3.3.8 Hydrology and Water Quality

VIII. HYDROLOGY AND WATER QUALITY: **Would the Project:**	**Potentially Significant Impact**	**Less Than Significant with Mitigation**	**Less Than Significant Impact**	**No Impact**
a) Violate any water quality standards or waste discharge requirements?	☐	☐	☐	☒
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	☐	☐	☐	☒
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?	☐	☐	☐	☒
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?	☐	☐	☐	☒
e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	☐	☐	☐	☒
f) Otherwise substantially degrade water quality?	☐	☐	☒	☐
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	☐	☐	☐	☒
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	☐	☐	☐	☒
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	☐	☐	☐	☒
j) Inundation by seiche, tsunami, or mudflow	☐	☐	☒	☐

3.3.8.1 Environmental Setting

The Project area is predominately located in the Pacific Ocean within state waters offshore of the DCPP. This area includes the marine waters between Point Buchon and Point San Luis (Figure 2-1) and offshore to the 122 m (400 ft) water depth.

Nearshore water quality is influenced by many factors, including local currents, nearby ocean outfalls and discharges, and freshwater inflow. Natural hydrocarbon seeps, river runoff, municipal wastewater and minor industrial outfalls, commercial vessel traffic, and petroleum development activities contribute to increased levels of nutrients, trace metals and/or synthetic organic contaminants in offshore waters. However, compared to coastal water of the Southern California Bight, anthropogenic (human-induced) inputs into the water of the Santa Maria Basin, including Estero Bay and the Project area, are fewer and, therefore, these marine waters are considered to be of a good quality.

Other than the DCPP heated water outfall, the largest municipal outfall in the Project area is located approximately 3.2 km (2.0 mi) north of Morro Rock, in the southern portion of Estero Bay and serves the combined communities of Morro Bay and Cayucos. Historically this outfall has had low impacts to local water and sediment quality beyond 15 m (50 ft) of the zone of initial dilution surrounding the outfall.

Nearshore ocean temperatures along the California coast north of Point Conception are largely influenced by the California and Davidson currents and the seasonal upwelling of deeper ocean water. Surface water temperatures within Estero Bay typically range from 48 to 68 degrees Fahrenheit (°F) with a mean of 57 °F. The winds promote the offshore movement of the surface water mass and its subsequent replacement by the upwelling of cold, nutrient rich water from deeper layers. Seasonal upwelling plays an important role in temperature and nutrient cycling within Estero Bay and along the entire coast of California. Upwelling is not, however, restricted temporally, and can occur at anytime during the year when the appropriate wind conditions persist.

Deep water offshore swells generally approach Estero Bay from the south to northwest, between 190 and 310° relative to azimuth true north. Point Estero to the north and Point Buchon to the south provide sheltering from waves traveling in directions outside that approach window. Table 3.3.8-1 provides some wave statistics from data collected from 1956 through 1975 by the ACOE at the wave station nearest Morro Bay. Additional data are available from the Scripps wave rider located offshore of the DCPP intake bay. Table 3.3.8-2 provides a summary of extreme wave conditions also compiled by the ACOE based on data collected during the same 20-year period.

Table 3.3.8-1. Deep Water WIS Hindcast Wave Data for the Project Area

Wave Data	Measurement
Mean significant wave height	2.4 m (8 ft)
Mean peak period	10.3 seconds
Most frequent wave direction	292.5° azimuth (re: True North)
Largest significant wave height	8.5 m (28 ft)
Peak period associated with highest wave	12.5 seconds

Table 3.3.8-2. Extreme Wave Conditions for the Project Area

Return Period (Years)	Wave Height in Meters (ft)
10	6.4 (21.0)
25	7.9 (25.9)
50	9.0 (29.5)
100	10.1 (33.0)

3.3.8.2 Regulatory Setting

This section identifies and discusses the regulations and policies pertaining to hydrology and water quality that are administered by federal and state agencies.

Federal

Clean Water Act of 1972. The CWA is a comprehensive piece of legislation that generally includes reference to the Federal Water Pollution Control Act of 1972, its substantial supplementation by the CWA of 1977, and subsequent amendments. Overall, the CWA seeks to protect the nation's water from pollution by setting water quality standards for surface water and by limiting the discharge of effluents into waters of the United States. These water quality standards are enforced by the EPA. The CWA also provides for development of municipal and industrial wastewater treatment standards and a permitting system to control wastewater discharges to surface waters. State operation of the program is encouraged. The CWA is the primary federal statute governing the discharge of dredged and/or fill material into waters of the U.S. Relevant sections include:

- Section 208 requires that states develop programs to identify and control nonpoint sources of pollution, including runoff;
- Section 230.8 gives authority to the ACOE and EPA to specify, in advance, sites that are either suitable or unsuitable for the discharge of dredged or fill material within U.S. waters;
- Section 303 requires states to establish and enforce water quality standards to protect and enhance beneficial uses of water for such purposes as recreation and fisheries;
- Section 304, subdivision (a)(1) requires the administrator of the EPA to publish criteria for water quality that reflect the latest scientific knowledge regarding the effects of pollutants in any body of water;
- Section 313, subdivision (a) requires that federal agencies observe state and local water quality regulations;
- Section 401 applies to dredging and other in-water activities and requires certification that the permitted project complies with state water quality standards for actions within state waters. Under section 401, states must establish water

quality standards for waters in the territorial sea. Dredging and other in-water activities may not cause the concentrations of chemicals in the water column to exceed state standards. To receive state certification, the applicant must demonstrate that these standards will not be exceeded;

- Section 401, subdivision (a)(1) requires any applicant for a federal permit (i.e., section 404) to provide certification from the state in which the discharge originates that such discharge will comply with applicable water quality provisions (i.e., section 303);
- Section 402 requires the EPA Administrator to develop the National Pollutant Discharge Elimination System (NPDES) to issue permits for pollutant discharges to waters of the U.S. A NPDES permit is required for: (1) any proposed point source wastewater or stormwater discharge to surface waters from municipal areas with a population of 100,000 or more; and (2) construction activities disturbing 1.0 acre (0.4 hectare) or more of land. A stormwater pollution prevention plan (SWPPP) is required for projects disturbing more than 1 acre (0.4 hectare), pursuant to the general permit for construction-related discharges;
- Section 404 establishes programs regulating the discharge of dredged and fill material into navigable waters of the United States. The CWA and MPRSA overlap for discharges to the territorial sea. The CWA supersedes MPRSA if dredged material is disposed of in the ocean for beach restoration or some other beneficial use. MPRSA supersedes CWA if dredged material is transported and disposed of in the territorial sea; and
- Section 404, subdivision (b)(1) guidelines are the substantive criteria used in evaluating discharges of dredged or fill material under section 404.

Oil Pollution Act of 1990 (33 USC § 2712). The OPA 90 requires owners and operators of facilities that could cause substantial harm to the environment to prepare and submit plans for responding to worst-case discharges of oil and hazardous substances.

Rivers and Harbors Act (33 USC § 401). Section 10 of the Rivers and Harbors Act limits the construction of structures and the discharge of fill into navigable waters of the U.S.

State

Porter-Cologne Water Quality Control Act of 1969 (Cal. Water Code, § 13000 et seq.). The Porter-Cologne Act is the principal law governing water quality in California. The Act, which establishes a comprehensive program to protect water quality and the beneficial uses of state waters, also established the SWRCB and the nine RWQCBs, which are charged with implementing the SWRCB provisions and have primary responsibility for protecting water quality in California. The Porter-Cologne Act also implements many provisions of the Federal CWA, such as the NPDES permitting

program. CWA section 401 gives the SWRCB the authority to review any proposed federally permitted or federally licensed activity which may impact water quality and to certify, condition, or deny the activity if it does not comply with state water quality standards. If the SWRCB imposes a condition on its certification, those conditions must be included in the federal permit or license.

Basin Plan. The Central Coast Region of the RWQCB has established a Water Quality Control Plan (Basin Plan) for coastal waters. A water quality control plan for the waters of an area is defined as having three components: beneficial uses which are to be protected, water quality objectives which protect those uses, and an implementation plan which accomplishes those objectives (Cal. Water Code, § 13050). The RWQCB's Basin Plan standards incorporate the applicable portions of the California Ocean Plan and are more specific to the beneficial uses of marine waters adjacent to the Project area. The water quality objectives and toxic material limitations are designed to protect the beneficial uses of ocean waters, which are as follows:

- *Water Contact Recreation (REC-1).* Uses of water for recreational activities involving body contact for water, where ingestion of water is reasonably possible. These uses include, but are not limited to, swimming, wading, water skiing, skin and scuba diving, surfing, and fishing;
- *Non-Contact Water Recreation (REC-2).* Uses of water for recreational activities involving proximity to water but not normally involving body contact with water, where ingestion of water is not reasonably possible. These uses include, but are not limited to, picnicking, sunbathing, hiking, beachcombing, camping, boating, tide pool and marine life study, hunting, sightseeing, and aesthetic enjoyment in conjunction with the above activities;
- *Industrial Service Supply (IND).* Uses of water for industrial activities that do not depend primarily on water quality including, but not limited to, mining, cooling water supply, hydraulic conveyance, gravel washing, fire protection, or oil well re-pressurization;
- *Navigation (NAV).* Uses of water for shipping, travel, or other transportation by private, military, or commercial vessels;
- *Marine Habitat (MAR).* Uses of water that support marine ecosystems including, but not limited to, preservation or enhancement of marine habitats, vegetation such as kelp, fish, shellfish, or wildlife such as marine mammals and shorebirds;
- *Shellfish Harvesting (SHELL).* Uses of water that support habitats suitable for the collection of filter-feeding shellfish such as clams, oysters, and mussels, for human consumption, commercial, or sport purposes. This includes water that may have in the past or may in the future contain significant shellfisheries;

- *Ocean Commercial and Sport Fishing (COMM).* Uses of water for commercial or recreational collection of fish, shellfish, or other organisms including uses involving organisms intended for human consumption or bait purposes;
- *Rare, Threatened, or Endangered Species (RARE).* Uses of water that support habitats necessary at least in part for the survival and successful maintenance of plant or animal species established under state or federal laws as rare, threatened, or endangered; and
- *Wildlife Habitat (WILD).* Uses of water that support terrestrial ecosystems including, but not limited to, preservation and enhancement of terrestrial habitats, vegetation, wildlife, e.g., mammals, birds, reptiles, amphibians, invertebrates, or wildlife water and food sources.

Along with the Ocean Plan provisions, the RWQCB Basin Plan specifies additional objectives applicable to all ocean waters, including: (1) the mean annual dissolved oxygen concentration shall not be less than 7.0 milligrams per liter (mg/L), nor shall the minimum dissolved oxygen concentration be reduced below 5.0 mg/L at any time; and (2) the pH value shall not be depressed below 7.0 or raised above 8.5.

California Ocean Plan. The California Ocean Plan (SWRCB 2001 et seq.) establishes water quality objectives for California's ocean waters and provides the basis for regulation of wastes discharged into the state's ocean and coastal waters. The SWRCB prepares and adopts the Ocean Plan, which incorporates the state water quality standards that apply to all NPDES permits for discharges to ocean waters; the SWRCB and the six coastal RWQCBs implement and interpret the Ocean Plan. The Ocean Plan is not applicable to vessel wastes or the control of dredged material.

California Coastal Act of 1976. The Coastal Act requires anyone who proposes any development in the coastal zone to secure a CDP from either the CCC or local jurisdiction with a certified LCP. In general, the CCC is responsible for determining a project's consistency with the Coastal Act and/or the CCMP and for granting CDPs for projects within the California coastal zone not covered by LCPs.

California Clean Coast Act (Senate Bill [SB] 771), 2006. This Act establishes limitations for shipboard incinerators, the discharge of hazardous material, including oily bilgewater, graywater, and sewage into the waters of the State of California or a marine sanctuary. In addition, it provides specific direction for the reporting of discharges to the SWRCB and for the submission of information on visiting vessels to the CSLC.

Local. There are no local regulations related to hydrology and water quality relevant to the Project.

3.3.8.3 Impact Analysis

a) Would the project violate any water quality standards or waste discharge requirements?

The only onshore construction activity that would result from the Project is the extension of an existing conduit across the existing intake bay rip-rap and into the water to a depth of approximately 2.4 m (8.0 ft). No accumulation of contaminated material is expected to have occurred within the existing conduit; however, brushes and other devices may be used to remove dirt from the inner portion of the conduit. The discharge of those materials, which is likely to consist of sediment, would not result in water quality degradation or an increase in contaminants that exceeds the California Ocean Plan. Since these materials are non-toxic, no significant adverse effects on marine organisms or water quality would occur beyond the immediate area of physical disruption.

The offshore portion of the Project would result in the installation of temporary and long-term OBS units and the associated power/data transfer cable. Offshore operations would be conducted using the *MV Michael Uhl*, and no waste water or other materials would be discharged from the vessel. Therefore, proposed OBS installation activities would not be a substantial source of discharges to ocean waters. The operation of the proposed OBS units would not have the potential to result in discharges to ocean waters. Therefore, the Project would not result in short- or long-term violations of a water quality standard or waste discharge requirements.

b) Would the project substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?

Onshore construction activities would result in the installation of a 10.0 cm (4.0 in) diameter conduit across existing rock rip-rap. No additional development would occur at the DCPP site, no other impermeable surfaces would be provided, and existing water use would not be increased. Therefore, the Project would have no impact related to existing groundwater levels or recharge.

c) Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?

See response below.

d) Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?

See response below.

e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?

The proposed conduit extension across existing rip-rap would not alter any existing drainage patterns, result in an increase in erosion or flooding, require modifications to any existing drainage facilities, or adversely affect the quality of runoff water.

f) Would the project otherwise substantially degrade water quality?

Impacts to ocean water quality would have the potential to occur during Project-related OBS installation and recovery operations if an accidental release of petroleum products or other similar substances were to occur. Operations aboard the *MV Michael Uhl* would be the most likely source of an accidental discharge. Although it is unlikely that such an event would occur, an accidental release would have the potential to result in a significant impact to ocean water quality if confinement and recovery operations are delayed or inadequate. The water quality effects of an accidental discharge can feasibly be reduced to a less than significant level with the implementation of the OSCP that has been prepared for and is implemented by the *MV Michael Uhl* (Appendix B). OSCPs are standard for the offshore construction industry and describe spill response equipment maintained on the vessel and actions that will be taken in the event of a petroleum spill. The implementation of this existing plan is adequate to reduce Project-related impacts to a less than significant level and no mitigation measures are required.

No significant water quality degradation is expected from the resuspension of sediment during the installation of the OBS units or the cable. The units will be lowered to the seafloor in a controlled manner and only minor sediment resuspension is expected. Likewise, the cable would be laid onto the seafloor, no trenching or burial is proposed. Therefore the increase in turbidity from the installation is expected to be short-term and with only localized effects.

g) Would the project place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?

See response below.

h) Would the project place within a 100-year flood hazard area structures which would impede or redirect flood flows?

See response below.

i) Would the project expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?

The Project would not result in the development of any housing, or result in the development of any structures that would redirect flood flows. Therefore, the project

would have no flooding-related impacts. The Project area is not located in a designated dam inundation zone (San Luis Obispo County General Plan Safety Element 1999).

j) Would the project be subject to inundation by seiche, tsunami, or mudflow?

Ground displacement beneath the ocean has the potential to cause the formation of a tsunami wave. The Pacific Tsunami Warning Center is operated by NOAA and would likely be able to provide advance notice of an oncoming wave. If a tsunami were to occur during proposed OBS installation or recovery operations, such a warning would enable the *MV Michael Uhl* to move into a deep water area, which would reduce potential safety impacts to the vessel and crew to a less than significant level. No mitigation measures are required for this impact. A tsunami wave could have the potential to damage or displace the temporary and long-term OBS units. This impact, however, would not result in substantial property damage or safety impacts and is not considered to be significant.

3.3.8.4 Mitigation and Residual Impacts

Mitigation. Implementation of existing regulations, standard offshore construction industry measures for the containment and recovery of spills (the OSCP maintained by the *MV Michael Uhl*), and the implementation of applicant-proposed measures would reduce the potential for and water quality-related impacts of an accidental release of petroleum or other materials to a less than significant level. Applicant-proposed mitigation measures are provided below. The short-term resuspension of seafloor sediments during installation is also considered to be less than significant. No additional mitigation measures are required. The Project would not result in any other water quality- or hydrology-related impacts.

APM-1 Vessel fueling shall only occur at an approved docking facility. No cross vessel fueling shall be allowed. Marine vessels generally will contain petroleum products within tankage that is internal to the hulls of the vessels.

APM-5 Onboard spill response equipment and contracted services shall be sufficient to contain and recover the worst-case scenario spill of petroleum products.

Residual Impacts. The Project would have less than significant hydrology and water quality impacts. No residual impacts would occur.