June 3, 2019

FACT SHEET

Proposed National Pollutant Discharge Elimination System ('NPDES") General Permit No. CAG280000 for Offshore Oil and Gas Exploration, Development and Production Operations off Southern California.

SUMMARY: The Regional Administrator, EPA, Region 9, is proposing to reissue an NPDES general permit for discharges from oil and gas exploration, development and production operations in Federal waters offshore of the State of California. This general permit was last issued on December 20, 2013, with an effective date of March 1, 2014 and an expiration date of February 28, 2019. Pursuant to 40 CFR 122.6 the terms of the existing permit have been administratively extended until the issuance of a new permit.

When reissued, the proposed permit will establish effluent limitations, prohibitions, and other conditions on discharges from facilities in the general permit area. These conditions are based on the administrative record. EPA regulations and the permit contain a procedure which allows the owner or operator of a point source discharge to apply for an individual permit instead. A total of 23 facilities are covered under the existing general permit. Of these 23 facilities, 18 are currently active and five are currently being decommissioned. The geographic area of coverage for the 2019 proposed permit would be: a) 34 lease blocks currently considered active by the Bureau of Ocean Energy Management ("BOEM") off Southern California; and b) five additional BOEM leases that recently expired but are the locations of the five platforms that are currently being decommissioned but may still have some future discharges; the 39 total lease blocks would be a reduction from the 49 lease blocks considered active in 2014 and included in the previous general permit.

For the proposed 2019 permit, Region 9 re-evaluated the discharges for consistency with EPA's regulations for ensuring that discharges do not cause unreasonable degradation of the marine environment found at 40 CFR Part 125 Subpart M ("Ocean Discharge Criteria"). As part of this re-evaluation, Region conducted an updated analysis of the reasonable potential of produced water discharges (and discharges of cooling water and fire control system test water) to cause or contribute to exceedances of EPA's most recent recommended marine water quality criteria developed under section 304(a) of the Clean Water Act ("CWA"). Monitoring data collected during the term of the 2014 permit were used in the updated analysis. The effluent limits and monitoring requirements in the proposed 2019 permit were revised from the 2014 permit based on this re-evaluation. The proposed 2019 permit also continues whole effluent toxicity ("WET") requirements for produced water based on EPA's 2010 Test of Significant Toxicity. A new study requirement is also proposed to gather additional information on discharges of well stimulation treatment fluids. Otherwise, the proposed requirements of the 2019 permit are similar in most respects to the 2014 permit.

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Dates: Comments on the proposed general permit must be received or postmarked no later than , 2019.

ADDRESSES: Public comments on the draft permit may be submitted by U.S. Mail to: Environmental Protection Agency, Region 9, Attn: Eugene Bromley, NPDES Permits Section (WTR-2-3), 75 Hawthorne Street, San Francisco, California 94105-3901, or by email to: [HYPERLINK "mailto:bromley.eugene@epa.gov"].

FOR FURTHER INFORMATION CONTACT: Eugene Bromley, EPA Region 9 at the address listed above or telephone (415) 972-3510. Copies of the proposed general permit and fact sheet will be provided upon request, and are also available on Region 9's website at https://www.epa.gov/npdes-permits/npdes-permits-california-excluding-tribal-permits

ADMINISTRATIVE RECORD: The proposed general permit, fact sheet and other related documents in the administrative record are on file and may be inspected any time between 8:30 a.m. and 4:00 p.m., Monday through Friday, excluding legal holidays, at the following address:

U.S. EPA, Region 9
NPDES Permits Section (WTR-2-3)
75 Hawthorne Street
San Francisco, CA 94105-3901

SUPPLEMENTARY INFORMATION

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I. LEGAL BASIS

Section 301(a) of the Clean Water Act ("CWA" or "the Act"), 33 USC 1311(a), provides that the discharge of pollutants is unlawful except in accordance with the terms of a National Pollutant Discharge Elimination System ("NPDES") permit. CWA Section 402, 33 USC 1342, authorizes EPA to issue NPDES permits allowing discharges on condition they will meet certain requirements, including CWA Sections 301, 304, 401, and 403, 33 USC 1311, 1314, 1341, 1343. These statutory provisions require that NPDES permits include effluent limitations requiring that authorized discharges (1) meet standards reflecting levels of technological capability, (2) comply with EPA-approved state water quality standards, (3) comply with other state requirements adopted under authority retained by states under CWA Section 510, 33 USC 1370 and (4) cause no unreasonable degradation to the territorial seas, waters of the contiguous zone or the oceans, consistent with CWA ocean discharge criteria. .

Two types of technology-based effluent limitations are included in the proposed permit. With regard to conventional pollutants, i.e., pH, biochemical oxygen demand ("BOD"), oil and grease, total suspended solids ("TSS") and fecal coliform, CWA Section 301(b)(2)(E) requires effluent limitations based on "best conventional pollution control technology" ("BCT"). With regard to nonconventional and toxic pollutants, CWA Sections 301(b)(2)(A), (C), and (D) require effluent limitations based on "best available pollution control technology economically achievable" ("BAT"). Final effluent guidelines specifying BCT and BAT for the Offshore Subcategory of the Oil and Gas Extraction Point Source Category (40 CFR 435, Subpart A) were issued January 15, 1993 and were published at 58 FR 12454 on March 4, 1993. CWA Section 301 requires compliance with BCT and BAT no later than March 31, 1989, 33 USC 1311(2)(C).

II. GENERAL PERMITS AND PERMIT COVERAGE

A. General Permit. The Regional Administrator has determined that oil and gas facilities operating in the areas described in the proposed general NPDES permit are more appropriately and effectively controlled by a general permit than by individual permits. This decision is based on 40 CFR 122.28, and 40 CFR 125 (Subpart M) and EPA's previous permit decisions on the Pacific Outer Continental Shelf ("OCS"), offshore California.

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B. Request for an Individual Permit. Any operator authorized to discharge under a general permit may request to be excluded from coverage under the general permit by applying for an individual permit as provided by 40 CFR 122.28(b)(3). The operator shall submit an application together with the reasons supporting the request to the Director, Water Division, EPA, Region 9 ("Director").

C. Requesting Coverage Under This Proposed General Permit. Procedures for requesting coverage for a general permit are provided by NPDES regulations at 40 CFR 122.28. In accordance with these regulations, all dischargers requesting coverage under the permit shall submit a Notice of Intent ("NOI"). Information to be provided includes the legal name and address of the owner or operator, the facility name and location, type of facility and discharges, lease block, previous permits, and the receiving water. All NOIs shall be signed in accordance with 40 CFR 122.22.

D. Requiring an Individual Permit. The Director may require any person authorized by this permit to apply for and/or obtain an individual NPDES permit. Any interested person may petition the Director to take action under this paragraph. Where the Director requires a discharger authorized to discharge under this permit to apply for an individual NPDES permit, the Director shall notify the discharger in writing that an individual permit application is required. Coverage under this general permit shall automatically terminate on the effective date of the issuance or denial of the individual permit.

E. Modification, Revocation, and Termination. Procedures for modification, revocation, termination, and processing of NPDES permits are provided by 40 CFR 122.62-122.64.

F. Deadlines for NOI Submittal. For the production platforms in existence in the permit area as of the effective date of this proposed permit, NOIs shall be submitted no later than 30 days after the effective date of the permit. For new mobile exploratory drilling operations, NOIs shall be submitted not later than 30 days prior to commencement of discharges.

G. Effective Date of the Proposed Permit. To ensure smooth transition and allow current operators time to apply and prepare for new requirements, the effective date of this permit is proposed as the first day of the month that begins at least 45 days after the California Coastal Commission ("CCC") concurs with the certification provided by EPA that the discharges authorized by this permit are consistent with the approved California Coastal Zone Management Program ("CZMP").

III. PREVIOUS AND CURRENT PERMITS

Region 9's current general permit authorizing discharges from offshore oil and gas facilities in Federal waters off Southern California was issued on December 20, 2013, with an effective date of March 1, 2014, and an expiration date of February 28, 2019 (79 FR 1643). Pursuant to 40 CFR 122.6 the terms of the existing permit are administratively extended until the

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issuance of a new permit. There are currently 23[1] production platforms located in Southern California Federal waters and all are operating under the 2014 general permit.

The general permit was originally issued in 1982 and reissued in 1983 and 14 production platforms were covered by the general permit. Nine individual permits were also issued between 1978 and 1993 covering nine additional platforms. The general permit was reissued in 2004 at which time the operators of all 23 platforms elected to seek coverage under the general permit. When the 2014 general permit was issued, the operators of all 23 platforms again elected to seek coverage under the general permit.

IV. DESCRIPTION OF FACILITIES, OPERATIONS, AND NATURE OF DISCHARGES

A. Facility Coverage. Like the 2014 general permit, the proposed general permit would apply to existing development and production platforms, and new exploratory drilling operations in the Offshore Subcategory of the Oil and Gas Extraction Point Source Category, located in and discharging to specified lease blocks in Federal waters on the Pacific Outer-Continental Shelf ("OCS"), offshore Southern California. The OCS consists of the seafloor beyond three miles from shore. Facilities located within the California Territorial Seas are covered under separate permits issued by California Regional Water Quality Control Boards.

The 23 existing development and production platforms which would be covered by the proposed permit are: Platforms A, B, C, Edith, Ellen, Elly, Eureka, Gail, Gilda, Gina, Grace, Habitat, Harmony, Harvest, Henry, Heritage, Hermosa, Hillhouse, Hidalgo, Hogan, Hondo, Houchin and Irene. Additional platforms (such as Platforms Heather and Julius which have been proposed in the past) would not be eligible for coverage under the proposed permit unless Region 9 determines that they are not new sources based on information submitted with the NOI. Such additional platforms would be considered new sources if they meet the definition at 40 CFR 435.11(q). However, EPA is not making any new source determinations at this time, since additional platforms are not anticipated to be installed during the term of this permit. Individual permits would be required for platforms not eligible for coverage under the proposed general permit.

The proposed general permit would authorize discharges on 39 lease blocks previously leased by the Bureau of Ocean Energy Management ("BOEM") from Federal Lease Sale Nos. 35, 48, 53, 68, 73, 80 and the 1966 and 1968 Federal Lease Sales.[2] The 2014 general permit had

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[1] It should be noted that five of these platforms are currently undergoing decommissioning; however, these platforms may still have certain discharges subject to permitting such as deck drainage, sanitary wastes or even produced water that would be eligible for coverage under the 2019 general permit until total cessation of discharge activity on the platforms.

[2] Region 9 recognizes that BOEM has recently proposed a new national OCS oil and gas leasing program that could result in additional leases in Federal waters off California; see [HYPERLINK "https://www.boem.gov/National-OCS-Program/"] However, the locations of any such leases are not known at the present time, and the proposed general permit only authorizes discharges on previous leases. Modification of the general permit, or the issuance of

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authorized discharges on the 49 lease blocks considered active as of 2014. Since 2014, several of the 49 lease blocks have expired or been terminated leaving only 34 lease blocks currently active. The proposed 2019 general permit would authorize discharges on 39 lease blocks as follows: a) 34 lease blocks currently considered active by BOEM, and b) five additional lease blocks that recently expired. The five expired lease blocks are included since they are the locations of five platforms (Grace, Gail, Hidalgo, Hermosa, and Harvest) that are currently being decommissioned but may still have some discharges during the decommissioning process.

Since the 39 lease blocks are all among the 49 lease blocks which were covered by the 2014 general permit, the proposed general permit would authorize discharges in the same general area as the 2014 permit, but the total area covered would be reduced by approximately 20% given the smaller number of active lease blocks in 2019. Appendix B provides a map showing the locations of the active lease blocks and the platform locations.

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an alternate general or individual permits would be necessary to authorize discharges on any new leases.

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B. Types of Operations. "Exploratory" operations involve drilling to determine the nature of potential hydrocarbon reserves. "Development" operations involve the drilling and completion of production wells. Development operations may occur prior to, or simultaneously with, "production" operations, which involve the active recovery of hydrocarbons from producing formations. These operations are described in more detail in EPA's Development Document for Effluent Limitations Guidelines and New Source Performance Standards for the Offshore Subcategory of the Oil and Gas Extraction Point Source Category (EPA 821-R-93-003, January 1993) ("Development Document").

New mobile exploratory drilling operations are not considered "new sources" under the NPDES permit program (40 CFR 122.2) with further explanation at 58 FR 12457, March 4, 1993; however, they are considered "new dischargers" when they operate in areas of biological concern. Areas of biological concern are determined by considering the ten factors in the Ocean Discharge Criteria regulations (40 CFR 125 Subpart M).

EPA would also like to clarify that for existing production platforms, the proposed permit would authorize discharges from exploratory wells drilled from the platform as well as production wells, provided the maximum discharge limits established for each platform are not exceeded. In some circumstances, it may be possible to drill an exploratory well from an existing platform rather than bringing in an exploratory drilling vessel. A separate NOI would not be required for such an exploratory well. EPA believes this approach is appropriate since the processes and discharges resulting from an exploratory well are basically the same as for a production well.

The question has also been raised as to whether additional production wells from existing platforms would ever be considered new sources. Industry commenters have pointed out that with advances in drilling technology, it is possible to drill greater and greater distances from existing platforms. In response, the preamble to the final effluent limitations guidelines and new source performance standards (58 FR 12457) clarifies that such wells would not be considered new sources. This is because for an existing platform, significant site preparation work for the platform as defined at 40 CFR 435.11(w)(1)(ii) would also have occurred prior to promulgation of the guidelines, which is the general cutoff date for establishing new sources. All subsequent development and production activities from such platforms would not be considered new sources.

Lastly, it should be noted that for some platforms such as Platform Harmony, discharges such as produced water are piped to onshore facilities (Las Flores Canyon for Platform Harmony) for treatment and then returned to the platform for discharge. Part I.A of the permit clarifies that land-based facilities operating in support of offshore platforms are part of the Offshore Subcategory since the location of the platform itself determines the Subcategory of the platform..

C. Types of Discharges Authorized. The proposed general permit would authorize the same discharges as the 2014 general permit (subject to the terms and conditions of the permit) in all areas of coverage. These discharges are: drilling fluids and drill cuttings; produced water; well

treatment, completion and workover fluids; deck drainage; domestic and sanitary waste; blowout preventer fluid; desalination unit discharge; fire control system test water; non-contact cooling water; ballast and storage displacement water; bilge water; boiler blowdown; test fluids; diatomaceous earth filter media; bulk transfer material overflow; uncontaminated freshwater; water flooding discharges; laboratory wastes; excess cement slurry; hydrotest water; hydrogen sulfide gas processing waste water; and pipeline preservation water. Definitions and descriptions of these discharges are provided below and in Part V of the proposed permit. Operators of existing facilities are encouraged to consider whether the above discharge categories will cover all discharges at their facilities. If additional categories are necessary, notification should be given to EPA during the public comment period.

EPA considers it appropriate to include discharges from exploratory operations with development and production discharges in this permit because, although some development and production discharges do not result from exploratory operations, all exploratory discharges are a subset of those occurring in development and production.

Concern has been previously expressed that the precise locations of future exploratory drilling operations are not known at the present time, and the terms of the proposed permit may be inadequate in some situations. As noted above in Section II.D, EPA will require an individual NPDES permit when the terms of the general permit are inappropriate. The procedures for initiating exploratory operations include other opportunities for public involvement and comment. Operators who wish to initiate exploratory operations must submit Exploration Plans to BOEM for approval, in accordance with 30 CFR 250, Subpart B. These Plans are required to cover all aspects of the exploration process. Once a plan is accepted for review, BOEM sends the exploration plan to the Governor and the Coastal Zone Management Act ("CZMA") agency (which is the California Coastal Commission ("CCC")) of the affected state for comment. BOEM considers comments received as part of the exploration plan's technical and environmental review and approval process. Similarly, the CCC considers comments received during the public review/comment period associated with its consistency review of the exploration plan.

During these two review processes (BOEM and CCC), issues may be identified that will require analysis of the appropriate NPDES permitting mechanism and requirements. If all approvals are granted, then the operator will submit an NOI to EPA, requesting permit coverage. BOEM and CCC will provide direction to EPA regarding any special permit conditions necessary to protect coastal and marine resources and public health. During the review process, site-specific concerns such as impacts to hard bottom habitat and/or to other sensitive areas such as the Channel Islands Marine Sanctuary will be evaluated.

The last exploratory well drilled in the Southern California OCS occurred in 1989, and it is unclear whether any such drilling would occur during the term of the proposed permit.

D. Nature of Discharges. The following discharges would be authorized by the proposed permit. Not every facility will have each discharge and some of the discharges may be combined at one disposal pipe. The proposed permit contains provisions requiring the more stringent

monitoring and effluent limitations for the combined wastestreams. The most common combinations are some of the smaller discharges such as deck drainage routed through the oil and water separator and discharged along with the produced water.

Discharge 001 - Drilling Fluids and Cuttings. "Drilling fluid" means the circulating fluid (mud) used in the rotary drilling of wells to clean and condition the hole and to counterbalance formation pressure. A water-based drilling fluid is the conventional drilling mud in which water is the continuous phase and the suspended medium for solids, whether or not oil is present. An oil-based drilling fluid has diesel oil, mineral oil, or some other oil as its continuous phase with water as the dispersed phase.

"Drill cuttings" refers to the particles generated by drilling into subsurface geologic formations and carried to the surface with the drilling fluid.

Discharge 002 - Produced Water. "Produced water" refers to the water (brine) brought up from the hydrocarbon-bearing strata during the extraction of oil and gas, and can include formation water, injection water, and any chemicals added downhole or during the oil/water separation process.

Discharge 003 - Well Treatment, Completion, and Workover Fluids. "Well treatment" is a fluid used to restore or improve productivity by chemically or physically altering hydrocarbon-bearing strata after a well has been drilled. "Well completion" fluids are salt solutions, weighted brines, polymers, and various additives used to prevent damage to the well bore during operations which prepare the drilled well for hydrocarbon production. "Workover fluids" means salt solutions, weighted brines, polymers, or other specialty additives used in a producing well to allow safe repair and maintenance or abandonment procedures.

Discharge 004 - Deck Drainage. "Deck drainage" refers to any waste resulting from deck washing spillage, rain water and runoff from gutters and drains including drip pans and work areas within the facilities subject to this subpart.

Discharge 005 - Domestic and Sanitary Wastes. "Domestic waste" refers to materials discharged from sinks, showers, laundries, safety showers, eyewash stations, and galleys located within facilities subject to this subpart. "Sanitary waste" refers to human body waste discharged from toilets and urinals located within facilities subject to this subpart.

Discharge 006 - Blowout Preventer ("BOP") Fluid. These are fluids used to actuate the hydraulic equipment on blowout preventers.

Discharge 007 - Desalination Unit Wastes. This is wastewater associated with the process of creating fresh water from saltwater.

Discharge 008 - Fire Control System Test Water. This is seawater which is released during the training of personnel in fire protection and the testing and maintenance of fire

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protection equipment. The seawater may be treated with chlorine or other biocide to control fouling of the piping.

Discharge 009 - Non-contact Cooling Water. This is water which circulates across crude oil or produced water tanks, power generators or other machinery for the purpose of cooling. As implied by the name, this water does not come in contact with product, produced water or the machinery it cools, although it may be treated with biocide to prevent fouling in heat exchangers.

Discharge 010 - Ballast and Storage Displacement Water. This is seawater added or removed to maintain proper draft for the purpose of drilling vessel stabilization.

Discharge 011 - Bilge Water. This is seawater which collects in the lower internal parts of a drilling vessel's hull and may be contaminated with oil and grease or rust. Bilge water is directed to an oil/water separator before discharge, which occurs intermittently.

Discharge 012 - Boiler Blowdown. This is the discharge of circulation water and minerals from boilers necessary to minimize solids build-up in the boilers. This is another intermittent discharge.

Discharge 013 - Test Fluids. "Test fluids" are discharges that would occur if hydrocarbons are located during exploratory drilling and tested for formation pressure and content.

Discharge 014 - Diatomaceous Earth Filter Media. Diatomaceous earth is used on some production platforms to filter seawater which is subsequently used to make completion fluid. The completion fluid itself may also be filtered to remove suspended contaminants picked up in the well. Discharge 014 may include diatomaceous earth, contaminants removed from seawater, other materials removed from completion fluids, and filter backwash water.

Discharge 015 - Bulk Transfer Material Overflow. This discharge refers to bulk materials such as barite or cement which may be discharged during transfer operations from supply ships to the offshore facilities. Often this takes the form of excess "dust," composed of small particles of the bulk material, being blown through the loading system into the sea.

Discharge 016 - Uncontaminated Freshwater. Uncontaminated freshwater discharges come from wastes such as air conditioning condensate or potable water during transfer or washing operations.

Discharge 017 - Waterflooding Discharges. These discharges are associated with the treatment of seawater prior to its injection into a hydrocarbon-bearing formation to improve the flow of hydrocarbons from production wells. Seawater is taken aboard and treated to remove solids and dissolved oxygen; additional treatment may include flocculants, scale inhibitors, oxygen scavengers, and biocides. This wastestream also includes strainer and filter backwash water and excess treated water not injected.

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Discharge 018 - Laboratory Wastes. This discharge includes small volumes of discharges associated with laboratory testing occurring on the offshore facilities. Given the small volume of the waste stream, it is not expected to pose significant environmental risks. The discharge may include freon, but because freon is highly volatile, it does not remain in aqueous state for long.

Discharge 019 - Excess Cement Slurry. This wastestream is excess mixed cement, including additives and wastes from equipment washdown after a cementing operation.

Discharge 020 - Drilling Muds, Cuttings and Cement at the Seafloor. These wastes result from marine riser disconnect and well abandonment and plugging and riserless drilling during, for example, the setting of new well conductors. Compared to discharge of fluids and cuttings (Discharge 001), these volumes are small.

Discharge 021 - Hydrotest Water. This is water used in the testing of the structural integrity of piping and other components on an offshore platform. This discharge may include chemicals such as corrosion inhibitors, oxygen scavengers or bactericides as necessary to protect the pipelines and other platform components.

Discharge 022 - H2S Gas Processing Wastewater. This is wastewater generated from a treatment process used by some platforms for the removal of sulfur from oil and gas.

Discharge 023 – Pipeline Preservation Water. This is water that is placed in a pipeline to maintain pipeline integrity during an extended pipeline shut-in. The need for such a discharge recently arose due to the 2015 rupture of the onshore pipeline that had been used to transport crude oil produced offshore and the cessation of production operations at certain offshore platforms such as Harmony and Heritage. This discharge is very similar to hydrotest water (discharge 021) and may also include chemicals such as corrosion inhibitors, oxygen scavengers or bactericides as necessary to protect the pipelines.

EPA has established from extensive data review, as discussed in the Development Document, that drilling fluids and cuttings are the major pollutant sources discharged from exploratory and developmental drilling operations. Produced water and well treatment fluids are the major pollutant sources discharged from production operations.

Part I.A.5 of the proposed permit clarifies that discharges other than those listed above, including pollutants which are not ordinarily present in the discharges, are not authorized by the permit. The types of pollutants which are "ordinarily present" in the discharges were analyzed in EPA's Development Document and guidelines studies for the industry. Pollutants or classes of pollutants which are consistent with those recognized in the Development Document would be authorized by the permit.

In developing the proposed permit conditions, EPA has evaluated the concentrations of these pollutants relative to the levels allowed under Federal regulations. The pollutants and

discharge parameters limited in each waste stream are summarized in Section V.A and discussed in Sections V.B - V.J.

E. Types of Waste Treatment. The type of waste treatment utilized for the major discharges from offshore oil and gas operations is discussed in EPA's Development Document. A summary of the treatment received by the major discharges follows below.

For produced water, a number of alternative treatment processes are available including gas flotation, plate coalescers and gravity separators. Reinjection of produced water is also practiced by a number of platforms. Drilling mud toxicity is largely controlled through product substitution (i.e., the use of low toxicity materials in place of higher toxicity materials). When the toxicity limit or another drilling mud effluent limitation cannot be met, the mud is taken ashore for disposal. Sanitary waste treatment includes physical/chemical and biological treatment. Physical/chemical treatment includes evaporation-incineration, maceration-chlorination, and chemical addition. Biological treatment systems include aerobic digestion or extended aeration processes.

V. SPECIFIC PERMIT CONDITIONS

A. General. The determination of appropriate conditions for each discharge was accomplished through: (1) consideration of technology-based effluent limitations to control conventional pollutants under Best Conventional Pollutant Control Technology ("BCT"); (2) consideration of technology-based effluent limitations to control toxic and nonconventional pollutants under Best Available Treatment Economically Achievable ("BAT"); and (3) an evaluation of the Ocean Discharge Criteria regulations assuming BAT and BCT were in place. Among other requirements, the Ocean Discharge Criteria regulations require a consideration of marine water quality criteria developed pursuant to Section 304(a)(1) of the Act. The technology-based requirements are discussed below in Sections V.B through V.G of this fact sheet. Limitations based on Ocean Discharge Criteria and water quality-based effluent limitations are found in Section V.H below. Best management practice requirements and other discharge limitations and prohibitions are discussed in Section V.I and V.J.

Section 301(b)(2)(A), (C) and (D) of the CWA requires by March 31, 1989, the application of BAT for toxic pollutants (40 CFR 401.15) and nonconventional pollutants, and BCT for conventional pollutants (pH, BOD, oil and grease, total suspended solids, and fecal coliform under 40 CFR 401.16). Since the deadline for compliance with BAT/BCT effluent limitations has passed, the permit must require immediate compliance with appropriate BAT/BCT limitations.

BAT and BCT effluent limitations guidelines were promulgated by EPA on March 4, 1993 (58 FR 12454) for the Offshore Subcategory of the Oil and Gas Extraction Point Source Category. These regulations establish BAT and BCT effluent limitations for drilling muds and cuttings, produced water, produced sand, well treatment, completion and workover fluids, deck

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drainage, and sanitary and domestic wastes. BAT and BCT effluent limitations have been included in the proposed permit for the affected discharges.

Effluent limitations guidelines were not promulgated, however, for discharges 006 through 023 above. In the absence of promulgated effluent limitations guidelines for a particular discharge, permit conditions must be established using Best Professional Judgement ("BPJ") procedures (40 CFR 122.43, 122.44, and 125.3). This proposed permit incorporates BAT and BCT effluent limitations based on BPJ for discharges 006 through 023, as discussed in Section V.G.

Permits for discharges to state waters must ensure compliance with water quality standards and limitations imposed by the State as part of its certification of NPDES permits under Section 401 of the Act. Although today's proposed permit does not authorize discharges into state waters, and thus the California Regional Water Quality Control Boards will not be certifying this permit, potential effects and standards need to be considered. Potential impacts to state waters are considered as part of the coastal zone consistency certification requirements of the Coastal Zone Management Act, discussed below, and part of the CWA Section 403(c) and 40 CFR 125, Subpart M (Ocean Discharge Criteria) analysis. Although CWA Section 401 certification will not be sought from the California Regional Water Quality Control Boards which are charged with water quality activities, EPA will carefully consider any comments from the Regional Water Quality Control Boards.

B. Drilling Fluids and Drill Cuttings (Discharge No. 001)

1. Free oil & oil-based fluids. No free oil is permitted from the discharge of drilling mud and drill cuttings, based on BCT effluent guidelines. The discharge of oil-based drilling fluids is prohibited since oil-based fluids would violate the BCT effluent limitations of no discharge of free oil. Compliance with the free oil limitation will be monitored by weekly use of the Static Sheen Test whenever drilling is occurring (daily when drilling through a hydrocarbon producing zone due to the higher risks of oil contamination) and before bulk discharges.

2. Diesel oil. The discharge of drilling fluids and cuttings which have been contaminated by diesel oil is prohibited by the proposed permit, in accordance with the BAT effluent guidelines. Diesel oil, which is sometimes added to a water-based mud system, is a complex mixture of petroleum hydrocarbons, known to be highly toxic to marine organisms and to contain numerous toxic and nonconventional pollutants. The pollutant "diesel oil" is being used as an "indicator" of the listed toxic pollutants present in diesel oil which are controlled through compliance with the effluent limitation (i.e., no discharge). An "indicator" pollutant is a parameter the presence and control of which correlates well with other pollutants which are intended to be controlled via the indicator pollutant. The technology basis for this limitation is product substitution of less toxic mineral oil for diesel oil. Compliance with this limit must be certified by the operator based on the drilling fluids inventory.

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3. Mercury and cadmium in barite. In accordance with the BAT effluent guidelines, the proposed permit contains limitations of 1 mg/kg mercury and 3 mg/kg cadmium in barite. Barite is a major constituent of drilling fluids. These restrictions are designed to limit the discharge of mercury, cadmium, and other potentially toxic metals which can occur as contaminants in some sources of barite. The justification for the limitation under BAT is product substitution. Operators can substitute "clean" barite, which meets the above limitations, for contaminated barite, which does not meet the limitations.

As a part of the effluent guidelines development, EPA investigated the availability of domestic and foreign supplies of barite to meet the cadmium and mercury limits. EPA considered the potential for the increased demand for clean barite stocks resulting from this rule to cause a rise in the cost of barite. (See the Development Document and also "Economic Impact Analysis of Final Effluent Limitations Guidelines and Standards of Performance for the Offshore Oil and Gas Industry" (EPA 821-R-93-004, January 1993) for a detailed discussion on the availability and economic achievability of using clean barite.) EPA concluded that "there are sufficient supplies of barite capable of meeting the limits of this rule to meet the needs of offshore drilling operations" (58 FR 12480, March 4, 1993).

The proposed permit allows the operator several alternative reporting methods to determine compliance with the cadmium and mercury limitation. The operators may have the barite tested using atomic absorption spectrophotometry or provide certification from the supplier documenting that the stock barite does not exceed concentrations of mercury and cadmium. Compliance with limitations, if tested, shall be reported on the Well Discharge Monitoring Report ("DMR") or certifications attached to the DMR, if provided by the supplier.

It should also be noted that the 1992 individual permits for Exxon's Platforms Harmony and Heritage included a limit of 2 mg/kg for cadmium based on BPJ. To ensure compliance with Section 402(o) of the Act (anti-backsliding), this limit was included in the 2004 and 2014 general permits, and would be retained in the 2019 proposed permit (to again ensure compliance with anti-backsliding requirements). All other dischargers would be subject to the 3 mg/kg limit for cadmium in barite.

4. Toxicity of drilling fluids and cuttings. EPA is proposing a toxicity limit of 30,000 ppm on the Suspended Particulate Phase ("SPP") (a 96-hour LC_{50}) on discharged drilling fluids as a technology-based control on toxicity and toxic and nonconventional pollutants. The numeric effluent limit is based on the BAT effluent guidelines. Compliance with the drilling mud toxicity limit will be monitored when the end-of-well is reached (at least 80% of well footage permitted by the Bureau of Safety and Environmental Enforcement ("BSEE")). In cases where mineral oil pills are used near the end-of-well, the Region will accept the bioassay reports required for pills as the end-of-well report (see permit Part II.A.1). A mineral oil pill is a specially formulated portion of drilling mud system usually used to free stuck pipe.

It is important to note the inverse relationship between the 96-hr LC_{50} value of 30,000 ppm SPP and toxicity. The 30,000 ppm limit is the concentration (of mud in the SPP) at which 50% mortality of the tested organisms (*Mysidopsis bahia*) occurs. As the concentration

where 50% mortality increases, this implies a less toxic drilling mud because less dilution is required to prevent 50% mortality; in other words, toxicity decreases as 96-hr LC_{50} values increase. Thus, the permit limit of 30,000 ppm SPP (96-hr LC_{50}) is actually the minimum LC_{50} value which limits the maximum allowed toxicity for drilling mud discharges.

The proposed permit requires permittees to maintain a mud inventory for each well drilled. Under the existing general permit, EPA has approved numerous specialty additives based on bioassay data and informed offshore operators of these determinations. This regulatory approach (the "clearinghouse" approach) has allowed operators to use these approved additives in drilling operations without conducting additional bioassays.

After review of the various issues regarding the use of the clearinghouse approach, EPA has decided to continue using the clearinghouse on a limited scale for drilling muds and additives. This limited clearinghouse has been in use for previous NPDES permits issued by EPA Region 9 for offshore platforms. The proposed permit requires a demonstration of compliance with the overall toxicity limit for each mud system which is used and discharged. The term "mud system" refers to the major types of drilling muds which are used during the drilling of a single well. For example, drilling would probably commence with a spud mud for the first several hundred feet. Then a seawater gel mud might be used to a depth about 1,000 feet. Subsequently, a lightly treated lignosulfonate mud might be used to a depth of around 5,000 feet. Finally, a freshwater lignosulfonate system might be used for the remainder of the drilling operation to a depth of about 15,000 feet.

Typically, a bulk discharge of 1,000 to 2,000 barrels of mud occurs when the mud system is changed. It is at these times (when these bulk discharges occur) that compliance with the permit's toxicity limit must be demonstrated. The bulk discharges are the highest volume mud discharges and will include all specialty mud components added to each mud system. As such, EPA believes that the bulk discharges are the most appropriate discharges for which to require a demonstration of compliance with the toxicity limit. In the above example, four such demonstrations would be required for the drilling of the well.

Except for the final mud system used at the time maximum well depth is reached, this demonstration may make use of the clearinghouse that EPA Region 9 has already implemented and is discussed further below. However, a bioassay is required for the final mud discharge irrespective of mud composition. This is the time when the maximum mud toxicity is likely to be reached due to the increased need for specialty additives at greater depths. Given the uncertainties of the methods for estimating mud toxicity, EPA requires that at least one actual bioassay per well be completed. Also, the Response to Comments accompanying the final effluent limitations guidelines points out that the NPDES permit program is based on "end-of-pipe" accountability (58 FR 12496, March 4, 1993). Only an actual bioassay can truly demonstrate compliance with the mud toxicity limit. There, a minimum of 1 bioassay is required per well.

As discussed in the Development Document, EPA has determined that there are eight basic formulations of water-based drilling muds in use for offshore drilling operations. These

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muds have been termed "generic drilling muds" and commonly referred to as muds 1 through 8. The lower 95% confidence limit LC_{50} (worst-case bioassay result) for the generic muds, as determined by testing at EPA's Gulf Breeze Laboratory,[3] occurred at 30,000 ppm. Therefore, the toxicity limit represents the most stringent 96-hour LC_{50} which would allow each generic mud to be discharged. Specialty mud additives (such as biocides, lubricants or defoamers) are often added to the basic generic muds to deal with particular drilling problems which may arise. Generic muds including such additives may be discharged as long as the overall mud toxicity does not exceed the permit limit.

One drawback of the clearinghouse approach to mud additive regulation is the possibility that operators might combine several moderately toxic additives (individually approvable) in one mud and thereby exceed the permit's overall toxicity limit. In order to limit the possibility of such occurrences, EPA mud additive clearinghouse provides two levels of approval for specialty additives, general and conditional:

a. Additives where the LC_{50} is greater than 100,000 ppm (SPP) when tested in a reference mud at the maximum usage rate would be listed as acceptable for general use and discharge. The reference mud to be used for these tests is the lightly treated lignosulfonate mud (generic mud #7) which has been the most commonly used reference mud to date.

b. Additives where the LC_{50} is greater than 30,000 ppm and less than 100,000 ppm would be conditionally listed as acceptable, contingent upon the additive's not being used in conjunction with other additives which in combination could result in violation of the permit's overall toxicity limit.

In all instances, regardless of whether an additive is listed as acceptable for general use or is conditionally accepted, the discharger is responsible for demonstrating compliance with the whole mud toxicity limit.

The above regulatory approach to mud additive regulation offers the following advantages: 1) because the LC_{50} of most specialty additives is greater than 100,000 ppm, general listing of acceptability for discharge, following an initial bioassay, could be given for most additives to be discharged, thus providing desirable flexibility for operators, and 2) it is unlikely that violations of the permit's whole mud toxicity limit (minimum of 30,000 ppm) would result from the combination of additives acceptable for general use and discharge. For example, if it is assumed that (a) LC_{50} of the reference mud = 500,000 ppm; (b) mud constituent toxicity is additive according to equation (1) below; and (c) additive usage by weight is small relative to the basic mud constituents, four specialty additives with LC_{50} = 100,000 ppm each used at its maximum concentration (an unlikely scenario) would be necessary to produce a mud with an overall toxicity limit approximating the permit limit of 30,000 ppm. A review of muds and additives typically used offshore Southern California shows that such a combination would be

[3] Duke, Thomas W. and Patrick R. Parrish. 1984. Results of the Research Program Sponsored by the Gulf Breeze Environmental Laboratory, 1976-1984, and their Application to Hazard Assessment, Environmental Research Laboratory, Gulf Breeze, Florida, June 1984.

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very unlikely. Listing and toxicity information for mud additives may be obtained from Region 9.

It should also be noted that the above provisions pertaining to specialty additives would apply only to generic muds #2-#8. The overall mud toxicity limit in the permit is based on the toxicity of mud #1 with no specialty additives included. However, this does not preclude the use of specialty additives in mud #1. Such additive could be included in mud #1 if the additives did not increase the toxicity of the mud (i.e., the toxicity of the additive is lower than the toxicity of the mud which would be replaced), or if the basic components of mud #1 where used at concentrations lower than the maximum allowed concentration to offset the effects of specialty additives.

Estimates of joint toxicity of muds containing conditionally accepted additives may be made using equation (1) from the report entitled "Separate and Joint Toxicity to Rainbow Trout of Substance Used in Drilling Fluids for Oil Exploration" (Sprague and Logan, *Environmental Pollution*, Volume 19, No. 4, August 1979):

$$(1) \quad \frac{10^6}{LC_t} = \frac{C_g}{LCg} + \sum_{i=1}^{N} \frac{C_i}{LC_i}$$

where LC_t is the 96-hour LC_{50} of the generic mud including mud additives in ppm and
C_i is the concentration of the ith additive in ppm
LC_i is the 96-hour LC_{50} of the ith additive in ppm
C_g is the concentration of the generic mud in ppm
LCg is the 96-hour LC_{50} of the generic mud in ppm

5. Synthetic-based drilling fluids ("SBFs"). In response to its performance needs and regulatory requirements, the oil and gas extraction industry has developed SBFs. The new drilling fluids are used in cases, such as deep water or directional drilling, where use of water-based fluids is not practical and traditional oil-based drilling fluids would have been used. EPA promulgated final effluent limitations guidelines for SBFs (66 FR 6850, January 22, 2001). However, given the absence of any significant interest in the use of SBFs in Region 9, neither the 2004 permit nor the 2014 permit authorized discharges associated with the use of SBFs. In view of a continuing lack of interest during the term of the 2014 permit, Region 9 is again not proposing to authorize discharges associated with SBFs in the 2019 permit; any such discharges would need to be authorized under an individual permit issued to a specific platform.

6. Other. In addition to the other monitoring requirements discussed above, the proposed permit requires that the permittee monitor and report the total volume of muds and cuttings discharged as well as the number of days each is discharged. The volumes of muds and cuttings and the number of days discharged shall be monitored and reported separately.

C. Produced Water (Discharge No. 002)

1. Oil and Grease. The proposed general permit would require that oil and grease concentrations in produced water discharges from all facilities not exceed 29 mg/l monthly average and 42 mg/l maximum daily. These oil and grease limits were promulgated as BAT for offshore facilities (40 CFR 435.13) as indicators of toxic and nonconventional pollutants. The proposed 2019 permit would also require weekly monitoring for oil and grease in produced water discharges to demonstrate compliance with the effluent limits (which is the same monitoring frequency as the 2014 general permit).

Prior to the 2004 general permit, the sampling method for oil and grease in the permits of OCS oil and gas facilities off Southern California specified the collection of four samples in a 24-hour period that were analyzed separately and the values averaged. For the 2004 and 2014 general permits, EPA allowed, as an alternative, the use of only one grab sample instead of four; the new proposed 2019 general permit would continue to provide this alternative. Sampling for oil and grease becomes compromised when samples are re-poured into additional containers because the oil and grease sticks to the sides of the containers.

Region 9 does recommend the use of four separately analyzed grab samples as this reduces the likelihood of an individual sample being the sole sample indicating an exceedance of the permit limit. Using four samples allows for an averaging of the potentially high sample. Region 9 believes that the authors of the test method did not intend for the samples to be compromised by re-pouring individual samples into one container (possibly reducing the final concentration of oil and grease), and therefore Region 9 will allow the collection and analysis of one sample, which may more accurately reflect the total concentration of oil and grease in the discharge.

2. Flow Rate. Measurement of the produced water flow rate is required daily. This requirement serves to determine compliance with, or the possible future need for, effluent limitations in the permit. The basis for this requirement is Section 308 of the Act.

3. Test Method for Oil and Grease Analysis. In 1999, EPA finalized a new test method (Method 1664, N-Hexane) for oil and grease analysis, which replaced the Freon Extraction Method (EPA Method Number 413.1) (64 FR 26315). The regulations became effective June 14, 1999. On March 12, 2007 (72 FR 11199), EPA withdrew method 413.1 from its list of approved test methods at 40 CFR 136 (with an effective date of April 11, 2007). Like the 2014 general permit, the proposed 2019 general permit would require the use of method 1664 given the withdrawal in 2007 of method 413.1 from the list of approved test methods.

D. Well Treatment, Completion and Workover Fluids ("WTCWs") (Discharge No. 003)

1. Free oil: In accordance with BCT effluent limitations guidelines, the discharge of free oil would be prohibited in WTCWs discharged in accordance with this proposed permit. The test method for determining compliance with this limit would be the Static Sheen Test (Appendix 1 to 40 CFR Part 435, Subpart A).

2. Oil and grease: Although oil and grease is a conventional pollutant subject to BCT, it is also an indicator of toxic pollutants (and it thus limited under BAT as well). Promulgated (offshore) BAT limitations for oil and grease in WTWC fluids are 29 mg/l monthly average and 42 mg/l daily maximum (58 FR 12506, March 4, 1993). These limits have been included in the proposed permit in accordance with the effluent limitations guidelines. Monitoring for oil and grease is required once per job (which would consist of the short-term use of one of these materials). In addition, monitoring for free oil is required once per discharge using the Static Sheen Test.

3. Discharge Volume: Based on Section 308 of the Act, the proposed permit requires estimated discharge volumes to be reported on a per job basis.

E. Deck Drainage (Discharge No. 004). In accordance with BCT/BAT effluent limitations guidelines for this industry, the proposed permit requires that there be no free oil in discharges of deck drainage. Visual observations of the receiving waters would be required to determine compliance with this limit. In addition, a monthly estimate of the flow rate is required.

The proposed 2019 permit includes a revision from the 2014 permit that provides that visual observations for free oil are not required when a facility is unstaffed. This revision is proposed in recognition that some platforms may become unstaffed during temporary shutdown or de-commissioning and visual observations of discharges during rain events could be burdensome in such circumstances. The recent general permit for offshore oil and gas facilities in the Western Gulf of Mexico (NPDES General Permit No. GMG290000, 82 FR 45845, October 2, 2017) includes such a provision, and Region 9 believes it would be appropriate for the Region 9 permit as well.

Region 9's proposed 2019 permit also includes a requirement that to qualify for the waiver from visual observations during periods when a facility is unstaffed, that care is taken to ensure that industrial materials on a platform that could be a source of pollutants in deck drainage must not be exposed to stormwater. This requirement was derived from EPA's 2015 multi-sector general permit (80 FR 34403, June 16, 2015) for industrial stormwater discharges that also includes a waiver from visual observations for unstaffed facilities but assuming industrial materials are not exposed to stormwater during the period when the facility is unstaffed.

F. Domestic and Sanitary Waste (Discharge No. 005).

1. Floating Solids. In accordance with BCT effluent limitations guidelines, no floating solids would be allowed in the discharges of sanitary wastes for facilities intermittently manned, or for facilities permanently manned by nine or fewer persons. This limit also applies to domestic wastes for all facilities. Prohibition on floating solids is equivalent to the current level of control for sanitary wastes in existing permits. Visual observations of the receiving waters in the vicinity of the discharges must be conducted each day during daylight hours to monitor compliance with this limit.

Any facility using a Marine Sanitation Device ("MSD") that complies with pollution control standards and regulations under Section 312 of the Act is considered to be in compliance with the prohibition of floating solids.

2. Foam. The BAT effluent guidelines for domestic wastes require no discharge of foam. Visual observations of the receiving waters in the vicinity of the discharges must be conducted each day during daylight hours to monitor compliance with this limit.

3. Chlorine. Chlorine is added to the sanitary waste stream to control fecal coliform in the discharge. The proposed permit includes the BCT effluent limitation guideline of at least 1 mg/l Total Residual Chlorine ("TRC") (to be maintained as close as possible to this concentration) for facilities permanently manned by 10 or more persons. Any facility using a MSD that complies with pollution control standards and regulations under Section 312 of the Act is considered to be in compliance with the TRC limitation. Monthly monitoring of this discharge is required to demonstrate compliance with this limit.

4. U.S. Coast Guard Regulations at 33 CFR 151. In accordance with the BCT effluent guidelines, the proposed permit requires that permittees comply with U.S. Coast Guard regulations at 33 CFR 151 with regards to discharges of domestic wastes other than floating solids. This condition is intended primarily to incorporate the U.S. Coast Guard regulations concerning discharges of garbage and plastics.

G. Miscellaneous Discharges (Discharge Nos. 006-023). Discharges 006-023 are miscellaneous discharges which often accompany offshore oil and gas operations and would be authorized and regulated by the proposed permit. These discharges were also authorized in the 2014 permit, and the proposed discharge limitations and monitoring requirements for the 2019 permit are very similar to the requirements of the 2014 permit.

1. BPJ Effluent Limitations. Neither the promulgated Offshore nor the Coastal effluent guidelines address wastestreams 006 through 023 described above in Section IV.D of this fact sheet. EPA's basis for not addressing these wastestreams in either guideline is that they are more appropriately controlled by regionally issued NPDES permits such as the one proposed today. In the absence of promulgated effluent limitations guidelines, permit conditions must be established using BPJ procedures (40 CFR 122.43, 122.44 and 125.3). Effluent limitations developed through BPJ for these discharges are discussed below.

2. Floating Solids. EPA has determined that the BCT effluent guideline of no discharge of floating solids from the discharge of sanitary wastes should apply to discharges 006 through 022 as well. These types of discharges have been subject to this limitation in previous permits and past practices have not resulted in violations of this limitation. No technology performance data available to EPA indicate that a more stringent standard is appropriate at this time. Therefore, EPA is proposing to include this BCT effluent limitation on floating solids in the proposed permit for discharges 006 through 023. Visual observations of the receiving waters in the vicinity of the discharges must be conducted each day during daylight hours to monitor compliance with this limit.

3. Foam. EPA has determined that the BAT effluent guideline of no discharge of foam in domestic wastes should apply to discharges 006 through 023 as well. These types of discharges have been subject to this limitation in previous permits and past practices have not resulted in violations of this limitation. No technology performance data available to EPA indicate that a more stringent standard is appropriate at this time. Therefore, EPA is proposing to include this BAT effluent limitation for foam in the proposed permit for discharges 006 through 022. Visual observations of the receiving waters in the vicinity of the discharges must be conducted each day during daylight hours to monitor compliance with this limit.

4. Flow Monitoring. The proposed permit would also require monitoring of the flow rate for certain miscellaneous discharges including noncontact cooling water, ballast and storage displacement, bilge water, test fluids, excess cement slurry, hydrotest water, and H2S gas processing wastewater.

5. Cooling Water Intake Structure Requirements. Section 316(b) of the CWA requires that the location, design, construction and capacity of cooling water intake structures ("CWIS") reflect the application of the best technology available ("BTA") to minimize adverse environmental impacts.

EPA originally promulgated regulations implementing Section 316(b) in three phases.[4] Regulations for new offshore oil and gas facilities were covered by the Phase III regulations promulgated on June 16, 2006 (71 FR 35006). More recently on August 15, 2014 (79 FR 48300), EPA promulgated revised CWIS regulations updating Phase I and responding to remands related to Phases II and III.

The 2014 regulations declined to establish new categorical requirements for existing offshore oil and gas facilities,[5] noting the practical difficulties of retrofitting these facilities with the additional equipment that may be necessary. However, existing facilities would be subject to case-by-case determinations of BTA. The preamble to the regulations describes the factors to be considered in the case-by-case determinations (79 FR 48350) and include factors such as the cost and practicality of additional controls in comparison to the environmental benefits from the additional controls.

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[4] Additional information is available at: https://www.epa.gov/cooling-water-intakes.

[5] It should be noted that all the facilities proposed to be covered by the 2019 general permit would be considered existing sources, including production platforms and mobile exploratory drilling rigs. "New facilities" as defined at 40 CFR 125.133 are those facilities that commence construction after July 17, 2006 and withdraw more than 2 million gallons per day of water from waters of the U.S., of which at least 25% is used for cooling. The production platforms to be covered by the general permit were all constructed well before 2006. With regards to offshore oil and gas exploratory operations, the definition of "new facility" includes "new dischargers" and for exploratory operations, the definition of "new discharger" at 40 CFR 122.2 includes exploratory operations when they discharge in an area identified in the permit as an area of biological concern. Since Region 9 had not designated any such areas within the 38 lease blocks covered by the proposed general permit, the regulations would not apply.

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The requirements of the 2014 general permit were based on the regulations in effect on the date of permit issuance, i.e., the 2006 regulations. Like the 2014 regulations, the 2006 regulations did not include specific requirements for existing offshore oil and gas facilities; however, the preamble for the 2006 regulations noted that requirements for existing facilities could be developed on a case-by-case basis using BPJ (71 FR 35006). The preamble also noted a potential for adverse environmental impacts from CWIS at offshore oil and gas facilities, especially given the tendency of some species to congregate around the platforms (71 FR 35013). However, little information was available for quantifying the potential impacts (71 FR 35013). Given this uncertainty, the 2014 general permit included a study requirement that applied to all platforms with cooling water discharges; the study required the following:

- description of current CWIS and existing measures to minimize entrainment/ impingement;
- assessment of the environmental impacts from entrainment/impingement given current practices; and
- practicality of additional measures to reduce environmental impacts from entrainment/ impingement.

Study reports could be submitted jointly or individually by permittees and were due within one year of the effective date of the 2014 permit; timely reports were submitted by all permittees.[6] The factors to be considered in accordance with the 2014 regulations are essentially the same as those considered in the reports required by the 2014 general permit. Each of the reports that were submitted concluded that the platforms are already implementing BTA and that additional requirements would not be appropriate. After review of the reports and the factors for determining BTA, Region 9 concurs with the conclusions in the reports and is not proposing any new CWIS requirements for the 2019 permit.

H. Ocean Discharge Criteria. Section 403 of the Act requires that an NPDES permit for a discharge into marine waters located seaward of the inner boundary of the territorial seas be issued in accordance with guidelines for determining the potential degradation of the marine environment. These guidelines, referred to as the Ocean Discharge Criteria (40 CFR Part 125, Subpart M) and Section 403 of the Act are intended to "prevent unreasonable degradation of the

[6] Tetra Tech, Inc. 2015, Final Report, Minimizing Adverse Environmental Impacts from Cooling Water Intake Structures at Platform Intakes, Prepared for Exxon/Mobil Production Company, February 17, 2015; Tetra Tech, Inc. 2015, Final Report, Minimizing Adverse Environmental Impacts from Cooling Water Intake Structures at Platform Intakes, Prepared for Beta Offshore, February 17, 2015; Tetra Tech, Inc. 2015, Final Report, Minimizing Adverse Environmental Impacts from Cooling Water Intake Structures at Platform Intakes, Prepared for DCOR, February 17, 2015; Tetra Tech, Inc. 2015, Final Report, Minimizing Adverse Environmental Impacts from Cooling Water Intake Structures at Platform Intakes, Prepared for Freeport McMoran Oil and Gas, February 17, 2015; Tetra Tech, Inc. 2015, Final Report, Minimizing Adverse Environmental Impacts from Cooling Water Intake Structures at Platform Intakes, Prepared for Venoco, Inc., February 17, 2015;

marine environment and to authorize imposition of effluent limitations, including a prohibition of discharge, if necessary, to ensure this goal" (49 FR 65942, October 3, 1980).

If EPA determines that the discharge will cause unreasonable degradation, an NPDES permit will not be issued. If a determination of unreasonable degradation cannot be made because of a lack of sufficient information, EPA must then determine whether a discharge will cause irreparable harm to the marine environment and whether there are reasonable alternatives to on-site disposal. To assess the probability of irreparable harm, EPA is required to make a determination that the discharger, operating under appropriate permit conditions, will not cause permanent and significant harm to the environment. If data gathered through monitoring indicate that continued discharge may cause unreasonable degradation, the discharge must be halted or additional permit limitations established.

The determination of unreasonable degradation must be based on the following ten factors (40 CFR 125.122(a)): 1) quantities, composition, and potential for bioaccumulation or persistence of the pollutants discharged; 2) potential transport of such pollutants; 3) the composition and vulnerability of biological communities exposed to such pollutants; 4) the importance of the receiving water area to the surrounding biological community; 5) the existence of special aquatic sites; 6) potential impacts on human health; 7) impacts on recreational and commercial fishing; 8) applicable requirements of approved Coastal Zone Management Plans; 9) marine water quality criteria developed pursuant to Section 304(a)(1) of the CWA; and 10) other relevant factors.

To support the issuance of the 2004 general permit, Region 9 prepared an Ocean Discharge Criteria Evaluation ("ODCE")[7] which evaluated the proposed discharges in relation to the requirements of the Ocean Discharge Criteria regulations. In addition, Region 9 reviewed numerous other studies related to the potential environmental effects of the discharges that were available at the time. Discharges from offshore platforms had already been studied extensively at the time of the issuance of the 2004 permit and considerable information was available. Based on the information in the ODCE, the various studies that were reviewed and other information in the administrative record, Region 9 concluded that the discharges authorized and regulated by the permit would not cause unreasonable degradation of the marine environment.

For the 2014 general permit, Region 9 reconsidered the above conclusion through a review of new studies and other information that had become available after the 2004 permit issuance. The environmental studies program conducted by the Pacific OCS Office of BOEM was particularly relevant since the studies are designed to address offshore oil and gas issues for the Southern California OCS specifically. These studies can be found on BOEM's website at: [HYPERLINK "https://www.boem.gov/Pacific-Completed-Studies"], and several studies[8] included useful information for the 2014 permit. Region 9 also reviewed several technical

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[7] Science Applications International Corporation. 2000. Ocean Discharge Criteria Evaluation South and Central California for NPDES Permit No. CAG28000, Submitted to U.S. EPA Region 9, September 29, 2000.

[8] The studies were: Reproductive Ecology and Body Burden of Resident Fish Prior to Decommissioning, OCS Study MMS 2009-019, October 2009; Trophic Links and Condition of a Temperate Reef Fish: Comparisons among

reports from other BOEM offices (Gulf of Mexico and Alaska) for information that could have a bearing in the effects of the California offshore discharges.[9] Finally, after reviewing other available information in the administrative record for the 2014 permit concerning the potential effects of the discharges, Region 9 concluded (as in the case of the 2004 permit) that the discharges authorized by the 2014 permit would not cause unreasonable degradation of the marine environment.

For the proposed 2019 general permit, Region 9 again reconsidered the above conclusion by reviewing new studies and other information that has become available subsequent to the issuance of the 2014 permit. These studies and certain permit revisions that are proposed for the 2019 permit based on the new information are discussed below. After review of the new information, Region 9 again concludes that the discharges authorized and regulated by the proposed 2019 permit would not cause unreasonable degradation of the marine environment.

The Pacific OCS Office of BOEM has published several new reports since the 2014 permit was issued that shed some new light on the potential effects of the discharges. Since some of the platforms on the Pacific OCS are nearing the end of their useful lives, the potential effects of platform removal (and removal of the habitat a platform provides) has been a common study topic. A 2014 study[10] examined the biological productivity associated with California offshore platforms – productivity that could be lost if platforms were removed. The study found that the platform productivity was the highest that had been observed anywhere worldwide. As such, concerns about adverse effects from the discharges were not apparent from this study. Another 2014 study[11] examined the potential release of contaminants (such as PAHs) from Pacific OCS shell mounds. The study found that the concentrations of PAHs released from the shell mounds were well below concentrations of concern. PAHs are among the pollutants authorized and regulated by the permit, but this study did not identify any apparent need for additional limits on the discharges. A 2015 study[12] examined fish populations at the platforms off Summerland, California. Although the goal of the study was more to assess the value of the habitat provided by these particular platforms (and compare with other platforms) rather than identifying environmental effects of the discharges, the absence of any reported adverse effects in the report is nevertheless of interest. Another 2015 report[13] provided an update for an ongoing monitoring program to, among other objectives, assess whether any changes in rocky shoreline communities might be associated with offshore oil and gas production; no adverse effects from the discharges authorized by the general permit were reported in the 2015 update.

Offshore Oil Platforms and Natural Reef Habitats", OCS Study MMS 2005-005, January 2007; Updated Summary of Knowledge: Selected Areas of the Pacific Coast Final Report, OCS Study BOEMRE 2010-014. July 2010.

[9] The reports considered can be found in the administrative record for the 2014 permit.

[10] Bureau of Ocean Energy Management. 2014. Biological Productivity of Fish Associated with Offshore Oil and Gas Structures on the Pacific OCS, OCS Study BOEM 2014-030, April 2014.

[11] BOEM. 2014. Determining the Potential Release of Contaminants into the Marine Environment from Pacific OCS Shell Mounds, OCS Study BOEM 2013-208, March 24, 2014.

[12] BOEM. 2015. Analysis of Fish Populations at Platforms off Summerland, California, OCS Study BOEM 2015-019, September 2015.

[13] BOEM. 2015. Pacific Rocky Intertidal Monitoring: Trends and Synthesis Update – 2015, OCS Study BOEM 2015-011, September 30, 2015.

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In late 2016, BOEM also published a new Programmatic Environmental Impact Statement ("PEIS")[14] in support of its national offshore leasing program. The PEIS includes an updated assessment of the potential effects of the discharges from offshore oil and gas facilities. Region 9 found no new information in the PEIS that would change the above conclusion about the effects of the discharges.

Region 9 also considered new information that has been identified in conjunction with the recent reissuance of the general permits in the western and eastern portions of the Gulf of Mexico; see 82 FR 45845 (October 2, 2017) for the general permit for the western Gulf (GMG290000) and 82 FR 61293 (December 27, 2017) for the general permit for the eastern Gulf (GEG460000). The Center for Biological Diversity ("CBD") provided comments on the draft general permits in letters to EPA Region 6[15] and EPA Region 4[16] in which CBD cited a number of new studies related primarily to the potential environmental effects of discharges of well stimulation treatment fluids. These and other recent studies related to these discharges are discussed in more detail below.

As in the 2014 general permit, Region 9 has included a variety of technology-based and Section 403-based requirements in the proposed 2019 general permit to ensure compliance with the Ocean Discharge Criteria regulations. Many of these requirements are carried forward from the 2014 permit and include: discharge restrictions (volume and nature of discharge) on drilling fluids, cuttings and produced water; requirement for the use of barite with low trace metal contaminant levels for drilling fluids; limitations on the discharge of oil-based muds and diesel oil as a mud additive; an oil and grease limitation for produced water; a "no free oil" limitation on numerous discharges from the offshore facilities; the Static Sheen Test for detection of free oil before discharges occur; and limitations on solids and chlorine for sanitary waste discharges. New revised requirements for the proposed 2019 permit are discussed below:

1. Requirements for Well Treatment, Completion and Workover Fluids Discharges.

The 2014 general permit included a new condition (Part II.C.3) that required permittees to maintain an inventory of the quantities and application rates of chemicals used to formulate well treatment, completion and workover fluids (discharge 003). If these fluids were discharged, the chemical formulation of the discharges (and the discharge volume) would be submitted to Region 9 with the quarterly discharge monitoring reports. The new requirement was in response to concerns[17] that were raised in 2013 regarding the potential risks to the marine environment

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[14] BOEM. 2016. Outer Continental Shelf Oil and Gas Leasing Program: 2017-2022, Final Programmatic Environmental Impact Statement, Volumes I and II OCS EIS/EA BOEM 2016-060, November 2016.

[15] Center for Biological Diversity. 2017. Comments on Draft NPDES Permit for Offshore Oil and Gas Operations in the Western Portion of the Outer Continental Shelf of the Gulf of Mexico, General Permit No. GMG290000, July 10, 2017.

[16] Center for Biological Diversity. 2016. Comments on Draft NPDES Permit for Offshore Oil and Gas Operations in the Eastern Gulf of Mexico, General Permit No. GEG460000, September 17, 2016.

[17] One example of such concerns is a letter dated August 6, 2013 from a group of California legislators to EPA, BSEE and BOEM. Another example is a letter dated August 13, 2013 from the Center for Biological Diversity,

from these discharges (especially well treatment fluids) and the adequacy of the existing information and permit requirements.

Concerns continued to be expressed about these discharges after issuance of the 2014 general permit. In February 2014, CBD submitted a petition[18] to EPA with the following requests:

a. Revoke or modify the Region 9 general permit to prohibit discharges of wastewater mixed with well stimulation fluids,[19]

b. Revise EPA's effluent limitations guidelines to prohibit discharges of well stimulation fluids, including those commingled with produced water, and

c. Promulgate revisions to Ocean Discharge Criteria regulations (40 CFR Part 125, Subpart M) to establish designated uses and water quality criteria.

EPA denied the petition[20] in April 2015, noting that applicable regulations and available information did not justify EPA taking the requested actions at that time. We also noted that additional information about the discharges would be collected during the term of the general permit and that we would re-evaluate the discharges, and applicable permit conditions, when the general permit was reissued.

In May 2014, the California Coastal Commission ("CCC") also expressed concerns about the discharges in a letter[21] to Region 9; in its letter the CCC requested that Region 9 submit a supplemental determination of consistency with the California Coastal Management Program, or otherwise modify the general permit to provide for individual CCC review of chemicals proposed for discharge and include additional effluent limits and monitoring requirements for these chemicals. In May 2015, Region 9 declined[22] to take the steps requested by the CCC, but again noted that the discharges would be re-evaluated when the general permit was reissued.

Region 9 is now proposing to reissue the general permit and, as indicated above, has reconsidered the potential environmental effects of the discharges on the marine environment, along with appropriate effluent limitations and monitoring requirements for the discharges. The following two studies were key in the development by Region 9 of the requirements for the proposed 2019 permit. In May 2016, BSEE and BOEM released a final Programmatic Environmental Assessment ("PEA")[23] of the use of well stimulation treatments on the Pacific

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Surfrider Foundation and the Environmental Defense Center to EPA.

[18] Center for Biological Diversity. 2014. Petition for Rulemaking on Ocean Discharge Criteria and to Modify Offshore Oil and Gas General Permit CAG280000, February 26, 2014.

[19] The petition did not define the term "well stimulation fluids," but it appeared to refer to fluids similar to those covered by the definition of "well stimulation treatment fluids" in California Senate Bill No. 4 passed in 2013. These fluids would be a subset of those included in discharge 003 and would most closely resemble well treatment fluids as defined in the NPDES permit.

[20] Letter from Region 9 to Miyoko Sakashita of the Center for Biological Diversity dated April 28, 2015.

[21] Letter to Region 9 from Alison Dettmer, Deputy Director, CCC, dated May 9, 2014.

[22] Letter from Region 9 to Alison Dettmer, Deputy Director, CCC dated April 28, 2015.

[23] BSEE and BOEM. 2016. Programmatic Environmental Assessment of the Use of Well Stimulation Treatments

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OCS. The PEA provides an in-depth assessment of the potential effects of discharges of chemicals used in these treatments on the marine environment. Notably, the PEA concludes that the potential effects of the discharges are still not fully understood, at least within the mixing zone, in part due to the lack of toxicity data for some constituents.[24] In July 2015, the California Council on Science and Technology ("CCST") released a comprehensive environmental assessment[25] of well stimulation activities in the oil and gas industry in California (onshore and offshore). The overall conclusions of the CCST study are similar to those in the PEA that data gaps exist concerning the discharges from offshore oil and gas facilities in California and the potential effects of the discharges on the marine environment.

Region 9 is not aware of any more recent studies or data that address the information gaps noted in the reports discussed above. To address the gaps, Region 9 is proposing a study requirement for the 2019 permit for all permittees that anticipate discharges of well stimulation treatment fluids commingled with produced water.[26] The study requirement would be limited to well stimulation treatment fluids as defined in California Senate Bill No. 4 ("SB4") originally passed in 2013 which is also the definition used for the analysis in the PEA. Region 9 believes this requirement will focus attention on the discharges with the greatest potential for environmental impacts.

Under the proposed permit, individual (or joint) workplans would be due within 12 months of the permit effective date to gather further characterization data for representative discharges consisting of produced water commingled with well stimulation treatment fluids following a well stimulation operation.[27] Although the 2014 general permit required whole effluent toxicity ("WET") tests for produced water discharges, the timing of the tests would not necessarily coincide with a well stimulation operation at a platform. This was a major concern noted by the CCC in its comments on the draft PEA[28] and in the CCST study. Under the proposed permit, workplans would include WET tests and chemical analysis of commingled discharges immediately following a well stimulation operation during the period when flowback of chemicals used for well stimulation would be expected.[29] WET tests and chemical analysis

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on the Pacific Outer Continental Shelf, Prepared by Argonne National Laboratory, May 2016.

[24] PEA at page 4-32

[25] CCST. 2015. An Independent Scientific Assessment of Well Stimulation in California, July 2015. The study was in response to the requirements of California Senate Bill No. 4 passed in 2013.

[26] The PEA points out that well stimulation fluids used offshore California are normally commingled with produced water and then discharged with produced water. PEA, page ES-9.

[27] Region 9 notes that the general permits recently issued by EPA Regions 6 and 4 for the western and eastern portions of the Gulf of Mexico also require further study of these discharges and would address well treatment, completion and workover fluids; see 82 FR 45845 (October 2, 2017) for the general permit for the western Gulf (GMG290000) and 82 FR 61293 (December 27, 2017) for the general permit for the eastern Gulf (GEG460000).

[28] Letter dated March 23, 2016 from the CCC to BOEM and BSEE.

[29] Region 9 recognizes industry concerns in trying to accurately sample the flowback of well stimulation fluids in a commingled discharge of produced water and well stimulation fluids. At a meeting with Region 9 staff in October 2018, industry representatives indicated that in the Gulf of Mexico, the focus is shifting to tests of well treatment fluids that are discharged separately from produced water. Indeed, the industry study plan for well treatment, completion and workover fluids in the Gulf of Mexico was recently submitted, "Joint Industry Project Study Plan for Treatment, Completion and Workover Discharges", dated March 25, 2019. This study plan focuses on sampling of discharges that are not commingled with produced water and that occur within the first 0.5 to 2 hours of

would be required at least daily for a minimum of seven days following the start of the commingled discharge.[30] The parameters for the chemical analysis would encompass the parameters anticipated to be present based on the composition of the treatment fluids used in the operation. For baseline data, WET tests and chemical analysis would also be required immediately prior to the commencement of the commingled discharge.

After approval of a workplan proposal by Region 9, implementation would become a requirement of the permit. Interim progress reports, including any monitoring data generated, would be submitted with each quarterly DMR following approval of the workplan. A final report would be submitted within four years of the effective date of the permit.

For reasons discussed below, despite the concerns and uncertainties noted above, Region 9 continues to believe (as it did when the 2014 general permit was issued) that the discharges of well treatment, completion and workover fluids proposed to be authorized by the 2019 general permit would not cause unreasonable degradation of the marine environment.

First, while there may be some remaining gaps in our understanding of the potential effects of the discharges, these gaps appear to be narrow. The PEA points out that although toxicity data may not be available for all potential chemicals that may be found in the discharges, those with available data would be expected to be representative, or "even conservatively representative", since studies tend to be conducted on materials thought to be of greatest concern.[31]

The PEA also included a desktop dilution analysis of the constituents used in a well treatment operation at Platform Harmony for which the composition of the treatment fluid had been reported in accordance with the requirements of the 2014 general permit, and that was commingled and discharged with produced water. In this example, mixing with produced water reduced the concentrations of the constituents of concern in the injected treatment fluid such that for the commingled discharge, the concentrations were below levels reported to be toxic at the point of discharge; the general permit provides for additional dilution in a mixing zone which for Platform Harmony is estimated at 2,400 to 1, thereby providing a substantial additional margin for safety.

Aside from the well treatment operation at Platform Harmony described above, which would be considered an acid well stimulation treatment, the other most potentially significant operations recently reported would be two hydraulic fracturing operations at Platform Gilda in 2014. However, the CCST report noted that typical chemical constituents in acid stimulation

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commencement of discharges. However, such discharges would not be expected in Region 9 since well treatment fluids are normally commingled and discharged with produced water. In addition, since the general timeframe during which flowback of well treatment fluids is known, Region 9 continues to believe that useful data could be obtained from the proposed study. The sampling results from the Gulf of Mexico study will nevertheless be of interest in Region 9 since the additives used in the Gulf will likely be similar to those used in Region 9.

[30] As noted in the PEA (page 4-37), most fluids would be recovered within seven days after commencement of the commingled discharge.

[31] PEA at page 4-38.

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treatments in California appear to have more potential for adverse environmental effects than those typically used for hydraulic fracturing.[32] As noted above, the desktop analysis for Platform Harmony estimated that even for an acid well stimulation treatment, the concentrations of constituents in the discharges would be reduced below levels of concern at the discharge point – even before accounting for the additional 2,400 to 1 dilution allowed in the mixing zone. Given the results of the analysis for the acid well stimulation treatment operation at Platform Harmony, and the relatively lower expected risks from chemical constituents used in hydraulic fracturing, it would seem there would be little likelihood of adverse effects from hydraulic fracturing operations such as those at Platform Gilda in 2014. Overall, the recent well stimulation operations and discharges at Platform Harmony appear to represent a reasonable worst case for the types of operations and discharges occurring offshore California, and even these discharges would not be expected to cause unreasonable degradation of the marine environment.

However, to check on the characterization in the CCST report concerning the relatively lower toxicity of chemicals used for hydraulic fracturing, Region 9 considered the specific chemicals and usage rates that were reported to have been used in the two hydraulic fracturing operations at Platform Gilda. There were 35 specific constituents used in the fracturing fluid and these were the same in both cases. Region 9 used EPA's Ecotox database to obtain toxicity data for the constituents. As noted above in the PEA and in the CCST report, toxicity data are not always available for some of the constituents. For the 35 constituents used at Platform Gilda, toxicity data were available for salt water organisms for 13 of the 35 constituents; data for fresh water species were available to 10 constituents that lack salt water data and no data were available for 12 constituents.

As the following examples illustrate using data from Platform Gilda, constituents used in the fluids injected in hydraulic fracturing operations are quickly diluted well below levels of concern in typical offshore discharge scenarios. Nearly all the constituents are used in very small concentrations in the injected fracturing fluids, most of which is retained downhole.[33] Flowback that is not retained downhole is heavily diluted when commingled with produced water and further diluted in the mixing zone allowed by the general permit.

Example No. 1 - Of the 13 constituents used in the injection fluid that have toxicity data in the Ecotox database for salt water organisms, the lowest LC_{50} that was found was for tetrakis(hydroxymethyl) phosphonium sulfate with an LC_{50} of 3.6 ppm for the opossum shrimp; minimum dilution at the edge of the mixing zone was estimated using the following assumptions:

- Produced water discharge rate: 326,000 gal/day
- Mixing zone dilution factor: 1,427 to 1
- Quantity of injected fluid: 136,000 gal
- Usage rate for tetrakis(hydroxymethyl) phosphonium sulfate: 0.00212% (mass fraction)
- 5% of injected fluid flows back to the surface

[32] CCST report, Vol. 3, Chapter 2, page 98.
[33] For hydraulic fracturing operations, the PEA estimates that only about 5% of the injected fluids are returned to the surface as flowback, PEA at page 4-37.

- Assume all flowback occurs within 7 days;[34] assume a steady discharge rate
- Daily flowback rate: 971 gal/day
  (136,000 gal x (0.05/7 days))
- Flowback fluid concentration in commingled produced water discharge: 3000 ppm
  (971 gal/(971 gal + 326,000 gal))
- Constituent of concern concentration in commingled discharge: 0.064 ppm
  (3000 ppm x 0.0000212)
- Concentration of constituent of concern at the edge of the mixing zone: 0.000045 ppm
  (0.064 ppm/(1 + 1427))

The above example shows that the concentration of the constituent of concern at the edge of the mixing zone (0.000045 ppm) is well below (by several orders of magnitude) the LC_{50} for the constituent (3.6 ppm)

Example No. 2 – as noted above, some of constituents without toxicity data for salt water organisms do have data for freshwater organisms and these data can provide additional insights into the risks of the chemicals. A constituent with a relatively highly usage rate and toxicity would be "distillated, petroleum, hydrotreated light." Here the lowest LC_{50} found is 2.2 ppm (bluegill) and the usage rate is 0.41% in the injected fluid; minimum dilution at the edge of the mixing zone was estimated using the following assumptions:

- Produced water discharge rate: 326,000 gal/day
- Mixing zone dilution factor: 1,427 to 1
- Quantity of injected fluid: 136,000 gal
- Usage rate for distillated, petroleum, hydrotreated light: 0.41% (mass fraction)
- 5% of injected fluid flows back to the surface
- Assume all flowback occurs within 7 days; assume a steady discharge rate
- Daily flowback rate: 971 gal/day
  (136,000 gal x (0.05/7 days))
- Flowback fluid concentration in commingled produced water discharge: 3000 ppm
  (971 gal/(971 gal + 326,000 gal))
- Constituent of concern concentration in commingled discharge: 12 ppm
  (3000 ppm x 0.0041)
- Concentration of constituent of concern at the edge of the mixing zone: 0.0084 ppm
  (12 ppm/(1 + 1427))

This second example shows that the concentration of the constituent of concern at the edge of the mixing zone (0.0084 ppm) is again well below (by a factor of over 250) the LC_{50} for the constituent (2.2 ppm).

Region 9 also reviewed the DMRs submitted during the term of the 2014 permit for additional information concerning the miscellaneous discharge activity for well treatment,

[34] PEA at page 4-37.

completion and workover fluids (other than hydraulic fracturing or acid well treatments). Most of the discharges would be classified as routine well maintenance activities such as acid wash or solvent wash that are outside the scope of SB4 and were not considered by the PEA to have significant environmental effects given the much lower usage rates for chemical constituents in such operations. The PEA indicates that acid wash and solvent wash operations each occur approximately once every other year for a given well.[35] The fluids used in these operations are commingled with produced water and for platforms discharging produced water, composition data are reported to Region 9. Recent DMRs show that a common solvent wash used offshore is xylene; however, as illustrated by the following example for Platform A, typical usage and discharge rates[36] would not be expected to cause unreasonable degradation of the marine environment.

- Produced water discharge rate: 144,270 gal/day
- Mixing zone dilution factor: 1,674 to 1
- Quantity of xylene used: 300 gal
- Assume 50% of material flows back to the surface[37]
- Assume all flowback occurs within 7 days; assume a steady discharge rate.
- Daily flowback rate: 21 gal/day
  (300 gal x (0.5/7 days))
- Flowback fluid concentration in commingled produced water discharge: 145 ppm
  (21 gal/(21 gal + 144,270 gal))
- Concentration at the edge of the mixing zone: 0.087 ppm
  (145 ppm/(1 + 1674))

Region 9 again consulted the Ecotox database for toxicity data for xylene; the lowest LC_{50} that was found was 1.3 ppm (bay shrimp), substantially higher than the estimated concentration of the edge of the mixing zone.

Data for acid wash operations provided by platforms discharging produced water show that the constituents used resemble those used in acid well treatment operations such as discussed above for Platform Harmony. Given the much lower chemical usage rates, however, significant environmental effects would not be expected from such operations.

As noted above, CBD recently submitted comments on the draft general permits that had been proposed for offshore oil and gas operations in the Gulf of Mexico and cited a number of new studies in the comments. Region 9 reviewed these studies for any new information that could indicate that the discharges could cause unreasonable degradation of the marine environment offshore California. CBD expressed concern that the well stimulation fluid

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[35] PEA at page 4-74.

[36] It should be noted the routine discharges of produced water ceased at Platform A in early 2018. The example uses data from late 2017 when the platform was still discharging.

[37] It is not clear how much xylene would return to the surface as flowback; the PEA estimates 50-70% of acid treatment chemicals return and 5% of hydraulic fracturing chemicals return; for this analysis we assume 50% of the xylene would return.

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discharges could cause adverse effects in the marine environment even after substantial dilution. For example, adverse effects were reported[38] [39] for rainbow trout at dilutions of commingled produced water/well stimulation fluids of 2.5% and 7.5%. LC_{50} values for the water flea (*Daphnia magna*) were reported[40] at concentrations of 0.75% (adults) and 0.19% for neonates. Another study reported LC_{50} values for zebrafish embryos ranging from 0.6% to 3.9% depending on the test.[41] In response, Region 9 would point out that these studies were for operations in Alberta, Canada that may be quite different from those offshore California; the Canadian studies did not include information concerning the specific chemicals used in the operations as was provided for Platforms Harmony and Gilda. As such, the dilution analyses for these California platforms noted above are a better indicator of the potential environmental effects of California offshore discharges. Moreover, even if the Canadian wastewater had been discharged at Platform Harmony or Platform Gilda, the effluent concentration at the edge of the mixing zone would have been reduced below the observed LC_{50}'s by the dilution factors for the platforms (2,400 to 1 or 0.042% effluent for Platform Harmony and 1,427 to 1 or 0.07% effluent for Platform Gilda). As such, after reviewing the new information submitted for the Gulf of Mexico permits, Region 9 continues to conclude that the proposed discharges in Region 9 would not cause unreasonable degradation of the marine environment.

Despite the above information, the CCST report expresses concern that actual composition and toxicity data for discharges consisting of produced water commingled with well stimulation treatment fluids in the offshore environment are still lacking; the CCST report recommends further study of this matter. Region 9 agrees and hence the proposed study requirement noted above.

The proposed general permit also retains the reopener clause in the 2014 permit that provides that the permit may be reopened and modified to include additional effluent limits or monitoring requirements if new information should demonstrate a need for such revisions. The proposed permit also retains the requirement in the 2014 permit for maintaining an inventory of the quantities and concentrations of the chemicals used to formulate well treatment, workover and well completion fluids, and to report this information in the quarterly DMR if there is a discharge. In addition, progress reports from the workplan discussed above to gather further data about the discharges, including toxicity data, would be submitted quarterly. These reports will ensure timely availability of any new information that could indicate that the discharges could

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[38] Yuhe He, et al. 2017. Effects on Biotransformation, Oxidative Stress, and Endocrine Disruption in Rainbow Trout (Oncorhynchus mykiss) Exposed to Hydraulic Fracturing Flowback and Produced Water. Environ. Sci. Technol.2017, 51, 940−947.

[39] Tamzin A. Blewett, et al. 2017.The effect of hydraulic flowback and produced water on gill morphology, oxidative stress and antioxidant response in rainbow trout (*Oncorhynchus mykiss*), Nature: Scientific Reports. 7:46582.

[40] Tamzin A. Blewett, et al. 2017. Sublethal and Reproductive Effects of Acute and Chronic Exposure to Flowback and Produced Water from Hydraulic Fracturing on the Water Flea Daphnia magna, Environ. Sci. Technol. 2017, 51, 3032−3039.

[41] Yuhe He, et al. 2017. Chemical and toxicological characterizations of hydraulic fracturing flowback and produced water. Water Research 114 (2017) 78-87.

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cause unreasonable degradation of the marine environment, and the need for any permit modifications.

Finally, as noted previously, well treatment, workover and completion fluids are normally combined with and discharged with produced water in Region 9. However, for any future discharges of well treatment, workover and completion fluids that are discharged and not commingled with produced water, the proposed 2019 permit includes a new requirement for the same toxicity tests that are required for produced water.

2. Water Quality-Based Effluent Limitations for Produced Water.

a. Reasonable Potential Monitoring Study in the 2004 Permit. Among other factors, the Ocean Discharge Criteria regulations require a consideration of marine water quality criteria for discharges to the ocean permitted under the NPDES permit program. In considering these criteria, particularly in determining permit conditions that would be needed to support a determination that produced water discharges will not cause unreasonable degradation of the marine environment, the 2004 general permit included a study requirement using the statistical procedures that EPA uses in determining the need for water quality-based effluent limits ("WQBELs") for point source discharges to waters of the United States, including the territorial seas. The study, captioned the "reasonable potential monitoring study" was required in order to determine whether the discharges regulated under the permit would cause, or had the reasonable potential to cause, or contribute to non-attainment of marine water quality criteria at the boundary of the mixing zone, which is the location identified in the Ocean Discharge Criteria regulations at 40 CFR 125.123(d)(1).

The Ocean Discharge Criteria at 40 CFR 125.121(c) allow a 100-m (330-ft) radius mixing zone for initial dilution of discharges. To ensure no unreasonable degradation of the marine environment in accordance with the factor at 40 CFR 125.122(a)(10), Region 9 has concluded that EPA's recommended marine water quality criteria must be met at the edge of the mixing zone. The determination of whether a discharge meets water quality criteria at the edge of a mixing zone requires the computation of the amount of dilution that occurs in the mixing zone between the discharge location and the edge of the mixing zone. This calculation of dilution is usually accomplished through modeling. The 2004 general permit specified the use of EPA's PLUMES UM model and the 2019 proposed general permit would retain this requirement. More information concerning EPA dilution models, including PLUMES UM, is available on EPA's Office of Research and Development ("ORD") website at: http://www.epa.gov/CEAM/.

The statistical procedures used to evaluate the discharges in accordance with the Ocean Discharge Criteria were derived from EPA's Technical Support Document for Water Quality-Based Toxics Control ("TSD") (EPA/505/2-90-001). A separate document, "Procedure for Reasonable Potential Evaluation in NPDES Permit CAG280000" (Appendix A) sets forth in detail the specific mathematical procedures for evaluating reasonable potential.

The constituents of concern for the monitoring study were 26 pollutants that Region 9 had identified as potentially present in the discharges; these pollutants are: ammonia, arsenic, cadmium, copper, cyanide, lead, manganese, mercury, nickel, selenium, silver, zinc, benzene, benzo (a) anthracene, benzo (a) pyrene, chrysene, benzo (k) fluoranthene, benzo (b) fluoranthene, dibenzo (a,h) anthracene, hexavalent chromium, phenolic compounds, toluene, ethylbenzene, naphthalene, 2,4-dimethylphenol, and undissociated sulfide.

The 2004 general permit required monthly monitoring during the first year of the permit for the 26 pollutants listed above. For cooling water and fire control system test water, monitoring was also required monthly during the first year for total residual chlorine which is used at some platforms as an anti-fouling agent. EPA also explained that if a discharge demonstrated the reasonable potential to cause or contribute to non-attainment of a marine water quality criterion at the boundary of the mixing zone, then the permit could be reopened and modified to include additional effluent limitations and monitoring requirements to ensure compliance with the water quality criteria. The reasonable potential monitoring study was submitted in 2006 and in 2009, the 2004 general permit was modified to include additional effluent limitations and monitoring requirements based on the study results.

For the 2014 permit, the effluent limitations and monitoring requirements for produced water (and for cooling water and fire control system test water) were revised based on an updated reasonable potential analysis using the monitoring data that had been collected in the years subsequent to the 2009 permit modification. For the proposed 2019 permit, Region 9 again updated the reasonable potential analysis[42] using the monitoring data collected during the term of the 2014 permit.

In evaluating the discharges for consistency with the Ocean Discharge Criteria, the water quality criteria that EPA used for the reasonable potential analysis were the more stringent of EPA's recommended chronic marine water quality criteria[43] or the California Ocean Plan ("COP") objectives.[44] These criteria are found in Table 1 below. As EPA explained in the 2009 modification of the general permit, EPA concluded that the use of the more stringent criteria would be necessary to ensure that the discharges did not cause unreasonable degradation of the marine environment. As noted in Table 1, several EPA criteria have been updated[45] since 2006 and the updated criteria were used in the reasonable potential analysis for the proposed 2019 permit.

Table 1 – 304 (a) Recommended Water Quality Criteria (in ug/l) Considered for the Produced Water Unreasonable Degradation Determination

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[42] An Excel spreadsheet was used to perform the analysis and generate the revised permit limits; the spreadsheet is part of the administrative record for the permit.
[43] EPA criteria are available at: https://www.epa.gov/wqc
[44] State Water Resources Control Board. 2015. Water Quality Control Plan, Ocean Waters of California, 2015.
[45] The updates occurred in 2015 and 2016 and can be found along with additional information at: https://www.epa.gov/wqc

Constituent	Aquatic Life Criteria			Human Health Criteria		
	EPA Criteria		COP 6-Month Median	EPA Criteria		COP 30-Day Average
	2006[46]	2019		2006	2019	
Ammonia	1,300		600			
Arsenic	36		8			
Cadmium	8.8	7.9	1			
Copper	3.1		3			
Cyanide	1		1			
Lead	8.1		2			
Manganese						
Mercury	0.051		0.04			
Nickel	8.2		5			
Selenium	71		15			
Silver	1.9		0.7			
Zinc	81		20			
Benzene				51	58	5.9
Benzo (a) Anthracene				0.018	0.0013	
Benzo (a) Pyrene				0.018	0.00013	
Chrysene				0.018	0.13	
Benzo (k) Fluoranthene				0.018	0.013	
Benzo (b) Fluoranthene				0.018	0.0013	
Dibenzo (a,h) Anthracene				0.018	0.00013	
Hexavalent Chromium	50		2			
Phenol				1,700,000	300,000	
Toluene				15,000	520	85,000
Ethylbenzene				2,100	130	4,100
Naphthalene	Not available			Not Available		
2,4 Dimethylphenol				2,300	3,000	
Undissociated Sulfides	5.79					

[46] The 2006 criteria were used for the 2009 permit modification and in the 2014 permit reissuance.

The monitoring requirements and effluent limits in the 2009 modification and the 2014 permit are for constituents for which reasonable potential was demonstrated based on the water quality criteria in effect in 2006. Given that many of the updated criteria are more stringent than those in effect in 2006, Region 9 revisited the original reasonable potential study to determine which platforms would have had reasonable potential, and for which constituents, based on the 2019 criteria and current dilution estimates. The analysis[47] showed that there are numerous additional constituents that would have shown reasonable potential in 2006 if the updated water quality criteria had been in place at that time. Table 2 below shows the affected platforms and the relevant constituents. For these constituents, Region 9 is proposing to require monthly monitoring for the first 12 months[48] of the term of the permit to gather current data on effluent quality, as the original reasonable potential study was based on data collected in 2004 and 2005 and may not be current. The 2019 permit also provides that the permit may be reopened and modified to establish additional effluent limits or monitoring requirements for these constituents after collection of the additional data.

The revised effluent limitations and monitoring requirements for the proposed 2019 permit are found in Appendix B of the permit for produced water and Appendix C for cooling water and fire control system test water. As in the 2014 permit, Region 9 is proposing monthly monitoring and effluent limits for constituents for which reasonable potential was demonstrated by data collected during the term of the 2014 permit; annual monitoring is proposed otherwise. As noted above, monthly monitoring for produced water is proposed for the first year of the permit for new constituents with reasonable potential based on the 2019 water quality criteria.

Table 2 – New Constituents in Produced Water with Reasonable Potential Based on the Updated Water Quality Criteria

Platform/Constituent	Benzo (a) Anthracene	Benzo (a) Pyrene	Benzo (k) Fluoranthene	Benzo (b) Fluoranthene	Dibenzo (a,h) Anthracene
A	X				X
B	X				X
Edith	X	X		X	X
Elly	X	X	X	X	X
Gail	X		X	X	X
Gilda					
Gina	X				X
Habitat	X				
Harmony		X		X	X
Harvest					
Hermosa					
Hidalgo	X	X			X

[47] An Excel spreadsheet was used for the analysis and is part of the administrative record for the permit.
[48] The TSC recommends a minimum of 10 samples for a reasonable potential analysis. Region 9 is proposing 12 samples for consistency with the 2006 reasonable potential monitoring study.

Hillhouse					
Hogan	X				

X – Constituents with reasonable potential based on updated water quality criteria in effect in 2019 that did not demonstrate reasonable potential based on criteria in effect in 2006.

Although the general permit authorizes discharges from 23 offshore platforms, only 15 of the platforms may discharge produced water. Several of these platforms (Platforms A, B and Gina) have ceased routine discharges of produced water. For several other platforms,[49] production operations are currently shut down due to the 2015 rupture of the onshore pipeline that had been used to transport the crude oil produced offshore. For the platforms that are currently not discharging produced water, the reasonable potential analysis used monitoring data collected prior to the termination of discharges.

For Platform Irene (which rarely discharges produced water), Region 9 still does not have the minimum number of samples recommended by the TSD to do a reasonable potential analysis. As was the case with the 2014 permit, Region 9 is again deferring action on this platform. Platform Irene would continue to be subject to effluent limits in its previous individual permit, and when discharges occur, the platform would continue to conduct monitoring for all 26 of the pollutants of concern. When the minimum number of samples is collected, Region 9 would reopen and modify the permit to include additional effluent limits and monitoring requirements, as appropriate. This procedure is described in Appendix D of the 2019 proposed permit

For most parameters in Table 1, the COP aquatic life water criteria are expressed in terms of a 6-month median whereas EPA's criteria are expressed in terms of a criterion continuous concentration (which is a four-day average), and it is not entirely clear which criteria would be more stringent. To answer that question, EPA developed a mathematical procedure[50] for comparing the stringency of a 6-month median and a four-day average, which was used in the reasonable potential analysis.

With regards to the human health criteria in Table 1, there are three parameters for which EPA and COP criteria are both specified (benzene, ethylbenzene and toluene). However, the EPA criteria and the COP objectives for these parameters are both considered long-term criteria (despite the COP objective being labeled a 30-day average) and therefore it is appropriate to compare them directly for stringency.

3. Whole Effluent Toxicity ("WET"). In developing the WET requirements for the draft 2019 general permit, Region 9 built on the permit requirements and monitoring results obtained from the 2004 and 2014 general permits. The requirements and monitoring results from these previous permits are discussed below, along with an overview of WET and a discussion of the proposed 2019 permit requirements.

[49] These platforms are Platforms Hermosa, Hidalgo, Harvest, Harmony, Grace and Gail. Platforms Hermosa, Hidalgo, Harvest, Grace and Gail are also being decommissioned.
[50] The procedure is found in the document entitled "Procedure for Comparing California Ocean Plan 6-Month Median and a 4-Day Average for NPDES Permit No. CAG280000" dated August 16, 2001,

The WET approach to toxics control for the protection of aquatic life involves the use of acute and chronic toxicity tests to measure the toxicity of wastewaters. WET is a useful parameter for assessing and protecting against impacts on water quality and designated uses caused by the aggregate toxic effects of the different pollutants in a discharge. WET tests employ the use of standardized, surrogate freshwater or marine plants, invertebrates, and vertebrates. EPA has published extensive protocols listing numerous marine and freshwater species for toxicity testing.

WET tests are used to measure the acute and/or chronic toxicity of an effluent. Chronic toxicity measures a sublethal effect (e.g., reduced growth, reproduction) in an effluent compared to that of the control organism. When conducting a chronic toxicity test, the highest concentration of an effluent at which no adverse effects are observed on the aquatic test organisms is defined as the No Observed Effect Concentration ("NOEC"). Chronic toxicity units ("TU"$_c$) are defined as 100/NOEC.

The 2004 general permit required chronic toxicity testing for produced water discharges. Given the variety of pollutants in produced water, EPA believed that WET toxicity was appropriate to measure the aggregate toxic effects of these materials. The 2004 permit required monthly testing (for the first year of the permit) using the red abalone (*Haliotis rufescens*) larval development test, and then annual screening with a plant (giant kelp, *Macrocystis pyrifera*), a vertebrate (topsmelt, *Atherinops affinis*) and an invertebrate (red abalone). The chronic toxicity of the effluent was estimated as specified in "Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to West Coast Marine and Estuarine Organisms," EPA/600/R-95/136, August 1995.

In 2010, EPA published a new guidance manual[51] which Region 9 believes improves regulatory decision-making with regards to WET test results. The new method is based on comparing the mean response of the test organisms in the control and at the instream waste concentration ("IWC") (which is the concentration at the edge of the 100-meter mixing zone for the offshore platforms).

The 2010 manual also includes a procedure for evaluating the reasonable potential of a discharge to cause toxicity in the receiving waterbody. Region 9 used the procedure in the 2010 manual to evaluate the toxicity test results collected during the term of the 2004 permit. Most of the test results for all species tested (red abalone, giant kelp and topsmelt) were "pass", i.e., the discharge did not cause toxicity. However, for the giant kelp and the topsmelt, reasonable potential to cause toxicity was demonstrated for several platforms using the 2010 procedure. The 2014 permit included permit effluent limits for WET for platforms where reasonable potential was demonstrated and a "permit trigger" where reasonable potential was not demonstrated. Depending on the WET test results, the 2014 permit specified certain follow-up actions, such as additional WET tests and a toxicity reduction evaluation to identify and correct

[51] U.S. EPA. 2010. National Pollutant Discharge Elimination System Test of Significant Toxicity Implementation Document, EPA 833-R-10-003, June 2010.

the cause of any observed toxicity. The follow-up actions were the same for both permit effluent limits and permit triggers. The only difference between a permit effluent limit and a permit trigger was that exceedance of a permit trigger only requires the follow-up actions, while exceedance of a permit effluent limit was also a violation of the permit.

The draft of the 2014 permit had required annual WET tests using the species noted above, using the 2010 protocol. However, based on comments received from the CCC, the monitoring scheme in the final 2014 permit was revised to require quarterly WET tests for at least the first year of the permit term. Following four consecutive "pass" results for a particular platform and species, annual tests were required and annual tests could be continued unless a "fail" result occurred in which case quarterly monitoring would resume.

For the proposed 2019 general permit, Region 9 believes that continued WET testing would be appropriate to ensure no unreasonable degradation of the marine environment. Region 9 is proposing a continuation of the WET monitoring frequency that was in place for each platform at the end of the 2014 permit term, using the same species and the 2010 protocol. Currently, the required WET test frequency is annual for all platforms except Platform Habitat for which insufficient test results have been obtained.

Region 9 also compared the WET monitoring results from the 2004 permit with those obtained during the 2014 permit. During the 2014 permit term, there were no "fail" results for any platform for any species, whereas there were two "fail" results during the 2004 permit term. During the 2014 permit term, the number of platforms showing reasonable potential for WET was much smaller as well.[52]

Table 4 in the 2014 permit summarized which platforms were subject to permit effluent limits for WET and which were subject to "permit triggers." For the proposed 2019 permit, Table 4 has been revised based on the WET results obtained during the term of the 2014 permit. Many of the previous permit effluent limits have been changed to permit triggers, given the absence of reasonable potential based on the latest WET monitoring results. Finally, it should be noted that no new results were obtained for Platform Habitat, given the absence of discharges, and the 2014 permit requirements are carried forward into the draft 2019 permit.

4. Adequacy of the BAT Mud Toxicity Limit in Complying with CWA Section 403(c) Requirements. EPA believes that the BAT toxicity limit for drilling mud (96-hour LC_{50} of 30,000 ppm) will also ensure that no unreasonable degradation occurs as a result of the discharges. For the original general permit issued in 1982, EPA had determined, based on a dilution analysis, that a 96-hour LC_{50} of 20,000 ppm would be adequate to comply with the permit limitations. Dischargers operated under this limitation until the 2004 permit reissuance, and EPA is not aware of any data which would indicate that this limit has been insufficient to ensure "no unreasonable degradation" of the marine environment. For example, such degradation was not detected in the BOEM-funded studies that were discussed above. Because

[52] An Excel spreadsheet was used for the reasonable potential analysis and is part of the administrative record for the permit.

the proposed drilling mud toxicity limit is more stringent than the previous limit, the proposed limit should also be adequate to ensure no unreasonable degradation.

5. Maximum Concentration of Chlorine in Sanitary Wastes. The proposed permit would retain the maximum concentration limit of 10 mg/l that was included in the 2014 general permit, the 2004 general permit and the individual permits which EPA issued in 1993. EPA concluded that this limit should be achievable through better operation and housekeeping of existing facilities and would minimize the potential effects of chlorine in the discharge. As noted above, the BCT effluent guidelines require a minimum chlorine concentration of 1 mg/l, maintained as close to this concentration as possible.

6. Chemical Inventory. The proposed 2019 permit retains the requirement in the 2004 and 2014 general permits that permittees maintain (and submit with the DMRs) information concerning chemicals such as corrosion inhibitors, oxygen scavengers and other materials added to hydrotest water, fire control system test water, noncontact cooling water, test fluids and water flooding discharges. Pipeline preservation fluids, a new discharge proposed to be authorized by the 2019 permit (similar to hydrotest water) would also be subject to this requirement. EPA does not believe that these discharges will cause unreasonable degradation of the marine environment; however, the requirement to submit such information will ensure that EPA is kept informed of the nature of materials which are being used. As discussed below, the proposed permit includes a reopener clause which would allow EPA to reopen and modify the permit to include additional restrictions on the use of chemicals in the discharges as necessary to ensure no unreasonable degradation of the marine environment.

7. Maximum Discharge Rates. The proposed general permit would limit the maximum annual quantities of drilling muds, cuttings, excess cement and produced water which could be discharged from all production platforms. These limits were also included in the 2004 and 2014 general permits in response to public comments on previous permits; the limits will more clearly define the maximum environmental impacts of the discharges as recommended by the commenters. The limits themselves are the maximum amounts which the platform operators expect may occur on an annual basis during the term of the permit.

8. No Discharge of Chrome Lignosulfonate. The 2004 and 2014 general permits prohibited the discharge of chrome lignosulfonate in order to prevent the discharge of the toxic pollutant chromium. EPA believes it to be appropriate to continue this prohibition of chrome lignosulfonate in the 2019 permit since substitutes are available and its prohibition is an appropriate limit to prevent unreasonable degradation of the marine environment.

9. Barging of Muds to Shore. When the effluent limitations guidelines for drilling fluids were promulgated in 1993, EPA pointed out that various non-water quality factors (such as air emissions, energy use and solid waste management) must be considered in developing the guidelines. The air emissions stemming from the barging of fluids to shore was one factor cited in support of the decision to allow the fluids to the discharged beyond 3 miles from the coast. However, for the 2004 permit, one party recommended that with the advent of lower emissions vessels, EPA should reconsider this decision.

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In response, EPA stated that the emissions from barges still constituted a valid argument for the proposed authorization of drilling fluids discharges in ocean waters. Industry also provided data showing that the emissions levels for vessels used in the Santa Barbara Channel are comparable to the emissions levels for the vessels considered by EPA in the development of the offshore effluent guidelines.

Therefore, EPA did not incorporate modified effluent limitations for drilling fluids in the 2004 general permit on this basis. However, EPA did include a requirement in the permit that permittees operating under the permit submit (jointly or individually) a report to EPA within two years of the effective date of the permit which re-evaluated alternatives to direct disposal of drilling fluids and cuttings at the disposal site (such as onshore disposal, increased recycling and reuse, ocean dumping off-site, and reinjection). Two reports were submitted by permittees[53,54] in December 2006; Region 9 concluded the reports supported continued authorization of the discharges, which therefore was continued in the 2014 permit. Region 9 is not aware of any new information that would change the conclusions in the reports and as such, the 2019 permit proposes continued authorization of the discharges of drilling fluids subject to the effluent limits and monitoring requirements of the permit.

10. Reopener Clause. The Ocean Discharge Criteria regulations require that the re-opener clause found at 40 CFR 125.123(d)(4) be included in permits issued to pursuant to 40 CFR 125.123(c) (no irreparable harm). As noted above, EPA concluded that no unreasonable degradation would occur. Thus, the reopener clause would be optional. However, Region 9 is including the reopener clause in the proposed permit to ensure that any necessary permit modifications may be made if new information should unexpectedly indicate that the discharges could cause unreasonable degradation of the marine environment. Further, the reopener was modified to specifically provide that the permit may be reopened if increased discharges may cause unreasonable degradation, or if additional conditions are needed to protect special aquatic sites. EPA believes that these changes are reasonable since the criteria for determining unreasonable degradation at 40 CFR 125.122(a)(1) generally include a consideration of these factors. In addition, the reopener provides that the permit may be modified based on new requirements which are determined to be necessary to prevent unreasonable degradation of the marine environment.

11. On-Line Oil and Grease Monitors. For all permittees that may discharge produced water, the 2014 general permit required (within one year of the effective date of the permit) that the permittees do either (a) or (b) as described below:

(a) Install on-line monitoring equipment along with operating procedures ensuring that the operator is provided with rapid information concerning potential noncompliance with the effluent limits in this permit for oil and grease in produced water as follows:

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[53] DCOR, LLC. 2006. Discharge Alternatives Study, Submitted to EPA Region 9, December 15, 2006.
[54] Western States Petroleum Association. 2006. Final Report, Discharge Alternatives Feasibility Study, Submitted to EPA Region 9, December 21, 2006.

1) for platforms with an average daily produced water discharge greater than 100,000 gal/day in the year prior to the permit effective date, install equipment providing real-time information or with a brief lag time such as one hour, or

2) for platforms with an average daily produced water discharge less than or equal to 100,000 gal/day in the year prior to the permit effective date, install equipment providing real-time information or with a lag time such as four hours, or

(b) Provide information to Region 9 demonstrating that the operator has already installed monitoring equipment along with operating procedures meeting the above objective.

This requirement was a follow-up to a provision in the previous 2004 general permit that required each permittee (jointly or separately) to investigate and submit a report evaluating the availability and practicality of on-line monitoring devices for oil and grease in produced water discharges. The practicality of such devices for produced water was unclear at the time of the 2004 general permit issuance, but it was Region 9's intent to re-evaluate this matter when the general permit was reissued. If practical, these devices would have the potential to provide more timely information concerning upset conditions and potential exceedances of permit limits, and thereby provide improved protection of the marine environment by allowing timely corrective actions by the permittee.

The permittees submitted three different reports[55,56,57] pursuant to the requirements of the 2004 permit, and Region 9 concluded that the reports showed that the technology had been developed to the point that it was practical for use at California offshore platforms. Furthermore, as noted in the reports, some platforms had already installed such devices.

The requirements of the 2014 general permit were based on the reports noted above and comments received from permittees on the proposed general permit. Timely responses to the requirements of the 2014 general permit were submitted by all permittees in 2015.[58] After considering these responses, Region 9 believes that all permittees have installed appropriate monitoring equipment and are implementing standard operating procedures to ensure that timely information concerning potential upset conditions is available to allow a permittee to implement timely corrective actions. Given that the objectives of the 2004 permit have now been achieved,

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[55] Western States Petroleum Association. 2008. Assessment of On-Line Oil in Water Monitors, Prepared by Maxoil Process Solutions, November 2008.

[56] DCOR, LLC and Pacific Operators Offshore. 2008. Feasibility Study, On Line Oil and Grease Monitoring, NPDES Permit No. CAG28000, November 2008.

[57] Pacific Energy Resources. 2008. NPDES Permit CAG28000, Offshore California Produced Water Oil and Grease Online Monitor Study, Prepared by LTS Environmental, September 25, 2008.

[58] Letter dated February 23, 2015 from Freeport-McMoran Oil & Gas to Region 9; letter dated February 26, 2015 from Beta Offshore to Region 9; letter dated February 27, 2015 from DCOR, LLC to Region 9; letter dated February 11, 2015 from ExsonMobil Production to Region 9; and email from Pacific Offshore Operators LLC dated February 5, 2015 to Region 9.

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the proposed 2019 general permit does not include any further requirements related to this matter.

12. Maintenance Wastes. Region 9's Enforcement Division requested that the new permit include a provision clarifying the requirements for any discharges associated with maintenance activities on the platforms such as painting and sandblasting. The Enforcement Division recommended permit language from the 2017 general permit for the western Gulf of Mexico.[59] Part II.G.6 of Region 9's 2014 permit (and the proposed 2019 permit) requires compliance with U.S. Coast Guard regulations at 33 CFR 151 concerning discharges of "garbage" the definition of which includes wastes from maintenance activities. Region 9 discussed these regulations with the U.S. Coast Guard in 1994[60] and the Coast Guard clarified that the intent of the regulations is basically to minimize any discharges from painting or sandblasting operations through the use of appropriate best management practices. The permit requirements of the Gulf of Mexico permit are consistent with this understanding and similar requirements are proposed for the Region 9 permit as well. However, Region 9 did not find the specific API guidance document referenced in the Gulf of Mexico permit, but did find what appears to be an equivalent API guide[61] and this alternate guide is used to set forth the required best management practices for the Region 9 permit.

I. Best Management Practices. Best Management Practices ("BMPs"), in addition to numerical effluent limitations, may be required to control or abate the discharge of pollutants in accordance with 40 CFR 122.44(k).

The proposed permit requires the discharge of surfactants, dispersants, and detergents to be minimized except as necessary to comply with the safety requirements of the Occupational Health and Safety Administration and BSEE. These products contain primarily nonconventional pollutants. This provision also appeared in the 2004 and 2014 general permits for Southern California OCS oil and gas facilities.

J. Other Discharge Limitations, Prohibitions and Conditions

1. Produced Sands. In the proposed permit, EPA prohibits the discharge of produced sands (formerly called "produced solids") as a BAT limit based on EPA's effluent guidelines for the Offshore subcategory. Promulgated BAT for produced sand is "no discharge" based on EPA's determination that these "sands" may be sent to shore on barge trips during regularly scheduled maintenance trips.

In 1993, the promulgated Offshore rule (40 CFR 435.11) defined "produced sand" as slurried particles used in hydraulic fracturing, the accumulated formation sands and scales

[59] Permit No. GMG290000, 82 FR 45845 (October 2, 2017).
[60] Record of Communication. 1994. Region 9 and the U.S. Coast Guard, June 24, 1994.
[61] API. 2007. API Bulletin 91, Planning and Conducting Surface Preparation and Coating Operations for Oil and Gas Drilling and Production Facilities in a Marine Environment, First Edition, June 2007.

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particles generated during production, desander discharge from the produced water wastestream, and blowdown of the water phase from the produced water treatment system.

2. No Halogenated Phenol Discharges. The 2004 general permit required that there be no discharges of halogenated phenols in accordance with an operations order from the Minerals Management Service, the agency that preceded the current BSEE and BOEM. This requirement was carried forward into the 2014 permit and explained as a BSEE requirement. For the 2019 permit, Region 9 contacted BSEE to see if the operations order was still in effect or had been replaced. Although BSEE was unable to find a current requirement of this nature, Region 9 has retained the requirement in the proposed 2019 permit for consistency with the anti-backsliding requirements of section 402(o) of the CWA.

3. Tracer Materials. Radioactive tracer concentrations above the background in the parent, discharged waste stream shall be limited as given in 10 CFR 20 Appendix B, Table II, Column 2, Effluent Concentrations, Water.

4. Standard Permit Conditions

NPDES Regulations at 40 CFR 122.41 and 122.42 require that certain standard conditions be included in all NPDES permits. These conditions have been included in Part IV of the proposed permit. For the 2004 general permit, industry commenters expressed concerns regarding the meaning of some of these conditions and suggested certain revisions, which are discussed below. For items (a) through (g), the industry concerns were addressed in the 2004 and 2014 permits as discussed below and for the proposed 2019 permit they will be addressed the same way. Items (h) and (i) are new proposed requirements for the 2019 permit based on recent revisions to NPDES regulations.

a. References to Sludge. A few standard conditions include references to sewage sludge which only apply to publicly owned treatment works ("POTWs"). Industry commenters suggested that such references be removed since they would not apply to offshore facilities. In response, EPA points out that such references are relatively few, and EPA prefers to not modify the standard conditions when it is clear they do not apply to offshore facilities.

b. Duty to Reapply. NPDES regulations at 40 CFR 122.41(b) require that permittees reapply and obtain a new NPDES permit to continue discharges after expiration of an existing permit. Industry commenters have expressed concern that this standard condition might conflict with Part I.A.6.c of the proposed general permit. In response, EPA disagrees that there is a conflict. For the proposed general permit, the NOI is the mechanism by which a permittee reapplies for coverage.

c. Reporting Requirements. NPDES regulations at 40 CFR 122.41(l)(1)(ii) require that permittees provide notice when physical changes are planned for a permitted facility which would "significantly change the nature or increase the quantity of pollutants discharged." Industry commenters have raised the issue of whether the word "significantly" modifies only the

word "change," or both the words "change" and "increase." The commenters indicated that their interpretation would be that both words are modified. EPA concurs with this interpretation.

d. Permittee Transfers. NPDES regulations at 40 CFR 122.41(l)(3) include certain mandatory requirements pertaining to transfer of permit coverage from one permittee to another. Industry commenters have recommended some revised language which would make transfers automatic provided a permittee transfer agreement is developed. In response, EPA believes that the standard language of 40 CFR 122.41(l)(3) should be retained. In transferring a permit from one permittee to another, EPA must consider whether the terms of the permit are appropriate for the new permittee. For example, the capability of the new permittee to comply with the terms of the permit may be different for the new permittee than for the previous permittee. As such, the proposed permit retains the standard condition from 40 CFR 122.41(l)(3). However, this is not to say that permittee transfer could not be accomplished as a minor permit modification in accordance with 40 CFR 122.63. EPA may also consider BOEM findings in its decision on a change of operator of record.

e. Compliance Schedules. NPDES regulations at 40 CFR 122.41(l)(5) include a reference to compliance schedules which industry commenters recommended be removed. The industry commenters contended that general permits do not include compliance schedules and there could be a conflict with the Toxicity Identification Evaluation/Toxicity Reduction Evaluation ("TIE/TRE") conditions of Part II.B.4 of the permit. In response, EPA has retained the condition for consistency with NPDES regulations. Further, the TIE/TRE requirements would constitute a compliance schedule and 40 CFR 122.41(l)(5) simply requires that the permittees report the TIE/TRE results in a timely manner.

f. 24-Hour Reporting Requirements. NPDES regulations at 40 CFR 122.44(g) require a list in the permit of any specific pollutants for which 24-hour reporting of violations of daily maximum discharge limitations will be required. Industry commenters recommended that this condition be deleted from the proposed permit since no specific pollutants have been listed. EPA, however, prefers to retain the condition for consistency with NPDES regulations.

g. Duty to Comply. NPDES regulations at 40 CFR 122.41(a)(1) require compliance with effluent standards which may be established under CWA Section 307(a) (toxic and pretreatment effluent standards) in the time frame which is established even if a permit has not been modified to incorporate the requirements. Industry commenters suggested that this condition be removed and replaced with alternate language indicating that the permit would be modified to include any effluent standards established under CWA Section 307(a). In response, EPA again believes that the condition should be retained exactly as found at 40 CFR 122.41(a)(1) for consistency with the regulations. The alternative suggested by industry would be inappropriate in that it would not clarify that compliance would be required in the time frame established by the regulations regardless of whether the permit had been modified.

h. Sufficiently Sensitive Test Methods. On August 19, 2014 (79 FR 49001), EPA promulgated new regulations requiring the use of sufficiently sensitive test methods in the NPDES permit program. A test method is sufficiently sensitive when: 1) the method minimum

level ("ML") is at or below the level of the effluent limit established in the permit for the measured pollutant or pollutant parameter; or 2) the test method has the lowest ML of the analytical methods approved under 40 CFR Part 136 or required under 40 CFR Chapter I, Subchapter N or O for the measured pollutant or pollutant parameter. Part III.A.1 of the proposed permit has been revised to incorporate these new requirements.

i. Electronic Reporting. On October 22, 2015 (80 FR 64064), EPA promulgated new regulations requiring electronic submittal of certain information required to be reported in the NPDES program. The implementation for electronic submittal of information such as DMRs is December 21, 2016; other information required by general permits such as NOIs and NOTs must be submitted electronically by December 21, 2020.

All permittees covered by this general permit are already submitting DMRs electronically to EPA in accordance with the new regulations. Part I.A.6.d of the proposed 2019 permit has been modified from the 2014 permit to require electronic submittal of DMRs to EPA (through NeTDMR); the use of NeTDMR was optional in the 2014 permit. The proposed 2019 permit continues to require submittal of DMRs to BOEM, BSEE and the CCC in any manner selected by the permittee.

The proposed 2019 permit also requires that NOIs and NOTs be submitted to EPA electronically by December 21, 2020. EPA is still working to provide for submittal of the Region 9 NOIs/NOTs through EPA's NeT (NPDES e-Reporting Tool) system. Prior to December 21, 2020, paper NOIs/NOTs will be accepted. Paper NOIs/NOTs must also be submitted to BOEM, BSEE and the CCC both prior to and after December 21, 2020. Other reports required by the permit (such as non-compliance reports) will continue to be reported in paper form.

VI. OTHER LEGAL REQUIREMENTS

A. Oil Spill Requirements. Oil spill requirements in the proposed permit reflect Executive Order 12777 which implements provisions of the Oil Pollution Act of 1990. Executive Order 12777 removed offshore facilities from jurisdiction under EPA and placed them under the jurisdiction of the Department of Interior, BSEE. Offshore operators are required to submit Oil Spill Response Plans to BSEE for review in accordance with 30 CFR 254.

The effect of the Oil Pollution Act of 1990 and Executive Order 12777 is that operators in state or Federal waters are no longer required by Section 311 of the Clean Water Act to develop Spill Prevention, Control and Contingency ("SPCC") plans.

B. Endangered Species Act ("ESA"). For the 2014 permit, Region 9 had concluded that the discharges would have no effect on species listed as threatened or endangered under the ESA or designated critical habitat for such species. This conclusion was based on an update to an

analysis in two biological assessments ("BAs")[62,63] that had been prepared for the 2004 general permit to assess the potential effects of the discharges on listed species under the jurisdiction of the U.S. Fish and Wildlife Service ("USFWS") and the National Marine Fisheries Service ("NMFS") (collectively "Services").

For the proposed 2019 permit, Region 9 has re-evaluated the potential effects of the discharges on updated lists of listed species and critical habitat based on the best available scientific and commercial data. The action area is the 39 offshore lease blocks described above in Section IV.A which is a reduction from (and a subset of) the 49 lease blocks covered by and evaluated for the 2014 permit.

The proposed action is the reissuance of the 2014 permit authorizing discharges from offshore oil and gas platforms located in active offshore lease blocks off Southern California. The proposed permit would authorize the same discharges as the 2014 permit (with very similar effluent limits) and from the same 23 platforms that were authorized to discharge under the 2014 permit. As such, the platforms and their discharges are already part of the environmental baseline for the action area.

In letters dated December 15, 2017, Region 9 requested updated lists of threatened and endangered species and critical habitat for these species from the Services to ensure that all appropriate species would be considered for the proposed permit. USFWS responded with its list in a letter to Region 9 dated January 29, 2018; NMFS provided its list in a letter dated January 19, 2018. These lists were updates to previous lists provided by the Services for the 2014 permit; the USFWS provided its previous list in a letter dated December 12, 2012, and NMFS provided its previous list in a letter dated January 14, 2013.

Table 3 shows the 2018 list of species provided by USFWS, along with the list provided for the 2014 permit; Table 4 provides the same information for the species under the jurisdiction of NMFS. The 2018 list provided by USFWS shows only minor revisions from the list provided for the 2014 permit. The specific species on the list have not changed; however, the listing status (endangered versus threatened) of two species has changed. In particular, for the island phacelia, the listing status has been revised from threatened to endangered and for the southern sea otter the status has been revised from endangered to threatened. These changes appear to be the result of errors in the list provided in 2012. The 2018 species list provided by NMFS shows more substantial changes from the list provided for the 2014 permit, including certain new species that have recently been listed.

As discussed below, however, after considering the additional species and new information that has become available subsequent to the 2014 permit issuance, we again

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[62] Science Applications International Corporation. 2000. Biological Assessment for Endangered Species in Outer Continental Shelf Waters of South and Central California for Consultation with the National Marine Fisheries Service, Submitted to EPA, February 10, 2000.

[63] Science Applications International Corporation. 2000. Biological Assessment for Endangered Species in Outer Continental Shelf Waters of South and Central California for Consultation with the Unites States Fish and Wildlife Service, Submitted to EPA, February 10, 2000.

conclude that the best available evidence supports the conclusion that the discharges, as well as the proposed action of permit reissuance, will have no effect on the species. It should also be noted that for the 2014 permit, Region 9 had provided copies of the draft permit and fact sheet to the Services, along with a tentative conclusion that the discharges would have no effect on listed species. No comments were received from the Services on this matter. Region 9 will also provide copies of the new draft permit and fact sheet to the Services for comment.

Table 3 – USFWS Species List

	Date Listed	2012 Status	2018 Status
Mammals			
Southern sea otter *(Enhydra lutris nereis)*	1/14/77	E	T
Birds			
California least tern *(Sterna antillarum browni)*	10/13/70	E	E
Light-footed clapper rail (*Rallus longirostris levipes)*	10/13/73	E	E
Western snowy plover *(Charadrius nivosus nivosus)*	4/5/93	T, CH[1]	T, CH[1]
Short-tailed albatross *(Phoebastria albatrus)*	7/31/00	E[2]	E[2]
Marbled murrelet (*Brachyramphus marmoratus)*	10/1/92	T[3], CH	T[3], CH
Amphibians			
California red-legged frog *(Rana draytonii)*	5/23/96	T, CH[4]	T, CH[4]
Fish			
Tidewater goby *(Eucyclogobius newberryi)*	2/4/94	E, CH[5]	E, CH[5]
Plants			
Beach layia *(Layia carnosa)*	6/22/92	E	E
Coastal dune milk-vetch *(Astragalus tener* var. *titi)*	8/12/98	E	E
Gambel's watercress *(Rorippa [Nasturtium] gambellii)*	8/3/93	E	E
Marsh sandwort *(Arenaria paludicola)*	8/3/93	E	E
Salt marsh bird's-beak *(Cordylanthus maritimus* ssp. *Maritimus)*	9/29/78	E	E
Hoffman's slender-flowered gilia *(Gilia tenuiflora* ssp. *Hoffinanii)*	7/31/97	E	E
Island phacelia (*Phacelia insularis insularis)*	7/31/97	T	E
Soft-leaved paintbrush *(Castilleja mollis)*	7/31/97	E	E
Ventura marsh milk-vetch *(Astragalus pycnostachyus* var. *lanosissimus)*	5/21/01	E, CH[6]	E, CH[6]

Key:
E -Endangered CH -Critical Habitat
T -Threatened

[1] Critical habitat finalized on December 7, 1999 and revised on June 19, 2012.
[2] Nonbreeding visitor to nearshore coastal waters.
[3] Nonbreeding visitor to nearshore coastal waters. Critical habitat finalized on May 24, 1996, revised on October 5, 2011, and affirmed on August 4, 2016.
[4] Critical habitat finalized on April 13, 2006 and revised on March 17, 2010.
[5] Critical habitat finalized on February 6, 2013.
[6] Critical habitat finalized on May 20, 2004.

Table 4 – NMFS Species List

	Date Listed	2013 Status	2018 Status
Marine Mammals			
Blue Whale *(Balaenoptera musculus)*	6/2/70	E	E
Fin Whale *(Balaenoptera physalus)*	6/2/70	E	E
Humpback Whale *(Megaptera novaeangliae)* – Central America Distinct Population Segment ('DPS")	6/2/70	E	E
Humpback Whale *(Megaptera novaeangliae)* - Mexican DPS		N/A	T
Sei Whale *(Balaenoptera borealis)*	6/2/70	E	E
Sperm Whale *(Physeter macrocephalus)*	6/2/70	E	E
Southern Resident Killer Whale (*Orcinus orca*)	11/18/05	E	E
Right Whale *(Eubalaena japanica)* - North Pacific DPS[1]	6/2/70	E, CH	E, CH
Gray Whale *(Eschrichtius robustus)* – Western North Pacific DPS	6/2/70	N/A	E
Steller Sea Lion *(Eumetopias jubatus)*	4/5/90	T	N/A
Guadalupe Fur Seal *(Arctocephalus townsendi)*	12/16/85	T	T
Sea Turtles			
Leatherback Turtle *(Dermochelys coriacea)*	6/2/70	E, CH[2]	E, CH[2]
Loggerhead Turtle *(Caretta caretta)* – North Pacific DPS	6/2/70	E, CH[3]	E, CH[3]
Olive Ridley Turtle *(Lepidochelys olivacea)*	7/28/78	E,T[4]	E,T[4]
Green Sea Turtle *(Chelonia mydas)* – East Pacific DPS[5]	7/28/78	E,T	E
Marine Invertebrates			
White Abalone *(Haliotis sorenseni)*	5/29/01	E	E
Black Abalone *(Haliotis cracherodii)*	1/14/09	N/A	E
Anadromous Fish			

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Chinook Salmon (*Oncorhynchus tshawytscha*)	8/4/89	E,T[6]	N/A
Coho Salmon (Central Coast ESU) *(Oncorhynchus kisutch)*	6/28/05	E[7]	N/A
Steelhead Trout, Southern California DPS (Oncorhynchus mykiss)	8/11/97	E	E
Steelhead Trout, South-Central California DPS (Oncorhynchus mykiss)		T	N/A
Green Sturgeon *(Acipenser medirosiris)* – Southern DPS	4/7/06	N/A	T, CH[8]
Marine Fish			
Giant Manta Ray *(Manta birostris)*	1/22/18	N/A	T
Scalloped Hammerhead *(Sphyrna lewini)* – Eastern Pacific DPS	7/3/14	N/A	E

Key:
E - Endangered
T – Threatened
CH - Critical Habitat
N/A – Not Applicable

[1] For the Pacific population, reclassification in 2008 to the North Pacific right whale; Atlantic and Pacific right whales were originally considered one species. Critical habitat also finalized in 2008.
[2] Critical habitat finalized on January 26, 2012.
[3] Critical habitat finalized on July 10, 2014.
[4] Southern California population is endangered, while rest of global population is threatened.
[5] Prior to 2016, Southern California population listed as endangered, with rest of global population listed as threatened. In 2016, 11 DPSs were established with East Pacific DPS (including Southern California) population listed as endangered.
[6] Sacramento River winter run evolutionarily significant unit (ESU) is endangered while Central Valley spring run ESU is threatened.
[7] Listed as threatened in 1996 and reclassified as endangered in 2005; geographic range of ESU revised on April 2, 2012.
[8] Critical habitat finalized on October 9, 2009.

Following below is an updated evaluation of potential effects on listed species under the jurisdiction of the USFWS and NMFS.

1. USFWS Species

Listed Mammals

Southern Sea Otter: This species had been considered in the BA prepared for the 2004 permit. The BA noted that the species tends to inhabit nearshore waters and given the location of the platforms three of more miles offshore, no effects were anticipated from the regulated discharges.

This species was reconsidered for the 2014 permit, including review of a revised recovery plan[64] prepared by the USFWS, and a supplemental EIS[65] addressing the termination of a translocation program for the species. The habitat of the species continued to be described as nearshore with sea otters primarily residing within about 1.2 miles of the shore. Although oil spills were considered to be a significant threat to the species, the regulated discharges from the platforms were not mentioned as a significant threat. Given the location of the platforms at least three miles from shore, Region 9 concluded that the discharges would have no effect on this species.

More recently in 2015, USFWS provided a status update for the species[66] and an updated stock assessment report became available in 2017 (82 FR 40793), but Region 9 found no new information in these updates that would change the previous conclusion of no effect to the species. BOEM also published a new report[67] in 2017 analyzing an expansion of the habitat of the species into the Santa Barbara Channel. However, no new information was provided indicating that the discharges could pose a threat to the species. The report specifically noted that sea otters had not been sighted near offshore oil platforms.

Listed Birds

California Least Tern: This species had been considered in the BA prepared for the 2004 permit. The BA concluded that no effects would be anticipated from the authorized discharges given the habitat of the species near the coastline (or in nearshore shallow waters) and that the species would not be expected in the vicinity of the platforms in Federal waters.

The USFWS completed a 5-year review[68] in 2006 and an action plan[69] for the species was developed by USFWS in 2009. The habitat of the species continued to be described in these updates as nearshore with foraging occurring within about two miles of shore, similar to the description in the recovery plan[70] for the species. In June 2018 (83 FR 28251), USFWS provided notice of initiation of another 5-year review of the status of the species, but no new information was provided that would have a bearing on potential effects of the discharges. Given the location of the platforms at least three miles from shore, Region 9 again concludes that the discharges would have no effect on this species.

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[64] U.S. Fish and Wildlife Service. 2003. Final Revised Recovery Plan for the Southern Sea Otter, February 2003.
[65] U.S. Fish and Wildlife Service. 2012. Final Supplemental Environmental Impact Statement, Translocation of Southern Sea Otters, November 2012.
[66] U.S. Fish and Wildlife Service. 2015. Southern Sea Otter California (*Enhydra lutris nereis)*, 5-Year Review: Summary and Evaluation, September 15, 2015.
[67] Bureau of Ocean Energy Management. 2017. Southern Sea Otter Range Expansion and Habitat Use in the Santa Barbara Channel, California, Open-File Report 2017-1001.
[68] U.S. Fish and Wildlife Service. 2006. California Least Tern, 5-Year Review Summary and Evaluation, September 2006.
[69] U.S. Fish and Wildlife Service. 2009. Spotlight Species Action Plan, California Least Tern, September 2009.
[70] U.S. Fish and Wildlife Service. 1985. Revised California Least Tern Recovery Plan, September 27, 1985.

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Light-Footed Clapper Rail: This species had been considered in the BA prepared for the 2004 permit. The BA concluded that no effects would be anticipated from the authorized discharges given the habitat of the species in salt water marshes at the coastline and that the species would not be present in the vicinity of the platforms in Federal waters.

USFWS prepared a 5-year review[71] of the species in 2009; the habitat of the species continues to be described as salt water marshes at the coastline and occasionally in freshwater marshes, similar to the description in the recovery plan[72] for the species. In 2013 (78 FR 19510), USFWS provided notice of its intent to conduct another 5-year review of the species, but no additional information was provided relevant to the potential effects of the discharges from the offshore platforms. Given the location of the platforms at least three miles from shore, Region 9 again concludes that the discharges would have no effect on this species.

Western Snowy Plover: This species had been considered in the BA prepared for the 2004 permit. The BA concluded that no effects would be anticipated from the authorized discharges given the habitat of the species at the coastline and that the species would not be present in the vicinity of the platforms in Federal waters.

USFWS prepared a recovery plan[73] for the species in 2007; critical habitat for the species was finalized in 1999 and revised in June 2012 (77 FR 36728). The habitat of the species is described as areas such as coastal dunes and beaches, and salt pans and marshes at the coastline. In June 2018 (83 FR 28251), USFWS provided notice of its intent to conduct another 5-year review of the species, but no additional information was provided relevant to the potential effects of the discharges from the offshore platforms. Given the location of the platforms at least three miles from shore, Region 9 concludes that the discharges would have no effect on this species.

Short-tailed Albatross: This species had not been considered in the BA prepared for the 2004 permit, given the listing date for the species. However, the species was considered for the 2014 permit and Region 9 concluded there would be no effects from the discharges.

In its species list provided to Region 9 on January 29, 2018, the USFWS described this species as a non-breeding visitor to the geographic area covered by the general permit. The recovery plan[74] for the species describes the habitat as largely centered in North Pacific coastal areas, but its range may include the Northern California coast during the non-breeding season. The Southern California coast (where the platforms are located) is not mentioned as part of the range of the species and from the discussion, it appears that Southern California is not a significant habitat for the species.

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[71] U.S. Fish and Wildlife Service. 2009. Light-Footed Clapper Rail, 5-Year Review Summary and Evaluation, August 10, 2009.
[72] U.S. Fish and Wildlife Service. 1985. Light-Footed Clapper Rail Recovery Plan, June 24, 1985.
[73] U.S. Fish and Wildlife Service. 2007. Western Snowy Plover, Pacific Coast Population Recovery Plan, August 13, 2007.
[74] U.S. Fish and Wildlife Service. 2008. Short-Tailed Albatross Recovery Plan, September 2008.

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In May 2015 (79 FR 25613), USFWS provided notice of its intent to conduct a 5-year review of the species, but no additional information was provided relevant to the potential effects of the discharges from the offshore platforms. Based on the above information, Region 9 concludes again that the discharges would have no effect on this species.

Marbled Murrelet: Although this species was listed on October 1, 1992, it was not on the list of species provided by USFWS for consideration in the BA for the 2004 permit. However, the species was on the list for provided by USFWS for consideration for the 2014 permit. Critical habitat was established on May 24, 1996 and revised on October 5, 2011 (76 FR 61599) and affirmed in 2016 (81 FR 51348). In its species list provided to Region 9 on January 29, 2018, USFWS referred to the species as a non-breeding visitor to nearshore coastal waters of Southern California. In its critical habitat designation of October 5, 2011, USFWS describes the range of the species as extending from Alaska to central California and may occur in small numbers in Southern California. Critical habitat itself extends only as far south as Santa Cruz County, well to the north of the location of the platforms. Further, the recovery plan[75] notes that its marine feeding range extends only about 1.2 miles from shore. Given the location of the platforms (more than three miles from shore) and the low number of birds that may occur in Southern California, Region 9 concludes that the discharges would have no effect on this species.

In April 2017 (82 FR 18665), USFWS provided notice of its intent to conduct a 5-year review of the species, but no additional information was provided relevant to the potential effects of the discharges from the offshore platforms.

Listed Amphibians and Fish

California Red-Legged Frog: Although this species was listed in 1996, it was not on the list of species provided by USFWS for consideration in the BA for the 2004 permit. However, the species was on the list provided by USFWS for consideration for the 2014 permit; critical habitat for the species was established in 2010 (75 FR 12816). Although the habitat includes areas within nearby counties such as Santa Barbara and Ventura Counties, its habitat as described in the recovery plan[76] and the critical habitat designation, consists of ponds, marshes and upland areas landward of the coastline. Given the location of the platforms (at least three miles offshore), Region 9 concludes that the discharges would have no effect on this species.

In June 2018 (83 FR 28251), USFWS provided notice of its intent to conduct a 5-year review of the species, but no additional information was provided relevant to the potential effects of the discharges from the offshore platforms.

Tidewater Goby: This species was listed as threatened by USFWS in 1994, with critical habitat established in 2013 (78 FR 8746). The habitat of the species as described in the recovery plan[77] and the critical habitat designation consists of coastal lagoons, marshes and freshwater

[75] U.S. Fish and Wildlife Service. 1997. Recovery Plan for the Marbled Murrelet, September 1997.
[76] U.S. Fish and Wildlife Service. 2002. Recovery Plan for the California Red-Legged Frog, May 28, 2002.
[77] U.S. Fish and Wildlife Service. 2005. Recovery Plan for the Tidewater Goby, December 7, 2005.

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tributaries. The species had been considered in the BA prepared for the 2004 permit but given the location of the platforms at least three miles offshore, the BA concluded that the discharges would have no effect on this species. Region 9 is not aware of any new information that would change the previous conclusion of no effect.

In June 2018 (83 FR 28251), USFWS provided notice of its intent to conduct a 5-year review of the species, but no additional information was provided relevant to the potential effects of the discharges from the offshore platforms; Region 9 concludes again that the discharges would have no effect on this species.

In March 2014 (79 FR 14340), USFWS proposed reclassifying the species from endangered to threatened. However, apparently no further action has occurred thus far on the proposal.

Listed Plants

Table 3 includes nine listed plants, most of which were not included in the species list provided by USFWS for consideration in the BA for the 2004 permit. The habitats of these plants as described in their recovery plans[78,79,80,81,82] are either onshore or in marshes at the coastline. There is one species without a recovery plan (Ventura march milk-vetch), but the original listing for the species (66 FR 27901) indicates that this species is also found at the coastline. Given the location of the platforms at least three miles from the coastline, Region 9 has concluded that the discharges would have no effect on these species.

2. NMFS Species

Listed Whales

The principal threats to all listed whales are similar and include factors such as vessel strikes, entanglement in fishing gear, reduced prey abundance due to overfishing, direct harvest and anthropogenic noise.[83] Habitat degradation including chemical pollutants is also mentioned as a potential threat in the recovery plans[84] for these species, but the significance of this factor is either unclear (sperm, blue, humpback, right and killer whales) or considered to be low (sei and fin whales).

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[78] U.S. Fish and Wildlife Service. 1998. Recovery Plan for Seven Coastal Plants and the Myrtle's Silverspot Butterfly, September 29, 1998.
[79] U.S. Fish and Wildlife Service. 2004. Recovery Plan for Five Plants from Monterey County, California, August 19, 2004.
[80] U.S. Fish and Wildlife Service. 1998. Recovery Plan for Marsh Sandwort and Gambel's Watercress, September 28, 1998.
[81] U.S. Fish and Wildlife Service. 2000. Thirteen Plant Taxa from the Northern Channel Islands Recovery Plan, September 26, 2000.
[82] U.S. Fish and Wildlife Service. 1985. Salt-Marsh Bird's Peak Recovery Plan, December 6, 1985.
[83] Major threats are described on NMFS website at: https://www.fisheries.noaa.gov/whales
[84] Can be accessed at: https://www.fisheries.noaa.gov/whales

Given the wide-ranging habitat of these species, Region 9 had concluded for the 2004 and 2014 permits that the discharges from the California offshore oil platforms would have no effect on the species. As discussed below, Region 9 has reconsidered each species, but reaches the same conclusion for the discharges proposed to be authorized by the next permit.

Blue Whale: This species had been considered in the BA prepared for the 2004 permit. Given the very limited amount of time these whales may spend in the vicinity the platforms, the BA concluded that no effects were anticipated from the regulated discharges. On April 17, 2012 (77 FR 22760), NMFS published a notice that it intended to update the 1998 recovery plan[85] for the species. The 2012 notice had been considered for the 2014 permit and Region 9 found no new information in the notice that would change the conclusion in the BA that the discharges would not affect this species. The updated recovery plan has yet to be finalized and Region 9 is not aware of any new information that would change the previous conclusion of no effect.

Fin Whale: This species had been considered in the BA prepared for the 2004 permit. Given the very limited amount of time this species may spend in the vicinity of the platforms, the BA concluded that no effects were anticipated on the species from the regulated discharges. On August 6, 2010 (75 FR 47538), NMFS published a notice of availability of a final recovery plan[86] for the species. The recovery plan had been considered for the 2014 permit and Region 9 found no information in the plan that would change the conclusion in the BA that the platform discharges would not affect this species. On January 29, 2018 (83 FR 4032), NMFS published a notice of initiation of 5-year reviews for several whales, including the fin whale. However, Region 9 found no new information in the notice indicating that the discharges could affect the species.

Humpback Whale: This species had been considered in the BA prepared for the 2004 permit and was reconsidered for the 2014 permit. In both cases, Region 9 concluded that no effects would be anticipated on the species from the regulated discharges, given the very limited amount of time this species may spend in the vicinity of the platforms. On September 8, 2016 (81 FR 62260), NMFS established 14 distinct population segments ("DPSs") for the humpback whale, nine of which are no longer listed as threatened or endangered. For the two DPSs in the vicinity of the platforms, the species is still listed – as endangered for the Central America DPS and threatened for the Mexican DPS. However, Region 9 found no new information in the 2016 notice that would change the previous conclusion that the discharges would not affect the species. Region 9 also reconsidered the recovery plan[87] for the species and the current overall assessment of the species on NMFS's website, and again found no new information that would change Region 9's previous conclusion.

Sei Whale: This species had been considered in the BA prepared for the 2004 permit and reconsidered for the 2014 permit. Given the very limited amount of time these whales may

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[85] National Marine Fisheries Service. 1998. Recovery Plan for the Blue Whale, July 1998.
[86] National Marine Fisheries Service. 2010. Final Recovery Plan for the Fin Whale, July 2010.
[87] National Marine Fisheries Service. 1991. Final Recovery Plan for the Humpback Whale, July 1991.

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spend in the vicinity of the platforms, the BA concluded that no effects were anticipated on the species from the regulated discharges. In December 2011, NMFS published a recovery plan[88] for the species. However, Region 9 found no new information in the plan that would change the conclusion in the BA that the discharges would not affect this species. On January 29, 2018 (83 FR 4032), NMFS published a notice of initiation of 5-year reviews for several whales, including the sei whale. However, Region 9 found no new information in the notice indicating that the discharges could affect the species.

Sperm Whale: This species had been considered in the BA prepared for the 2004 permit and reconsidered for the 2014 permit. Given the infrequent occurrence of the species in the vicinity of the platforms, the BA concluded that no effects were anticipated on the species from the regulated discharges. On December 28, 2010 (75 FR 81584), NMFS published a notice of availability of a final recovery plan[89] for the species. However, Region 9 found no new information in the 2010 recovery plan that would change the conclusion in the BA that the discharges would not affect this species. On September 8, 2014 (79 FR53171), NMFS published a notice of initiation of a 5-year review for the sperm whale. However, Region 9 found no new information in the notice that would change the previous conclusion that the discharges would not affect the species.

Southern Resident Killer Whale: This species was listed on November 18, 2005 (70 FR 69903) and was not considered in the BA prepared for the 2004 permit; it was also not on the species list provided by NMFS for review for the 2014 permit, and as such it was not considered for the 2014 permit. Critical habitat was established on November 29, 2006 (71 FR 69054), and a recovery plan was made available in January 17, 2008.[90] The critical habitat is in the Puget Sound area in the State of Washington and would therefore not be impacted by the proposed discharges from California offshore oil platforms. According to the recovery plan, the geographic range for the Southern Resident killer whale extends as far south as the Monterey Bay area, well north of the Southern California platforms. As such, Region 9 concludes that the platform discharges would not affect this species.

Right Whale (North Pacific DPS): This species was considered in the BA prepared for the 2004 permit but it was not on the species list provided by NMFS for review for the 2014 permit, and as such it was not reconsidered. Given the very infrequent occurrence of the species in the vicinity of the platforms, the BA concluded that no effects were anticipated on the species from the regulated discharges.

For the original listing in 1970, right whales in the North Pacific and North Atlantic were considered to be one species. In 2008 (73 FR 12024), the species was reclassified by NMFS into two separate species for whales in the North Pacific and North Atlantic. Critical habitat was also

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[88] National Marine Fisheries Service. 2011. Final Recovery Plan for the Sei Whale, December 2011.
[89] National Marine Fisheries Service. 2010. Final Recovery Plan for the Sperm Whale, December 2010.
[90] National Marine Fisheries Service. 2014. Recovery Plan for the Southern Resident Killer Whale, January 17, 2008.

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established in 2008 (73 FR 19000), and a final recovery plan was made available in 2013.[91] The critical habitat is in offshore waters of Alaska and would therefore not be impacted by the proposed discharges from California offshore oil platforms. In addition, the recovery plan does not identify the discharges that would be authorized by the proposed general permit as a significant threat to the species. Overall, Region 9 concludes that the platform discharges would not affect this species.

Gray Whale: On June 16, 1994 (59 FR 31094), NMFS revised its list of threatened and endangered species to remove the eastern North Pacific population of the gray whale; the western North Pacific population remained on the list. However, given that the location of the western North Pacific population (eastern Asia) is far removed from the Southern California offshore oil platforms, Region 9 concludes that the platform discharges would not affect this species.

Listed Seals and Sea Lions

Steller Sea Lion: This species had been considered in the BA prepared for the 2004 permit, but the BA concluded that no effects would be expected from the regulated discharges. On November 4, 2013 (78 FR 66140), NMFS published a notice to delist the eastern DPS of the Steller sea lion, and the species was not on the 2018 list of endangered/threatened species that NMFS provided to Region 9. Hence, no further review of this species has been conducted.

Guadalupe Fur Seal: This species had been considered in the BA prepared for the 2004 permit, but the BA concluded that no effects were anticipated on the species from the regulated discharges. A recovery plan has not been prepared for this species, but Region 9 reviewed the current assessment of the species and information concerning threats to the species found on NMFS's website.[92] Major threats include entanglement in fishing gear, military activities, ocean noise and although oil spills are mentioned as a significant threat, we found no new information that would change the conclusion in the BA that the regulated platform discharges would not affect this species.

Listed Sea Turtles

Table 4 above includes four listed species of sea turtles that may be present in the vicinity of the California offshore oil platforms. These animals inhabit tropical and subtropical waters throughout the world which is where they spend most of their lives. However, they do come ashore on beaches for nesting. They also migrate long distances between nesting and foraging areas.

As described by NMFS,[93] the main threats to sea turtles in the marine environment include incidental take in fisheries, marine debris, vessel strikes and disease. Onshore, the main

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[91] National Marine Fisheries Service. 2013. Final Recovery Plan for the North Pacific Right Whale, June 3, 2013.
[92] [HYPERLINK "https://www.fisheries.noaa.gov/species/guadalupe-fur-seal"].
[93] See https://www.fisheries.noaa.gov/sea-turtles

threats include loss or degradation of nesting habitat, artificial lighting and nest/hatching predation. Oil spills are mentioned as a concern; chemical contaminants in the marine environmental are also mentioned as a potential concern, but the significance of this factor is unclear. Discharges from offshore oil platforms are not mentioned as a significant threat.

Given the limited time any of these species may spend near the California offshore oil platforms, Region 9 had concluded for the 2004 and 2014 permits that the discharges from the platforms would have no effect on the species. As discussed below, Region 9 has reconsidered each species, but has reached the same conclusion regarding the discharges proposed to be authorized by the next permit.

Leatherback Turtle: The potential effects of the discharges were considered in the BA prepared for the 2004 permit, and the BA concluded there would be no effects. The species was reconsidered for the 2014 permit and again no effects were anticipated.

Critical habitat for this species was finalized by NMFS on January 26, 2012 (77 FR 4170). Critical habitat extends along the California coast from Point Arena in the north to Point Conception in the south. Only one existing platform would fall within this area which is Platform Irene, and Region 9 found no information in the critical habitat designation or the recovery plan[94] that would indicate the proposed discharges could affect the species, or its critical habitat.

In 2013, NMFS published a 5-year status review[95] for this species that provides updated information concerning habitat and current threats. In 2016, NMFS also published a 5-year action plan for the species.[96] Although oil spills are a concern, no new information was provided indicating that the platform discharges could pose a significant threat. As such, Region 9 has again concluded that the discharges would have no effect on this species.

Loggerhead Turtle: This species had been considered in the BA prepared for the 2004 permit but given the infrequent occurrence in the general permit area, the BA concluded there would be no effects from the regulated discharges. The species was reconsidered for the 2014 permit and again no effects were anticipated.

In 2011 (76 FR 58868), NMFS established nine DPSs for the loggerhead turtle. Southern California falls within the North Pacific DPS. In 2009, NMFS also published a status review[97] of this species that provides updated information concerning habitat and current threats. The update notes that the species can be found throughout tropical and temperate areas in the Pacific Ocean,

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[94] National Marine Fisheries Service. 1998. Recovery Plan for the U.S. Pacific Populations of the Leatherback Turtle, January 12, 1998.

[95] National Marine Fisheries Service. 2013. Leatherback Sea Turtle (*Dermochelys coriacea*), 5-Year Review: Summary and Evaluation, November 2013.

[96] National Marine Fisheries Service. 2016. Species in the Spotlight, Pacific LeatherbackTurtle (*Dermochelys coriacea*), January 2016.

[97] National Marine Fisheries Service. 2009. Loggerhead Sea Turtle (Caretta carreta), 2009 Status Review Under the Endangered Species Act, August 2009.

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including the coast of California. However, discharges from offshore oil platforms are not mentioned as a threat and based on the above information and the recovery plan,[98] Region 9 again concludes that the proposed discharges from the platforms would have no effect on this species.

On July 10, 2014 (79 FR 39855), NMFS finalized critical habitat for the species. However, the critical habitat only covers certain areas in the Atlantic Ocean and Gulf of Mexico. The North Pacific area was specifically not included and accordingly the designation does not affect the area covered by the general permit.

Olive Ridley Turtle: This species had been considered in the BA prepared for the 2004 permit but given the rare occurrence of the species in the general permit area, the BA concluded there would be no effects from the regulated discharges. The species was reconsidered for the 2014 permit and again no effects were anticipated.

In 2014, NMFS completed a 5-year review[99] of the status of the species that provides an update concerning the species and the current threats to the species; the update notes that the species typically occurs in tropical and subtropical waters but can be found as far north as California. Additional information can be found in the recovery plan[100] prepared in 1998.

Although marine pollution overall is mentioned as a potential threat, its significance is not clear. Discharges from the offshore oil platforms are not mentioned as a specific concern. Given the infrequent occurrence of the species in the general permit area, Region 9 again concludes that the discharges would have no effect on this species.

Green Turtle: This species had been considered in the BA prepared for the 2004 permit. Given the infrequent occurrence of the species in the general permit area, the BA concluded that there would be no effects from the regulated discharges. The species was reconsidered for the 2014 permit and again no effects were anticipated.

Critical habitat was designated in 1998 for the species around Culebra Island, Puerto Rico, far removed from Southern California; as such, the California platform discharges would have no effect on this critical habitat.

On April 6, 2016 (81 FR 20058), NMFS established 11 DPSs for the green sea turtle. Southern California falls within the East Pacific DPS for which the species is listed as endangered. However, no new information was provided in the notice indicating that the platform discharges could pose a threat to the species.

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[98] National Marine Fisheries Service. 1998. Recovery Plan for the U.S. Pacific Populations of the Loggerhead Turtle, January 12, 1998.

[99] National Marine Fisheries Service. 2014. Olive Ridley Sea Turtle (Lepidochelys olivadea), 5-Year Review: Summary and Evaluation, June 2014.

[100] National Marine Fisheries Service. 1998. Recovery Plan for the U.S. Pacific Populations of the Olive Ridley Turtle, January 12, 1998.

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NMFS published a status review[101] of the species in 2015 that provides an update concerning the species and the current threats to the species; a recovery plan[102] for the species was also published in 1998. Oil and gas development is mentioned as a potential threat, largely due to factors such as vessel traffic and oil spills. However, no clear evidence is provided that regulated discharges from oil platforms would be a significant threat.

After review of the above information, Region 9 has again concluded that the discharges would have no effect on this species.

Listed Marine Invertebrates

White Abalone: This species was listed as endangered on May 29, 2001 (66 FR 29046). The species was not included on the species list that NMFS provided for the 2014 permit reissuance, but it had been considered by Region 9 for the 2014 permit since it is present in Southern California marine waters. The recovery plan[103] for the species describes the principal threats to the species as over-harvesting and disease; regulated discharges from the platforms are not mentioned as a threat.

The depth range of this species (5-60 meters) would overlap the locations of several shallow water platforms in Federal waters (e.g., Platforms Hogan and Gina in the Santa Barbara Channel and Platform Edith in the San Pedro Channel). However, the recovery plan also describes the habitat of the species as primarily rocky substrate along the coast. For the 2014 permit, BOEM provided Region 9 with an assessment of the ocean bottom characteristics in the vicinity of the shallow water platforms (email to Region 9 from BOEM dated August 27, 2013). BOEM's assessment was that no significant rocky habitat can be found within at least one-half mile of any of the shallow water platforms. Given the substantial distance between the platforms and suitable habitat for the species, and the absence of information in the recovery plan indicating the platform discharges could be a threat, Region 9 concluded for the 2014 permit that the discharges would have no effect on this species.

In 2016, NMFS completed a 5-year action plan with priority actions to be implemented to help restore the species.[104] On December 22, 2016 (83 FR 93902), NMFS also announced the initiation of a 5-year review of the white abalone to update its information on the status of the species. However, Region 9 found no new information in these documents that would change the previous conclusion that the discharges would have no effect on the species.

Black Abalone: This species was not included on the species list that NMFS provided for the 2014 permit, but it had been considered by Region 9 since it is present in Southern

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[101] National Marine Fisheries Service. 2015. Status Review of the Green Sea Turtle (Chenolia mydas) Under the Endangered Species Act, March 2015.
[102] National Marine Fisheries Service. 1998. Recovery Plan for the U.S. Pacific Populations of the East Pacific Green Turtle, January 12, 1998.
[103] National Marine Fisheries Service. 2008. Final White Abalone Recovery Plan, October 2008.
[104] National Marine Fisheries Service. 2016. Species in the Spotlight, Priority Actions: 2016-2020, White Abalone, *Haliotis sorenseni,* January 1, 2016.

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California marine waters, and it had been listed on January 14, 2009 (74 FR 1937). In addition, critical habitat was designated for the black abalone on October 27, 2011 (76 FR 66806). Like the white abalone, a 2009 assessment report[105] for the species lists factors such as over-harvesting and disease as the principal threats to the species; regulated discharges from the platforms are not mentioned as a threat.

Although critical habitat is present along the Southern California coastline in the vicinity of the offshore platforms, the habitat of the species, including the critical habitat, only extends seaward from the coastline to a depth of six meters. Bathymetry data for Southern California coastal waters show the habitat of the species would be separated from any platform by at least two miles.[106] Given this factor and the absence of information in the 2009 assessment report indicating the platform discharges could be a threat, Region 9 concluded for the 2014 permit that the discharges would have no effect on this species.

In 2016, NMFS prepared an outline for a recovery plan[107] for the species. The outline provides an updated assessment of the major threats to the species. Although oil spills and spill response activities are mentioned as a potential threat, the regulated discharges from the platforms are not. Accordingly, Region 9 again concludes that the discharges would not affect the species.

Listed Fish and Sharks

Green Sturgeon (Southern DPS): This species was listed on April 7, 2006 (71 FR 17757), and critical habitat was established on October 9, 2009 (74 FR 52300). Given the date of the listing, this species had not been considered in the BA for the 2004 permit; it was considered for the 2014 permit reissuance although it was not on the list of species that NMFS provided for the 2014 reissuance. The listing notice indicates that the geographic range of the species includes nearshore marine waters along the west coast of North America as far south as Mexico. The critical habitat, however, extends only as far south as the Monterey Bay area; as such, the critical habitat would not be affected by discharges from Southern California offshore oil platforms.

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The principal threats to the southern DPS as described in the listing notice are reductions in spawning areas in the Sacramento River due to dams, and water diversions in the Sacramento River and Delta. Discharges from offshore oil platforms were not mentioned as a significant threat to the species, and accordingly, Region 9 concluded that the reissuance of the 2014 permit would not affect the species.

In 2015, NMFS provided an updated assessment of the status of the species.[108] The

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[105] National Marine Fisheries Service. 2009. Status Review Report for Black Abalone. January 2009.
[106] Maps can be found in Oil Spill Response Plan for DCOR, Santa Barbara Channel & San Pedro Channel, November 2007, and ExxonMobil Pacific Region Oil Spill Response Plan, June 2009.
[107] National Marine Fisheries Service. 2016. Recovery Plan Outline for Black Abalone (*Haliotis cracherodii*), September 2016.
[108] National Marine Fisheries Service. 2015. Southern Distinct Population Segment of the North American Green

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update notes that in California, the species is seen most frequently in the San Francisco and Monterey Bay areas. No information was provided indicating that the discharges from the offshore oil platforms would constitute a significant threat; given the available information, Region 9 again concludes that the discharges would not affect this species.

Scalloped Hammerhead Shark (Eastern Pacific DPS): This species was listed on July 3, 2014 (79 FR 38214), and had not been considered in the BA for the 2004 permit or for the 2014 permit reissuance. These sharks are found worldwide in warm temperate or tropical waters, mainly in the open ocean. The principal threats to the species as described in the listing notice include factors such as overfishing and bycatch. Habitat degradation from factors such as pollutants in discharges from facilities such as offshore oil platforms is not considered a significant threat to the species (79 FR 38230). Accordingly, Region 9 concludes that the discharges would not affect this species.

Giant Manta Ray: This species was listed on January 22, 2018 (83 FR 2916), and had not been considered in the BA for the 2004 permit or for the 2014 permit reissuance. This species is migratory and is found worldwide in tropical, subtropical and temperate waters and has been observed as far north as Southern California. The principal threat to the species as noted on NMFS website is overutilization for commercial purposes. The listing notice indicates that environmental pollutants do not appear to be a significant threat, and no information was provided suggesting that pollutants in discharges from offshore oil platforms would be a significant concern. Accordingly, Region 9 concludes that the discharges authorized by the permit would not affect this species.

Steelhead Trout: This species had been considered in the BA prepared for the 2004 permit but given the absence of information indicating the regulated discharges could affect the species, Region 9 concluded that no effects would be anticipated. The species was reconsidered for the 2014 permit, but again no effects were anticipated.

In 2016, NMFS published a new 5-year review[109] of the status of the species, including an assessment of the major threats to the species. A final recovery plan was also published in 2012.[110] Again, however, no information is presented indicating that the regulated discharges from the platforms would be a threat. As such, Region 9 has concluded that the discharges would have no effect on this species.

Coho Salmon (Central Coast Evolutionarily Significant Unit ("ESU")): This species was originally listed as threatened in 1996 and reclassified as endangered in 2005. Although NMFS revised the geographic range of this species in 2012 (77 FR 19552), the southern boundary of the range is still in Santa Cruz County well to the north of the location of the

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Sturgeon (*Acipenser medirostris*), 5-Year Review: Summary and Evaluation, August 11, 2015.

[109] National Marine Fisheries Service. 2016. South-Central/Southern California Coast Steelhead Recovery Planning Domain, 5-Year Review: Summary and Evaluation of Southern California Coast Steelhead Distinct Population Segment, March 18, 2016.

[110] National Marine Fisheries Service. 2012. Southern California Steelhead Recovery Plan, January 2012.

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platforms in Southern California. Given this factor, Region 9 concluded that the discharges authorized by the 2014 permit would not affect the species.

In April 2016, NMFS published a 5-year review[111] for the species, but no information was provided indicating that the discharges from the oil platforms could pose a threat. Further, the 2018 species list provided by NMFS no longer included this species as a species of concern. As such, Region 9 has concluded that the discharges would have no effect on this species.

Chinook Salmon (Sacramento River winter run and Central Valley spring run): The salmon had been considered in the BA prepared for the 2004 permit but given the absence of information indicating the regulated discharges could affect the salmon, Region 9 concluded that no effects would be anticipated. The species was reconsidered for the 2014 permit, but again no effects were anticipated.

In July 2014, NMFS published a recovery plan for the species,[112] but no new information was provided indicating that the platform discharges could pose a threat. In addition, the 2018 species list provided by NMFS no longer included this species as a species of concern. As such, Region 9 has concluded that the discharges would have no effect on this species.

C. Coastal Zone Management Act. The Coastal Zone Management Act ("CZMA") provides that a Federal license or permit for activities affecting the coastal zone of a state may not be granted until a state with an approved Coastal Management Program ("CMP") concurs with a certification that the activities authorized by the permit are consistent with the CMP (CZMA Section 307(c)(3)(A)). In California, the CZMA authority is the CCC. In this case, EPA will be preparing and submitting to the CCC the required certification. Since the necessary consistency concurrence has not been obtained, the proposed permit will not be effective until the required concurrence is obtained.

As a threshold matter, CZMA consistency determination requirements apply not only to federal activities and federal licenses or permits for activities that occur within the coastal zone, but also to federal activities and federal licenses or permits for activities outside the coastal zone that affect any land or water use or natural resource of the coastal zone. Region 9 believes that the proposed permit could affect coastal uses or resources of the coastal zone of State of California.

In accordance with revised regulations implementing the CZMA (71 FR 788, January 5, 2006), the issuance of a general NPDES permit by EPA that does not involve case-by-case or individual issuance of a license or permit is considered a "Federal agency activity" subject to the consistency determination requirements of CZMA Section 307(c)(1). 15 CFR 930.31(d). If the

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[111] National Marine Fisheries Service. 2016. 5-Year Review: Summary and Evaluation of Central California Coast Coho Salmon, April 2016.

[112] National Marine Fisheries Service. 2014. Recovery Plan for the Evolutionarily Significant Units of the Sacramento River Winter-Run Chinook Salmon and Central Valley Spring-Run Chinook Salmon and the Distrinct Population Segment of California Central Valley Steelhead, July 2014.

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relevant state agency's conditions are not incorporated into the general permit or the state agency objects to the general permit, then the general permit is not available for use in that state unless the applicant or person who wants to use the general permit provides the state agency with a consistency determination and the state agency concurs. Essentially, if EPA does not include a state agency's conditions or if the state agency objects, then the applicable CZMA consistency determination requirements shift from those in CZMA Section 307(c)(1) into those in CZMA section 307(c)(3).

CZMA Section 307(c)(1)) requires that issuance of the proposed 2019 permit be consistent with the enforceable policies of the approved California CMP to maximum extent practicable. The enforceable policies are found in Articles 1 through 7 of Chapter 3 of the California Coastal Act. EPA has considered the proposed permit in relation to these policies and determined that issuance of the proposed 2019 permit is consistent. In the near future, as noted above, Region 9 will be submitting a certification of consistency to the CCC and requesting the concurrence of the CCC with Region 9's determination.

D. Marine Protection, Research, and Sanctuaries Act. The Channel Islands National Marine Sanctuary was designated in 1980 and encompasses approximately 4,296 km^2 in the Southern California Bight. The sanctuary boundaries include the ocean area extending from the mean high-tide line to a distance of 11.1 km around San Miguel, Santa Rosa, Santa Cruz, Anacapa, and Santa Barbara Islands. The islands themselves are not part of the sanctuary but constitute the emergent portion of the Channel Islands National Park. The seaward boundary of the park extends 1.85 km offshore.

Sanctuary regulations (15 CFR Part 922.71) provide a list of activities that are prohibited and thus unlawful for any person to conduct or to cause to be conducted within the Sanctuary. No operations authorized by this proposed permit are within the Sanctuary boundaries.

E. Magnuson-Stevens Fishery Conservation and Management Act. The 1996 amendments to the Magnuson-Stevens Fishery Conservation and Management Act set forth a number of new mandates for the National Oceanic and Atmospheric Administration ("NOAA") Fisheries, regional fishery management councils, and Federal agencies to identify and protect important marine and anadromous fish habitat (16 U.S.C 1855). Regional fishery management councils, with assistance from NOAA Fisheries, are required to delineate essential fish habitat ("EFH").

The Magnuson-Stevens Act requires that Federal agencies consult with NOAA Fisheries on all actions undertaken by the agency which may adversely affect EFH (50 CFR 600.905 - 600.930). In accordance with these requirements, for the 2004 general permit, EPA prepared an assessment[113] of the effects of the proposed discharges on EFH in the area covered by the permit. The assessment concluded that while there may be effects on EFH from certain discharges near an outfall, these effects should be minor overall given the small area which may be affected

[113] Science Applications International Corporation. 2000. Essential Fish Habitat Assessment for NPDES Permit No. CAG280000, Submitted to EPA Region 9. October 2, 2000.

relative to the size of the EFH off the Pacific Coast, and the mitigation provided by the various effluent limitations of the permit.

On October 4, 2000, EPA provided a copy of the EFH assessment to NOAA Fisheries to initiate a consultation. In a letter dated October 20, 2000, NOAA Fisheries provided its response, which included the following Conservation Recommendations with regards to produced water discharges:

1. Require oil and gas platform operators to evaluate the direct lethal, sublethal, and bioaccumulative effects of produced water on Federally-managed fish species (e.g., blue rockfish, bocaccio rockfish, brown rockfish, olive rockfish and lingcod) at key life stages (e.g., juvenile and adult) occupying the mixing zone of produced water effluent discharges.

2. Model dilution and dispersion plumes from the point of produced water discharge to determine the extent of the area in which Federally-managed fish species may be adversely affected.

3. Develop appropriate mitigation measures (i.e., alter discharge rates or relocate discharge pipes) should information from the two previous recommendations indicate that substantial adverse effects to Federally-managed species or EFH do occur.

The 2004 general permit included a requirement that the permittees prepare and submit to Region 9 within 6 months of the permit effective date a study that addressed the above issues. A final report[114] was submitted by permittees in June 2005. The report concludes that the discharges would not be expected to have a significant adverse effect on EFH. Region 9 forwarded a copy of the report to NOAA Fisheries in September 2005. NOAA Fisheries was satisfied that its concerns had been addressed by the report, and the consultation was concluded.

For the 2014 permit reissuance, Region 9 reconsidered the potential effects of the discharges on EFH, based on new information that had become available since 2004. One such item was the adoption on May 11, 2006 (71 FR 27408) of Amendment 19 (effective June 12, 2006) to the Pacific Coast Groundfish Fishery Management Plan that sets forth certain new requirements for the Plan. While oil production platforms are mentioned in the Amendment, Region 9 found no new requirements or concerns identified that had not been previously considered. Another document[115] provided an assessment of nonfishing impacts (including potential impacts from offshore oil platforms) on EFH. However, Region 9 found no new information that was not already considered in the previous EFH assessment.

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[114] Western States Petroleum Association. 2005. The Effects of Produced Water Discharges on Federally Managed Fish Species along the California Outer Continental Shelf, Submitted to EPA Region 9, June 2005.
[115] Pacific Coast Groundfish Fishery Management Plan for the California, Oregon, and Washington Groundfish Fishery, Appendix D, Nonfishing Impacts to Essential Fish Habitat and Recommended Conservation Measures, Pacific Fishery Management Council, November 2005.

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For the proposed 2019 permit, Region 9 again reconsidered its previous conclusion concerning EFH by reviewing new information available since 2014. The West Coast Regional Office of NOAA Fisheries provides updated information concerning EFH on its website at: [HYPERLINK "https://www.westcoast.fisheries.noaa.gov/habitat/fish_habitat/efh_consultations_go.html"]. An updated Pacific Coast Groundfish Fishery Management Plan was released in 2016.[116] However, Region 9 found no new information in the plan that would indicate a need for revisions to the general permit. The Pacific Coast Salmon Fishery Management Plan was also updated in 2016.[117] The plan recommends diligent application and enforcement of regulations applicable to industrial operations including oil exploration, which EPA believes is being accomplished by the terms of this proposed permit, but no new specific requirements applicable to the general permit. The National Saltwater Recreational Fisheries Policy, West Coast Implementation Plan 2016-2017[118] was also recently released, but again Region 9 found no new information indicating a need for revisions for the proposed 2019 permit.

In summary, Region 9 reviewed the current EFH information on the NOAA Fisheries website for any new requirements or information pertaining to the potential effects of the proposed discharges on EFH. We found no new information that would change our previous conclusion that the discharges would not have an adverse effect on EFH. As such, Region 9 is not reinitiating consultation at this time, nor proposing any revisions to the 2019 permit based on EFH considerations, but will forward the proposed permit and fact sheet to NOAA Fisheries for any comments on Region 9's tentative conclusion concerning the potential effects on EFH.

F. ANNEX V of MARPOL (33 CFR 155.73). Under Annex V of the International Convention for the Prevention of Pollution from Ships, the U.S. Coast Guard ("USCG") has issued interim final regulations under 33 CFR 151.73 to control the disposal of garbage and domestic wastes from fixed or floating platforms. These regulations include those platforms involved in the exploration and exploitation of oil and gas resources, such as oil drilling rigs and production platforms. These regulations apply to all such vessels when in navigable waters of the U.S. or within the 200-mile Exclusive Economic Zone. This proposed permit will prohibit the discharge of garbage (as defined at 33 CFR 151) within 12 miles of the nearest land. The term "garbage," as it is applied here, includes operational and maintenance wastes. Further clarification of wastes covered under these regulations can be found at 33 CFR 151. Beyond 12 miles from the nearest land, the discharge of food wastes that are ground so as to pass through a 25-millimeter mesh screen, incinerator ash, and non-plastic clinkers will be permitted. Incinerator ash and non-plastic clinkers that can pass through a 25-millimeter mesh screen will be permitted to be discharged beyond 3 miles from the nearest land. These requirements are already part of the USCG regulations and are incorporated into the permit for consistency.

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[116] Pacific Fishery Management Council. 2016. Pacific Coast Groundfish Fishery Management Plan for the California, Oregon, and Washington Groundfish Fishery, August 2016.
[117] Pacific Fishery Management Council. 2016. Pacific Coast Salmon Fishery Management Plan, March 2016.
[118] NOAA Fisheries. 2016. National Saltwater Recreational Fisheries Policy, West Coast Implementation Plan 2016-2017, April 2016.

G. Paperwork Reduction Act. The information collection required by this proposed permit has been approved by Office of Management and Budget ("OMB") under the provisions of the Paperwork Reduction Act, 44 U.S.C. 3501 *et. seq.*, in submission made for the NPDES permit program and assigned OMB control numbers 2040-0086 (NPDES permit application) and 2040-0004 (discharge monitoring reports).

H. Regulatory Flexibility Act. The Regulatory Flexibility Act, 5 U.S.C. 601 *et seq,* requires that EPA prepare a regulatory flexibility analysis for regulations that have a significant impact on a substantial number of small entities. The permit renewal proposed today is not a ''rule'' subject to the Regulatory Flexibility Act. EPA prepared a regulatory flexibility analysis, however, on the promulgation of the Offshore Subcategory guidelines on which many of the permit's effluent limitations are based. That analysis has shown that issuance of this permit would not have a significant impact on a substantial number of small entities.

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Appendix A - Procedure for Reasonable Potential Evaluation in NPDES Permit CAG280000 Using EPA's Recommended 304(a) Marine Water Quality Criteria as Part of the Evaluation of the Discharges for Consistency with EPA's Ocean Discharge Criteria Regulations

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Appendix B – Map of OCS Lease Blocks and Platform Locations in Federal Waters off Southern California

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