15
Ozone	47	58	59	23
Diesel PM	45	52	69	16
Air Toxics Cancer Risk	46	57	63	21
Respiratory Hazard Index	46	57	65	19

¹¹ U.S. Census Bureau, Quickfacts: Suisun City, California, <https://www.census.gov/quickfacts/fact/table/suisuncitycalifornia/PST045219> (last visited Feb. 17, 2021); U.S. EPA, EJSCREEN Tool Report: Suisun City, *available at* <https://www.epa.gov/ejscreen> (last visited Feb. 18, 2021) (“EJSCREEN Suisun City”).

¹² U.S. Census Bureau, Quickfacts: Fairfield city, California, <https://www.census.gov/quickfacts/fact/table/fairfielddcitycalifornia,US/PST045219> (last visited Feb. 18, 2021); U.S. EPA, EJSCREEN Tool Report: Fairfield, *available at* <https://www.epa.gov/ejscreen> (last visited Feb. 18, 2021) (“EJSCREEN Fairfield”).

¹³ U.S. Census Bureau, Quickfacts: Vallejo city, California, <https://www.census.gov/quickfacts/fact/table/vallejocitycalifornia,US/PST045219> (last visited Feb. 18, 2021); U.S. EPA, EJSCREEN Tool Report: Vallejo, *available at* <https://www.epa.gov/ejscreen> (last visited Feb. 18, 2021) (“EJSCREEN Vallejo”).

¹⁴ U.S. Census Bureau, Quickfacts: Benicia city, California, <https://www.census.gov/quickfacts/fact/table/beniciacitycalifornia,PA/PST045219> (last visited Feb. 18, 2021); U.S. EPA, EJSCREEN Tool Report: Benicia, *available at* <https://www.epa.gov/ejscreen> (last visited Feb. 18, 2021) (“EJSCREEN Benicia”).

¹⁵ California State Lands Commission, Letter to organizations re: Environmental justice outreach for existing natural gas pipeline in Sacramento County (Feb. 16, 2021); California State Lands Commission, Letter to organizations re: Environmental justice outreach for existing natural gas pipeline in Contra Costa and San Joaquin Counties (Feb. 16, 2021).

¹⁶ EJSCREEN Suisun City; EJSCREEN Fairfield; EJSCREEN Vallejo; EJSCREEN Benicia.

Adding new fossil fuel production to this region would expose these already overburdened communities to even more serious adverse health effects and would be a violation of Executive Order 12898 which requires Federal agencies to identify and address the “disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations in the United States...”¹⁷

In addition to suffering from air pollution, residents and the nearby natural areas are regularly put in danger from oil and gas operations. In 2004, a pipeline owned by Kinder-Morgan Energy Partners ruptured and spilled 123,774 gallons of diesel oil in the Suisun Marsh, resulting in the death of over 30 birds and mammals along with various species of invertebrates.¹⁸ Benicia’s Valero refinery received seven notices of violation from the Bay Area Air Quality Management District in March of 2019 after a malfunction at the facility resulted in petroleum coke dust being released over the city.¹⁹ Just recently, on February 10, 2021, a pipeline at Chevron’s Richmond refinery leaked up to 750 gallons of diesel fuel into the San Francisco Bay. The facility has been served 147 formal enforcement actions in the last five years.²⁰ These are just a few examples of the countless harms caused in the region by oil and gas operations.

Approving new gas development is incompatible with a safe and healthy future in Solano County and is unacceptable at a time when we must urgently reduce greenhouse gases and other air pollution to protect our climate and health. Allowing the polluting and hazardous gas activities so close to environmental justice communities, wildlife and plants, and recreational areas is unsafe and should be rejected out of hand.

II. Proposed Project

The project description indicates that Sunset Exploration intends to drill one exploratory natural gas well. If sufficient gas is discovered, the company will install additional production equipment and a natural gas pipeline to interconnect into another pipeline over a mile and a half away.²¹

The initial drilling activities will require vegetation at the site to be removed. A “layer of filter fabric” will separate soil from fill that will be placed to construct a 150-by 250-foot well pad (1.05 acres of fill).²² Although some gravel roads exist in the project area, a new 100-foot by

¹⁷ Executive Office of the President, Executive Order 12,898, 59 Fed. Reg. 7629 (Feb. 16, 1994) (“Executive Order 12,898”), <https://www.govinfo.gov/content/pkg/FR-1994-02-16/html/94-3685.htm>.

¹⁸ U.S. Fish and Wildlife Service and CA Dep’t of Fish and Game, Kinder Morgan Suisun Marsh Diesel Fuel Oil Spill FINAL Damage Assessment and Restoration Plan/ Environmental Assessment (Apr. 2010) at 4-5, <https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=22852&inline=true>.

¹⁹ Bay Area Air Quality Mgmt. Dist., Valero refinery reporting shutdown in process (Mar. 24, 2019), <https://www.baaqmd.gov/news-and-events/page-resources/2019-news/032419-valero-refinery-shutdown>.

²⁰ Canon, Gabrielle, *‘A Clear Danger’: oil spill in California city revives call to cut ties with Chevron*, THE GUARDIAN, Feb. 11, 2021, <https://www.theguardian.com/environment/2021/feb/11/richmond-california-chevron-oil-spill>.

²¹ U.S. Army Corps of Engineers, San Francisco Dist., Public Notice No. 2011-00065N (Jan. 25, 2021) (“Public Notice No. 2011-00065N”) at 1.

²² *Id.*

10-foot access road will also need to be constructed. According to the company's San Francisco Bay Conservation and Development Commission application, the well site will host a drilling rig and onsite storage for hazardous materials such as diesel fuel. Portable tanks will be used to mix and store drilling mud and fluids.²³ In the second phase of work, a production facility with a 175-foot by 300-foot drill pad (1.36 acres of fill) will be installed along with water tanks and the pipeline.²⁴

There are many unknowns about the project, including the location of the production facility and routes of the pipeline and roads, and what chemicals will be used for drilling, well completion, and well maintenance, and whether the operator may use well stimulation treatments or enhanced oil recovery techniques. There is no information disclosing the proposed depth of the well, nor an indication of which way the directional drilling will occur. The map and description are coarse, though they do indicate that the proposed well pad is literally adjacent to Suisun Slough. The Center for Biological Diversity informally requested the application materials submitted by Sunset Exploration on February 10 to get more detailed information. The Center for Biological Diversity requested the same materials by Freedom of Information Act request on February 11, but still has not received the documents.

The notice states that the project will explore production in an existing well. Sunset Exploration claims in the notice that utilizing this previously developed well will "avoid[] and minimize" project impacts.²⁵ However, this claim is misleading. The former Chevron gas well site has "largely reverted back to seasonal wetland conditions."²⁶ Indeed, it is a requirement of the Solano County Component of the Suisun Marsh Local Protection Program that abandoned wells be properly sealed and that the surface area be "revegetated with native vegetation within one growing season after abandonment."²⁷ Drilling an abandoned well and in an area with other abandoned wells also poses special risks. There are dozens of plugged and abandoned wells in the Suisun Marsh, including one immediately adjacent to the well proposed to be drilled (see Figure 1).

There are four main categories of risk related to drilling new wells near abandoned wells:

- (1) vertical migration of gas to the surface along faults and improperly completed or abandoned wellbores (e.g., due to poor cementing practices),
- (2) subsidence caused by the fluid production and declining reservoir pressures,
- (3) soil and groundwater contamination resulting from historic gas field operations, and
- (4) air toxics resulting from surface operations.²⁸

²³ BCDC Application at Box 2, p. 2.

²⁴ Public Notice No. 2011-00065N at 1.

²⁵ *Id.* at 2.

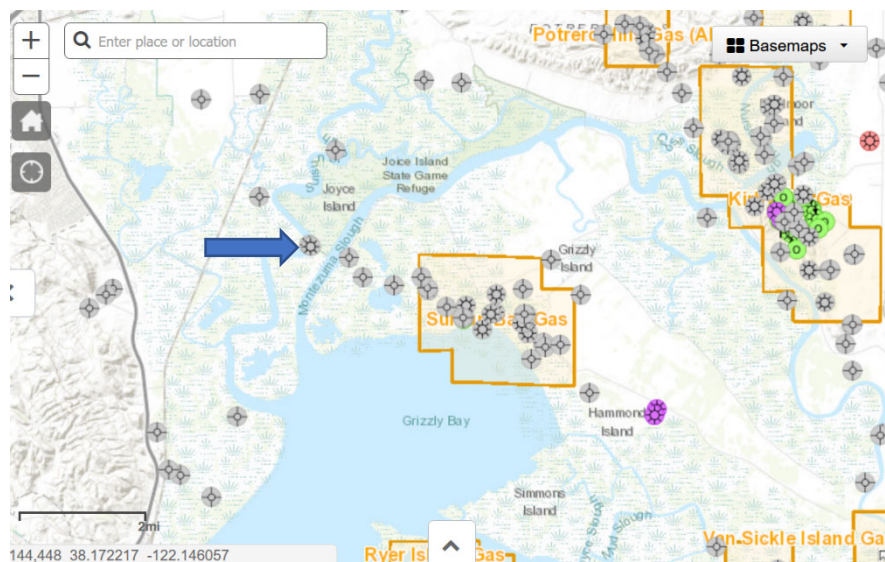
²⁶ BCDC Application at Box 2, p. 3-4.

²⁷ Solano County, Solano County Component of the Suisun Marsh Local Protection Program, 2018 Amendment Draft (Oct. 2, 2018) at SM.P-22, <https://www.solanocounty.com/civicax/filebank/blobdload.aspx?BlobID=29524>.

²⁸ Chilingar, G.V. & B. Endres, Environmental Hazards Posed by the Los Angeles Basin Urban Oilfields: An Historical Perspective of Lessons Learned. 47 ENVTL. GEOLOGY, 302 (2005), available at DOI 10.1007/s00254-004-1159-0.

One of the main risks relates to a phenomenon called well to well communication. When a new well is drilled and used for injection and production, it can affect existing wells around it, in ways ranging from soil and water contamination to a full blowout from gas that has migrated to the surface through improperly plugged wells.²⁹ Existing, older, unused wells can create pathways for water contamination. These wells, especially those that were constructed decades ago with outdated technologies and standards, can act as a conduit for fluid migration.³⁰ A 2016 study also showed that well integrity decreases with age, even for wells that were plugged properly.³¹

Blowouts can happen when injection increases pressure in a reservoir. Poorly plugged or aging wells often lack the integrity to avoid a blowout (the uncontrolled release of gas from a well). There is a consistent risk that formation fluids will be forced to migrate up the plugged wellbores and bypass the existing plugs.



²⁹ *Id.*

³⁰ See California Council on Science Technology, *An Independent Scientific Assessment of Well Stimulation in California Volume II: Potential Environmental Impacts of Hydraulic Fracturing and Acid Stimulation* (2015) (“CCST, Vol. II”) at 107, 109, 122-123, available at <https://ccst.us/reports/an-independent-scientific-assessment-of-well-stimulation-in-california-volume-2/>.

³¹ Jordan, Preston & J. William Carey, *Steam Blowouts in California Oil and Gas District 4: Comparison of Roles of Initial Defects Versus Aging and Implications for Well Blowouts in Geologic Carbon Storage Projects*, 51 INT’L J. OF GREENHOUSE GAS CONTROL, 36 (Aug. 2016), available at <https://www.sciencedirect.com/science/article/abs/pii/S1750583616302080?via%3Dihub>.

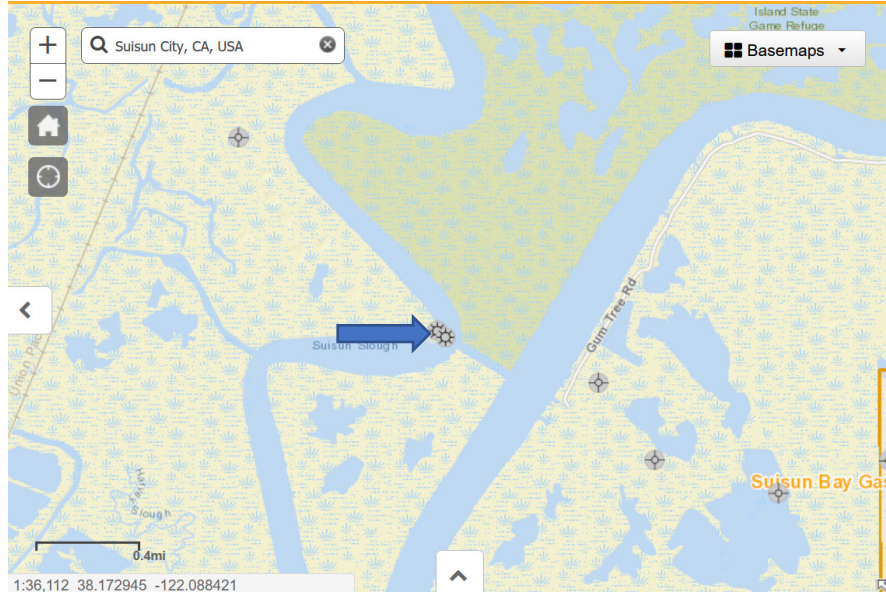


Figure 1: Screen captures of California Geologic Energy Management Division’s Well Finder tool showing the wells in the vicinity of the proposed project (project area identified by blue arrow). Grey circles are abandoned wells, pink circles are idle wells (idle wells are those that have been inactive for two or more years and have not been properly plugged and abandoned), and green circles are active wells. Delineated oil and gas fields are outlined in orange.³²

The project notice explicitly contemplates a second phase if commercial quantities of gas are discovered, but does not mention any additional, reasonably foreseeable activities that would occur should Sunset Exploration be successful, including drilling of more wells in the area. The company’s San Francisco Bay Conservation and Development Commission application makes clear, however, that upon discovering gas, the project applicant is likely to try to bring additional wells into production. It states: “Gas harvesting technology has significantly changed over the years, and although Chevron abandoned their efforts at Hunter’s Point years ago, there is now technology that allows more efficient harvesting of gas reserves such that *many former wells that were abandoned over the years are once again coming into production.*”³³ The project applicant would not be investing money in exploratory drilling if it did not think the exploratory well would be productive and lead to additional drilling. This assumption is not without precedent. The Solano County-Delta-Sacramento Valley area is thought to be the “largest potential reservoir of dry gas in the state” and other companies have been quick to drill exploratory wells and conduct seismic exploration over the last two decades.³⁴

³² California Department of Conservation, Geologic Energy Management Division, Well Finder, CalGEM GIS, <https://maps.conservation.ca.gov/doggr/wellfinder/> (last accessed Feb. 17, 2021).

³³ BCDC Application at Box 2, p. 3.

³⁴ Doyle, Alan, *Gas Drilling rush hits Suisun Marsh*, SAN FRANCISCO BUSINESS JOURNAL, July 22, 2001, <https://www.bizjournals.com/eastbay/stories/2001/07/23/story1.html>.

III. Environmental Impacts

Oil and gas production results in well-documented significant environmental and health effects. The Corps must not approve the Project without sufficient consideration of, at minimum, the following impacts:

A. Air Pollution and Health Effects

A recent study from Harvard University estimates that 8.7 million premature deaths in a single year could be attributed to fine particulate matter from fossil fuel emissions.³⁵ This includes 34,000 premature deaths in California.³⁶ The Bay Area Air Quality Management District deems the air basin to be in nonattainment for fine particulate matter (PM_{2.5}), particulate matter (PM₁₀), and ozone.³⁷ Thus, any additional air emissions will be significant and will undermine regional efforts to make air quality safer for residents.

The Harvard study only adds to the growing body of research demonstrating that oil and gas production are detrimental to air quality and public health. For example, residents living close to oil and gas wells experienced elevated risks of cancer.³⁸ Residents have also suffered from asthma, headache, cough, nosebleeds, shortness of breath, fatigue, hospitalizations, and cardiovascular disease. A human health study commissioned by the Office of Petroleum and Natural Gas Administration and Safety in the City of Los Angeles identified additional 24 peer-reviewed studies concerning oil and gas proximity health risk performed during the period 2015-2018,³⁹ and numerous others have come down since that time, including two key California studies of adverse birth outcomes. Tran et al. (2020) studied women in California living within 10 kilometers (6.2 miles) of at least one production well, and found that infants born to women in rural communities with the highest exposure to oil and gas production were at 40 percent higher risk of being born low birthweight, had lower term birthweight, and 22 percent higher risk of being small for their gestational age.⁴⁰ Another study of California birth records assessed the association between exposure to oil and gas wells and risk of spontaneous preterm birth among

³⁵ Vohra, Karn et al., Global mortality from outdoor fine particle pollution generated by 1 fossil fuel combustion: Results from GEOS-Chem (Feb. 2021), http://acmg.seas.harvard.edu/publications/2021/vohra_2021_ff_mortality.pdf.

³⁶ Olalde, Mark, *Harvard study links fossil fuels to millions of 'premature' deaths*, DESERT SUN, Feb. 9, 2021, <https://www.desertsun.com/story/news/environment/2021/02/09/harvard-links-fossil-fuels-deaths-california-approves-fracking/4436589001/>.

³⁷ Bay Area Air Quality Management District, Air Quality Standards and Attainment Status, <https://www.baaqmd.gov/about-air-quality/research-and-data/air-quality-standards-and-attainment-status> (last visited Feb. 23, 2021).

³⁸ McKenzie, Lisa M. et al., Human health risk assessment of air emissions from development of unconventional natural gas resources, 424 SCIENCE OF THE TOTAL ENV'T, 79 (2012) ("McKenzie 2012"), doi: 10.1016/j.scitotenv.2012.02.018; McKenzie, Lisa M. et al., Childhood Hematologic Cancer and Residential Proximity to Oil and Gas Development, 12 PLOS ONE 2: e0170423 (2017), <http://dx.doi.org/10.1371/journal.pone.0170423>.

³⁹ Shonkoff, Seth B.C. et al., Human Health and Oil and Gas Development: A Review of the Peer- Reviewed Literature and Assessment of Applicability to the City of Los Angeles, PSE HEALTH ENERGY (2019), <http://www.psehealthyenergy.org/wp-content/uploads/2019/08/Literature-Review.pdf>.

⁴⁰ Tran, Kathy V. et al., Residential Proximity to Oil and Gas Development and Birth Outcomes in California: A Retrospective Cohort Study of 2006-2015 Births, 128 ENVTL. HEALTH PERSPECTIVES 6 (June 2020), <https://ehp.niehs.nih.gov/doi/10.1289/EHP5842>.

women living in the San Joaquin Valley, and found that women with the highest exposure to wells had an 8 to 14 percent increased risk of preterm birth at 20-31 weeks, compared to women who didn't have any exposure.⁴¹ These studies are consistent with other studies linking oil and gas activity with adverse birth outcomes. A study of Texas births and fetal deaths showed a significant link between well distance and density and adverse birth outcomes up to ten miles away.⁴² Pregnant women experienced lower birthweights and higher rates of preterm births.⁴³

Harmful air pollutants are emitted during every stage of oil and gas development, including drilling, completion, well stimulation, production, and disposal, as well as from transportation of water, sand, and chemicals to and from the well pad.⁴⁴ Drilling and casing the wellbore require substantial power from large equipment. The engines used typically run on diesel fuel, which emits particularly harmful types of air pollutants when burned. These operations can produce VOCs, NO_x, methane, and ethane, all of which are potent ground-level (tropospheric) ozone precursors.⁴⁵ VOCs can form ground-level (tropospheric) ozone when combined with nitrogen oxides ("NO_x") from compressor engines, turbines, other engines used in drilling, and flaring,⁴⁶ in the presence of sunlight. This reaction can diminish visibility and air quality and harm vegetation. Many regions around the country with substantial oil and gas operations are now suffering from extreme ozone levels due to heavy emissions of these pollutants.⁴⁷

The chemicals used in drilling and well stimulation fluids are harmful to human health. In a study of 353 chemicals used in the recovery of natural gas (e.g. drilling and/or fracking), it was found that more than 75 percent of the chemicals could adversely impact the skin eyes and sensory organs; 75 percent could impact the respiratory and gastrointestinal systems; 40-50

⁴¹ Gonzalez, David J.X., Oil and Gas Production and Spontaneous Preterm Birth in the San Joaquin Valley, CA, 4 ENVTL. EPIDEMIOLOGY 4:e099 (2020), doi: 10.1097/EE9.000000000000099.

⁴² Whitworth, Kristina W. et al., Drilling and Production Activity Related to Unconventional Gas Development and Severity of Preterm Birth, 126 ENVTL. HEALTH PERSPECTIVES 3 (2018), <https://doi.org/10.1289/EHP2622>.

⁴³ Hill, Elaine L., Shale gas development and infant health: Evidence from Pennsylvania, 61 J. OF HEALTH ECONOMICS, 134 (2018), <https://doi.org/10.1016/j.jhealeco.2018.07.004>.

⁴⁴ McCawley, Michael, Air Contaminants Associated with Potential Respiratory Effects from Unconventional Resource Development Activities, 36 SEMINARS IN RESPIRATORY AND CRITICAL CARE MEDICINE 3, 379 (2015), doi: 10.1055/s-0035-1549453; Shonkoff, Seth B.C. et al., Environmental Public Health Dimensions of Shale and Tight Gas Development, 122 ENVTL. HEALTH PERSPECTIVES 8, 787 (2014) ("Shonkoff 2014"), available at <https://ehp.niehs.nih.gov/doi/full/10.1289/ehp.1307866>.

⁴⁵ U.S. Environmental Protection Agency, Integrated Science Assessment for Ozone and Related Photochemical Oxidants (2013), available at <https://www.epa.gov/isa/integrated-science-assessment-isa-ozone-and-related-photochemical-oxidants>.

⁴⁶ See, e.g., U.S. Environmental Protection Agency, Oil and Gas Sector: Standards of Performance for Crude Oil and Natural Gas Production, Transmission, and Distribution: Background Technical Support Document for Proposed Standards (July 2011) at 3-6, available at <https://nepis.epa.gov/>; Armendariz, Al, Emissions for Natural Gas Production in the Barnett Shale Area and Opportunities for Cost-Effective Improvements, Env'tl. Defense Fund (2009) ("Armendariz 2009") at 24, https://www.edf.org/sites/default/files/9235_Barnett_Shale_Report.pdf.

⁴⁷ Armendariz 2009 at 1, 3, 25-26; Koch, Wendy, *Wyoming's Smog Exceeds Los Angeles' Due to Gas Drilling*, USA TODAY, May 9, 2011; Craft, Elena, Do Shale Gas Activities Play a Role in Rising Ozone Levels?, Environmental Defense Fund (2012), <http://blogs.edf.org/texascleanairmatters/2012/07/10/do-shale-gas-activities-play-a-role-in-rising-ozone-levels/>; Colorado Oil and Gas Conservation Commission, Conservation Commission: Colorado Weekly and Monthly Oil and Gas Statistics (July 6, 2012) at 12, available at <https://cogcc.state.co.us/#/home>.

percent could impact the nervous, immune, urinary, and cardiovascular systems; 37 percent could impact the endocrine system; and 25 percent could cause cancer and mutations.⁴⁸ Many chemicals used in oil and gas production are designated as Hazardous Air Pollutants (HAPs).⁴⁹ For instance, ethylbenzene, formaldehyde, and methylene chloride are all known or suspected carcinogens, while methanol is linked to reproductive harm, and hydrochloric acid and hydrofluoric acid can cause both eye irritation and respiratory harm.⁵⁰

Flaring and venting of gas are also potential sources of air emissions. Gas flaring and venting can occur in both oil and gas recovery processes when underground gas rises to the surface and is not captured as part of production. Emissions from flaring typically include carbon monoxide, nitrogen oxides, benzene, formaldehyde, and xylene, but levels of these smog-forming compounds are seldom measured directly.^{51,52} Truck traffic related to oil and gas extraction contributes to air emissions. Trucks capable of transporting large volumes of chemicals and waste fluid typically use large engines that run on diesel fuel, also increasing threats of NO_x and PM emissions.

B. Water Degradation

The Project jeopardizes the surrounding surface water. Spills, leaks, and accidents are common in oil and gas operations, and a substantial number of them have resulted in impacts to water. From 2011 to 2014 there were 575 reported spills in oil and gas fields, 18 percent of which affected waterways.⁵³ During that period, there were 31 chemical spills in oil fields, nine of them acid spills.⁵⁴ The CCST found “ample evidence” of groundwater contamination caused by oil and gas activities.⁵⁵ A US Geological Survey study concluded that thermogenic gases (mostly methane, but also heavier gases like ethane and propane derived from hydrocarbon sources) are likely migrating from hydrocarbon-bearing formations to beneficial use groundwater

⁴⁸ Colborn, Theo et al. Natural Gas Operations from a Public Health Perspective. 17 HUMAN AND ECOLOGICAL RISK ASSESSMENT 5, 1039 (2011), <https://doi.org/10.1080/10807039.2011.605662>.

⁴⁹ Sierra Club et al., Comments on New Source Performance Standards: Oil and Natural Gas Sector; Review and Proposed Rule for Subpart OOOO (Nov. 30, 2011) at 13.

⁵⁰ Agency for Toxic Substances and Disease Registry, ATSDR A-Z Index, <https://www.atsdr.cdc.gov/az/a.html> (last visited on Feb. 24, 2021); Center for Biological Diversity, Fracking and Dangerous Drilling in California: Briefing Book, Californians Against Fracking (Dec. 2017), https://www.biologicaldiversity.org/campaigns/california_fracking/pdfs/fracking-and-drilling-in-california.pdf.

⁵¹ Physicians for Social Responsibility and Concerned Health Professionals of NY, Compendium of Scientific, Medical, and Media Findings Demonstrating Risks and Harms of Fracking, Fourth Edition (Nov. 17, 2016), https://concernedhealthny.org/wp-content/uploads/2012/11/COMPENDIUM-4.0_FINAL_11_16_16.pdf.

⁵² California Council on Science and Technology, Advanced Well Stimulation Technologies in California (2016) at 248, available at <https://ccst.us/reports/advanced-well-stimulation-technologies-in-california/>; McKenzie 2012; Shonkoff 2014.

⁵³ CCST, Vol. II at 127.

⁵⁴ CCST, Vol. II at 127-128.

⁵⁵ CCST, Vol. II at 112.

in the Oxnard oil field.⁵⁶ Drilling muds and chemicals stored and mixed on site may also harm surface water if allowed to spill or leak from containment structures.

C. Greenhouse Gas Emissions

Fossil gas is primarily methane, a greenhouse gas 87 times more heat-trapping than carbon dioxide over a 20-year period. Even a small leak at the wellhead or at any stage of production would lead to significant greenhouse gas emissions. Fugitive emissions can occur at every stage of extraction and production, often leading to high volumes of gas being released into the air. Methane emissions from oil and gas production are as much as 270 percent greater than previously estimated.⁵⁷ Studies show that fugitive emissions from pneumatic valves (which control routine operations at the well pad by venting methane during normal operation) and equipment leaks are higher than EPA estimates.⁵⁸ This is of great concern because ground-level ozone can be formed by methane in substantial quantities as it interacts with nitrogen oxides and sunlight.⁵⁹

Furthermore, oil and gas wells may become super-emitters if left unattended by the operator. In the nearby Rio Vista field, a single well was responsible for emitting more than 30 tons of methane over the decades the well was neglected.⁶⁰ A survey of California oil and gas wells found that roughly two-thirds of active and idle wells leaked detectable volumes of methane.⁶¹ The risks from idle and deserted wells have increased over the last few years as more companies have become financially insolvent and attempt to walk away from their legal obligation to properly plug and abandoned wells. A CCST report found that oil and gas companies have only set aside a small fraction of the \$9.2 billion it would cost to remediate the current inventory of 107,000 active and idle wells in the state.⁶² Last year, California's largest oil and gas producer, California Resources Corporation, filed for bankruptcy, highlighting the

⁵⁶ Rosecrans, Celia et al., Groundwater Quality of Aquifers Overlying the Oxnard Oil Field, Ventura County, California, 771 *Sci. of the Total Env't* 144822 (June 2021), *available at* <https://www.sciencedirect.com/science/article/pii/S0048969720383558?via%3Dihub>.

⁵⁷ Miller, Scot M. et al., Anthropogenic Emissions of Methane in the United States, 110 *PNAS* 50, 20018 (2013), <https://doi.org/10.1073/pnas.1314392110>.

⁵⁸ Allen, David et al., Measurements of Methane Emissions at Natural Gas Production Sites in The United States, 110 *PNAS* 44, 17768 (2013), <https://doi.org/10.1073/pnas.1304880110>; Harriss, Robert et al., Using Multi-Scale Measurements to Improve Methane Emission Estimates from Oil and Gas Operations in the Barnett Shale Region, Texas, 49 *ENVTL. SCI. TECH.*, 7524 (2015), <https://pubs.acs.org/doi/pdf/10.1021/acs.est.5b02305>.

⁵⁹ Fiore, Arlene et al., Linking Ozone Pollution and Climate Change: The Case for Controlling Methane, 29 *GEOPHYS. RES. LETTERS* 19 (2002), <https://doi.org/10.1029/2002GL015601>; U.S. Environmental Protection Agency, Oil and Gas Sector: New Source Performance Standards and National Emission Standards for Hazardous Air Pollutants Reviews; Proposed Rule, 76 *Fed. Reg.* 52,738 (Aug. 23, 2011), <https://www.govinfo.gov/content/pkg/FR-2011-08-23/pdf/2011-19899.pdf>.

⁶⁰ Frazier, Mya, *Gas companies are abandoning their wells, leaving them to leak methane forever*, BLOOMBERG GREEN (Sept. 17, 2020, 1:05 PM PDT), <https://www.bloomberg.com/news/features/2020-09-17/abandoned-gas-wells-are-left-to-spew-methane-for-eternity>.

⁶¹ Lebel et al., Methane Emissions from Abandoned Oil and Gas Wells in California, 54 *ENVTL. SCI. TECH.*, 14617 (Oct. 30, 2020), *available at* <https://pubs.acs.org/doi/10.1021/acs.est.0c05279>.

⁶² California Council on Science and Technology, *Orphan Wells in California* (2020) at 28, Table 8, <https://ccst.us/reports/orphan-wells-in-california/>.

precarious status of California's oil and gas companies and further bringing into question their ability to clean up oil and gas wells.

D. Harm to Wildlife

Oil and gas projects can harm wildlife and habitat in a number of ways. Habitat disturbance and destruction occur as a result of grading and construction activities. Air, water, noise, vibration, and light pollution can affect the areas around the wellpad and discourage wildlife to occupy and forage in those areas. Direct harm may occur as a result of increased truck traffic and heavy equipment operation. Exposure to chemicals or trash stored on site may cause mortalities. Construction activity also may introduce invasive species that make it difficult for native species to survive. Fossil fuels also cause harm to wildlife by accelerating the effects of climate change, which is driving a wave of extinctions across the globe.

E. Downstream Impacts

Fossil gas is transported through gathering lines, compressor stations, and transmission lines, all of which may leak fugitive gases or otherwise emit air pollution. The fossil gas is then processed at a refinery, resulting in further emissions and the final products then travels through distribution pipelines or vessels and trucks to an end user, where it is burned. The Army Corps must fully disclose, evaluate, and describe mitigation for these downstream impacts of the project.

F. Cumulative Impacts

The impacts of the proposed projects may not be considered in isolation. There are scores of active and idle wells in the vicinity, which individually and cumulatively constitute a significant risk to the environment. The Army Corps must also account for other impacts from oil and gas activity in the area, including pollution from pipelines, compressor stations, refineries, trucks traffic, ship traffic, storage, distribution, and combustion.

IV. The Proposed Permit Is Legally Deficient

A. NEPA Requires an EIS for Projects, Like This One, That Likely Have Significant Environmental Impacts

The National Environmental Policy Act ("NEPA"),⁶³ is our basic national charter for environmental protection. A primary objective of NEPA is to ensure that agencies like the Corps make decisions that are based on understanding of environmental consequences, and take actions that protect, restore, and enhance the environment.⁶⁴ NEPA also seeks to facilitate informed decision-making and public participation by requiring that environmental information be made available to public officials and citizens before decisions are made and before actions are taken.⁶⁵

⁶³ 42 U.S.C. §§ 4321-4347.

⁶⁴ 40 C.F.R. § 1500.1.

⁶⁵ *Id.*

To accomplish these objectives, NEPA requires agencies to fully disclose all the potential environmental impacts of a proposed action.⁶⁶ Agencies must use accurate information and ensure the scientific integrity of this analysis.⁶⁷ The agency must disclose if information is incomplete or unavailable and explain “the relevance of the incomplete or unavailable information to evaluating reasonably foreseeable significant adverse impacts.”⁶⁸ If an agency action has effects that may be “significant,” an agency must prepare an Environmental Impact Statement (“EIS”).⁶⁹

Historically, to determine whether an impact is “significant,” agencies have analyzed the “context” within which the action would occur, as well as the “intensity” of the proposed action.⁷⁰ The “intensity” of the action was based on several factors, including:

- The degree to which the proposed action affects public health and safety;
- Unique characteristics of the geographic area “such as proximity to park lands, . . . wetlands, . . . or ecologically critical areas”;
- The degree to which possible effects are “highly uncertain” or involve “unique or unknown risks”;
- The degree to which the action “may establish a precedent for future actions with significant effects”;
- The degree to which the action is related to other actions have cumulatively significant impacts;
- The degree to which the action may adversely affect an endangered or threatened species or its habitat;
- The degree to which effects are likely to be “highly controversial”; and
- Whether the action threatens a violation of Federal, State, or local law or requirements imposed for the protection of the environment.⁷¹

The recently updated CEQ regulations include similar factors for determining whether a proposed action’s effects are significant:

(b) In considering whether the effects of the proposed action are significant, agencies shall analyze the potentially affected environment and degree of the effects of the action. . . .

(1) In considering the potentially affected environment, agencies should consider, as appropriate to the specific action, the affected area (national, regional, or local) and its resources, such as listed species and designated critical habitat under the Endangered Species Act. Significance varies with the setting of the proposed action. For instance, in the case of a site-specific action, significance would usually depend only upon the effects in the local area.

⁶⁶ 42 U.S.C. § 4332(2)(C).

⁶⁷ 40 C.F.R. § 1502.23.

⁶⁸ *Id.* § 1502.21.

⁶⁹ 42 U.S.C. § 4332(2)(C).

⁷⁰ *Nat’l Parks & Conservation Ass’n v. Babbitt*, 241 F.3d 722, 731 (9th Cir. 2001).

⁷¹ 40 C.F.R. § 1508.27 (2006, replaced in 2020).

(2) In considering the degree of the effects, agencies should consider the following, as appropriate to the specific action:

- (i) Both short- and long-term effects.
- (ii) Both beneficial and adverse effects.
- (iii) Effects on public health and safety.
- (iv) Effects that would violate Federal, State, Tribal, or local law protecting the environment.⁷²

If it is unclear whether impacts are significant enough to warrant an EIS, the agency may prepare an Environmental Assessment to assist in making that determination.⁷³ An agency's Environmental Assessment must discuss the need for the proposal, alternatives, and the environmental impacts of the proposed action and its alternatives.⁷⁴

Agencies must also consider the environmental justice implications of a proposed project. During the NEPA process, "each Federal agency shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations in the United States"⁷⁵

If, after taking a "hard look" at the impacts, the agency determines an EIS is not required, the agency must provide a statement of reasons why the project's impacts are insignificant and issue a Finding of No Significant Impact, or "FONSI."⁷⁶ Conversely, if an action may have a significant effect on the environment, or even if there are substantial questions as to whether it may, the agency must prepare an EIS.⁷⁷

The notice for the Hunter's Point Natural Gas Well Drilling Project states that the Army Corps has preliminarily determined that the project will not require the preparation of an Environmental Impact Statement.⁷⁸ Should the Army Corps choose not to reject this Project, it must reverse this determination and require an EIS. Several of the "significance factors" listed above are triggered by the proposed project, indicating that there may be significant impacts from the project. First and foremost, the project is likely to affect public health and safety. As explained in Section III, even a single well has public health and environmental impacts, and those impacts will be compounded if the exploratory well results in additional drilling. The Army Corps must consider all reasonable public health issues from gas production and distribution activities, including harmful air and greenhouse gas emissions. Second, there are unique characteristics and resources in the project area. The proposed gas well is in a wetland and is adjacent to the California Joice Island State Game Refuge, which acts as a buffer against marsh development while providing vital habitat to rare, threatened, and endangered species. Third, the action is likely to have both short- and long-term effects. Greenhouse gas emissions

⁷² 40 C.F.R. § 1501.3

⁷³ *Id.* § 1501.5.

⁷⁴ *Id.* § 1501.5(c)(2).

⁷⁵ Executive Order 12,898, 59 Fed. Reg. 7629 (Feb. 16, 1994).

⁷⁶ 40 C.F.R. § 1501.6.

⁷⁷ *See* 42 U.S.C. § 4332(2)(C).

⁷⁸ Public Notice No. 2011-00065N at 3.

associated with gas extraction, distribution, and consumption remain in our atmosphere to heat our planet for decades. Especially in combination with other ongoing oil and gas drilling activities throughout Solano County and California, this project poses grave threats to our long-term well-being, in addition to short-term harms to wildlife and human health. This project may also establish precedent and involves unique or unknown long-term risks because the scope of the project is so uncertain. It is not known whether a gas pipeline will be installed and whether this project will lead to additional exploration or production activities. Fifth, the action may threaten a violation of Federal, State, or local law or requirements imposed for the protection of the environment; the project appears inadequate to protect federally listed species, and the notice does not explain how expanded production gas is consistent with California's greenhouse gas reduction targets.

When an EIS is prepared, the statement of purpose and need must be broader than the "Overall Project Purpose" identified in the notice. The purpose and need inquiry is crucial for a sufficient environmental analysis because "[t]he stated goal of a project necessarily dictates the range of 'reasonable' alternatives."⁷⁹ Thus, "an agency cannot define its objectives in unreasonably narrow terms" without violating NEPA.⁸⁰ The Clean Water Act charges the Army Corps of Engineers with ensuring that actions it permits are in the public interest and do not discharge fill material into wetlands unless there is no less damaging practicable alternative available. Accordingly, the Corps should focus its purpose and need inquiry on objectives that comport with these statutory duties, rather than on ensuring that the project applicant will be able to extract gas from the Suisun Marsh. At a minimum, the project need statement should be defined so that alternative locations that are not in a wetland and do not require new pipelines to be built are considered. In addition, the statement should be defined so that alternatives that would fulfill the project's true goal of producing energy are not limited to gas projects that generate greenhouse gas emissions. In order to avoid the worst dangers of climate change, the Corps must consider a renewable energy and energy conservation alternative.

B. The Proposed Project Does Not Qualify for Water Quality Certification from Regional Water Quality Control Board

Clean Water Act section 401 requires applicants for federal permits involving discharges to waters of the United States to obtain certification ("401 certification") from the appropriate state that the discharge will comply with certain state legal requirements, including state water quality standards and the state antidegradation policy.⁸¹ This certification is critical because "[n]o license or permit shall be granted if certification has been denied by the State . . ."⁸² The California Regional Water Quality Control Board ("Regional Board") is the section 401 certifying authority for the proposed project.⁸³ For the reasons described below, the Regional

⁷⁹ *Carmel-by-the-Sea v. U.S. Dep't of Transp.*, 123 F.3d 1142, 1155 (9th Cir. 1997).

⁸⁰ *Id.*

⁸¹ See 33 U.S.C. § 1341; *PUD No. 1 of Jefferson Cty. v. Washington Dep't of Ecology*, 511 U.S. 700, 707-08 (1994).

⁸² 33 U.S.C. § 1341(a)(1).

⁸³ "The applicant has recently submitted an application to the California Regional Water Quality Control Board (RWQCB) to obtain water quality certification for the project." Public Notice No. 2011-00065N at 2.

Board cannot certify the proposed project as recommended. At a minimum, the Regional Board must require more supporting information before making a certification decision and must condition any certification on specific, enforceable requirements to minimize adverse impacts to the aquatic environment. Further, allowing this proposed project to move forward is inconsistent with California's antidegradation policy.

1. There is not sufficient information to support that the proposed project will comply with water quality standards

The materials that Sunset Exploration has prepared, and we have been able to review provide no assurance, let alone a reasonable assurance, that the proposed project will comply with water quality standards. There are many unknowns with this project and the 404 permit application and 401 permit application are not posted on the Army Corps or Regional Board websites. The application Sunset Exploration prepared for its San Francisco Bay Conservation and Development Commission ("BCDC") does not discuss if wastewater will be produced during well operations, nor if wastewater will be treated. Additionally, the application materials do not discuss whether wastewater will be discharged to surface waters, let alone where or in what quantity or quality wastewater will be discharged, despite the fact that oil and gas drilling and exploration generates wastewater.⁸⁴ Additionally, site stormwater is not addressed in the application materials. Finally, the application materials do not describe the location, rate, volume, frequency, temperature, or other parameters of discharges or of the Suisun Marsh receiving waters.

The BCDC application materials state a "watershed profile for the projected project area and the proposed compensatory mitigation project is required."⁸⁵ The mitigation plan will be implemented to "compensate for impacts to waters of the U.S. and State that would result from the [proposed project]."⁸⁶ The mitigation plan lists the "functions and services" of the waters of the U.S. and State that will be impacted by the project, including tidal surge attenuation, sediment/toxicant retention, nutrient production and export, and groundwater recharge and discharge.⁸⁷ However, the plan does not specify what the impacts to these waters will be. More information is needed on the project's impacts to water quality standards.

Without more specific information about the extent, location, volume, rate, frequency, quality, proposed treatment method, and receiving waters for all proposed discharges, and about the effects of water withdrawals and potential discharges, the Regional Board cannot conclude there is reasonable assurance the proposed project qualifies for water quality certification.

⁸⁴ U.S. EPA, Oil and Gas Extraction Effluent Guidelines (2020), <https://www.epa.gov/eg/oil-and-gas-extraction-effluent-guidelines#:~:text=Related%20Information&text=Oil%20and%20Gas%20Extraction%20is%20production%20of%20oil%20and%20gas> (last visited Feb. 22, 2021).

⁸⁵ Part 8: Wetland Mitigation and Restoration Plan Hunter's Point Natural Gas Well Drilling Project, in BCDC Application.

⁸⁶ *Id.*

⁸⁷ *Id.*

2. *There is no reasonable assurance that the proposed project will satisfy California's antidegradation policy.*

Antidegradation is an important tool that states use to meet the Clean Water Act requirement that water quality standards protect public health and welfare, enhance water quality, and meet the objective of the Clean Water Act to “restore and maintain the chemical, physical and biological integrity” of the nation’s waters.⁸⁸

In 1968, the State Water Resources Control Board adopted an antidegradation policy aimed at maintaining the high quality of waters in California through the issuance of Resolution Number 68-16.⁸⁹ The antidegradation policy applies to surface waters and groundwaters, protects existing and potential beneficial uses of surface water and groundwater, and is incorporated into Regional Board Plans.⁹⁰ Per California’s antidegradation policy, waters that meet or are below water quality objectives must be maintained or improved, and waters that are cleaner cannot be degraded at all. The Regional Board may not grant the permit for the proposed project without finding that the disposal of wastes into waters of the state is regulated to achieve the “highest water quality consistent with maximum benefit to the people of the State . . . ,”⁹¹ and, for discharges to high quality waters, waste discharge requirements that will result in the best practicable treatment or control of the discharge are imposed to assure that pollution or nuisance will not occur.⁹²

With the current materials provided, it is not possible to make the requisite antidegradation findings without more information. Therefore, the Regional Board cannot certify the proposed project as sufficient to satisfy California’s antidegradation policy.

C. *The Proposed Project Does Not Qualify for Coastal Zone Management Consistency Certification from the San Francisco Bay Conservation and Development Commission*

Congress created a federal and state partnership for management of coastal resources in the Coastal Zone Management Act (“CZMA”) of 1972.⁹³ The CZMA encourages states to develop coastal management programs and implement the federal consistency procedures of the CZMA. The federal government certified the California Coastal Management Program in 1977.⁹⁴ Upon certification of a state’s coastal management program, all federal agency activities, including federal permits, affecting the coastal zone must be consistent with the enforceable policies of the state’s certified program.⁹⁵ The review process used to implement this

⁸⁸ 33 U.S. Code § 1251; *see* 40 C.F.R. § 230.10(b)(1).

⁸⁹ State Water Resources Control Board, Res. No. 68-16, Antidegradation Policy (Statement of Policy with Respect to Maintaining High Quality Waters in California) (1968) (enacted) (“Res. No. 68-16”), https://www.waterboards.ca.gov/board_decisions/adopted_orders/resolutions/1968/rs68_016.pdf.

⁹⁰ *Id.*

⁹¹ *Id.*; *Asociacion de Gente Unida por El Agua v. Central Valley Regional Water Quality Control Board*, 210 Cal. App. 4th 1255, 1258 (2012).

⁹² Res. No. 68-16, *supra* note 83.

⁹³ California Coastal Commission, Federal Consistency (2019), <https://www.coastal.ca.gov/fedcd/fedcndx.html>.

⁹⁴ *Id.*

⁹⁵ *Id.*

requirement is called a consistency certification.⁹⁶ Generally, no federal license or permit will be granted until the appropriate state agency has issued a consistency certification or has waived its right to do so.⁹⁷

In California, a consistency certification must include a description of the proposed activity and a statement by the developer that the project will comply with the California Coastal Management Program. Sunset Exploration must submit the certification with the necessary data and information to enable the San Francisco BCDC to adequately review the project and make a determination of whether the project meets consistency requirements.⁹⁸

Further, the BCDC is charged with protecting the “quality of coastal waters . . . appropriate to maintain optimum populations of marine organisms and for the protection of human health.”⁹⁹ This is achieved through, among other means, “minimizing adverse effects of waste waters discharges.”¹⁰⁰ If the BCDC certified the proposed project, it would fail to meet this mandate because the proposed project would violate multiple policies in the California Coastal Act, including:

- 1) Protect biological productivity and the quality of coastal waters and wetlands to maintain optimum populations of marine organisms and protection of human health.¹⁰¹ Heavy industry projects, including gas drilling, are known to negatively impact marine life, especially when the drilling takes place in the middle of a wetland. *See* Section III(A) and (D).¹⁰² Further, gas drilling is hazardous to human health for a myriad of reasons, including the use of toxic chemicals. Gas drilling also increases risks to water quality, increases air pollution, and increases vehicle traffic and light pollution.¹⁰³ *See* Section III.
- 2) Protect movement of sediment and nutrients, and ensure such movement is carried out in a way that avoids disruption to marine and wildlife habitats and water circulation.¹⁰⁴
- 3) Protect environmentally sensitive habitat areas against any significant disruption of habitat values.¹⁰⁵ Vehicle and human traffic, drilling, construction of roads, and other activity associated with the proposed project is highly disruptive to the sensitive coastal habitat and species on the site.
- 4) Design development in areas adjacent to environmentally sensitive habitat areas, parks, and recreation areas to prevent impacts that degrades those areas, and ensure development is compatible with the continuance of those habitat and recreation

⁹⁶ *Id.*

⁹⁷ *See* 15 C.F.R. § 930.57.

⁹⁸ Cal. Pub. Res. Code §§ 30000 et seq.; U.S. Department of Energy, California Coastal Zone Consistency Certification (2020), <https://openei.org/wiki/RAPID/Roadmap/13-CA-c>.

⁹⁹ Cal. Pub. Res. Code § 30231.

¹⁰⁰ *Id.*

¹⁰¹ *Id.*

¹⁰² CCST, Vol. II at 127.

¹⁰³ Shonkoff 2019.

¹⁰⁴ Cal. Pub. Res. Code § 30233.

¹⁰⁵ *Id.* at § 30240.

- areas.¹⁰⁶ The site is currently used for bird hunting, and construction and activity on the site is likely to reduce the number of birds on the site, thus impacting area as it is used for recreation.
- 5) Protect the scenic and visual qualities of coastal areas as a resource of public importance and ensure development is sited and designed to protect views to and along the coastal areas and to be visually compatible with the character of surrounding areas.¹⁰⁷ The site currently is in a scenic and visually compatible character with the surrounding wetlands, however, the construction and operation of a drill, the proposed road, and truck traffic is inconsistent with the visual and scenic qualities of the surrounding areas.
 - 6) Ensure the development maintains and enhances public access to the coast.¹⁰⁸
 - 7) Minimize adverse impacts and risk of a flood and fire hazard, assure stability and structural integrity.¹⁰⁹ Drilling in a wetland may impact the stability of the site.
 - 8) Ensure there is no contribution to erosion, destruction of the site, or alter the site so construction of protective devices would substantially alter landforms.¹¹⁰ Drilling in a wetland contributes to erosion. Further, oil exploration is inherently a destructive process.
 - 9) Ensure energy consumption and vehicle miles traveled is minimized.¹¹¹ The proposed project includes a new 100-foot by 10-foot access road that will be constructed, and the creation of a new road will increase the amount of distance traveled.¹¹²
 - 10) Protect communities and neighborhoods that are destination points for recreational uses.¹¹³ The site of the proposed project site is to the west of the Joice Island State Game Refuge and Suisun Slough, which are used for duck hunting and is a prime coastal area for coastal recreational use such as kayaking and bird watching.¹¹⁴
 - 11) Ensure the gas development is performed safely and consistent with the geologic conditions of the well site.¹¹⁵
 - 12) The development will not cause or contribute to subsidence hazards unless it is determined that adequate measures will be undertaken to prevent damage from such subsidence.¹¹⁶ Drilling activity in wetlands may contribute to subsidence.
 - 13) More generally, the California Coastal Act was passed in order to “[p]rotect, maintain, and where feasible, enhance and restore the overall quality of the coastal zone environment” and to “[a]ssure orderly, balanced utilization and conservation of coastal zone resources.”¹¹⁷ In so doing, the legislature recognized that the coastal zone is a “distinct and valuable recourse of vital and enduring interest to all the

¹⁰⁶ Cal. Pub. Res. Code § 30240.

¹⁰⁷ *Id.* at § 30251.

¹⁰⁸ *Id.* at § 30252.

¹⁰⁹ *Id.*

¹¹⁰ *Id.*

¹¹¹ *Id.*

¹¹² Public Notice No. 2011-00065N at 1.

¹¹³ Cal. Pub. Res. Code § 30253.

¹¹⁴ Public Notice No. 2011-00065N at 1.

¹¹⁵ Cal. Pub. Res. Code § 30262(a)(1).

¹¹⁶ *Id.* at § 30262(a)(5).

¹¹⁷ *Id.* at § 30001.5.

people and exists as a delicately balanced ecosystem.”¹¹⁸ “The permanent protection of the state’s natural and scenic resources is a paramount concern to present and future residents of the state and nation.”¹¹⁹ As stated by the California Court of Appeals in *Gherini v. California Coastal Commission*, 204 Cal. App. 3d 699 (1988), “[t]he Legislature further found that in order to promote the public safety, health and welfare, protect public and private property, wildlife, marine fisheries, ocean resources and the natural environment, ‘it is necessary to protect the ecological balance of the coastal zone and prevent its deterioration and destruction.’” BCDC’s goal of protecting California’s coastal resources must be observed when the BCDC and the Army Corps consider permitting any new gas drilling.

BCDC also enforces the McAteer-Petris Act, which has many of the same objectives as the California Coastal Act and also restricts the placement of fill through the following specific policies:

- “The public benefits from the proposed fill [should] clearly exceed[] the public detriment from the loss of water areas,
- Further filling should be limited to water-oriented uses (including but not limited to ports, water-related industry, airports, bridges, wildlife refuges, and water-oriented recreation and public assembly) or minor fill for improving shoreline appearance or access to the Bay
- Fill should be authorized for any purpose only when no alternative upland location is available for such purpose
- The water area to be filled should be the minimum amount necessary to achieve the purpose of the fill, and
- That the nature, location, and extent of any fill should be such that it will minimize harmful effects to the bay area such as the reduction or impairment of the volume of surface area or circulation of water, water quality, fertility of marshes or fish or wildlife resources or other conditions impacting the environment”¹²⁰

Here, the public benefits of a new gas well clearly do not exceed the public detriment of loss of the water area, the well drilling is not a water dependent use nor a project that will increase public access or improve shoreline appearance, there is no publicly available information that shows an upland alternative is infeasible, and the fill will only exacerbate harmful effects to the area.

Based on what is known about the proposed project, it is inconsistent with the requirements of the Coastal Zone Management Act and McAteer-Petris Act and should not receive a consistency certification from the San Francisco BCDC. The Army Corps should deny the application as well.

¹¹⁸ Cal. Pub. Res. Code § 30001.5.

¹¹⁹ *Id.*

¹²⁰ BCDC, BCDC Jurisdiction and Authority, <https://www.bcdc.ca.gov/bcdc-jurisdiction-authority.html> (last visited Feb. 25, 2021).

D. The Proposed Project is Inconsistent with the Solano County General Plan

The proposed project is inconsistent with the County's General Plan in several respects. The proposed project would violate multiple policies in the Plan, including:

- 1) Protect and enhance the county's natural habitats and diverse plant and animal communities, particularly occurrences of special-status species, wetlands, sensitive natural communities, and habitat connections.¹²¹
- 2) Focus conservation and protection efforts on high-priority habitat areas depicted in Figure RS-1.¹²²
- 3) Protect and enhance wildlife movement corridors to ensure the health and long-term survival of local animal and plant populations. Preserve contiguous habitat areas to increase habitat value and to lower land management costs.¹²³
- 4) Preserve and enhance the diversity of habitats in marshes, delta to maintain these unique wildlife resources.¹²⁴
- 5) Protect marsh waterways, managed wetlands, tidal marshes, seasonal marshes, and lowland and grasslands because they are critical habitats for marsh-related wildlife and are essential to the integrity of the marshes.¹²⁵
- 6) Encourage restoration of historic marshes to wetland status, either as tidal marshes or managed wetlands. When managed wetlands are no longer used for waterfowl hunting, restore them as tidal marshes.¹²⁶
- 7) The County shall preserve and enhance wherever possible the diversity of wildlife and aquatic habitats found in the Suisun Marsh and surrounding upland areas to maintain these unique wildlife resources.¹²⁷
- 8) The County shall protect its marsh waterways, managed and natural wetlands, tidal marshes, seasonal marshes and lowland grasslands which are critical habitats for marsh-related wildlife.¹²⁸

The Proposed Project should be denied because it would be inconsistent with these and other policies of the County General Plan. Although the General Plan allows "extraction, storage, and transportation of natural gas resources," those activities must be done "responsibl[y]," in a way that "minimize[s] the impact on the natural environment."¹²⁹ It is irresponsible to site a new natural gas well and pipeline in the middle of the Suisun Marsh, especially when the County acknowledges that "natural gas is not a permanent fuel source, contributes to global warming, and cannot increase over the long run."¹³⁰ In addition, there is insufficient information in the

¹²¹ Solano County, General Plan, Ch. 4: Resources (2008) at p. RS-11, RS.P-1, <https://www.solanocounty.com/civicax/filebank/blobdload.aspx?BlobID=6494>.

¹²² *Id.* at RS.P-3 (RS-1 shows that the proposed project area is in the high-priority "Suisun Marsh Protection Plan (April 1995) Primary Management Area")

¹²³ *Id.* at RS.P-5.

¹²⁴ *Id.* at RS.P-7.

¹²⁵ *Id.* at RS.P-8.

¹²⁶ *Id.* at RS.P-9.

¹²⁷ *Id.* at RS.P-10.

¹²⁸ *Id.* at RS.P-11.

¹²⁹ *Id.* at RS.P-55.

¹³⁰ *Id.* at p. RS – 52.

notice as to how the project will comply with the Solano County Component of the Suisun Marsh Local Protection Program.

E. At Minimum, the Project May Not Proceed Until Solano County Completes a CEQA-compliant EIR

The California Environmental Quality Act (“CEQA”) requires agencies to prepare a full environmental impact report before approving a project when there is a “fair argument” that the foreseeable impacts of a project may be significant.¹³¹ This “fair argument” test “establishes a low threshold for initial preparation of an [Environmental Impact Report, or] EIR, which reflects a preference for resolving doubts in favor of environmental review.”¹³²

As noted in Section III, there is more than a fair argument that approval of this project would put natural resources and public health at risk and prolong our dependence on dirty fossil fuels at a time when we need to rapidly transition to clean, sustainable energy. At a minimum, Solano County will need to review and mitigate the many significant and cumulative impacts this project will have on air quality and health; soil and water; public safety due to possible leaks, spills, and transportation of hazardous materials; climate; special status species; and noise and light.

CEQA requires the disclosure and analysis of direct, reasonably foreseeable indirect, and cumulative effects of the project.¹³³ Further, it is improper for agencies to “piecemeal” the review of a project’s environmental impacts by examining only some stages of a project while omitting later stages. CEQA defines “project” as “the whole of an action, which has a potential for resulting in either a direct physical change in the environment, or a reasonably foreseeable indirect physical change in the environment.”¹³⁴ CEQA forbids segmenting a project into separate actions in order to avoid environmental review of the “whole of the action.”¹³⁵

As a result, the CEQA analysis must address all phases of the proposed project, including the exploratory well and the additional wells and future production that is reasonably foreseeable if the exploratory well is successful. The analysis must also address the aggregate effect on air quality, water quality, noise, light, greenhouse gas emissions, and habitat from existing oil and gas wells, refineries, and other polluting development in and near Solano County. The proposed project is one of many that continues to fragment the valuable and limited wetland wildlife habitat of Suisun Marsh, so should also be considered in the context of that trend.

Finally, CEQA prohibits approval of a project if there are feasible alternatives or feasible mitigation measures available that would substantially lessen any significant impacts on the environment.¹³⁶ As with the NEPA analysis, the EIR must consider a reasonable range of alternatives, including a No Project alternative. The No Project alternative should be an

¹³¹ Cal. Pub. Res. Code §§ 21100; 21151; CEQA Guidelines § 15064(a)(1), (f)(1).

¹³² *Architectural Heritage Assn. v. County of Monterey*, 122 Cal. App. 4th 1095 (2004).

¹³³ CEQA Guidelines, § 15126.2(a), 15130, 15064(d); *see also* Cal. Pub. Res. Code § 21080(d), 21082.2(a); Guidelines, § 15064(a)(1).

¹³⁴ CEQA Guidelines § 15378(a); Cal. Pub. Res. Code § 21065.

¹³⁵ *See Bozung v. Local Agency Formation Comm’n*, 13 Cal.3d 263, 283-84 (1975); *Rural Landowners Ass’n v. City Council*, 143 Cal. App. 3d 1013, 1024 (1983); *Nelson v. County of Kern*, 190 Cal. App. 4th 252, 272 (2010).

¹³⁶ *See also* CEQA Guidelines, § 15126.6, 15126.4.

alternative under which development does not occur in a wetland. The EIR should also explore one or more alternatives that hasten the transition away from fossil fuel development and promote renewable energy.

F. The Army Corps Must Consult with the US Fish and Wildlife Service and National Oceanic and Atmospheric Administration to Evaluate Harm to Protected Species.

The Project could potentially harm multiple protected species and their habitats. Under the federal Endangered Species Act, the Army Corps must formally consult with the US Fish and Wildlife Service and the National Oceanic and Atmospheric Administration's National Marine Fisheries Service because the Project may affect threatened and endangered species and their habitat.

G. The 404(b) Fill Permit Cannot be Issued

1. The permit would not comply with the 404(b)(1) guidelines

All Section 404 permits are subject to the Section 404(b)(1) Guidelines found at 40 C.F.R. § 230 *et seq.* These guidelines provide that no discharge of dredge or fill material may be permitted if there is a less damaging “practicable alternative” available, or if it will “cause or contribute to significant degradation” of waters of the United States.¹³⁷ The Section 404(b)(1) Guidelines further provide that “the degradation or destruction of special aquatic sites . . . is considered to be among the most severe environmental impacts covered by these Guidelines.”¹³⁸ Wetlands are considered “special aquatic sites” under the Guidelines.¹³⁹

The Guidelines require that the Corps follow a specific two step procedure in applying the practicable alternative standard. First, a correct statement of the project’s “basic purpose” is necessary. After the Corps defines the basic purpose of the project, it must determine whether that basic purpose is “water dependent.”¹⁴⁰ If the activity is not “water dependent,” as is the case here, the Guidelines require that the Corps apply a presumption that a practicable alternative that has a less adverse environmental impact on the wetland is available.¹⁴¹ When this presumption applies, the applicant must then rebut the presumption by “clearly demonstrat[ing]” that a practicable alternative is not available.¹⁴² In addition, unless the applicant clearly demonstrates otherwise, the Corps presumes that all practicable alternatives that do not involve the discharge into a wetland have a less adverse environmental impact.¹⁴³ Where the presumption applies, the permit applicant bears the burden of providing “detailed, clear, and convincing information *proving* that an alternative with less adverse impact is impracticable.”¹⁴⁴ An area not owned by

¹³⁷ 40 C.F.R. § 230.10.

¹³⁸ *Id.* § 230.1.

¹³⁹ *Id.* § 230.41.

¹⁴⁰ *See id.*

¹⁴¹ *Id.*; *see also Bering Strait*, 524 F.3d 938, 947 (9th Cir. 2008) (applying the presumption that practicable alternatives exist for an Alaskan gold mining project because the project was not water dependent).

¹⁴² 40 C.F.R. § 230.10(a)(3).

¹⁴³ *Id.*

¹⁴⁴ *Greater Yellowstone Coalition v. Flowers*, 359 F.3d 1257, 1269 (10th Cir. 2004) (internal quotations and citation omitted).

the applicant may be considered a practicable alternative.¹⁴⁵ Moreover, the Corps may rely on information submitted by the applicant but must independently verify such information.¹⁴⁶

The 404(b)(1) Guidelines require the Corps to independently assess the “overall project purpose” and “basic purpose.”¹⁴⁷ As the Corps has explained, “[i]t is only when the ‘basic project purpose’ is reasonably defined that the alternatives analysis required by the [404(b)(1)] Guidelines can be usefully undertaken by the applicant and evaluated by the Corps.”¹⁴⁸ Courts routinely explain that determining the project’s purpose is “central” to the Corps’ analysis, dictating both the range of practicable alternatives and the applicant’s burden of proof.¹⁴⁹ Corps regulations further require that “the Corps will, in all cases, exercise independent judgment in defining the purpose and need for the project from both the applicant's and the public's perspective.”¹⁵⁰ This ensures that “an applicant cannot define a project in order to preclude the existence of any alternative sites and thus make what is practicable appear impracticable.”¹⁵¹ Stated otherwise, “the definition of a project purpose may not be used by the sponsor as a tool to artificially exclude what would otherwise be practicable alternatives to the project—in other words, the sponsor’s project purpose must be ‘legitimate.’”¹⁵²

Here, the Corps appears to have impermissibly adopted the applicant’s narrowly defined purpose without exercising its independent judgment. By doing so, the Corps has done just what the law prohibits—allowed the applicant to define a project in the narrowest of possible ways to preclude the existence of practicable alternatives.¹⁵³ The Corps explains that the basic project purpose is “natural gas extraction,” while the overall project purpose is “to locate economically feasible source of gas in the Suisun Marsh.”¹⁵⁴ Locating gas within a specific wetland area is not an appropriate project purpose, but an unreasonably narrow statement of a specific project design—one that precludes alternatives that do not discharge fill into a wetland. This statement does not represent the Corps’ independent analysis of the purpose and need for the project. Indeed, though we have not been provided access to the project application, we suspect that this statement is likely a verbatim rephrasing of the applicant’s purpose statements. By mandating a specific project design (drilling a natural gas well) and location (the Suisun Marsh), the purposes foreclose consideration of reasonable alternatives that do not harm wetlands, such as drilling in a less environmentally sensitive area or siting a different energy production project that does not generate harmful air and climate emissions.

¹⁴⁵ 40 C.F.R. § 230.10(a)(2).

¹⁴⁶ *Id.*; 40 C.F.R. § 1506.5(a).

¹⁴⁷ 33 C.F.R., Pt. 325, App. B(9)(b)(4).

¹⁴⁸ U.S. Army Corps of Engineers, Permit Elevation, Old Cutler Bay Associates (Sept. 13, 1990) at 6, https://www.epa.gov/sites/production/files/2015-05/documents/2006_04_19_wetlands_cutlerbayguidance.pdf.

¹⁴⁹ *See, e.g., Nat’l Wildlife Fed’n v. Whistler*, 27 F.3d 1341, 1345 (8th Cir. 1994).

¹⁵⁰ 33 C.F.R. § 325, App. B(9)(b)(4).

¹⁵¹ *Sylvester v. U.S. Army Corps of Engineers*, 882 F.2d 407, 409 (9th Cir. 1989). Similarly, under NEPA, the Corps “cannot restrict its analysis to those ‘alternative means by which a particular applicant can reach *his* goals.’”

Simmons v. U.S. Army Corps of Engineers, 120 F.3d 664, 669 (7th Cir. 1997).

¹⁵² *Florida Clean Water Network, Inc. v. Grosskruger*, 587 F. Supp. 2d 1236, 1243-44 (M.D. Fla. 2008) (quoting *Sylvester*, 882 F.2d at 409).

¹⁵³ *See Sylvester*, 882 F.2d at 409.

¹⁵⁴ Public Notice No. 2011-00065N at 2.

Under the 404(b)(1) Guidelines, the Corps must not only independently assess the project purpose, but also conduct its own “independent evaluation” of practicable alternatives to meet the purpose. The Corps should not blindly accept the impermissibly narrow scope of practicable alternatives the applicant presented. Although we have, again, not been able to view the project application, we understand from correspondence with Army Corps contact Roberta Morganstern that the alternatives analysis “amount[s] to two maps, only.” Presumably, the alternatives maps displayed other possible locations within the Suisun Marsh that were dismissed as infeasible or having more adverse impacts. Were the Corps to adopt this alternatives analysis, it would fail to meet its duty to conduct its own alternatives analysis that complies with the law.¹⁵⁵ The Corps should consider non-drilling alternatives and alternatives outside of the Suisun Marsh, and also reject any assertion by the applicant that a less damaging practicable alternative is not available because drilling an abandoned well minimizes project impacts. As explained in Section II, there are multiple risks associated with redrilling an abandoned well and drilling near other abandoned wells that we suspect the applicant has not adequately disclosed in its application. The Corps must also reject any argument that the proposed site is the preferred alternative because the applicant owns the mineral rights there. At a minimum, the Corps must demand, and make available for public review, data to evaluate the applicant’s presentation of alternatives.

Other issues that we are concerned about but unable to comment on at this time due to lack of information include:

- Whether there will be significant degradation of the aquatic environment,¹⁵⁶ and appropriate and practicable measures to minimize potential impacts if the project would significantly degrade wetlands.¹⁵⁷
- The applicant’s proposed compensatory mitigation plan, especially since the project notice “proposed mitigation” section mentions drilling in an existing well to be part of the avoidance and minimization of project impacts.¹⁵⁸ The mitigation plan must identify the true extent of wetland function loss from the project and timing of full or partial recovery.
- Whether the Corps can ensure that the permitted discharge will not jeopardize ESA-protected species or adversely modify their critical habitat, as discussed in Section IV.F.¹⁵⁹
- Whether the permitted discharge would cause or contribute to violations of any applicable state water quality standard, including the state’s antidegradation policy, as discussed in Section IV.B.¹⁶⁰

The Corps’ regulations state that a permit should be denied if the proposed discharge would not comply with the 404(b)(1) guidelines, as is the case here.¹⁶¹ The Corps will err if it approves the 404 Permit when the project has not avoided and minimized impacts to waters of the United States.¹⁶²

¹⁵⁵ See 40 C.F.R. § 230.10(a)(4)..

¹⁵⁶ *Id.* § 230.10(c).

¹⁵⁷ *Id.* § 230.10(d).

¹⁵⁸ *Id.* § 230.93(a)(1); Public Notice No. 2011-00065N at 2.

¹⁵⁹ *Id.* § 230.10(b)(3).

¹⁶⁰ *Id.* § 230.10(b)(1).

¹⁶¹ 33 C.F.R. § 323.6(a).

¹⁶² 40 C.F.R. § 230.91(c)(2); § 230.70-.77.

2. *The permit is not in the public interest*

The Corps must deny the section 404 permit because the project is not in the public interest. Pursuant to the Corps' regulations implementing the Clean Water Act, the "decision whether to issue a permit will be based on an evaluation of the probable impacts, including cumulative impacts, of the proposed activity and its intended use on the public interest."¹⁶³

The public interest review is intentionally broad and should include all relevant issues that could impact the environment, human health, and natural resources. The Corps' regulation instructs:

Evaluation of the probable impact which the proposed activity may have on the public interest requires a careful weighing of all those factors which become relevant in each particular case. The benefits which reasonably may be expected to accrue from the proposal must be balanced against its reasonably foreseeable detriments. The decision whether to authorize a proposal, and if so, the conditions under which it will be allowed to occur, are therefore determined by the outcome of this general balancing process. That decision should reflect the national concern for both protection and utilization of important resources.¹⁶⁴

The Corps' regulations include a non-exhaustive list of factors that may be relevant for each individual project. 33 C.F.R. § 320.4(a)(1) states in part:

All factors which may be relevant to the proposal must be considered including the cumulative effects thereof: among those are conservation, economics, aesthetics, general environmental concerns, wetlands, historic properties, fish and wildlife values, flood hazards, floodplain values, land use, navigation, shore erosion and accretion, recreation, water supply and conservation, water quality, energy needs, safety, food and fiber production, mineral needs, considerations of property ownership and, in general, the needs and welfare of the people.

Consistent with the mandate that the Corps consider "all those factors that become relevant," this non-exhaustive list of factors includes issues beyond those directly related to the impacts of in-water work.¹⁶⁵ In other words, by requiring an analysis of "cumulative impacts" and by including a non-exhaustive, far-reaching list of factors, the Corps is required to conduct a broad analysis of the public interest that captures all relevant impacts associated with the project and not just those that result directly from the permitted activities. The Corps must conduct one comprehensive public interest review that considers all of the Project components together. The Corps cannot segment its public interest review to evaluate individual project components standing alone, or segment its analysis based on the differing permitting requirements. The Corps must also consider impacts from operation of the Project once constructed. These impacts include not only those relevant to the 404(b) guidelines discussed above, but also the climate change impacts of the Project and its likely impacts on species.

¹⁶³ 33 C.F.R. § 320.4(a)(1).

¹⁶⁴ *Id.*

¹⁶⁵ *Id.*

As noted in Section III, the full list of factors the Corps should consider includes exacerbation of climate change, facilitation of gas development in wetlands that are critical for adaptation to rising tides and other climate consequences, and the risk of dangerous spills and leaks. The economic benefits from the project are speculative and cannot outweigh these and other environmental consequences. As a result, the project is not the public interest, and the Corps should deny the section 404 permit.

VI. Conclusion

For the reasons explained above, the Corps should deny Sunset Exploration's application for a 404 permit. In the alternative, the Corps should hold at least one public hearing, prepare a full environmental impact statement, and suspend the permitting process until a complete and accurate application is made available to the public.

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Respectfully submitted,



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LIST OF REFERENCES

- Allen, David et al., Measurements of Methane Emissions at Natural Gas Production Sites in The United States, 110 PNAS 44 (2013)
- Armendariz, Al, Emissions for Natural Gas Production in the Barnett Shale Area and Opportunities for Cost-Effective Improvements, Environmental Defense Fund (2009)
- Baginska, Barbara, Suisun Marsh TMDL for Methylmercury, Dissolved Oxygen and Nutrient Biostimulation, San Francisco Bay Regional Water Quality Control Board (Sept. 2012)
- Bay Area Air Quality Management District, Valero refinery reporting shutdown in process (Mar. 24, 2019)
- California Council on Science and Technology, Advanced Well Stimulation Technologies in California (2016)
- California Council on Science Technology, An Independent Scientific Assessment of Well Stimulation in California Volume II: Potential Environmental Impacts of Hydraulic Fracturing and Acid Stimulation (2015)
- California Council on Science and Technology, Orphan Wells in California (2020)
- California State Lands Commission, Letter to organizations re: Environmental justice outreach for existing natural gas pipeline in Contra Costa and San Joaquin Counties (Feb. 16, 2021)
- California State Lands Commission, Letter to organizations re: Environmental justice outreach for existing natural gas pipeline in Sacramento County (Feb. 16, 2021)
- Canon, Gabrielle, *'A Clear Danger': oil spill in California city revives call to cut ties with Chevron*, THE GUARDIAN, Feb. 11, 2021
- Center for Biological Diversity, Fracking and Dangerous Drilling in California: Briefing Book, Californians Against Fracking (Dec. 2017)
- Chilingar, G.V. & B. Endres, Environmental Hazards Posed by the Los Angeles Basin Urban Oilfields: An Historical Perspective of Lessons Learned. 47 ENVIRONMENTAL GEOLOGY (2005)
- Colborn, Theo et al. Natural Gas Operations from a Public Health Perspective, 17 HUMAN AND ECOLOGICAL RISK ASSESSMENT 5 (2011)
- Colorado Oil and Gas Conservation Commission, Conservation Commission: Colorado Weekly and Monthly Oil and Gas Statistics (July 6, 2012)

- Craft, Elena, Do Shale Gas Activities Play a Role in Rising Ozone Levels?, Environmental Defense Fund (2012)
- Doyle, Alan, *Gas Drilling rush hits Suisun Marsh*, SAN FRANCISCO BUSINESS JOURNAL, July 22, 2001
- Executive Office of the President, Executive Order 12,898, 59 Fed. Reg. 7629 (Feb. 16, 1994)
- Fiore, Arlene et al., Linking Ozone Pollution and Climate Change: The Case for Controlling Methane, 29 GEOPHYSICAL RESEARCH LETTERS 19 (2002)
- Frazier, Mya, *Gas companies are abandoning their wells, leaving them to leak methane forever*, BLOOMBERG GREEN (Sept. 17, 2020, 1:05 PM PDT)
- Gonzalez, David J.X., Oil and Gas Production and Spontaneous Preterm Birth in the San Joaquin Valley, CA, 4 ENVIRONMENTAL EPIDEMIOLOGY 4:e099 (2020)
- Harriss, Robert et al., Using Multi-Scale Measurements to Improve Methane Emission Estimates from Oil and Gas Operations in the Barnett Shale Region, Texas, 49 ENVIRONMENTAL SCIENCE & TECHNOLOGY (2015)
- Hill, Elaine L., Shale gas development and infant health: Evidence from Pennsylvania, 61 JOURNAL OF HEALTH ECONOMICS (2018)
- Jordan, Preston & J. William Carey, Steam Blowouts in California Oil and Gas District 4: Comparison of Roles of Initial Defects Versus Aging and Implications for Well Blowouts in Geologic Carbon Storage Projects, 51 INTERNATIONAL JOURNAL OF GREENHOUSE GAS CONTROL (Aug. 2016)
- Koch, Wendy, *Wyoming's Smog Exceeds Los Angeles' Due to Gas Drilling*, USA TODAY, May 9, 2011
- Lebel et al., Methane Emissions from Abandoned Oil and Gas Wells in California, 54 ENVIRONMENTAL SCIENCE & TECHNOLOGY (Oct. 30, 2020)
- McCawley, Michael, Air Contaminants associated with potential respiratory effects from unconventional resource development activities, 36 SEMINARS IN RESPIRATORY AND CRITICAL CARE MEDICINE 3 (2015)
- McKenzie, Lisa M. et al., Childhood Hematologic Cancer and Residential Proximity to Oil and Gas Development, 12 PLoS ONE 2: e0170423 (2017)
- McKenzie, Lisa M. et al., Human health risk assessment of air emissions from development of unconventional natural gas resources, 424 SCIENCE OF THE TOTAL ENVIRONMENT (2012)

Miller, Scot M. et al., Anthropogenic Emissions of Methane in the United States, 110 PNAS 50 (2013)

Olalde, Mark, *Harvard study links fossil fuels to millions of 'premature' deaths*, DESERT SUN, Feb. 9, 2021

Physicians for Social Responsibility and Concerned Health Professionals of NY, Compendium of Scientific, Medical, and Media Findings Demonstrating Risks and Harms of Fracking, Fourth Edition (Nov. 17, 2016)

Rosecrans, Celia et al., Groundwater Quality of Aquifers Overlying the Oxnard Oil Field, Ventura County, California, 771 Science of the Total Environment 144822 (June 2021)

Shonkoff, Seth B.C. et al., Environmental Public Health Dimensions of Shale and Tight Gas Development, 122 ENVIRONMENTAL HEALTH PERSPECTIVES 8 (2014)

Shonkoff, Seth B.C. et al., Human Health and Oil and Gas Development: A Review of the Peer-Reviewed Literature and Assessment of Applicability to the City of Los Angeles, PSE HEALTH ENERGY (2019)

Sierra Club et al., Comments on New Source Performance Standards: Oil and Natural Gas Sector; Review and Proposed Rule for Subpart OOOO (Nov. 30, 2011)

Solano County, General Plan, Ch. 4: Resources (2008)

Solano County, Solano County Component of the Suisun Marsh Local Protection Program, 2018 Amendment Draft (Oct. 2, 2018)

State Water Resources Control Board, Res. No. 68-16, Antidegradation Policy (Statement of Policy with Respect to Maintaining High Quality Waters in California) (1968)

Tran, Kathy V. et al., Residential Proximity to Oil and Gas Development and Birth Outcomes in California: A Retrospective Cohort Study of 2006-2015 Births, 128 ENVIRONMENTAL HEALTH PERSPECTIVES 6 (June 2020)

U.S. Army Corps of Engineers, Permit Elevation, Old Cutler Bay Associates (Sept. 13, 1990)

U.S. Army Corps of Engineers, San Francisco District, Public Notice No. 2011-00065N (Jan. 25, 2021)

U.S. Department of Energy, California Coastal Zone Consistency Certification (2020)

- U.S. Department of the Interior et al., *Executive Summary, in Suisun Marsh Habitat Management, Preservation, and Restoration Plan Final Environmental Impact Statement/Environmental Impact Report, Vol. 1a: Main Report, Executive Summary and Chapters 1-5* (Nov. 2011)
- U.S. Environmental Protection Agency, *Integrated Science Assessment for Ozone and Related Photochemical Oxidants* (2013)
- U.S. Environmental Protection Agency, *Oil and Gas Sector: New Source Performance Standards and National Emission Standards for Hazardous Air Pollutants Reviews; Proposed Rule, 76 Fed. Reg. 52,738* (Aug. 23, 2011)
- U.S. Environmental Protection Agency, *Oil and Gas Sector: Standards of Performance for Crude Oil and Natural Gas Production, Transmission, and Distribution: Background Technical Support Document for Proposed Standards* (July 2011)
- U.S. Fish and Wildlife Service and California Department of Fish and Game, *Kinder Morgan Suisun Marsh Diesel Fuel Oil Spill FINAL Damage Assessment and Restoration Plan/ Environmental Assessment* (Apr. 2010)
- Vohra, Karn et al., *Global mortality from outdoor fine particle pollution generated by 1 fossil fuel combustion: Results from GEOS-Chem* (Feb. 2021)
- Whitworth, Kristina W. et al., *Maternal Residential Proximity to Unconventional Gas Development and Perinatal Outcomes Among a Diverse Urban Population in Texas*, 12 *PLoS ONE* 7:e0180966 (2017)
- WRA, Inc., *San Francisco Bay Conservation and Development Commission Application: Hunter's Point Natural Gas Well Drilling Project, Sunset Exploration, Inc.* (Nov. 2020)