Issues (and Supporting Information Sources):		*Potentially Significant Impact*	*Potentially Significant Unless Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
VIII.	**HYDROLOGY AND WATER QUALITY – Would the project:**				
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 of 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 of seiche, tsunami, or mudflow?	☐	☐	☐	☒

SETTING

The approximately 35-mile pipeline is located in Contra Costa County, California and primarily follows the San Francisco Bay shoreline between the cities of Richmond and Pittsburg. All of Contra Costa County's water drains either directly or indirectly into the Bay-Delta system. Water from the western, urbanized portion of the County drains directly into San Francisco or San Pablo Bay, while that from the northern and eastern portions drain into Suisun Bay and the Delta river

channels, eventually flowing in San Pablo and San Francisco Bays. The south-central portion of the County is within the Alameda Creek drainage basin, which drains south to Alameda Creek and then west to San Francisco Bay. The San Francisco Bay Delta system (including San Pablo Bay) is generally regarded as the most important water body in the California. It is used extensively for both recreational and commercial purposes, and supports diverse flora and fauna. Water from about 40 percent of land in California drains into the Bay and comprises most of the State's agricultural and urban supplies.

Substantial areas within Contra Costa County are subject to flooding. According to records maintained by the Federal Emergency Management Agency (FEMA), the majority of the County's creeks and shoreline areas lie within the 100-year flood zone, an area subject to flooding in a storm which has a 1% annual probability of being equaled or exceeded. In the West and Central County, these areas include portions of the shoreline in the vicinity of Richmond, Hercules, Rodeo, Crockett, and Martinez.

The pipeline crosses several creeks and associated watersheds, most of which flow northward or westward and drain into San Pablo Bay and Suisun Bay. Historically, this area included extensive marsh plains that fringed the bay. However, street and railroad construction, as well as channelization, damming, and realignment of creeks have drastically altered the natural drainage patterns. Industrial and commercial facilities now occupy large areas of former marsh.

RICHMOND

Wildcat Creek and San Pablo Creek drain large areas of the Berkeley hills and empty into saltwater marshes of San Pablo Bay. Wildcat Creek enters the Castro Creek channel before it empties into San Pablo Bay. San Pablo Creek has its own outlet into the bay. The pipeline crosses under San Pablo Creek and Wildcat Creek approximately 1.5 miles from their respective outlets into Suisun Bay. The pipelines at both crossing are at sufficient depth to have no impact on the flow in the creeks.

PINOLE

The major watershed in Pinole is Pinole Creek. This creek generally parallels the route of Pinole Valley Road and Tennent Avenue. The pipeline crosses under the creek approximately 0.25 mile from the creek's outlet into Suisun Bay. The pipeline is buried at sufficient depth to have no impact on the flow in the creek.

HERCULES

Refugio Creek is the major watershed crossed by the pipeline in Hercules. Pinole Creek and Rodeo Creek also drain small portions of the area surrounding the pipeline, near the southern and northern city boundaries, respectively. The pipeline crosses under Refugio Creek at its outlet into Suisun Bay. The Hercules Pump Station is located approximately 0.1 mile from Refugio Creek. The pipeline is buried at sufficient depth to have no impact on the flow in the creeks.

The area surrounding the pump station is primarily paved with concrete or asphalt and includes small patches of graveled areas. The existing drainage system for the pump station is comprised of diked catch basins, drainage channels, and an impounding basin, lined with an impermeable material to prevent oil seepage into the soil and into the groundwater. This system is the secondary containment for the oil and fuel tanks. Runoff enters the impounding basin and if an oily residue is present, the oil and water are separated, the oil is discharged into a concrete-lined pit, and the remaining water is discharged into two holding/evaporation ponds. Surface water runoff from the pump station is minimal and flows to the existing drainage system.

MARTINEZ

Alhambra Creek is the major drainage system crossed by the pipeline in Martinez. This creek is an intermittent stream draining 15.1 square miles of generally rugged topography. The creek headwaters are located in Briones Regional Park and the creek outlets into Carquinez Strait. The 4,000-foot pipeline replacement section may be installed under Alhambra Creek approximately 0.5 mile from its outlet into Carquinez Strait, where the topography is tidal estuary. It will be buried at sufficient depth to have no impact on the flow in the creek. Water levels rise and fall in the creek in response to tides in Carquinez Strait. The 4,000-foot pipeline replacement section crosses a minor drainage of Alhambra Creek that has associated wetland vegetation.

PITTSBURG

In Pittsburg, the major watershed crossed by the pipeline is Lawlor Creek, which drains into Suisun Bay approximately 0.75 mile from the pipeline crossing. Most runoff is conveyed by natural channels except for storm drains located in developed areas and culverts under Highway 4. The Kirker Creek watershed, which encompasses 14.6 square miles, is east of the Pittsburg Power Plant. This creek drains into the New York Slough approximately 3.5 miles from the power plant. The existing drainage system for Kirker Creek is largely composed of open channels fed by a combination of street runoff and underground storm drains. The pipeline has been buried at sufficient depth to have no impact on the flow in the creeks, or storm drains.

REGULATORY SETTING

The California State Regional Water Quality Control Board (RWQCB), San Francisco Bay Region, is the government agency responsible for protecting the health of the San Francisco Bay. A water quality control plan, or "basin plan," has been prepared to guide water pollution control activities in the Bay. The basin plan identifies the beneficial uses of the Bay that must be protected, including non-contact recreation; wildlife habitat; preservation of rare and endangered species; estuarine habitat; warm freshwater and cold freshwater fish habitat; fish spawning and migration; industrial service supply; navigation; and commercial and sport fishing.

Contra Costa County Flood Control and Water Conservation District administers flood and storm water throughout the county. The District develops drainage plans for entire watersheds that cross-jurisdictional boundaries.

HYDROLOGY AND WATER QUALITY IMPACTS DISCUSSION

a) The issues are limited to a) construction impacts resulting from the 4,000-foot replacement pipeline section, and b) draining and disposal of water treated with corrosion inhibitors from pipeline prior to use. Municipalities in the San Francisco Bay Area are required by the Clean Water Act to develop storm water management programs to control the discharge of pollutants from construction sites. Mitigation, in the form of following Best Management Practices for erosion and sediment control, will reduce construction impacts (see **Mitigation Measure VIII.1**). In addition, water drained from the pipeline may need to be treated prior to entering the waste stream. Implementation of the following mitigation measure will reduce the potential for the project to create significant impacts to hydrological resources during construction or dewatering activities.

Impact VIII.1: Construction of the 4,000-foot replacement pipeline section could result in erosion and sedimentation of storm water originating from the project site. Spills and leaks of oils or petroleum hydrocarbons from construction equipment could also adversely impact storm water quality.

Mitigation Measure VIII.1: SPBPC shall obtain coverage under the General Construction Activity Storm Water Permit issued by the State Water Resources Control Board and implement measures to prevent erosion and to control sediment and otherwise prevent stormwater pollution. The general construction permit requires the preparation and execution of a Storm Water Pollution Prevention Plan (SWPPP). The SWPPP must identify appropriate stormwater pollution best management practices to reduce pollutants in stormwater discharges from the construction site both during and after construction. Measures and practices include, but are not limited to, the following:

<u>General Practices</u>

- **An environmental training program shall be conducted to communicate appropriate work practices, including spill prevention and response measures. Implementation of work practices should be monitored.**
- **All storm drains, drainage swales and creeks located along the 4,000-foot pipeline alignment shall be identified. All construction personnel and subcontractors shall be made aware of the locations of drainage pathways to prevent pollutants from entering them.**
- **Leaks, drips and other spills shall be cleaned up immediately.**
- **Protect all storm drain inlets using filter fabric cloth or other best management practices to prevent sediments from entering the storm drainage system during construction activities.**
- **Otherwise protect stormwater runoff from potential pollutant sources.**

<u>Erosion Prevention and Sediment Control</u>

- **To the extent possible, the area of construction shall be restored to preconstruction conditions.**
- **Mulching, seeding, and/or other suitable stabilization measures to protect exposed areas shall be implemented, during and after construction.**

- **Protect drainage courses, creeks, and catch basins with straw bales, silt fences and/or temporary drainage swales.**
- **Conduct routine inspections of erosion control measures especially before and immediately after rainstorms, and repair if necessary.**

General Site Maintenance

- **Designate specific areas of the construction site, well away from creeks or storm drain inlets, for auto and equipment parking and routine vehicle and equipment maintenance.**
- **Accidental releases of drilling mud shall be cleaned up immediately.**
- **Spill kits shall be maintained on site during the construction project for small spills.**

SPBPC shall submit all approved permits to the CPUC mitigation monitor prior to commencing construction of the replacement section. The CPUC mitigation monitor shall monitor compliance with these measures during construction of the replacement section in Martinez.

Significance after mitigation: Less than significant.

b) Usable groundwater resources are not extensive. The average depth to groundwater varies from 5 to 30 feet, and may be as close as 0.5 feet to 2 feet during the winter. Regionally, groundwater flow is in a northerly direction toward the San Pablo Bay and Suisun Bay. Neither PG&E nor SPBPC have proposed any activity that would affect quantity, quality or flow of groundwater resources. Therefore, the project will not impact groundwater supplies.

c) **Impact VIII.2: Construction of the 4,000-foot pipeline replacement section could change drainage patterns in project area resulting in increasing run-off.**

The proposed construction of the 4,000-foot replacement section could affect existing stormwater and non-stormwater runoff conditions. The planned boring activities associated with construction of the replacement section would not alter the course of any waterway, and use of standard boring and filling practices would not substantially alter existing drainage patterns along the replacement section. Any increase in runoff caused by construction activities would be minimal due to the limited size and temporary nature of construction.

Mitigation Measure: Implementation of Mitigation Measure VIII.1.

Significance after mitigation: Less than significant.

d) **Impact VIII.3: Construction of the 4,000-foot pipeline replacement section could alter drainage patterns, resulting in on- or off-site flooding.**

Mitigation Measure: Implementation of Mitigation Measure VIII.1.

Significance after mitigation: Less than significant.

e) Because the project would not involve any covering of permeable ground, it would not cause an increase in runoff. Therefore, the project would not create or contribute additional runoff water.

f) **Impact VIII.4: Construction activities could impact water quality of local creeks or infiltrate the soil.**

Construction could temporarily alter drainage patterns near these waterways and could result in siltation. In addition, the possibility of accidental release of drilling mud into waterways during drilling or boring activities could impact water quality.

Mitigation Measure: Implementation of Mitigation Measure VIII.1.

Significance after mitigation: Less than significant.

g) Although various segments of the pipeline alignment lie within a 100-year flood hazard area, no housing is proposed as a part of this project.

h) The lower reach of Alhambra Creek is tidally influenced. Floods occur along the lower reach of the creek primarily because of channel capacity, development in the flood plain, tidal backwater effects, and severe storms. Moderate storms, such as the five-year event, can also cause flooding in the lower portion of the creek. During moderate and severe storms, the Union Pacific Railroad crossing acts as a constriction to drainage, causing flooding. The creek does not flow during dry summer months.

The 4,000-foot pipeline replacement section would follow standard US Department of Transportation Office of Pipeline Safety practices and would be buried at least 6 feet below ground level, and therefore would not interfere with flood flows.

i) As explained in d), g) and h) above, the project would not substantially alter drainage, and would not be an impediment to flooding, and therefore would not expose people or structures to the possibility of flooding.

j) Because it is not located near any active or dormant volcano, and is located far from the ocean, the likelihood of inundation from seiche, tsunami, or mudflow is negligible.

REFERENCES

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