gutters, and drains including drip pans and wash areas.

4. "Desalinization unit discharge" means wastewater associated with the process of creating fresh water from seawater.

5. "Domestic waste" includes discharges from galleys, sinks, showers, and laundries.

6. "No discharge of free oil" means a discharge that does not cause a film or sheen upon or a discoloration on the surface of the water or adjoining shorelines, or cause a sludge or emulsion to be deposited beneath the surface of the water or upon adjoining shorelines.

7. "Drill cuttings" means particles generated by drilling into subsurface geological formations.

8. "Drilling muds" means any fluid sent down the well hole, including any specialty products, from the time a well is begun until the final cessation of drilling in that hole. The term "mud system" refers to the major types of drilling muds used during the drilling of one well. A change in mud system is considered to occur after bulk discharges when one basic type of generic mud is exchanged for another type. A change in mud system is not considered to have occurred when small amounts of specialty mud additives are added to a mud.

9. "Produced sands" means sands and other solids removed from the produced waters.

10. "Sanitary waste" means human body waste discharged from toilets and urinals.

11. The term "territorial seas" means the belt of the seas measured from the line of ordinary low water along that portion of the coast which is in direct contact with the open sea and the line marking the seaward limit of inland waters, and extending seaward a distance of three miles.

12. "Well completion and treatment fluids" means any fluids sent down the drill hole to improve the flow of hydrocarbons into or out of geological formations which have been drilled.

13. A "discrete sample" means any individual sample collected in less than fifteen minutes.

14. For flow rate measurements, a "composite sample" means the arithmetic mean of no fewer than eight individual measurements taken at equal intervals for twenty-four hours or for the duration of the discharge, whichever is shorter.

For oil and grease measurements, a "composite sample" means four samples taken over a twenty-four hour period analyzed separately and the four samples averaged. The daily maximum limitation for oil and grease is based on this definition of a composite sample. For measurements other than flow rate or oil and grease, a composite sample means a combination of no fewer than eight individual samples obtained at equal time intervals for twenty-four hours or for the duration of the discharge, whichever is shorter.

15. Limiting Permissible Concentration—that concentration which will not exceed .01 of a concentration shown to be acutely toxic (96 hour $LC_{50}$) to appropriate sensitive marine organisms in a bioassay carried out in accordance with the method in "Drilling Fluids Toxicity Test" identified in Condition II.A.l(e).

16. Generic Drilling Muds.

| | Maximum allowable concentration (Pounds per barrel) |
|---|---|
| 1. Seawater/potassium/polymer mud: | |
| KCl | 50 |
| Starch | 12 |
| Cellulose polymer | 5 |
| Xanthan gum polymer | 2 |
| Drilled solids | 100 |
| Caustic | 3 |
| Barite | 450 |
| Seawater | (1) |
| 2. Seawater/lignosulfonate mud: | |
| Components | |
| Attapulgite or bentonite | 50 |
| Lignosulfonate | 15 |
| Lignite | 10 |
| Caustic | 5 |
| Barite | 450 |
| Drilled solids | 100 |
| Soda ash/sodium bicarbonate | 2 |
| Cellulose polymer | 5 |
| Seawater | (1) |
| 3. Lime mud: | |
| Components | |
| Lime | 20 |
| Bentonite | 50 |
| Lignosulfonate | 15 |
| Lignite | 10 |
| Barite | 180 |
| Caustic | 5 |
| Drilled solids | 100 |
| Soda ash/sodium bicarbonate | 2 |
| Freshwater | (1) |
| 4. Nondispersed mud: | |
| Components | |
| Bentonite | 15 |
| Acrylic polymer | 2 |
| Barite | 180 |
| Drilled solids | 70 |
| Freshwater | (1) |
| 5. Spud mud (slugged intermittently with seawater): | |
| Components | |
| Attapulgite or Bentonite | 50 |
| Caustic | 2 |
| Drilled solids | 100 |
| Barite | 50 |
| Soda ash/sodium bicarbonate | 2 |
| Lime | 1 |
| Seawater | (1) |
| 6. Seawater gel mud. | |
| Components | |
| Attapulgite or bentonite | 50 |
| Caustic | 3 |
| Cellulose polymer | 2 |
| Drilled solids | 100 |
| Barite | 50 |
| Soda ash/sodium bicarbonate | 2 |
| Lime | 2 |
| Seawater or freshwater | (1) |
| 7. Lightly treated lignosulfonate freshwater/seawater mud: | |
| Components | |
| Bentonite | 50 |
| Barite | 180 |
| Caustic | 3 |
| Lignosulfonate | 6 |
| Lignite | 4 |
| Cellulose polymer | 2 |
| Driling solids | 100 |
| Soda ash/sodium bicarbonate | 2 |
| Lime | 2 |
| Seawater to freshwater ratio 1:1 approx. | (1) |
| 8. Lignosulfonate freshwatrer mud: | |
| Components | |
| Bentonite | 50 |
| Barite | 450 |
| Caustic | 5 |
| Lignosulfonate | 15 |
| Lignite | 10 |
| Cellulose polymer | 2 |
| Drilling solids | 100 |
| Soda ash/sodium bicarbonate | 2 |
| Lime | 2 |
| Seawater to freshwater ratio | (1) |

[1] As needed.

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[FRL-2885-4]

## Draft General NPDES Permit for Offshore Oil and Gas Development and Production Activities off Southern California

**AGENCY:** Environmental Protection Agency (EPA), Region 9.

**ACTION:** Notice of Draft General NPDES Permit.

**SUMMARY:** The Regional Administrator of Region 9 is proposing to issue a general NPDES permit (NPDES permit No. CAG280622) which would authorize discharges from facilities engaging in development and production activities for oil and gas in specified Federal waters off Southern California. This permit would be applicable to facilities included in the Offshore Subcategory of the Oil and Gas Extraction Point Source Category with the exception of mobile exploratory operations. A general NPDES permit covering both mobile exploratory operations and production platforms was issued by Region 9 on February 18, 1982 (NPDES No. CA0110516–47 FR 7312). This permit was reissued on December 8, 1983, for the six month period ending June 30, 1984 (48 FR 55029).

Rather than reissuing this permit again, however, Region 9 is proposing to issue two general permits, one covering development and production operations (discussed in this notice) and another

general permit covering exploratory operations (published elsewhere today). Studies funded by EPA pursuant to Section 403 of the Clean Water Act (CWA) revealed a significant difference in the state of knowledge concerning the potential environmental effects of exploratory operations and production platforms. As discussed in the **Federal Register** notice for the general permit covering exploratory operations, Region 9 concluded that unreasonable degradation of the marine environment (as defined in 40 CFR Part 125, Subpart M) would not be expected from the exploratory activity anticipated off Southern California in the next 5 years. However, due to the larger quantities of material, the localized concentrations of that material, and the persistence of the material discharged from production platforms, Region 9 concluded that such a determination could not be made for production platforms based on existing data. As a result, different permit requirements are appropriate for exploratory operations and production platforms and Region 9 believes two general permits should be issued which reflect these differences.

General NPDES permit No. CAG280622 would become effective on publication following the Region's consideration of public comments and expire 5 years from the effective date. The area to be covered by the proposed permit consists of those offshore tracts currently considered active by the Minerals Management Service (MMS) and leased by MMS from Lease Sale Nos. 35, 48, 53, 68, 73, 80 and the 1966 and 1968 Federal lease sales.

The draft general permit contains effluent limitations requiring Best Available Technology Economically Achievable (BAT) for toxic and nonconventional pollutants and Best Conventional Pollutant Control Technology (BCT) for conventional pollutants as required by sections 301(b)(2) (A), (C), (D), (E), and (F) of the CWA.

Since the Agency has not promulgated BAT/BCT effluent limitations guidelines for the Oil and Gas Extraction Point Source Category, the effluent limits in the permit were developed by Region 9 using best professional judgment (BPJ) as authorized by section 402(a)(1) of the CWA and 40 CFR 125.3. The requirements of section 403 of the CWA (Ocean Discharge Criteria) and regulations promulgated by EPA pursuant to section 403(c) (40 CFR Part 125, Subpart M) were also included in the development of the permit effluent limitations and other conditions. See Section VI.D below.

This proposed permit does not authorize discharges from facilities located in the territorial seas of the State of California or any body of water landward of the inner boundary of the territorial seas or any wetlands adjacent to such waters (facilities in the "Onshore" and "Coastal" subcategories defined in 40 CFR Part 435).

As required by section 307(c)(3)(A) of the Coastal Zone Management Act, Region 9 has certified the proposed permit to the California Coastal Commission as consistent with the State Coastal Zone Management Plan (CZMP).

As required by the Endangered Species Act (ESA), Region 9 has reviewed the effects of the proposed discharges on endangered or threatened species found in the general permit area. Region 9 has concluded that the proposed discharges would not jeopardize the continued existence of any endangered or threatened species or result in the destruction or adverse modification of their critical habitats. Pursuant to section 7 of the ESA, Region 9 has provided copies of the proposed permit and fact sheet to the U.S. Fish and Wildlife Service and the National Marine Fisheries Service and requested a formal evaluation of this conclusion.

The permit does not authorize discharges from facilities defined in 40 CFR 122.2 as "new sources". However, when new source performance standards (NSPS) become effective, Region 9 will issue new permits.

Copies of the fact sheet and draft permit may be obtained from the address below. The administrative record for this permit is available for public review at Region 9 at this address listed below.

**DATES:** *Comment Period*—Interested persons may submit comments on the draft general permit to the Regional Administrator at the address below no later than October 7, 1985.

*Public Hearing:* A public hearing to consider proposed general NPDES permit No. CAG280622 covering development and production activities and also the proposed general permit covering exploratory activities (NPDES No. CAG280605) will be held as follows:

*Date:* September 26, 1985.

*Times:* 10 a.m.; 2 p.m.; 7:30 p.m.

*Place:* Sheraton Santa Barbara Hotel, El Cabrillo Room, 2nd Floor, 1111 East Cabrillo Blvd., Santa Barbara, CA 93103.

The public hearing will be conducted pursuant to 40 CFR 124.12 and is for the purpose of receiving comments from the public on the proposed issuance of the two general permits. All interested persons are invited to submit their views.

Oral statements at the hearing will be received and considered, but for accuracy of the record all important testimony should be submitted in writing so that there will be time for all interested persons to be heard. A record of the proceedings will be made for consideration by Region 9 before final action is taken. It will contain all written and oral comments and be available for public inspection. Under the NPDES regulations (40 CFR Part 124) any evidence or comment that any person wishes to rely upon to contest any determination that Region 9 may make must be submitted at the public hearing or during the comment period unless good cause is shown for not doing so.

**ADDRESS:** Comments should be sent to the Regional Administrator, Region 9, U.S. Environmental Protection Agency, 215 Fremont St., San Francisco, CA 94105, (Telephone Number (415) 974–8330).

**FOR FURTHER INFORMATION AND COPIES OF DRAFT PERMITS CONTACT:** Eugene Bromley, Region 9, U.S. Environmental Protection Agency, 215 Fremont Street, San Francisco, CA 94105, (Telephone Number (415) 974–8330).

## SUPPLEMENTARY INFORMATION AND FACT SHEET

### I. General Permits and Requests for Individual NPDES Permits

Section 301(a) of the CWA provides that the discharge of pollutants is unlawful except in accordance with the terms of an NPDES permit. Under EPA's regulations (40 CFR 122.28), EPA may issue a single general permit to a category of point sources located within the same geographic area if the regulated point sources:

(1) Involve the same or substantially similar types of operations;

(2) Discharge the same types of wastes;

(3) Require the same effluent limitations or operating conditions;

(4) Require similar monitoring requirements; and

(5) In the opinion of the Regional Administrator, are more appropriately controlled under a general permit than under individual permits.

In addition, under EPA regulations (40 CFR 122.28(c)) the Regional Administrator is required to issue general permits covering discharges from offshore oil and gas facilities within the Region's jurisdiction. Where the offshore area includes areas, such as areas of biological concern, for which separate permit conditions are required,

a separate individual or general permit may be required by the Regional Administrator.

Any owner and/or operator authorized to discharge under a general permit may request to be excluded from coverage under the general permit by applying for individual permit as provided by 40 CFR 122.28(b). The operator shall submit an application together with the reasons supporting the request to the Director, Water Management Division, EPA, Region 9. A source located within a general permit area, excluded from coverage under the permit solely because it already has an individual permit (other than a permit that has been continued under the Administrative Procedure Act), may request that its individual permit be revoked, and that it be covered by the general permit. Upon revocation of the individual permit, the general permit shall apply. Procedures for modification, revocation and termination of general permits are provided by 40 CFR 122.62–122.64. As in the case of individual permits, violation of any condition of a general permit constitutes a violation of the CWA that is enforceable under section 309 of the CWA.

## II. Geographic Area of the General Permit

As noted earlier, the general permit for development and production facilities authorizes discharges on lease parcels in Federal waters off Southern California currently considered active by the MMS. Included are tracts from Lease Sale Nos. 35, 48, 53, 68, 73, 80 and the 1966 and 1968 Federal release sales.

The proposed general permit area differs from the existing general permit area in two respects: (1) 36 new parcels would be added as authorized discharge sites to reflect recent leasing activity by the MMS and (2) 44 parcels would be deleted due to expiration of the leases. Eight new tracts in the Santa Maria Basin were awarded by the MMS as a result of Lease Sale No. 73. The lease numbers of these parcels are P–0503 through P–0510, inclusive. Twenty-three new tracts were awarded as a result of Lease Sale No. 80. The lease numbers of these parcels are P–0511 through P–0517, P–0519 through P–0525 and P–0527 through P–0535.

Also, as a result of a recent Supreme Court decision (*Secretary of the Interior v. California*, 104 S. Ct. 656 (January 11, 1984)) 5 tracts from Lease Sale No. 53 which had been under litigation were also awarded by MMS. The lease numbers of these parcels are P–0373 through P–0377.

The new parcels are in the same general area as the parcels on which discharges were previously authorized. The effects of the proposed discharges throughout the entire area (new and old parcels) were analyzed in the Ocean Discharge Criteria Evaluation (see Section VI.D) and in the environmental impact statements accompanying the lease sales. Based on a review of these documents, and the criteria for the issuance of a general permit, Region 9 believes that facilities operating in the area covered by this proposed permit are more appropriately regulated by a general permit than by individual permits.

The lease numbers of the parcels which would be deleted are P–0186, P–0295, P–0325, P–0327, P–0328, P–00330 through P–0345, P–0347, P–0350 through P–0364, P–0366, P–0367, P–0369, P–0404, P–0405, P–0410 and P–0411.

## III. Covered Facilities and Nature of Discharges

The proposed permit would apply to the following types of facilities:

1. *Existing sources*—all development and production facilities currently operating in the general permit area complying with the notification requirements of Part I of the permit.

2. *New discharges*—all development and production facilities commencing operations after the effective date of the permit complying with the notification requirements of Part I of the permit.

The following fifteen discharges may result from the proposed operations:

### *Discharge 001—Drilling Muds and Cuttings and Washwater*

Drilling mud is defined as any fluid sent down the hole including gelling compounds, weighting agents, and any specialty products, from the time a well is begun until final cessation of drilling in that hole. There are two basic types of muds, water-based and oil-based. Water-based muds are usually mixtures of fresh water or sea water with clays. Oil-based muds (includes invert emulsion muds) are mixtures of diesel or mineral oil and clays with water or brine emulsified in the oil.

Drilling muds are used in both exploration and production drilling to maintain hydrostatic pressure control in the well, lubricate the drilling bit, and remove drill cuttings from the well. Oil-based muds are used for special drilling requirements such as tightly consolidated subsurface formations, water sensitive clays, and shales. Specific needs of a drilling program may require other additives in the drilling muds. Drill cuttings are mineral particles generated by drilling into subsurface geologic formations. Drill cuttings are carried to the surface of the well with the circulation of the drilling muds and separated from the fluids on the platform by solids separation equipment (screens and shakers).

The washwater is used to clean the drill cuttings prior to discharge. Drilling mud, and oil, and additives if used, remain with the drill cuttings after the solid separation equipment. These materials are removed from the cuttings to ensure compliance with disharge limitations.

### *Discharge 002—Produced Water*

Produced water includes water and suspended particulate matter, brought to the surface in conjunction with the recovery of oil and gas from underground geologic formations.

Producted water is primarily generated during the production phase of oil and gas operations with the amount generated dependent upon the method of recovery and the nature of the formation. Geologic formations contain different oil-water or gas-water mixtures which are produced at different times:

1. In some formations, water is produced with the oil and gas in the early stages of production;
2. In others, water is not produced until the formation has been significantly depleted; and
3. In still others, water is never produced.

### *Discharge 003—Produced Sand*

Produced sand includes sands and other solids removed from the produced water.

### *Discharge 004—Well Completion and Treatment Fluids*

Well completion fluids are low solids drilling fluids used to drill into the hydrocarbon producing zone and complete the well. The solids content of normal drilling muds may damage the porous rock of the production zone. Well treatment fluids are used to increase the rate of flow of hydrocarbons from a well already on production.

### *Discharge 005—Diatomaceous Earth Filter Media*

Diatomaceous earth is used on some production platforms to filter seawater which is subequently used to make completion fluid. The completion fluid itself may also be filtered to remove suspended contaminants picked up in the well. Discharge 005 would include diatomaceous earth, contaminants removed from seawater and other material removed from completion fluid.

Only diatomaceous earth used in making completion fluid or in filtering

completion fluid would be authorized for discharge. The estimated volume of the discharge is 1,500 lbs of diatomaceous earth per well.

*Discharge 006—Deck Drainage*

This discharge includes water resulting from platform washings, deck washing, tank cleaning operations, and runoff from curbs, gutters, and drains including drip pans and work areas.

*Discharge 007—Sanitary Wastes*

Sanitary wastes include human body waste discharged from toilets and urinals.

*Discharge 008—Domestic Wastes*

Domestic wastes include materials discharged from sinks, showers, laundries, and galleys. All galley wastes are macerated before flushing.

*Discharge 009—Desalinization Unit Discharge*

Desalinization unit discharge means and wastewater associated with the process of creating fresh water (for various purposes on the platform) from seawater.

*Discharge 010—Cooling Water*

Cooling water means once-through, non-contact cooling water.

*Discharge 011—Uncontaminated Bilge Water*

Uncontaminated bilge water is water that enters the lower holds of the facility and accumulates in the bilge areas.

*Discharge 012—Uncontaminated Ballast Water*

Ballast water is water used by a facility to maintain proper stability.

*Discharge 013—Excess Cement*

Excess cement is unused cement discharged after a well cementing operation. Cement is used to bond the casing (large diameter steel pipe) to the wall of the hole. The casing prevents the caving in of the hole.

*Discharge 014—Blow-out Preventer (BOP) Control Fluid*

Blow-out preventer fluid is a mixture of water and 1–2% hydraulic fluid (generally ethylene glycol and water) vented at the ocean floor during periodic testing of the blow-out preventer system as required by the Minerals Management Service.

*Discharge 015—Fire Control System Test Water*

Fire control system test water is sea water discharged during periodic testing of the fire control system.

**IV. Notification Requirements for Commencement and Termination of Operations**

Written notification of commencement of operations must be provided to, and received by, the Regional Administrator at least fourteen (14) days prior to initiation of discharges (Part I). This notification must be provided for each drillsite and must identify the permittee assuming responsibility for compliance with the permit. Permittees shall also notify the Regional Administrator within twenty-eight (28) days upon termination of discharges at each location.

For operations on parcels for which a biological survey is required by Minerals Management Service (MMS) lease stipulation, the biological survey report and the plan of development must be provided to Region 9 prior to initiation of discharges. Initiation of discharge under the permit may not begin until Region 9 has reviewed the survey report and the proposed operations, and has determined that this general permit is appropriate for the proposed discharges, and has notified the permittee in writing of this determination.

**V. Statutory Basis for Permit Conditions**

Sections 301(b), 304, 308, 401, 402 and 403 of the CWA provide the basis for the permit conditions contained in the draft permit. The general requirements of these sections fall into three categories, which are described below. A discussion of the basis for specific permit conditions follows in Part VI.

*A. Technology-Based Effluent Limitations*

1. BPT Effluent Limitations:

The CWA requires particular classes of industrial dischargers to meet effluent limitations established by EPA. EPA promulgated effluent limitations guidelines requiring Best Practicable Control Technology Currently Available (BPT) for the Offshore Subcategory of the Oil and Gas Extraction Point Source Category (40 CFR Part 435, Subpart A) on April 13, 1979 (44 FR 22069).

BPT effluent limitations guidelines require "no discharge of free oil" for discharges of deck drainage, drilling muds, drill cuttings, and well treatment fluids. This limitation requires that a discharge shall not cause a film or sheen upon or discoloration on the surface of the water or adjoining shorelines or cause a sludge or emulsion to be deposited beneath the surface of the water or upon adjoining shorelines [40 CFR 435.11(d)]. The BPT effluent limitations guideline for sanitary waste requires that the concentration of chlorine be maintained as close to 1 mg/l as possible in discharges from facilities housing ten or more persons. For facilities continuously manned by nine or fewer persons or only intermittently manned by any number of persons, the BPT effluent limitations guideline requires no discharge of floating solids. BPT limitations on oil and grease in produced water allow a daily maximum of 72 mg/l and a monthly average of 48 mg/l.

2. BAT and BCT Effluent Limitations

All permits issued after July 1, 1984, are required by section 301(b)(2) of the CWA to contain effluent limitations for all categories and classes of point sources which: (1) Control toxic pollutants (40 CFR 401.15) through the use of Best Available Technology Economically Achievable (BAT) and (2) represent Best Conventional Pollutant Control Technology (BCT). BCT effluent limitations apply to conventional pollutants (pH, BOD, oil and grease, suspended solids, and fecal coliform). BAT and BCT effluent limitations must be at least as stringent as BPT limitations since they are intended by the CWA to represent a higher level of treatment. Permits in effect after July 1, 1987, must impose effluent limitations which control nonconventional pollutants by means of BAT.

BAT and BCT effluent limitations guidelines and New Source Performance Standards (NSPS) are currently under development by the EPA Industrial Technology Division and will be proposed in the near future for the Offshore Subcategory. In the absence of effluent limitations guidelines for the Offshore Subcategory, permit conditions must be established using best professional judgment (BPJ) procedures (40 CFR 122.43, 122.44, and 125.3). This proposed permit incorporates BAT and BCT effluent limitations based on Region 9's best professional judgment.

As required by section 304(b)(2)(B) of the CWA, in developing the BPJ/BAT permit conditions, Region 9 considered: the age of equipment and facilities involved, the process employed, the engineering aspects of the application of various types of control techniques, process changes, the cost of achieving such effluent reduction, non-water quality environmental impact (including energy requirements), and such other factors as the Regional Administrator deems appropriate.

The type of equipment and processes employed in development and production operations are well known to Region 9. Region 9 has previously issued

general and numerous individual permits for such operations. The administrative records for this permit and the earlier permits thoroughly discuss the types of equipment, facilities and processes employed in developmental and production operations. Any costs of achieving the effluent limitations and any non-water quality environmental impacts were also evaluated and a discussion of such evaluations is presented below with respect to any limitation where applicable.

As required by section 304(b)(4)(B) of the CWA, Region 9 considered the same factors in determining BPJ/BCT permit conditions, but with one exception. Rather than considering "the cost of achieving such effluent reduction," any BCT determination includes "consideration of the reasonableness of the relationship between the costs of attaining a reduction in effluents and the effluent reduction benefits derived, and the comparison of the cost and level of reduction of such pollutants from publicly owned treatment works to the cost and level of reduction of such pollutants from a class or category of industrial sources." BCT effluent limitations cannot be less stringent than BPT: therefore, if the candidate BCT technologies fail the BCT "cost test", BCT effluent limitations are set equal to BPT.

Region 9's evaluation of the BAT factors, as discussed above, is also applicable to BCT, as well as to Region 9's best professional judgment determinations of BPT in instances where there is no BPT effluent limitation guideline for a particular waste stream. With respect to the BCT "cost test," all BCT limitations for this proposed permit are equal to the BPT effluent limitations guidelines or to Region 9's best professional judgment determinations of BPT. Therefore, no incremental cost would be incurred.

*B. Ocean Discharge Criteria*

Section 403 of the CWA 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 degradation of the marine environment. These guidelines, referred to as the Ocean Discharge Criteria (40 CFR Part 125, Subpart M), and section 403 are intended to "prevent unreasonable degradation of the marine environment and to authorize imposition of effluent limitations, including a prohibition of discharge, if necessary, to ensure this goal" (45 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 during a monitoring period in which additional information is gathered. 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 factors: Quantities, composition, and potential for bioaccumulation or persistence of the pollutants discharged; potential transport of such pollutants; the composition and vulnerability of biological communities exposed to such pollutants; the importance of the receiving water area to the surrounding biological community; the existence of special aquatic sites; potential impacts on human health; impacts on recreational and commercial fishing; applicable requirements of approved Coastal Zone Management Plans; marine water quality critera developed pursuant to section 304(a)(1) of the CWA; and other relevant factors.

*C. Section 308 of the Clean Water Act*

Under Section 308 of the CWA and 40 CFR 122.44(i) the Administrator must require a discharger to conduct monitoring to determine compliance with effluent limitations and to assist in the development of effluent limitations. Region 9 has proposed several monitoring requirements for the effluent limitations proposed in this permit, as listed in Section VI.

## VI. Specific Permit Conditions

*A. Approach*

The determination of appropriate conditions for each discharge was accomplished through:

(1) Consideration of technology-based effluent limitations to control conventional pollutants under BCT;

(2) Consideration of technology-based effluent limitations to control toxic and nonconventional pollutants under BAT; and

(3) Evaluation of the Ocean Discharge Criteria assuming conditions in parts (1) and (2) were in place.

Discussions of the specific effluent limitations and monitoring requirements derived from (1) through (3) appear below in Parts B. through D. For convenience, these conditions and the regulatory basis for each are cross-referenced by discharge in the following table:

| Discharge and permit condition | Statutory |
|---|---|
| Drilling Muds and Cuttings: | |
| No free oil | BCT. |
| No floating solids | BCT. |
| No oil-based muds and associated cuttings. | BCT. |
| Mud toxicity limit | BAT. |
| No chrome lignosulfonate | BAT. |
| No diesel except in spotting operations. | BAT. |
| Removal of 50 bbls on each side of diesel pill. | Section 304 (BMP) |
| Hg/Cd limits in barite | BAT. |
| Monitoring for metals and toxicity | Section 308. |
| Monitoring of volume discharged | Section 308. |
| Inventory of added substances | Section 308. |
| LPC requirements in vicinity of Channel Islands Marine Sanctuary. | Section 403(c). |
| Notification prior to final discharge upon completion of well. | Section 308. |
| Reopener clause | Section 403(c). |
| Field monitoring study | Section 403(c). |
| Bioassays with northern anchovy | Section 403(c). |
| Produced Water: | |
| Oil/grease limits of 48/72 mg/l | BCT. |
| Metals/toxic organics limits | Section 403(c). |
| Inventory of added substances | Section 308. |
| Monitoring of discharge rate | Section 308. |
| Produced Sand: | |
| No free oil | BCT. |
| Monitoring of volume discharged | Section 308. |
| Well Completion & Treatment Fluids: | |
| No free oil | BCT. |
| Monitoring of discharge rate | Section 308. |
| Inventory of added substances | Section 308. |
| Deck Drainage: | |
| No free oil | BCT. |
| Monitoring of discharge rate | Section 308. |
| Limits on dispersant, surfactants and detergents. | Section 304 (BMP). |
| Sanitary Wastes: | |
| No floating solids | BCT. |
| Chlorine 1.0 mg/l (facilities with more than 10 people) to control fecal coliform. | BCT. |
| Monitoring of discharge rate | Section 308. |
| Maximum chlorine concentration of 10 mg/l. | BAT. |
| Domestic Wastes: | |
| No floating solids | BCT. |
| Monitoring of discharge rate | Section 308. |
| Miscellaneous Discharges: | |
| No free oil | BCT. |
| Monitoring of discharge rate | Section 308. |
| All Discharges: | |
| No halogenated phenols | BAT. |
| No floating solids | BCT. |

*B. BCT Requirements*

1. Free Oil and Oil-Based Muds and Cuttings

No discharge of free oil is permitted from discharges authorized by this permit. Region 9 has determined that the BPT effluent limitations guideline of no discharge of free oil from the discharge

of deck drainage, drilling muds, drill cuttings, and well completion and treatment fluids should apply to other discharges, including diatomaceous earth filter media, uncontaminated bilge water, uncontaminated ballast water, desalinization unit discharge, cooling water, excess cement slurry, blowout preventer fluid, and fire control system test water. Thus, the no free oil limitation is Region 9's best professional judgment determination of BPT controls for these discharges. They have been subject to a no free oil limitation in previous permits issued by Region 9, and past practices have not resulted in violations of this limitation. No technology performance data available to Region 9 indicate that a more stringent standard is appropriate at this time. Region 9 has proposed BCT effluent limitations equal to the BPT level of control and, as such, these proposed limitations impose no incremental costs.

As discussed above, the BCT effluent limitation on free oil for drilling muds is equal to the BPT limitation. The discharge of oil-based drilling muds (with oil as the continuous phase and water as the dispersed phase) is therefore prohibited since oil-based muds would violate the BCT effluent limitation of no discharge of free oil. The discharge of drill cuttings associated with oil-based muds is also prohibited due to the likelihood of violation of this same limit.

The monitoring requirement for determining compliance with the effluent limitation on free oil is in most instances a visual observation of the receiving water. However, the static sheen test is required for monitoring free oil in mud and cuttings discharges (which are the discharges with the greatest likelihood of oil contamination) and also for discharges 003–006 if they occur at night. The static sheen test involves mixing effluent with ambient seawater in a test container and subsequently observing whether or not a sheen appears on the surface. The specific procedure is found in "Static Sheen Test" (U.S. Environmental Protection Agency, 1985b). The sheen test requirement is being proposed for the following reasons: (1) Region 9 believes that the test is reliable, (2) the test is an improvement over the alternate method of simply making visual observations in the receiving water and (3) the test can be conducted prior to discharge.

2. Floating solids

The BCT prohibition on floating solids is equal to the BPT level of control for sanitary wastes. As with the free oil limitations, Region 9 has determined that the BPT effluent limitations guideline of no discharge of floating solids from the discharge of sanitary wastes should apply to all other discharges as well. Thus, the no floating solids limitation is Region 9's best professional judgment determination of BPT limitations for these discharges. They have been subject to this limitation in previous permits issued by Region 9, and past practices have not resulted in violations of this limitation. No technology performance data available to Region 9 indicate that a more stringent standard is appropriate at this time. Therefore, Region 9 has determined that the BCT effluent limitation on floating solids from these discharges is equal to the BPT level of control. As such, the extension of this limitation to all discharges will involve no incremental cost.

3. Chlorine

The requirement of maintaining residual chlorine levels as close as possible to, but no less than 1 mg/1 in sanitary waste discharges for facilities manned by 10 or more people is a BCT determination equal to BPT. There is therefore no incremental cost to the industry. The chlorine residual is limited as a BCT pollutant to control the conventional pollutant, fecal coliform.

The proposed permit also provides that any facility using a marine sanitation device that complies with pollution control standards and regulations under Section 312 of the CWA shall be deemed to be in compliance with permit limitations for sanitary waste discharges, until such time as the device is replaced or is found not to comply with such standards and regulations.

4. Oil and Grease in Produced Water

For produced water discharges, the BPT effluent limitations prescribe a monthly average oil and grease concentration not to exceed 48 mg/1 and a daily maximum oil and grease concentration of 72 mg/1. The daily maximum limitation is present in the existing general permit. A more stringent BCT limit of 59 mg/1 for oil and grease was considered by the EPA Industrial Technology Division. Although it was determined to be economically achievable through better operation and maintenance of existing treatment facilities, this BCT effluent limitation for oil and grease fails the BCT cost tests. As such, the draft general permit retains only the previously promulgated BPT limits and therefore there is no incremental cost to industry. The monitoring frequency has been increased from monthly to weekly and the monthly average BCT limit of 48 mg/1 has been included in the proposed permit.

*C. BAT Requirements*

1. Mud Toxicity Limit

a. *Determination of Mud Toxicity Limit.* For compliance with the BAT requirements of section 301(b) of the CWA, Region 9, based on best professional judgment, is proposing an overall toxicity limit for discharged drilling muds. This limit is a minimum single (i.e. no sample to be less than) 96 hour $LC_{50}$ of 30,000 ppm for the suspended particulate phase (SPP). Discharge of muds with 96 hour $LC_{50}$ concentrations less than 30,000 ppm would constitute noncompliance with the permit and could lead to enforcement action by EPA. A toxicity limit was selected for compliance with BAT requirements, rather than separate limits on individual mud constitutents, because of the complexity of drilling mud formulations. The bioassay procedure to be used to determine compliance with the limit is "Drilling Fluids Toxicity Test" (U.S. Environmental Protection Agency, 1985a). The test organism specified in this bioassay procedure is *Mysidopsis bahia*.

In developing the proposed toxicity limit, Region 9 reviewed the basic formulations of muds, and the specialty additives, including lubricants, which are commonly used in offshore drilling activities. The toxicity of these components, and the factors relating to technology and cost which were evaluated pursuant to section 304(B)(2)(b) of the CWA, are discussed below.

An extensive review of offshore drilling practices has demonstrated that there are eight basic formulations of water-based drilling muds in use. These muds have been termed "generic drilling muds." The lower 95% confidence limit $LC_{50}$ (worst-case bioassay result) for the generic muds, as determined by recent testing at EPA's Gulf Breeze laboratory, occurred at 30,000 ppm (Duke and Parrish, 1984). Therefore, the proposed toxicity limit represents the most stringent 96 hour $LC_{50}$ which would allow each generic mud to be discharged.

Region 9 has also reviewed the types of specialty mud additives which have been used in waters offshore California in the last two years and the degree to which these additives affect overall mud toxicity. The review showed that additives are available which can be

combined with generic muds to meet the proposed toxicity limit and which can still perform nearly all specialty functions needed by operators. Moreover, Region 9 has, from inspections and Discharge Monitoring Reports (DMR's), reviewed whole muds actually used in offshore operations and the results demonstrated that 9 out of 10 would meet the proposed toxicity limit. Therefore, Region 9 has concluded that mud formulations with $LC_{50}$'s greater than 30,000 ppm are adequate to perform drilling functions in the vast majority of cases.

Of the specialty additives occasionally needed in drilling operations, lubricating additives are generally believed to have the greatest potential for increasing mud toxicity. Duke and Parrish (1984) found a strong correlation between diesel oil content in drilling muds and overall mud toxicity. These authors further determined that mineral oil, while also increasing mud toxicity, is substantially less toxic than diesel oil.

Drilling mud lubricants are used for two purposes, torque-reduction and spotting. For torque-reduction, lubricants are added to the entire mud system to reduce friction between the drillstring and the wall of the hole. If a portion of the drillstring becomes stuck against the wall of the hole, a spotting operation is usually needed.

At a national meeting sponsored by EPA in Denver, Colorado (June 11–12, 1984), industry representatives indicated that mineral oil is an adequate substitute for diesel for torque-reduction purposes. (Technical Resources, 1984a). Therefore, because substitute products are acknowledged by industry to be available, the proposed permit prohibits the discharge of drilling muds in which diesel oil is added as a torque-reducing lubricity agent (Condition II.A.1(h)). This prohibition on the discharge of diesel oil is discussed further in Section VI.C.2.

In a spotting operation, diesel or mineral oil is normally added to only a small fraction of the mud system. The mud containing the oil is then pumped to the stuck portion of the drillstring where the additional lubricity of the mud frees the pipe. Under the proposed permit, upon completion of the spotting operation, the diesel oil-contaminated mud or "pill," and a buffer zone around the pill, is removed from the mud system for onshore disposal. However, some amount of residual diesel may remain in the mud system due to diffusion of the pill.

Diesel oil has been the product of choice for use in a pill due to its ready availability at the facility although use of mineral oil is becoming more common as a substitute for diesel in spotting operations. Pruett II (1984) provides some examples of the successful use of mineral oil for spotting off Southern California. In view of the limited operational data in Region 9 offshore waters, however, the proposed permit authorizes the discharge of muds containing residual diesel from spotting operations provided the following conditions are met: (1) The diesel pill and a minimum of 50 barrels of mud on each side of the diesel pill and associated cuttings are removed from the mud system and not discharged, and (2) the overall mud toxicity limit is not violated by the remaining mud. The requirement for mud removal is established pursuant to NPDES permit regulations at 40 CFR 122.44(k) (best management practices). Compliance with the toxicity limit must be demonstrated by bioassay data from mud samples taken from the mud system immediately prior to and subsequent to pill removal.

In addition to the technology-related factors discussed above, in developing the proposed mud toxicity limit, Region 9 considered the costs associated with achieving effluent reduction. In this context, Region 9 evaluated the costs of land disposal of all drilling muds. In a study of alternatives to on-site disposal, Sobotka & Company (1984) estimated that such costs could exceed 7.5% of the total cost of an exploratory drilling operation (assuming $100,000/day for such operation). Region 9 has determined from this study that to require land disposal of all drilling muds would be economically burdensome, and would be accompanied by adverse impacts such as port congestion, truck and workboat emissions, and strain on the available capacity of land disposal sites. See Appendix B. Therefore, Region 9 has concluded that land disposal of all drilling muds would not be an appropriate BAT requirement.

Region 9 believes, however, that the proposed toxicity-based limit, minimum 96 hour $LC_{50}$ of 30,000 ppm (SPP), is economically achievable where the cost of barging muds to shore would be only infrequently incurred. As discussed previously, data from Region 9 inspections and DMR's indicate that 90% of the tested whole muds which had actually been used in drilling operations would meet the proposed toxicity limit. Therefore, even if 10% of all drilling muds had to be barged to shore for disposal, the aggregate cost to the industry would amount to only .75% (assuming a linear relationship between cost and barging frequency). In addition, Region 9 believes that through product substitution and more operator experience with new additives, the number of mud systems requiring land disposal can be further reduced, thereby resulting in still lower costs.

When Region 9 originally solicited comments for proposals being considered for a toxicity limit for discharged drilling muds in July, 1984, industry representatives claimed that a limit of 30,000 ppm was too stringent in that it would not allow the discharge of muds containing mineral oil in needed concentrations. Region 9 has reviewed the use of mud lubricants off Southern California in the last two years and believes that this claim is exaggerated.

In 1984, Duke and Parrish conducted a study in which mineral oil in concentrations of 1, 5, and 10% was added to generic muds #2 and #8. Toxicity tests revealed that at a concentration of 1%, the 96 hour $LC_{50}$'s (SPP) for muds #2 and #8 were 134,000 ppm and 71,000 ppm respectively, well above the toxicity limit in the proposed permit. At a concentration of 5%, the $LC_{50}$'s for these muds were 18,000 ppm and 9,000 ppm respectively, slightly below the proposed limit. However, Region 9's records of mud usage on the California OCS show that mineral oil, or additives containing mineral oil, are seldom needed at concentrations greater than approximately 1%. Therefore, compliance with the proposed toxicity limit should be attainable for the vast majority of drilling operations, including those for which lubricity additives are needed.

THUMS Long Beach Co. (operated by a consortium of major oil companies), in a recent request for modification of Ocean Dumping permit OD 82–01 (ocean disposal of drilling muds and cuttings), conducted bioassays on typical and "worst case" muds needed for the company's extensive drilling program in Long Beach Harbor. The "worst case" mud contained constituents, including lubricants and other additives, at concentrations which the company itself estimated would be adequate for all foreseeable drilling requirements. Nevertheless, the 96 hour $LC_{50}$ for even the "worst case" mud was 35,000 ppm, in compliance with the toxicity-based limit proposed in this permit. These results support the Region's conclusion that muds more toxic than authorized for discharge by this proposed permit should rarely be needed in drilling operations.

As noted above, Region 9 considers the proposed toxicity limit to be economically achievable even if a small number of operations must barge muds to shore for disposal. Therefore, Region 9, using best professional judgment, has

determined that the proposed minimum 96 hour $LC_{50}$ of 30,000 ppm is an appropriate toxicity limit for drilling muds which takes into consideration the need for lubricity and other additives.

b. *Compliance with Mud Toxicity Limit.* Under the existing BPT general permit, Region 9 has approved numerous specialty additives based on bioassay data and informed offshore operators of these determinations. This regulatory approach has allowed operators to use these approved additives in drilling operations without conducting additional bioassays. One drawback to this approach, however, is 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, Region 9 is proposing two levels of approval for specialty additives, general and conditional:

(1) Additives with $LC_{50}$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.

(2) 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.

It should 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 additives 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 were used at concentrations lower than the maximum allowed concentrations to offset the effects of specialty additives.

In all instances, regardless of whether an additive is listed as acceptable for general use and discharge or is conditionally accepted, the discharger will be responsible for demonstrating compliance with the whole mud toxicity limit. Estimates of joint toxicity for muds containing conditionally accepted additives may be made using Equation (1) from Sprague and Logan (1979):

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

Where

$LC_t$ is the 96 hour $LC_{50}$ of the generic mud including mud additives in ppm

$C_i$ 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

$LC_g$ is the 96 hour $LC_{50}$ of the generic mud in ppm

The above regulatory approach to mud additive regulation offers the following advantages:

(1) Since 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.

(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 the above equation, 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 would be necessary to produce a mud with an overall $LC_{50}$ approximating the permit limit of 30,000 ppm. This calculation proceeds by first determining $LC_i$ for each additive using the Sprague and Logan formula. In the above example assuming additive usage of 2 lbs/bbl in a 10 lbs/gal mud, $LC_i$ would be 594 ppm. Four such additives included in a generic mud ($LC_g$=500,000 ppm) would produce a mud with an $LC_{50}$ of 29,400 ppm.

Greater assurance that the permit's whole mud toxicity limit would not be violated could be obtained by increasing the minimum $LC_{50}$ for listing additives as acceptable for general use. However, Region 9 believes that 100,000 ppm is a reasonable minimum which would allow general acceptance of most additives and also provide a high degree of assurance that the permit's overall toxicity limit would not be exceeded by muds in actual use. Listing and toxicity information for mud additives may be obtained from Region 9 at the above address.

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 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, Region 9 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 consist of toxicity calculations as discussed above, exclusive use of generic muds and additives listed as acceptable for general use or an actual mud bioassay. 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, Region 9 believes that at least one actual bioassay per well should be required. The bioassay procedure to be used is "Drilling Fluids Toxicity Test" (U.S. Environmental Protection Agency, 1985a).

2. Diesel Oil

As discussed above, the proposed permit prohibits the discharge of diesel oil as a torque-reducing lubricity additive. Diesel, 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. While this limitation thereby controls the toxic as well as nonconventional pollutants present in

diesel, the Agency's primary concern is to control the toxic 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. The technology basis for this limitation is product substitution of less toxic mineral oil for diesel oil.

The Agency selected "diesel" as an "indicator" as an alternative to establishing limitations on each of the specific toxic and nonconventional pollutants present in the diesel-contaminated waste streams. The listed toxic pollutants found in various diesel oils include naphthalene, benzene, ethylbenzene, phenanthrene, toluene, fluorene, and phenol. Diesel oil may contain from 20 to 60 percent by volume aromatic hydrocarbons. The light aromatic hydrocarbons, such as benzenes, naphthalenes, and phenanthrenes, constitute the most toxic major components of petroleum products. Mineral oils, with their lower aromatic hydrocarbon content and lower toxicity, contain lower concentrations of toxic pollutants than do diesel oils. Diesel oil also contains a number of nonconventional pollutants, including polynuclear aromatic hydrocarbons such as methylnaphthalene, dimethylnaphthalene, methylphenanthrene, and other alkylated forms of each of the listed toxic pollutants.

Region 9 believes that the limitations achieved by product substitution or land disposal of contaminated muds and cuttings represent the technically feasible and economically achievable BAT-level of controls for the various toxic pollutants to be controlled. Establishing limitations on these pollutant parameters as indicator pollutants, avoids the costly and technically complex requirement of complying with specific limitations on each of the toxic pollutants. Monitoring and analyzing all waste streams to confirm compliance with specific effluent limitations for each of the toxic pollutants is not considered by Region 9 to be economically justified at this time.

3. Mercury and Cadmium Contamination of Barite

The proposed permit also limits mercury and cadmium as trace contaminants in barite to 1 mg/kg and 2 mg/kg, respectively (Condition II.A.1(g)). Barite is mined from either bedded or vein deposits. The bedded deposits are characterized by substantially lower concentrations of heavy metal contaminants such as mercury and cadmium (Nelson, Lui, and Sommers, 1980; Kramer, Grundy and Hammer, 1980). By limiting the mercury and cadmium in barite, the proposed permit also serves to limit the concentrations of the other contaminants as well. The numerical values for the limits were based on data in the above references and in Technical Resources Inc. (1984d) while allowing for a reasonable variability in the quality of bedded deposits. Compliance with this limit is achievable through product substitution, i.e. the utilization of uncontaminated sources of barite for offshore purposes in place of contaminated sources.

According to data collected by the EPA Industrial Technology Division, nearly half of the barite consumed in the United States is produced in the Battle Mountain, NV area which is a source of bedded or uncontaminated barite. Since offshore usage of barite constitutes only 25% of total domestic barite usage, an adequate supply of uncontaminated barite would be available for offshore usage nationwide if only 1/2 of the Nevada source were dedicated to offshore uses. It is preferable from an environmental point of the view to use the uncontaminated barite for offshore operations where the mud is discharged and to use the contaminated barite onshore where the mud is land disposed.

At a workshop sponsored by EPA in Santa Barbara, CA (July 27–29, 1984), an industry representative indicated that all Southern California offshore operators are already using the Nevada barite for their drilling mud (Technical Resources, Inc., 1984b). This is apparently due to the proximity of the Nevada source to Southern California. In view of this fact, Region 9 believes that the proposed limitation should be economically achievable and not disruptive to the barite market. It should also be noted that the Nevada barite is high density barite and need not be blended with other barite to achieve density specifications.

4. Prohibition of Chrome Lignosulfonate

The proposed permit prohibits the discharge of chrome lignosulfonate (Condition II.A.1(j)) in order to prevent the discharge of the toxic pollutant chromium. Substitutes for chrome lignosulfonate are available (such as iron or calcium lignosulfonate) which, according to Region 9's mud usage records, are already in use by approximately two-thirds of California OCS operators. Region 9 recognizes that chrome lignosulfonate may have advantages over other lignosulfonates such as stability over a greater temperature range. However, given the widespread use of substitutes for chrome lignosulfonate, Region 9 believes that this prohibition has been demonstrated to be technologically and economically achievable.

5. Other Toxic Nonconventional Compounds

The discharge of halogenated phenol compounds (a class of compounds which includes several toxic pollutants) is prohibited in accordance with a Minerals Management Service Operations Order.

As noted previously, the existing BPT guidelines require a residual chlorine concentration in the sanitary discharge of at least 1 mg/l which is to be maintained as close to 1 mg/l as possible. This requirement is being proposed as a BCT limit for this draft permit also (for control of the conventional pollutant, fecal coliform). JRB Associates (1984) concludes that the impacts from the chlorine in the sanitary discharge should be small due to rapid dilution and the low volume of the discharge. Nevertheless, to minimize the potential effects of chlorine in this discharge, Region 9 is also proposing a maximum chlorine residual of 10 mg/l as a BAT limit. Past DMR's in Region 9 show that the vast majority of offshore operators consistently comply with the proposed maximum chlorine limit. Compliance by all operators should be easily achievable through better operation and housekeeping of existing facilities.

6. Toxic Organics and Metals in Produced Water

The existing general permit limits heavy metals in produced water discharges. The limitations are based on the 1983 California Ocean Plan rather than existing BPT effluent guidelines which do not limit toxic pollutants.

The EPA Industrial Technology Division has recently sampled produced water discharges in the Gulf of Mexico, Alaska, and California. In addition to heavy metals, small concentrations of several priority toxic organic compounds were identified including naphthalene, phenol, 2, 4 dimethylphenol, benzene, toluene and ethylbenzene. In addition, benzo(a) pyrene was reported by Middleditch (1983). The EPA Industrial Technology Division has been reviewing treatment options for produced water in its current BAT/BCT guidelines development efforts. The treatment options considered as add-on technologies to existing BPT facilities include filtration, precipitation, carbon adsorption and biological treatment. For various reasons, these add-on technologies were

either found to be technologically infeasible to implement in this industry segment or do not appear to be effective in reducing priority pollutant levels in produced water discharges. The Agency is still evaluating reinjection technology for the effluent limitations guidelines for produced water discharges from existing source facilities.

The implementation of any treatment method for produced water is complicated by the space constraints on an offshore platform. The Industrial Technology Division in its upcoming guidelines proposal will be soliciting retrofit cost data for reinjection of produced water from existing platforms. Adequate data to accurately assess the economic achievability of this option are not available at the present time. Therefore, additional technology-based effluent limitations are not being proposed for toxic organic pollutants in produced waters at this time. However, the proposed permit does retain the heavy metals limits which are in the existing general permit and which were derived from the California Ocean Plan. Also, additional limits are proposed for several of the toxic organic pollutants based on the Ocean Discharge Criteria regulations. See section VI.D.3. Should the EPA Industrial Technology Division ultimately promulgate BAT effluent limitations for produced water which are more stringent than the limits in the proposed permit, Region 9 in accordance with 40 CFR 122.28(b)(2)(D), may require an individual permit for platforms discharging produced water and include the newly promulgated effluent limitations.

The use of specialty additives (which may contain toxic pollutants) in produced water is also under review by the Industrial Technology Division and is a subject for which data are limited. The proposed permit requires that the composition and concentration of all substances added to produced waters (such as but not limited to biocides, corrosion and scale inhibitors) be reported to Region 9 (Condition II.A.2(b)).

*D. Requirements Based on the Ocean Discharge Criteria Evaluation*

As noted previously, the general NPDES permit authorizing discharges from offshore oil and gas exploration, development and production facilities off Southern California was originally issued on February 18, 1982 (47 FR 7312). The term of the permit was two years with an expiration date of December 31, 1983. On December 8, 1983, Region 9 reissued the permit for an additional 6 month period ending on June 30, 1984 (48 FR 55029). Region 9 concluded in both permit issuances that the authorized discharges would not cause unreasonable degradation of the marine environment. These conclusions were based on the limited duration of the permits, the limited extent of offshore activity anticipated during the terms of permits and the fact that the permitted facilities would be subject to effluent limitations, monitoring requirements and other conditions contained in the permit. Short-term permits were issued because Region 9 believed that additional information was necessary concerning longer-term, cumulative effects of the discharges prior to issuance of a normal 5 year permit. The issuance of the short-term permits also provided additional time for ongoing and new studies to be completed which would assess the longer-term and cumulative effects of permitted discharges.

Many of these studies have now been completed. Since the reissuance of the last Region 9 OCS general permit, the National Reserach Council (NRC) completed a major assessment of the fate and effects of drilling muds and cuttings discharges in the marine environment, including long term cumulative effects (NRC, 1983). The NRC study draws from the many laboratory and field studies which have been conducted in recent years. The report concludes that the risks to the marine environment are small from individual operations such as a single exploratory drilling operation. However, insufficient information was available to conclude that "massive development" of an offshore oil field would not cause unreasonable degradation of the marine environment.

Considerable drilling activity is projected for offshore California in the coming years particularly in the western Santa Barbara Channel and Santa Maria Basin. MMS has estimated that a total of 74 exploratory wells and 751 development wells would be drilled in the proposed general permit area during the term of the permit.

EPA has funded two additional studies in an effort to determine whether this expected level of offshore activity would or would not cause unreasonable degradation of the marine environment. An Ocean Discharge Criteria Evaluation (ODCE) was performed by JRB Associates of Seattle, WA (JRB Associates, 1984). This study was supplemented by a hazard assessment prepared by Dr. Gary Petrazzuolo in which the long-term cumulative effects of mud and cuttings discharges are evaluated (Technical Resources, Inc., 1984c). These studies concluded that discharges from development and production platforms would cause unreasonable degradation unless additional controls are imposed in the permit. However, the analyses did conclude that irreparable harm (as defined by 40 CFR Part 125, Subpart M) would not be expected. See Appendix A for a more detailed discussion.

In determining whether the discharges resulting from the projected offshore activities will cause unreasonable degradation of the marine environment, Region 9 considered the studies discussed above, other studies and documents in the administrative record for general NPDES permit No. CA0110516, the application of additional permit conditions pursuant to 40 CFR 125.123(d), and the application of technology-based limitations to the discharges. After evaluating these factors, Region 9 has concluded that there is insufficient information to make a determination of no unreasonable degradation. Therefore, a permit for the discharges may only be issued if the requirements of 40 CFR 125.123(c) are met.

Region 9 has concluded that the dischargers, operating under permit conditions established in 40 CFR 125.123(d), will not cause irreparable harm to the marine environment. These additional permit conditions include limiting permissible concentration (LPC) requirements for pollutants in effluent streams and a monitoring program to assess the impact of the discharges.

Pursuant to 40 CFR 125.123(c), Region 9 has also determined that there are no reasonable alternatives to on-site disposal. A special study of disposal alternatives has been conducted by Sobotka & Co. in which drilling mud disposal alternatives were analyzed for mud generated on the Pacific OCS. See Appendix B. The study analyzed alternatives such as onshore disposal, disposal at special ocean dumping sites, and treatment prior to discharge. After reviewing the study Region 9 concluded that, after taking costs into consideration, no reasonable alternatives presently exist to onsite disposal.

Specific permit requirements included for compliance with the requirements of the Ocean Discharge Criteria are discussed below:

1. Mud Discharges in the Vicinity of the Channel Islands Marine Sanctuary

Region 9 is proposing a special discharge limitation applicable to drilling mud discharges on tracts within 1,000 m of the Channel Islands Marine Sanctuary which were leased subsequent to the effective date of the

sanctuary regulations. See section VIII.C. The proposed permit would prohibit mud discharges on such tracts which would result in exceedences of a limiting permissible concentration (LPC) inside the boundaries of the marine sanctuary (Condition II.A.1(i)). The LPC is 1 percent of the 96 hour $LC_{50}$ for a given drilling mud. Region 9 believes that the proposed condition will provide appropriate additional protection for the sanctuary and equitable treatment for lessees.

2. Limiting Permissible Concentration Requirements for Produced Water

The draft general permit contains conditions designed to ensure compliance with the regulations pertaining to limiting permissible concentrations (40 CFR 125.123(d)). For produced water discharges, Condition II.A.2(a) requires compliance with the heavy metals limitations of the California Ocean Plan. After initial dilution, heavy metals concentrations must be reduced below the limits set by the Ocean Plan. Condition II.A.2(a) also contains limits for several toxic organic pollutants which have been identified in produced water and for marine water quality criteria are provided in EPA's latest update of water quality criteria (45 FR 79318). The permit limits, again to be achieved after initial dilution, are 1% of the concentration for acute toxicity for salt water organisms. Initial dilution is estimated using a plume model such as PLUME (Teeter and Baumgartner, 1979) or other method approved by Region 9.

3. Field Monitoring Study

For permits issued pursuant to 40 CFR 125.123(c) the Ocean Discharge Criteria regulations require a monitoring program to assess the impacts of the discharges (40 CFR 125.123(d)(2)). Condition IV.D of the draft permit requires permittees to jointly conduct the production platform monitoring program found in "Monitoring Program Requirements for Assessing Impacts from Offshore Oil and Gas Discharges" (Technical Resources, Inc., 1985). This monitoring program consists of an existing platform study and a new platform study. Both studies would involve the sampling and analysis of bottom sediments and benthic organisms at reference sites and in the vicinity of offshore platforms. Analyses of samples would be conducted for parameters such as grain size and for contaminants such as barium and EPA priority pollutants. Comparison of the results for the reference sites and the sites near the platforms would allow EPA to evaluate the effects of the discharges on the marine environment, and the need for additional permit limitations or requirements.

The existing platform study would focus on the eastern Santa Barbara Channel where development activity has been the greatest. This study would produce information pertaining to the environmental impacts from platform discharges relatively quickly. The existing platform program would commence within six months of the effective date of the general permit and be completed within one year.

The new platform study would be coordinated with the installation dates for new platforms on the OCS. The MMS is currently conducting a monitoring program similar to the new platform study entitled "Monitoring: Assessment of Long-Term Changes in Biological Communities: Phase II—Quantitative Benthic Surveys Near Production Platforms in the Santa Maria Basin and Western Santa Barbara Channel—Year I". This study is part of a board range of California OCS studies administered by the Pacific OCS office of the MMS in support of the OCS leasing program (U.S. MMS, 1983). Region 9 recognizes that there may be some overlap between the work to be conducted by the MMS and the requirements of the new platform study. As such Condition IV.D provides that permittees may, upon approval of Region 9, substitute the study program of the MMS for the requirements of the new platform study to the extent that MMS studies meet the requirements described in the new platform study.

4. Reopener Clause

The Ocean Discharge Criteria regulation require that all permits issued pursuant to 40 CFR 125.123(c) include the reopener clause found in 40 CFR 125.123(d)(4). This reopener clause is included in the draft permit as Condition II.A.5. This condition provides that the permit may be modified or revoked if, based on new data, EPA determines that continued discharges may cause unreasonable degradation of the marine environment.

5. Bioassay Tests for Generic Muds Using Northern Anchovy

As discussed in Appendix A, the northern anchovy was identified as a critical species in the marine ecosystem off Southern California. In view of the significance of this species, Region 9 is requiring additional bioassays to determine the sensitivity of this species to drilling muds. This condition is included in the permit pursuant to 40 CFR 125.123(d)(3) since insufficient information is available concerning this particular species.

*E. Best Management Practices for Dispersants, Surfactants, and Detergents*

The facility operator is required to minimize the discharge of dispersants, surfactants, and detergents except as necessary to comply with the safety requirements of the Occupational Safety and Health Administration and the Minerals Management Service. This restriction applies to tank cleaning and other operations which do not directly involve the safety of workers. This restriction is imposed because detergents disperse and emulsify oil, thereby increasing toxicity and making the detection of a discharge of oil more difficult. These limitations have been established pursuant to NPDES permit regulations at 40 CFR 122.44(k) (best management practices).

**VII. Monitoring and Enforcement**

This general permit requires dischargers to monitor weekly the concentrations of oil and grease in produced water discharges and monthly the chlorine in sanitary waste discharges. In addition, weekly monitoring or estimates of the produced water flow rate is required, as well as quarterly sampling to demonstrate compliance with the numeric limits placed on heavy metals and toxic organic compounds in produced water discharges. Monthly volume estimates are required for drilling muds, drill cuttings, deck drainage, produced sand, and well treatment fluids. Discharge Monitoring Reports must be submitted quarterly. A chemical inventory of all materials actually added down the well must be maintained and all records retained for three years. Composition data for drilling muds which are used and discharged must be provided to Region 9 upon completion of each well.

Condition II.A.1(e) requires bioassay testing of muds to demonstrate compliance with permit toxicity limitations if an operator discharges other than generic muds or uses additives for which adequate data are not provided to determine compliance with permit limits. A bioassay is required for the final mud system when the well reaches its maximum depth, regardless of mud composition.

Condition II.A.1(k) requires that the permittee notify Region 9 (or other designated agency) 48 hours prior to the final mud discharge so that Region 9 may have an opportunity to sample the final mud. This provision will aid in ensuring compliance with permit

conditions. Also, the permittee is required to keep a record of days of discharge of each mud system and the volume of discharge. (Condition II.A.1(a).)

EPA has recently signed a Memorandum of Understanding (MOU) with MMS covering a broad range of OCS activities, including post lease monitoring, inspection and enforcement. Under the MOU, MMS agrees upon written request from an EPA Regional Administrator to sample waste streams (such as drilling mud) and forward all samples to EPA for analysis. Region 9 intends to work with the Pacific OCS Office of the MMS through a regional Memorandum of Agreement (currently under development) to establish a program of periodic sampling of drilling muds discharged into Southern California waters. Region 9 will test the muds for toxicity and for the presence of prohibited substances. Region 9 believes that such an inspection program will ensure compliance with permit limits. Under the MOU, Region 9 retains the right to conduct its own inspections. Region 9 has in the past conducted such inspections and retains all enforcement responsibilities under the CWA.

## VIII. Other Legal Requirements

### *A. Consistency With California Coastal Zone Management Program*

The Coastal Zone Management Act (CZMA) and its implementing regulations (15 CFR Part 930) require that any Federally licensed activity directly affecting the coastal zone of a state with an approved Coastal Zone Management Program (CZMP) be determined to be consistent with the CZMP. The proposed general permit would not authorize discharges into the territorial seas of the State of California, nor into any body of water landward of the inner boundary of the territorial seas or any wetland adjacent to such waters. However, discharges would be authorized in waters adjacent to the territorial seas of the State of California and as such could affect the coastal zone.

Region 9 has reviewed the requirements of the CZMP and determined that the proposed permit is consistent with the CZMP. Since there are no applicants for general permits, EPA in effect becomes the applicant and must provide the necessary consistency certification. Region 9 has certified the proposed permit to the California Coastal Commission as consistent with the CZMP.

Since Region 9 has formally certified the permit to the Commission for concurrence, Condition II.B.8 in the previous permit requiring concurrence by the Commission with plans of exploration/development prior to operation under the permit has been deleted.

### *B. Endangered Species Consultations*

The Endangered Species Act (ESA) requires that each Federal agency ensure that any of their actions, such as permit issuance, do not jeopardize the continued existence of any endangered or threatened species or result in the destruction or adverse modification of their habitats. Region 9 has concluded that the discharges authorized by the general permit would neither jeopardize the continued existence of any endangered or threatened species nor adversely affect its critical habitat.

In accordance with section 7 of the ESA, Region 9 has provided a copy of the proposed permit and fact sheet to the National Marine Fisheries Service and the U.S. Fish and Wildlife Service for an evaluation of this conclusion. Copies of all opinions will be included in the administrative record for the final permit.

### *C. The Marine Protection, Research, and Sanctuaries Act*

The Marine Protection, Research, and Sanctuaries Act of 1972 (MPRSA) regulates the dumping of all types of materials into ocean waters and establishes a permit program for ocean dumping. In addition the MPRSA establishes the Marine Sanctuaries Program implemented by the National Oceanic and Atmospheric Administration (NOAA), which requires NOAA to designate ocean waters as marine sanctuaries for the purpose of preserving or restoring their conservation, recreational, ecological or aesthetic values.

Section 302(f) of the MPRSA requires that the Secretary of Commerce, after designation of a marine sanctuary, consult with other Federal agencies, and issue necessary regulations to control any activities permitted within the boundaries of the marine sanctuary. It also provides that no permit, license, or other authorization issued pursuant to any other authority shall be valid unless the Secretary shall certify that the permitted activity is consistent with the purpose of the marine sanctuaries program and can be carried out within its promulgated regulations.

One marine sanctuary exists in the general permit area, the Channel Islands Marine Sanctuary, designated a sanctuary in September, 1980. The sanctuary consists of the Channel Islands from Anacapa Island to Richardson Rock and a six nautical mile buffer zone surrounding the islands. Regulations implementing the designation of this area as a marine sanctuary are found at 15 CFR Part 935. These regulations prohibit discharges from hydrocarbon activities on tracts leased after the effective date of the regulations (April 30, 1982).

Discharges on other tracts are not affected by the regulations. Portions of six (6) tracts leased prior to April 30, 1982, and included in the proposed permit, are within the sanctuary boundaries. However, the general permit does not authorize discharges within any tract leased subsequent to the effective date of sanctuary regulations and located within sanctuary boundaries. Accordingly, Region 9 believes that the permit is consistent with the requirements of the sanctuary regulations and the MPRSA.

Region 9 is, however, proposing a special discharge limitation applicable to drilling mud discharges on tracts which (1) were leased subsequent to the effective date of the sanctuary regulations and (2) have a portion of the tract lying within 1,000 m of the boundary of the Channel Islands Marine Sanctuary. The proposed permit would prohibit mud discharges on such tracts which would result in exceedences of a limiting permissible concentration (LPC) inside the boundaries of the marine sanctuary (Condition II.A.1(i)). The LPC is 1 percent of the 96 hour $LC_{50}$ for a given drilling mud. For mud discharges within 1,000 m of the boundary of the marine sanctuary, the proposed permit requires a demonstration of compliance with this condition by the permittee based on the toxicity of the mud and an analysis of the mud dilution. For mud discharges occurring at distances greater than 1000 m from the sanctuary boundary it is assumed, based on the dilution analysis of Petrazzuolo (1983), that the discharge would comply with this requirement. This condition is proposed pursuant to the requirements of Section 403 of the CWA. Region 9 believes that the proposed condition will provide appropriate additional protection for the sanctuary and equitable treatment for lessees.

### *D. Oil Spill Requirements*

Section 311 of the CWA prohibits the discharge of oil and hazardous materials in harmful quantities. Routine discharges specifically controlled by the permit are excluded from the provisions of Section 311. However, these permits do not preclude the institution of legal action or relieve the permittee from any responsibilities, liabilities, or penalties for other unauthorized discharges of

toxic pollutants which are covered by Section 311 of the CWA.

*E. State Water Quality Standards and State Certification*

Since State waters are not included in the general permit area, the provisions of section 401 of the CWA do not apply.

*F. Economic Impact: E.O. 12291*

The Office of Management and Budget has exempted this action from the review requirements of Executive Order 12291 pursuant to Section 8(b) of that order.

*G. Paperwork Reduction Act*

Region 9 has reviewed the requirements imposed on regulated facilities by the final permit reissuance under the Paperwork Reduction Act of 1980, 44 U.S.C. 3501 *et seq.* The information collection requirements in the final permit have already been approved by the Office of Management and Budget (OMB) under submissions made for the NPDES permit program under the provisions of the Clean Water Act. The final general permit will explain how its information collection requirements respond to any OMB or public comments.

*H. Regulatory Flexibility Act*

After review of the facts presented in the notice printed above, I hereby certify, pursuant to the provisions of 5 U.S.C. 605(b), that the final permit reissuance will not have a significant impact on a substantial number of small entities.

This certification is based on the fact that the regulated parties have greater than 500 employees and are not classified as small businesses under the Small Business Administration regulations at 49 FR 5024 et seq. (February 9, 1984). These facilities are classified as Major Group 13-Oil and Gas Extraction SIC 1311 Crude Petroleum and Natural Gas.

Dated: August 5, 1985.

**Charles W. Murray, Jr,**

*Acting Regional Administrator.*

## References


CENTEC Analytic Services, Inc. 1985. Analysis of Diesel Oil in Drilling Fluids and Drill Cuttings; Report to U.S. EPA, Industrial Technology Division, 1985.

Duke, Thomas W. and Patrick R. Parrish. 1984. Results of the Drilling Fluids Research Program Sponsored by the Gulf Breeze Environmental Research Laboratory, 1976–1984, and Their Application to Hazard Assessment, Environmental Research Laboratory, Gulf Breeze, Florida, June, 1984.

Earthrite Technology, Inc. 1984. OCS Oilfield Waste Streams: Waste Treatment Technology and Deep Water Disposal; Proposal Submitted to EPA, Region 9, April 12, 1984.

JRB Associates. 1984. Ocean Discharge Criteria Evaluation Southern and Central California for Reissuance of NPDES Permit No. CA0110516; Report to U.S. EPA, Office of Water Enforcement and Permits, October 19, 1984.

Kramer, J.R., H. D. Grundy, and L.G. Hammer. 1980. Occurrence and Solubility of Trace Metals in Barite for Ocean Drilling Operations. In: Proceedings of Symposium on Research on Environmental Fate and Effects of Drilling Fluids and Cuttings. Washington, D.C.: Courtesy Associates. pp 789–798.

Middleditch, Brian S. 1983. Ecological Effects of Produced Water Discharges from Offshore Oil and Gas Platforms, Report Submitted to American Petroleum Institute, API Project No. 248, August 1983.

National Research Council. 1983. Drilling Discharge in the Marine Environment. National Academy Press. Washington, D.C.

Nelson, D.W., S. Liu, and L.E. Sommers. 1980. Plant Uptake to Toxic Metals Present in Drilling Fluids. In: Proceedings of Symposium on Research on Environmental Fate and Effects of Drilling Fluids and Cuttings. Washington, D.C.: Courtesy Associates. pp. 114–138.

Pruett II, John O. 1984. IMCO Introduces KENOL ES Mineral Oil Muds to California Offshore. Pacific Oil World October, 1984.

Sobotka and Company, Inc. 1984. Assessment of Alternatives for Disposing of Drilling Muds and Cuttings from Offshore Oil Exploration and Development in Southern California Federal Waters; Report to U.S. EPA, Office of Policy Analysis, May, 1984.

Sprague, J.B., and W.J. Logan. 1979. Separate and Joint Toxicity to Rainbox Trout of Substances Used in Drilling Fluids for Oil Exploration. Environ. Pollut. Volume 19, No. 4, August, 1979.

Technical Resources, Inc. 1984a. Summary Proceedings of the National Workshop Offshore Oil and Gas NPDES Permits BPJ/BAT Effluent Limitations; Prepared for U.S. EPA, Office of Water Enforcement and Permits, June 29, 1984.

Technical Resources, Inc. 1984b. Summary Proceedings of U.S. EPA, Region 9 Workshop on Regulating Discharges from Offshore Oil and Gas Exploration, Development and Production Facilities; Prepared for U.S. EPA, Office of Enforcement and Permits, November, 1984.

Technical Resources, Inc. 1984c. Long-Term, Cumulative Effects from Drilling Fluid Discharges on the Southern California OCS; Report to U.S. EPA, Office of Water Enforcement and Permits, May 4, 1984.

Technical Resources, Inc. 1984d. Issue Paper: Regulating Cadmium and Mercury in Drilling Fluid Discharges; Report to U.S. EPA, May 8, 1984.

Technical Resources, Inc. 1985. Monitoring Program Requirements for Assessing Impacts from Offshore Oil and Gas Discharges; Report to U.S. EPA, Office of Water Enforcement and Permits, March 14, 1985.

Teeter, A.M. and D.J. Baumgartner. 1979. Prediction of Initial Mixing for Municipal Ocean Discharges, Corvallis Environmental Research Laboratory, CERL Publication 043, May, 1979.

U.S. Environmental Protection Agency. 1985a. Drilling Fluids Toxicity Test, Industrial Technology Division, May 1985.

U.S. Environmental Protection Agency. 1985b. Static Sheen Test, Industrial Technology Division, 1985.

U.S. Minerals Management Service. 1983. Pacific OCS Region Environmental Studies Plan, Fiscal Year, 1985. October, 1983.


## Appendix A—Review of Ocean Discharge Criteria Evaluation (ODCE) and Hazard Assessment for Mud/Cuttings Discharges

These studies were funded by EPA pursuant to the Ocean Discharge Criteria regulations (40 CFR Part 125, Subpart M) which establish guidelines for the issuance of NPDES permits into the territorial seas, contiguous zone or the ocean. The following ten factors are to be considered in evaluating the degradation of marine waters as a result of permitted discharges § 125.122).

(1) The quantities, composition and potential for bioaccumulation or persistence of the pollutants to be discharged;

(2) The potential transport of such pollutants by biological, physical or chemical processes;

(3) The composition and vulnerability of the biological communities which may be exposed to such pollutants, including the presence of unique species or communities of species, the presence of species identified as endangered or threatened pursuant to the Endangered Species Act, or the presence of those species critical to the structure of function of the ecosystem, such as those important for the food chain;

(4) The importance of the receiving water area to the surrounding biological community, including the presence of spawning sites, nursey/forage areas, migratory pathways, or areas necessary for other functions or critical stages in the life cycle of an organism.

(5) The existence of special aquatic sites including, but not limited to marine sanctuaries and refuges, parks, national and historic monuments, national seashores, wilderness areas and coral reefs;

(6) The potential impacts on human health through direct and indirect pathways;

(7) Existing or potential recreational and commercial fishing, including finfish and shellfish;

(8) Any applicable requirements of an approved Coastal Zone Management plan;

(9) Such other factors relating to the effects of the discharge as may be appropriate;

(10) Marine water quality criteria developed pursuant to section 304(a)(1).

The ODCE provides basic information on the proposed discharges, the affected environment and probable effects of the discharges. Each of the above factors is considered. The document concludes that only localized effects on water quality and resident marine species would be expected from discharges from offshore operations. However, uncertainties and factors meriting additional attention such as bioaccumulation of heavy metals from sediment contamination were identified in the study.

The cumulative impact of proposed drilling mud and cuttings discharges is evaluated in the hazard assessment prepared by Dr. Gary Petrazzuolo. Water column and benthic impacts are analyzed with respect to the likelihood of causing irreparable harm or unreasonable degradation as defined in the Ocean Discharge Criteria regulations. The results of the analysis are summarized in Table A-1 below.

TABLE A-1.—SUMMARY OF ESTIMATED IMPACTS OF PROPOSED DRILLING MUD DISCHARGES ON THE CALIFORNIA OCS

| | Unreasonable degradation | Irreparable harm |
|---|---|---|
| Exploratory Operation: | | |
| Water Column | No | No. |
| Benthic | No | No. |
| Production Platform | | |
| Water Column | No | No. |
| Benthic | insufficient information. | No. |

Drilling mud discharges are not expected to cause unreasonable degradation of the water column from either production platforms or exploratory operations. The basis for this conclusion is the fact that mud discharges are intermittent and the toxic effects in the water column are short-term. Drilling muds authorized for discharge by the permit have been shown to be of low toxicity to a wide variety of marine organisms and the time of exposure of the toxicity tests (generally 96 hour bioassays) is comparable to or greater than the time of exposure in the marine environment. Also the total volume of mud expected to be discharged from all operations was shown to be very small relative to the flux of water passing through the general permit area. The analysis did suggest, however, that the northern anchovy ( *Engraulis mordax*), a key species in the food web, should be tested for its sensitivity to drilling muds. Although the range of species already tested for sensitivity to drilling muds is very likely to be broad enough to include the anchovy, EPA believes that additional testing on this species is worthwhile due to its key role in the ecosystem. As such, Condition IV.E was added to the permit requiring bioassays on the anchovy using each of the eight generic muds listed in Condition IV.C.16. Test results to be provided jointly by permittees, are required within twelve months of the effective date of the permit.

With respect to benthic impacts, Dr. Petrazzuolo's analysis showed that while irreparable harm would not be expected from exploratory operations or production platforms, unreasonable degradation could not be ruled out for production platforms. Numerous field studies have been conducted around exploratory operations and have shown only moderate impacts which are restricted to the immediate vicinity of the operation (within 300–500 m). However, adequate studies have not been conducted in the vicinity of production platforms, which may discharge substantially larger quantities of mud.

Although predictions can be made regarding the expected impacts from such discharges, field studies are needed to verify the predictions. The hazard assessment concludes that given the uncertainty concerning the effects of platform discharges, existing data are insufficient to support a determination of unreasonable degradation for the levels of development anticipated during the life of the permit. However, since existing laboratory data and field surveys do indicate that impacts are not permanent and that recovery does occur, irreparable harm would not be expected even from the level of discharge activity expected during the term of the permit.

**Appendix B—Review of Results of Alternatives Study of Mud and Cuttings Disposal**

This study was funded by EPA pursuant to the Ocean Discharge Criteria regulations (40 CFR 125.123(c)(1)) which require a review of the alternatives to onsite disposal for permits issued pursuant to 40 CFR 125.123(c). The costs, advantages and disadvantages of various alternatives to onsite disposal of drilling muds and cuttings were analyzed. The study estimated that the costs of barging muds and cuttings to shore for disposal could range from $175,000 to $1,450,000/well depending on the volume of wastes and the length of the drilling operation. EPA believes that in light of this substantial cost and other adverse factors identified in the study such as port congestion, truck and workboat emissions and pressure on the availability of land disposal sites, that barging to shore is not a satisfactory alternative for disposal of muds and cuttings which comply with permit discharge limits. The alternative of disposal at special ocean dumping sites was also considered in this study. The analysis of the costs of onshore disposal showed, however, that the cost of the barge represented 80% or more of the total costs. This cost would also be present for the alternative of dumping at special ocean dumping sites. As such, EPA believes that this is also an unsatisfactory alternative for the general disposal of mud and cuttings. Additional alternatives including recycling/reuse, piping wastes to shore and underground injection were reviewed in the study, but for various reasons, appeared relatively unattractive.

The advantages, disadvantages and costs of shunting muds to various depths were also reviewed in the study. Shunting tends to reduct the dispersion of muds and is frequently mentioned as a mitigating measure to be required for operations near special biological popultations. The costs of shunting were shown to be modest and would not represent an excessive burden on regulated facilities. However, for operations not in the vicinity of special biological populations shunting does not appear to offer any particularly attractive advantages. As such, shunting is regarded by the Region 9 as a potential mitigating measure to be required on a case-by-case basis.

Another alternative receiving increasing attention and mentioned briefly in the study involves processes for solidifying or detoxifying mud prior to discharge. EPA, Region 9 reviewed the status of these processes prior to reissuance of the general permit on December 8, 1983. We concluded that since these technologies were still in development stages, it would not be appropriate to base pemit limits on such processes. We have reviewed the progress in the development of these technologies since the previous permit was issued and determined that meaningful progress has occurred (Earthrite Technology, Inc. (1984), for example). A drilling muds disposal and

operating techniques study is currently underway funded by Chevron Corporation which will include an assessment of the practical application of such technology on the Pacific OCS.

[Permit No. CAG280622]

**General Permit—Authorization To Discharge Under the National Pollutant Discharge Elimination System**

In compliance with the provisions of the Federal Water Pollution Control Act, as amended (33 U.S.C. 1251 *et seq.;* the "Act"), the following discharges are authorized:

Drilling Muds, Drill Cuttings and Washwater (discharge 001),
Produced Water (discharge 002),
Produced Sand (discharge 003),
Well Completion and Treatment Fluids (discharge 004),
Diatomaceous Earth Filter Media (discharge 005),
Deck Drainage (discharge 006),
Sanitary Wastes (discharge 007),
Domestic Wastes (discharge 008),
Desalinization Unit Discharge (discharge 009),
Cooling Water (discharge 010),
Uncontaminated Bilge Water (discharge 011),
Uncontaminated Ballast Water (discharge 012),
Excess Cement Slurry (discharge 013),
BOP Control Fluid (discharge 014), and
Fire Control System Test Water (discharge 015),

from offshore oil and gas facilities (defined in 40 CFR Part 435, Subpart A) engaged in development or production activities, to receiving waters named the Pacific Ocean, in accordance with effluent limitations, monitoring requirements and other conditions set forth in Parts I, II, III and IV thereof.

Offshore permittees who fail to notify the Regional Administrator of their intent to be covered by this general permit are not authorized to discharge to the specified receiving waters unless an individual permit has been issued to the facility by EPA, Region 9.

The authorized discharge sites are (by OCS lease parcel number): in waters west and northwest of Point Buchon,

P-0373 P-0374 P-0375 P-0376 P-0377;

in waters west and northwest of Point Arguello,

P-0393 P-0394 P-0395 P-0396 P-0397 P-0400 P-0401 P-0402 P-0403 P-0406 P-0407 P-0408 P-0409 P-0412 P-0413 P-0414 P-0415 P-0416 P-0418 P-0419 P-0420 P-0421 P-0422 P-0424 P-0425 P-0426 P-0427 P-0429 P-0430 P-0431 P-0432 P-0433 P-0434 P-0435 P-0436 P-0437 P-0438 P-0439 P-0440 P-0441 P-0443 P-0444 P-0445 P-0446 P-0447 P-0448 P-0449 P-0450 P-0451 P-0452 P-0453 P-0491 P-0492 P-0493 P-0494 P-0495 P-0496 P-0497 P-0498 P-0499 P-0500 P-0503 P-0504 P-0505 P-0506 P-0507 P-0508 P-0509 P-0510;

in waters south and west of Pt. Conception,

P-0315 P-0316 P-0317 P-0318 P-0319 P-0320 P-0321 P-0322 P-0323 P-0324 P-0456 P-0457 P-0511;

in the Santa Barbara Channel from Pt. Conception to Goleta Point,

P-0180 P-0181 P-0182 P-0183 P-0184 P-0185 P-0187 P-0188 P-0189 P-0190 P-0191 P-0192 P-0193 P-0194 P-0195 P-0196 P-0197 P-0326 P-0329 P-0459 P-0460 P-0461 P-0462 P-0463 P-0464 P-0465 P-0467 P-0469 P-0475 P-0512 P-0513 P-0514 P-0515 P-0516 P-0517 P-0519;

in the Santa Barbara Channel from Santa Barbara to Ventura,

P-0166 P-0202 P-0203 P-0204 P-0205 P-0208 P-0209 P-0210 P-0215 P-0216 P-0217 P-0231 P-0232 P-0233 P-0234 P-0238 P-0240 P-0241 P-0346 P-0348 P-0349 P-0468 P-0472 P-0473 P-0474 P-0478 P-0479 P-0520 P-0521 P-0522 P-0523 P-0524 P-0525 P-0527

in the waters south of Santa Rosa and Santa Cruz Islands.

P-0480 P-0481 P-0482 P-0483 P-0484 P-0485 P-0486 P-0487 P-0531 P-0532;

in water southwest of Point Dume,

P-0528 P-0529 P-0530

in the San Pedro Channel between San Pedro and Laguna,

P-0296 P-0300 P-0301 P-0306 P-0488;

and in waters south and southwest of San Clemente Island,

P-0489 P-0490 P-0533 P-0534 P-0535

This permit does not authorize discharges from "new sources" as defined in 40 CFR 122.3.

This permit shall become effective on ———.

This permit and the authorization to discharge shall expire at midnight, ——— (5 years from date of issuance).

Signed this —— day of ———.

Judith E. Ayres,

*Regional Administrator, Region 9.*

**Part I—Commencement and Termination of Operations—Notification Requirements**

Written notification of commencement of operations shall be provided to, and received by, the Regional Administrator at least fourteen (14) days prior to initiation of discharges. Notification shall be provided for each facility. The notification shall identify the permittee and include the statement "We assume full responsibility for compliance with NPDES General Permit No. CAG280622 for the operations listed below" and shall be signed by an authorized representative.

The notification of operations and designation of permittee letter shall contain the following information.

a. Name and address of permittee.

b. Description and location of operation, including parcel number and exact coordinates.

c. Date discharges are proposed to commence.

d. Expected duration of activities.

e. Name of leaseholder, if different from permittee.

Permittees shall also notify the Regional Administrator within twenty-eight (28) days upon permanent termination of discharges at these locations. The termination notification letter shall contain the date of the last day of any discharges at the site.

For operations on parcels for which a biological survey is required by Minerals Management Service (MMS) lease stipulation, the biological survey report and the plan of exploration shall be provided to EPA prior to initiation of discharges. Initiation of discharge under the permit may not begin until EPA has reviewed the survey report and the proposed operations and determined that this general permit is appropriate for the proposed discharges and notified the permittee in writing of this determination.

**Part II**

*A. Effluent Limitations and Monitoring Requirements*

1. During the period beginning the date this permit becomes effective for the permittee's facility and lasting through the expiration date of this permit, the permittee is authorized to discharge from outfall serial number 001 (drilling muds, drill cuttings and washwater).

a. The permittee shall individually estimate and report the total monthly discharge volume for drilling muds, drill cuttings and washwater. The permittee shall also report the number of days of discharge of drilling muds for each drilling mud system used.

b. There shall be no discharge of free oil as a result of the discharge of drilling muds, drill cuttings or washwater. Compliance with this limit shall be determined in accordance with the procedure in "Static Sheen Test" (U.S. Environmental Protection Agency, 1985b). The test shall be conducted on each day of discharge of drill cuttings or drilling mud. The permittee shall report the number of times free oil was observed.

c. The discharge of drilling fluids which contain waste engine oil, cooling oil, gear oil, lubricant which has been previously used for purposes other then borehole lubrication, is prohibited.

d. The discharge of oil-based drilling muds is prohibited. The discharge of drill cuttings associated with oil-based muds is also prohibited.

e. Drilling mud toxicity. The minimum 96 hour $LC_{50}$ value for drilling muds discharged in compliance with this permit is 30,000 ppm (suspended particulate phase). The permittee shall demonstrate compliance with this limit by conducting and reporting the results of a drilling mud bioassay for each mud system which is used and discharged. Mud samples for the bioassays shall be taken at the time that maximum well depth is reached for each generic mud type and just prior to the intended discharge of the mud.

The bioassay procedure to be used is "Drilling Fluids Toxicity Test" (U.S. Environmental Protection Agency, 1985a). Bioassay results shall be submitted within 28 days following completion of each well (Condition II.C.4.).

With the exception of the drilling mud system used and discharged when the well reaches its maximum depth, the bioassay requirement shall be deemed satisfied upon a demonstration by the permittee that a discharged mud complies with the requirements of (1), (2) or (3) below.

(1) The mud is generic as defined in Condition IV.C.16.

(2) The mud is generic as defined in Condition IV.C.16. (excluding generic mud #1) and all specialty additives included in the mud satisfy either of the following conditions:

(A) When each additive is included at its maximum concentration in generic mud #7 (lightly treated lignosulfonate mud), the 96 hour $LC_{50}$ value of the resulting mud exceeds 100,000 ppm for the suspended particulate phase. The bioassay procedure shall be that in "Drilling Fluids Toxicity Test" identified above.

(B) Other toxicity data is available for the additive upon which EPA may reasonably conclude that (A) above would be satisfied.

(3) The mud is generic as defined in Condition IV.C.16 and contains additives used in quantities such that the resulting whole mud may, based on bioassay data for similar whole muds or bioassay or toxicity data for the additives, be shown to comply with the overall mud toxicity limit (30,000 ppm). The permittee shall be responsible for providing the demonstration of compliance. The method in "Separate and Joint Toxicity to Rainbow Trout of Substances Used in Drilling Fluids for Oil Exploration" (Sprague and Logan, 1979) may be used to estimate joint toxicity.

f. Drilling Muds Inventory and Reporting Requirements. The permittee shall maintain a precise inventory of all mud constitutents added downhole for each well. The composition of each mud system used and discharged by the permittee shall be reported to EPA. Mud composition data shall be submitted to EPA within 28 days following completion of each well.

g. There shall be no discharge of drilling mud formulated with barite in which the mercury concentration in the barite exceeds 1 ppm or the cadmium concentration in the barite exceeds 2 ppm. An analysis for mercury and cadmium contamination shall be conducted for the barite used by the permittee for each mud system, and the results of the analysis submitted to EPA along with the mud composition data required by (f) above.

h. There shall be no discharge of drilling mud in which diesel fuel oil was added as a lubricity agent. The discharge of drilling muds containing residual diesel from spotting operations is prohibited except in compliance with the following conditions:

(1) The diesel pill and fifty (50) barrels of mud on each side of the diesel pill shall be removed from the mud system and shall not be discharged. The collection period shall begin when the 50 barrel lead buffer surfaces or at the time of first visual evidence of diesel, whichever occurs first. The collection period ends at the time that the 50 barrel trailing buffer is recovered or when no visual evidence of diesel exists, whichever occurs last. Drill cuttings which contact the removed mud shall also not be discharged.

(2) Mud which is discharged shall not exceed the toxicity limitation specified in Condition II.A.1(e). To demonstrate compliance with this requirement the analyses of (A), (B) and (C) below shall be conducted on two (2) mud samples collected as follows: Sample #1 shall be collected from the circulating mud system immediately prior to pumping the diesel oil downhole. Sample #2 shall be collected immediately after 2 complete circulations of the active mud system following recovery of the pill and contaminated mud. Sample #1 and sample #2 shall be taken from the return flow line under the screen and not from the mud pit. If washwater is used on the screen, then it shall be turned off before these samples are collected.

(A) Bioassay conducted in accordance with the method in "Drilling Fluids Toxicity Test" identified above,

(B) Analysis to determine the concentration of diesel oil in the mud conducted in accordance with the procedure in "Analysis of Diesel Oil in Drilling Fluids and Drill Cuttings" (US EPA August 1985), and

(C) Sheen test conducted in accordance with the method in "Static Sheen Test" identified above.

(3) The following information is also required:

(A) Composition of basic must plus specialty additives,

(B) Quantity of contaminated mud removed from mud system,

(C) Disposal site for contaminated mud, and

(D) Time at which the discharge of drilling mud ceased for the purpose of collecting the diesel pill for onshore disposal and the time at which drilling mud discharges recommenced subsequent to collection of the diesel pill.

i. Drilling mud discharges on parcels which (1) were leased subsequent to the effective date of the regulations implementing the Channel Islands Marine Sanctuary (April 30, 1982–15 CFR Part 935) and (2) have a portion of the tract lying within 1,000 m of the boundary of the Channel Islands Marine Sanctuary, shall not cause exceedences of the limiting permissible concentration (see Condition IV.C.15) inside the boundary of this marine sanctuary. For such discharges the permittee shall provide a demonstration of compliance with this condition based on the toxicity of the mud and an analysis of the mud dilution.

j. There shall be no discharge of chrome lignosulfonate.

k. Reporting of Final Mud Dump. The permittee shall provide verbal notice to EPA (or other Federal agency designated by EPA at a later date) 48 hours prior to the final mud dump upon completion of each well. Notification shall be provided to the Compliance Section, Water Management Division at: Telephone: (415) 974–8275.

l. Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location: discharge 001, subsequent to all treatment processes and prior to entry into the waters of the Pacific Ocean.

2. During the period beginning the date this permit becomes effective for the permittee's facility and lasting through the expiration date of this permit, the permittee is authorized to discharge from outfall serial number 002 (produced water).

a. Such discharges shall be limited and monitored by the permittee as specified below:

| Effluent characteristic | Discharge limitations | | Monitoring requirements | |
|---|---|---|---|---|
| | Monthly average (mg/l) | Daily maximum (mg/l) | Measurement frequency | Sample type |
| Flow (MGD) | | | Once/week | Estimate. |
| Oil and grease | 48.0 | 72.0 | do | Composite. |
| Arsenic | | [1].032 | Once/3 months | Discrete. |
| Cadmium | | [1].012 | do | Do. |
| Total chromium | | [1].008 | do | Do. |
| Copper | | [1].020 | do | Do. |
| Cyanides | | .020 | do | Do. |
| Lead | | .032 | do | Do. |
| Mercury | | [1].00056 | do | Do. |
| Nickel | | [1].080 | do | Do. |
| Silver | | [1].0018 | do | Do. |
| Zinc | | [1].080 | do | Do. |
| Phenol | | [1].120 | do | Do. |
| Naphthalene | | [1].0235 | do | Do. |
| 2, 4 dimethylphenol | | | do | Do. |
| Benzene | | [1].051 | do | Do. |
| Toluene | | [1].050 | do | Do. |
| Ethylbenzene | | [1].0043 | do | Do. |
| Benzo (a) pyrene | | [1].003 | do | Do. |

[1] This limit is applicable after initial dilution within a mixing zone defined in Condition IV.C.17. Compliance with these limits, shall be determined through the use of the following equation:

$Ce = Co + Dm (Co - Cs)$

where

Ce = the maximum allowable concentration,

Co = the concentration in Part II.A.2(a) which is to be met at the completion of initial dilution,

Cs = background seawater concentration (See Part IV.C.18),

Dm = minimum probable initial dilution expressed as parts seawater per part wastewater.

b. Use of chemical additives in produced water. The permittee shall maintain a record of all substances added to produced waters including but not limited to biocides, corrosion inhibitors and scale inhibitors. The quantity, concentration and chemical composition of these substances shall be reported annually to EPA as a supplement to the annual monitoring report required by Condition II.C.4. of this permit.

c. Samples taken in compliance with the monitoring requirements specified in Condition II.A.2(a), above, shall be taken at the following location: at a point in discharge 002 prior to entry into the waters of the Pacific Ocean.

3. During the period beginning the date this permit becomes effective for the permittee's facility and lasting through the expiration date of this permit, the permittee is authorized to discharge from outfall serial numbers 003–007.

a. Such discharges shall be limited and monitored by the permittee as specified on the following page:

| Serial Nos. outfalls | Effluent characteristic | Discharge limitations | Monitoring requirements | |
|---|---|---|---|---|
| | | | Measurement frequency | Sample type |
| 003—Produced sand | Quantity | (Barrels per mo) | Once per month | Estimate. |
| | Free oil | No visible sheen | Once per day | Visual observations. |
| 004—Well completion and treatment fluids.[3]. | Volume | | Once per month | Estimate. |
| | Free oil | No visible sheen | Once per day | Visual observations.[1] |
| 005—Diatomaceous earth filter media. | Volume | | Once per month | Estimate. |
| | Free oil | No visible sheen | Once per day | Visual observations.[1] |
| 006—Deck drainage | Volume | | Once per month | Estimate. |
| | Free oil | No visible sheen | Once per day | Visual observations.[1] |
| 007—Sanitary waste | Flow rate (MGD) | | Once per month | Estimate. |
| | Residual chlorine 1.0 mg/l.[2]. | | Once per week | Discrete. |
| 008—Domestic waste | | No floating solids | Once per day | Visual observations.[4] |

[1] The permittee shall make visual observations during daylight hours for the presence of free oil in the receiving water on each day of discharge, and shall report the number of days a sheen was observed. For discharges occurring at night, compliance shall be determined using the static sheen test (see Condition II.A.1(b)).

[2] Minumum of 1 mg/l and maintained as close to this concentration as possible (maximum concentration is 10 mg/l). This requirement is not applicable to facitlities intermittently manned or to facilities permanently manned by nine (9) or fewer persons. There shall be no visible floating solids in the receiving waters from this discharge for facilities intermittently manned or permanently manned by nine (9) or fewer persons. For such facilities visible observations for floating solids are required daily and the permittee shall report the number of times floating solids were observed.

[3] The chemical composition of these fluids shall be reported quarterly to EPA as a supplement to the quarterly monitoring report required by Condition II.C.4. of this permit.

[4] The permittee shall make visual observations during daylight hours for the presence of floating solids in the receiving water on each day of discharge, and shall report the number of days floating solids were observed.

b. Samples taken in compliance with monitoring requirements specified above shall be taken at a sampling point prior to commingling with any other waste stream or entering Pacific waters. In cases where sanitary and domestic wastes are mixed prior to discharge, and sampling of the sanitary waste component stream is infeasible, the discharge may be sampled after mixing. In such cases, the discharge limitation shown above for sanitary waste shall apply to the mixed waste stream.

4. a. During the period beginning the date this permit becomes effective for the permittee's facility and lasting through the expiration date of this permit the permittee is authorized to discharge from outfall(s) serial number(s) 008–014 (miscellaneous discharges).

Discharge 009—Desalinization Unit Discharge:

010—Cooling water

011—Uncontaminated Bilge Water

012—Uncontaminated Ballast Water

013—Excess Cement Slurry

014—Control Fluid From Blow-Out Preventer

015—Fire Control System Test Water

b. There shall be no free oil in the receiving waters as a result of these discharges. The permittee shall make visual observations during daylight hours for the presence of free oil in the receiving water on each day of discharge, and shall report the number of days a sheen was observed.

5. Reopener Clause

In addition to any other grounds specified herein, this permit shall be modified or revoked at any time if, on the basis of any new data, the Regional Administrator determines that continued discharges may cause unreasonable degradation of the marine environment.

6. Effective Date for Monitoring Requirements

The monitoring requirements shall take effect upon commencement of discharge.

*B. Other Discharge Limitations*

1. Floating Solids or Visible Foam

There shall be no discharge of floating solids or visible foam in other than trace amounts.

2. Halogenated Phenol Compounds

There shall be no discharge of halogenated phenol compounds.

3. Surfactants, Dispersants, and Detergents

The discharge of surfactants, dispersants, and detergents shall be minimized except as necessary to comply with the safety requirements of the Occupational Health and Safety

Administration and the Minerals Management Service.

4. Sanitary Wastes

Any facility using a marine sanitation device that complies with pollution control standards and regulations under Section 312 of the Act shall be deemed to be in compliance with permit limitations until such time as the device is replaced or is found not to comply with such standards and regulations.

*C. Monitoring And Records*

1. Representative Sampling

Samples and measurements taken for the purpose of monitoring shall be representative of the volume and nature of the monitored activity.

2. Reporting Procedures

Monitoring must be conducted according to test procedures approved under 40 CFR Part 136, unless other test procedures have been specified in this permit.

3. Penalties for Tampering

The Act provides that any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under this permit shall, upon conviction, be punished by a fine of not more than $10,000 per violation, or by imprisonment for not more than 6 months per violation, or by both.

4. Reporting of Monitoring Results

Monitoring results obtained for discharges 002–015 during the previous 3 months shall be summarized and reported on a Discharge Monitoring Report Form, EPA No. 3320–1 (DMR). For discharge 001 (drilling muds and cuttings), monitoring results obtained during the drilling of each well shall be summarized and reported on the DMR form. The highest daily maximum sample taken during the reporting period shall be reported as the daily maximum concentration.

If any category of waste (outfall) is not discharged no reporting is required for that particular outfall. Only DMR's representative of the activities occurring need to be submitted. A notification indicating the type of operation should be provided with the DMR's. If no discharges whatsoever occurred from the permittee's facility a report to that effect shall be submitted.

The first report for discharges 002–015 is due on the 28th day of the fourth month from the day this permit becomes applicable to a permittee. Drilling mud and cuttings monitoring results (discharge 001) are due on the 28th day following completion of each well.

Signed and certified copies of these and other reports required herein, shall be submitted to the Regional Administrator at the following address: Director, Water Management Division, Attn: W–3–2, Region 9, U.S. Environmental Protection Agency, 215 Fremont Street, San Francisco, CA 94105.

5. Additional Monitoring by the Permittee

If the permittee monitors any pollutant more frequently than required by this permit, using test procedures approved under 40 CFR Part 136 or as specified in the permit, the results of such monitoring shall be included in the calculation and reporting of the data submitted in the DMR.

6. Averaging of Measurements

Calculations for all limitations which require averaging of measurements shall utilize an arithmetic mean unless otherwise specified by the Regional Administrator in the permit.

7. Retention of Records

The permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, and copies of all reports required by this permit for a period of at least three (3) years from the date of the sample, measurement, or report. This period may be extended by request of the Regional Administrator at any time.

These records shall be stored on the permittee's offshore facility and shall include drilling mud composition data, well completion fluid composition data and records of all materials added to produced water.

8. Record Contents

Records of monitoring information shall include:

a. The date, place, and time of sampling or measurements;

b. The individual(s) who performed the sampling or measurements;

c. The date(s) analyses were performed;

d. The individual(s) who performed the analyses;

e. The analytical techniques or methods used; and

f. The results of such analyses.

9. Inspection and Entry

The permittee shall allow the Regional Administrator, or an authorized representative, upon the presentation of credentials and other documents as may be required by law, to:

a. Enter upon the permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit;

b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;

c. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and

d. Sample or monitor at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the Act, any substances or parameters at any location.

10. Rubbish, Trash and Other Refuse

The discharge of any solid material not in compliance with other parts of this permit is prohibited. Incineration residue from paper and plastic only is exempt from this prohibition.

*D. Reporting Requirements*

1. Anticipated Noncompliance

The permittee shall give advance notice to the Regional Administrator of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.

2. Monitoring Reports

Monitoring results shall be reported at the intervals specified in Part II.C.4 of this permit. The monitoring report shall include:

a. Drilling muds composition data (in lbs/bbl), bioassays results and/or demonstration of compliance with toxicity limits for muds;

b. Static sheen test results for drilling muds and drill cuttings and washwater;

c. Concentrations of mercury and cadmium in barite used in drilling muds;

d. Estimates of the volume of discharge of drilling muds, drill cuttings, produced water, produced sand, well completion and treatment fluids, deck drainage and sanitary waste; also, for drilling muds, the number of days of discharge for each drilling system used.

e. Information pertaining to diesel pill disposal, as appropriate;

f. Number of observations of free oil in the receiving water from discharges 003–006 and discharges 009–015; also static sheen test results for discharges 003–006 which occur at night;

g. Residual chlorine measurements for the sanitary wastes discharge or as appropriate, the number of observations of floating solids;

h. Produced water, oil, and grease analyses, heavy metals and toxic organics analyses and an analysis of the discharge dilution;

i. Number of observations of floating solids in the receiving water resulting from domestic wastes discharges; and

j. Demonstration of compliance with Condition II.-A.1(i) (as appropriate) for mud discharges in the vicinity of the Channel Island Marine Sanctuary.

3. Twenty-Four Hour Reporting of Noncompliance

The permittee shall report any noncompliance which may endanger health or the environment. Any information shall be provided orally within 24 hours from the time the permittee becomes aware of the circumstances. The written submission shall also be provided within 5 days of the time the permittee becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned or reduce, eliminate, and prevent reoccurrence of the noncompliance.

The following shall be included as information which must be reported within 24 hours:

a. Any unanticipated bypass which exceeds any effluent limitation in the permit;

b. Any upset which exceeds any effluent limitations in the permit; and

c. Violation of a maximum daily discharge limitation for any toxic pollutant or hazardous sustance, or any pollutant specifically identified as the method to control a toxic pollutant or hazardous substance, listed as such by the Regional Administrator in the permit to be reported within 24 hours.

Reports during normal business hours (8 a.m.– 4:30 p.m.) should be made to the Compliance Section, Water Management Division at telephone #415–974–8275. Twenty-four hour reporting may be made at telephone #415–974–8131. The Regional Administrator may waive the written report on a case-by-case basis if the oral report has been received within 24 hours.

4. Other Noncompliance

The permittee shall report all instances of noncompliance not reported under Part II.D.3. at the time monitoring reports are submitted. The reports shall contain the information listed in Part II.D.3.

5. Signatory Requirements

All reports or information submitted to the Regional Administrator shall be signed and certified in accordance with 40 CFR 122.22.

6. Availability of Reports

Except for data determined to be confidential under 40 CFR Part 2, all reports prepared in accordance with the terms of this permit shall be available for public inspection at the offices of the Regional Administrator. As required by the Act, permit applications, permits, and effluent data shall not be considered confidential.

7. Penalties for Falsification of Reports

The Act provides that any person who knowingly makes any false statement, representation, or certification in any record or permit, including monitoring reports or reports of compliance or noncompliance shall, upon conviction, be punished by a fine of not more than $10,000 per violation, or by imprisonment for not more than 6 months per violation, or by both.

**Part III**

*A. Operation and Maintenance of Pollution Controls*

1. Proper Operation and Maintenance

The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems which are installed by a permittee only when the operation is necessary to achieve compliance with the conditions of the permit.

2. Need To Halt or Reduce not a Defense

It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitteed activity in order to maintain compliance with the conditions of this permit.

3. Bypass of Treatment Facilities

a. *Definitions.* (1) "Bypass" means the intentional diversion of waste streams from any portion of a treatment facility.

(2) "Severe property damage" means substantial physical damage to property, damage to the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources which are reasonably expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.

b. *Bypass not exceeding limitations.* The permittee may allow any bypass to occur which does not cause effluent limitations to be exceeded, but only if it also is for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions of paragraphs c. and d. of this section.

c. *Notice.* (1) Anticipated bypass. If the permittee knows in advance of the need for a bypass, he shall submit prior notice, if possible, at least 10 days before the date of the bypass.

(2) Unanticipated bypass. The permittee shall submit notice of an unanticipated bypass as required in Part II.D.3. (24-hour notice).

d. *Prohibition of bypass.* (1) Bypass is prohibited, and the Regional Administrator may take enforcement action against the permittee for bypass, unless:

(A) Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;

(B) There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass which occurred during normal periods of equipment downtime or preventive maintenance; and

(C) The permittee submitted notices as required under paragraph c. of this section.

(2) The Regional Administrator may approve an anticipated bypass, after considering its adverse effects, if he determines that it will meet the three conditions listed above in paragraph d(1) of this section.

4. Upset Conditions

a. *Definition.* "Upset" means an exceptional incident in which there is unintentional and temporary noncompliance with technology based permit effluent limitations because of factors beyond the reasonable control of the permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.

b. *Effect of an upset.* An upset constitutes an affirmative defense to an action brought for noncompliance with such technology-based permit effluent limitations if the requirements of paragraph (c) of this section are met. No determination, made during administrative review of claims that noncompliance was caused by an upset, and before an action for noncompliance, is final administrative action subject to judicial review.

c. *Conditions necessary for a demonstration of upset.* A permittee who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs, or other relevant evidence that:

(1) An upset occurred and that the permittee can identify the cause(s) of the upset;

(2) The permitted facility was at the time being properly operated;

(3) The permittee submitted notice of the upset as required in Part II.D.3 (24-hour notice); and

(4) The permittee complied with any remedial measures required under Part III.B.4 (duty to mitigate).

d. *Burden of proof.* In any enforcement proceeding the permittee seeking to establish the occurrence of an upset has the burden of proof.

5. Removed Substances

Solids, sludges, filter backwash, or other pollutants removed in the course of treatment or control of wastewaters shall be disposed of in a manner such as to prevent any pollutant from such materials from entering navigable waters.

*B. General Conditions*

1. Duty to Comply

The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the Act and is grounds for enforcement action or for requiring a permittee to apply for and obtain an individual NPDES permit.

2. Duty to Comply with Toxic Effluent Standards

The permittee shall comply with effluent standards or prohibitions established under section 307(a) of the Act for toxic pollutants within the time provided in the regulations that establish these standards or prohibitions, even if the permit has not yet been modified to incorporate the requirement.

3. Penalties for Violation of Permit Conditions

The Act provides that any person who violates a permit condition implementing sections 301, 302, 306, 307, 308, 318, or 405 of the Act is subject to a civil penalty not to exceed $10,000 per day of such violation. Any person who willfully or negligently violates permit conditions implementing sections 301, 302, 303, 306, 307, or 308 of the Act is subject to a fine of not less than $2,500 nor more than $25,000 per day of violation, or by imprisonment for not more than 1 year, or both.

4. Duty to Mitigate

The permittee shall take all reasonable steps to minimize or prevent any discharge in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment.

5. Permit Actions

This permit may be modified, revoked and reissued, or terminated for cause, as provided in 40 CFR 122.41 and in 122.62, 122.63 and 122.64. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or notification of planned changes or anticipated noncompliance, does not stay any permit condition.

6. Civil and Criminal Liability

Except as provided in permit conditions on "Bypasses" (Part III.A.3) and "Upsets" (Part III.A.4.), nothing in this permit shall be construed to relieve the permittee from civil or criminal penalties for noncompliance.

7. Oil and Hazardous Substance Liability

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties to which the permittee is or may be subject under section 311 of the Act.

8. State laws

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties established pursuant to any applicable State law or regulation under authority preserved by section 510 of the Act.

9. Property Rights

The issuance of this permit does not convey any property rights of any sort, or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of Federal, State, or local laws or regulations.

10. Severability

The provisions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.

**Part IV—Other Requirements**

*A. When the Regional Administrator May Require Application for an Individual NPDES Permit*

The Regional Administrator may require any person authorized by this permit to apply for and obtain an individual NPDES permit when:

1. The discharge(s) is a significant contributor of pollution;

2. The discharger is not in compliance with the conditions of this permit;

3. A change has occurred in the availability of the demonstrated technology or practices for the control or abatement of pollutants applicable to the point source;

4. Effluent limitation guidelines are promulgated for point sources covered by this permit;

5. A Water Quality Management Plan containing requirements applicable to such point source is approved; or

6. The point source(s) covered by this permit no longer:

(1) Involve the same or substantially similar types of operations;

(2) Discharge the same types of wastes;

(3) Require the same effluent limitations or operating conditions;

(4) Require the same or similar monitoring; and

(5) In the opinion of the Regional Administrator are more appropriately controlled under a general permit than under individual NPDES permits.

The Regional Administrator may require any permittee authorized by this permit to apply for an individual NPDES permit only if the permittee has been notified in writing that a permit application is required.

*B. When an Individual NPDES Permit May Be Requested*

1. Any permittee authorized by this permit may request to be excluded from the coverage of this general permit by applying for an individual permit. The permittee shall submit an application together with the reasons supporting the request to the Regional Administrator.

2. When an individual NPDES permit is issued to a permittee otherwise subject to this general permit, the applicability of this permit to that owner or permittee is automatically terminated on the effective date of the individual permit.

3. A source excluded from coverage under this general permit solely because it already has an individual permit may request that its individual permit be revoked, and that it be covered by this general permit. Upon revocation of the individual permit, this general permit shall apply to the source.

*C. Definitions*

1. "Cooling water" means once through non-contact cooling water.

2. "Daily maximum" means the average concentration of the parameter specified during any 24-hour period that reasonably represents the 24-hour period for the purposes of sampling.

3. "Deck drainage" means all waste resulting from platform washing, deck washings, and run-off from curbs, gutters, and drains including drip pans and wash areas.

4. "Desalinization unit discharge" means wastewater associated with the process of creating fresh water from seawater.

5. "Domestic waste" includes discharges from galleys, sinks, showers, and laundries.

6. "No discharge of free oil" means a discharge that does not cause a film or sheen upon or a discoloration on the surface of the water or adjoining shorelines, or cause a sludge or emulsion to be deposited beneath the surface of the water or upon adjoining shorelines.

7. "Drill cuttings" means particles generated by drilling into subsurface geological formations.

8. "Drilling muds" means any fluid sent down the well hole, including any specialty products, from the time a well is begun until final cessation of drilling in that hole. The term "mud system" refers to the major types of drilling muds used during the drilling of one well. A change in mud system is considered to occur after bulk discharges when one basic type of generic mud is exchanged for another type. A change in mud system is not considered to have occurred when small amounts of specialty mud additives are added to a mud.

9. "Produced sands" means sands and other solids removed from the produced waters.

10. "Sanitary waste" means human body waste discharged from toilets and urinals.

11. The term "territorial seas" means the belt of the seas measured from the line of ordinary low water along that portion of the coast which is in direct contact with the open sea and the line marking the seaward limit of inland waters, and extending seaward a distance of three miles.

12. "Well completion and treatment fluids" means any fluids sent down the drill hole to improve the flow of hydrocarbons into or out of geological formations which have been drilled.

13. A "discrete sample" means any individual sample collected in less than fifteen minutes.

14. For flow rate measurements, a "composite sample" means the arithmetic mean of no fewer than eight individual measurements taken at equal intervals for twenty-four hours or for the duration of the discharge, whichever is shorter.

For oil and grease measurements, a "composite sample" means four sample taken over a twenty-four hour period analyzed separately and the four samples averaged. The daily maximum limitation for oil and grease is based on this definition of a composite sample. For measurements other than flow rate or oil and grease, a composite samples means a combination of no fewer than eight individual samples obtained at equal time intervals for twenty-four hours or for the duration of the discharge, whichever is shorter.

15. Limiting Permissible Concentration—that concentration which will not exceed .01 of a concentration shown to be acutely toxic (96 hour $LC_{50}$) to appropriate sensitive marine organisms in a bioassay carried out in accordance with the method in "Drilling Fluids Toxicity Test" identified in Condition II.A.1(e).

16. Generic Drilling Muds.

| | Maximum Allowable Concentration (pounds per barrel) |
|---|---|
| 1. Seawater/potassium/polymer mud: | |
| KCl | 50 |
| Starch | 12 |
| Cellulose polymer | 5 |
| Xanthan gum polymer | 2 |
| Drilled solids | 100 |
| Caustic | 3 |
| Barite | 450 |
| Seawater | (1) |
| 2. Seawater/lignosulfonate mud: | |
| Components | |
| Attapulgite or bentonite | 50 |
| Lignosulfonate | 15 |
| Lignite | 10 |
| Caustic | 5 |
| Barite | 450 |
| Drilled solids | 100 |
| Soda ash/sodium bicarbonate | 2 |
| Cellulose polymer | 5 |
| Seawater | (1) |
| 3. Lime mud: | |
| Components | |
| Lime | 20 |
| Bentonite | 50 |
| Lignosulfonate | 15 |
| Lignite | 10 |
| Barite | 180 |
| Caustic | 5 |
| Drilled solids | 100 |
| Soda ash/sodium bicarbonate | 2 |
| Freshwater | (1) |
| 4. Nondispersed mud: | |
| Components | |
| Bentonite | 15 |
| Acrylic polymer | 2 |
| Barite | 180 |
| Drilled solids | 70 |
| Freshwater | (1) |
| 5. Spud mud (slugged intermittently with seawater): | |
| Components | |
| Attapulgite or bentonite | 50 |
| Caustic | 2 |
| Drilled solids | 100 |
| Barite | 50 |
| Soda ash/sodium bicarbonate | 2 |
| Lime | 1 |
| Seawater | (1) |
| 6. Seawater gel mud: | |
| Components | |
| Attapulgite or bentonite | 50 |
| Caustic | 3 |
| Cellulose polymer | 2 |
| Drilled solids | 100 |
| Barite | 50 |
| Soda ash/sodium bicarbonate | 2 |
| Lime | 2 |
| Seawater or freshwater | (1) |
| 7. Lightly treated lignosulfonate freshwater/seawater mud: | |
| Components | |
| Bentonite | 50 |
| Barite | 180 |
| Caustic | 3 |
| Lignosulfonate | 6 |
| Lignite | 4 |
| Cellulose polymer | 2 |
| Drilling solids | 100 |
| Soda ash/sodium bicarbonate | 2 |
| Lime | 2 |
| Seawater to freshwater ratio 1:1 approx. | (1) |
| 8. Lignosulfonate freshwater mud: | |
| Components | |
| Bentonite | 50 |
| Barite | 450 |
| Caustic | 5 |
| Lignosulfonate | 15 |
| Lignite | 10 |
| Cellulose polymer | 2 |
| Drilling solids | 100 |
| Soda ash/sodium bicarbonate | 2 |
| Lime | 2 |
| Seawater to freshwater ratio | (1) |

17. Mixing Zone—the zone extending from the sea's surface to seabed and extending laterally to a distance of 100 meters in all directions from the discharge point or to the boundary of the zone of initial dilution as calculated by a plume model or other method approved by the Regional Administrator.

18. Background seawater concentration:

| Waste constituent | Cs (mg/l) |
|---|---|
| Arsenic | 0.003 |
| Cadmium | 0.000 |
| Total chromium | 0.000 |
| Copper | 0.002 |
| Lead | 0.000 |
| Mercury | 0.00006 |
| Nickel | 0.00 |
| Silver | 0.00016 |
| Zinc | 0.008 |
| Cyanide | 0.000 |
| Phenolic compounds | 0.0 |

*D. Field Monitoring Study*

Within six (6) months of the effective date of this permit, permittees shall jointly commence the implementation of the monitoring program described in "Monitoring Program Requirements for Assessing Impacts from Offshore Oil and Gas Discharges" (Technical Resources, Inc., 1985). The existing platform monitoring program (Section 3.1) shall be completed within eighteen (18) months of the effective date of this permit. A final report of the results of the study shall be submitted to EPA, Region 9 within two (2) months of completion of the monitoring program. Quarterly progress reports shall be submitted to EPA, Region 9 during the course of the study. The first progress report is due three (3) months after commencement of the study.

Permittees shall also jointly conduct the new platform study described in section 3.2 of the above document. The schedule for this study shall be coordinated with the installment dates for new platforms to be studied and the sampling schedule specified on page 32 of the study document. Quarterly progress reports shall be submitted to EPA Region 9 during the course of the study. The first progress report is due three (3) months after the commencement of the study. Should a monitoring program similar to the new platform study be undertaken by the Minerals Management Service, permittees may substitute such work for the requirements of this condition to the extent that the alternate study satisfies the requirements of the new platform study.

*E. Toxicity Tests for Northern Anchovy*

Within twelve (12) months of the effective date of this permit, permittees shall provide to the Regional Administrator, EPA, Region 9, the results of bioassays conducted with the northern anchovy as the test organism, using samples of each of the eight (8) generic muds listed in Condition III.C.16. The bioassays shall be conducted in accordance with a procedure developed by permittees (adapted from other bioassay procedures using drilling mud) and approved by the Regional Administrator, Region 9, in writing prior to use.

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