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APPENDIX

Appendix I Water Supply and Wastewater

6.0 WATER SUPPLY

6.1 WATER SOURCE

As described in Section 2.5.6, project water requirements for process makeup water will average approximately 980 gallons per minute (gpm) and peak at a maximum of 1,200 gpm (see Table 2.5-4).

Recycled water will be supplied to the Willow Pass Generating Station (WPGS) by Delta Diablo Sanitation District (DDSD). The applicant has a will-serve letter (see Appendix I) with DDSD for use of recycled water at the WPGS. This will-serve letter was signed in June 2008. DDSD has a sufficient amount of recycled water available to the region and is currently in the process of expanding the existing capacity of its wastewater treatment plant and system. The will-serve letter from DDSD confirms adequate water supply is available for the project.

The WPGS will use recycled water from the DDSD Wastewater Treatment Plant (WTP) for raw water makeup. The quality of the water produced at the DDSD WTP meets the Title 22 requirements. This water source will require ammonia removal treatment at the WPGS site to remove the nutrient source for *nitrobacter* and *nitrosomonus* bacteria that would otherwise cause fouling and microbiologically influenced corrosion within the plant. The recycled water will be processed through nitrification facilities to reduce ammonia to less than 0.3 milligram per liter. To sustain one day of water usage under peak operating conditions in the event of a water supply interruption, a 1.6-million-gallon Nitrified Water Storage Tank will be provided on the WPGS site.

Potable water will be provided by the City of Pittsburg. The WPGS potable water system will distribute potable water to the plant's washrooms, safety eyewash stations, showers, and other potable water uses.

6.2 WATER CONVEYANCE

A new water pipeline will be constructed as part of the project, to bring recycled water from the DDSD WTP (see Figures 2.3-1 and 2.3-2). Three miles of the five-mile-long route currently contains an unused fuel oil pipeline owned by Mirant Delta, which historically was used to convey oil between the Contra Costa Power Plant and the PPP. The existing pipeline is 10.75 inches in diameter, is now out of service, and will be replaced by the new water pipeline. Figure 2.2-1 shows the portion of the proposed pipeline that will be installed within the route of the existing unused fuel oil pipeline (identified on the figure as "Mirant Existing Easement") versus the portion of the water pipeline that will be installed outside of this area (identified on the figure as "New Easement").

The water pipeline alignment runs through the PPP site, crosses under Willow Pass Road/West 10th Street and Burlington North Santa Fe Railroad then turns east and runs adjacent to the Union Pacific Railroad. The alignment crosses beneath railroad tracks in several locations (consistent with the location of the existing unused fuel oil pipeline) as well as Kirker Creek and an unnamed tributary (see Section 7.2 for more information on biological resources in the vicinity of the offsite water pipeline route). The portion of the water pipeline at the east portion of the route runs adjacent to the Pittsburg-Antioch Highway, crosses beneath the road, and continues north on Arcy Lane to the DDSD WTP. At Harbor Street, the pipe will cross the road overhead (consistent with the location of the existing unused fuel oil pipeline). The recycled water line is expected to be a 10-inch-diameter, high-density polyethylene (HDPE) pipe.

Potable water will be supplied by the City of Pittsburg from an existing on-site underground potable water piping system.

6.3 CONSTRUCTION

The new water supply pipeline between the DDSD WTP and the new WPGS plant will be installed in a trench within the existing road rights-of-way using standard pipeline installation techniques and in accordance with the manufacturer's requirements for the installation of HDPE piping (see Figure 2.5-9). Topsoil will be removed and stored prior to excavation of the pipeline trench. Any portion of existing roads or pavement that must be removed in the trenching process will be disposed of off site in an appropriate disposal area. Spoils from trenching will be stored alongside the trench. The pipe sections will be joined by fusion welding and laid in the trench on a sand base. To the extent possible, excavation spoils will be used for backfill. Where trenching spoils are not suitable, imported backfill will be used. Once backfilled, the surface will be repaved where applicable.

The new water pipeline alignment will cross beneath several creeks, roads and railroad tracks. Best management practices will be used during construction to minimize the potential for erosion. The pipeline installation would require a maximum trench width of 4 feet. Total construction disturbance along the corridor, including laydown and staging, will be a maximum width of 15 feet. This may be reduced to a minimum of 5 feet to avoid environmental resources or minimize traffic disruption during construction adjacent to the Pittsburg-Antioch Highway. The pipeline will be laid at an average depth of 5 feet. The offsite water pipeline alignment will be constructed primarily using a cut-and-cover trenching method, except where the pipelines cross environmentally sensitive areas such as creeks, or cross under existing railroad tracks. A jack-and-bore method will be used in these areas to minimize disturbance. This construction method, also known as auger boring, allows the pipeline to be constructed beneath streams, roads, railway tracks, and other obstacles without causing surface disturbance. This method requires the excavation of an entrance and exit pit at each end of the boring area; these pits would be located at least 100 feet from the stream channel to avoid disturbance to the stream bed or banks. Spoils will be reused as fill wherever possible.

The one instance where the jack-and-bore method will not be used in a creek area is where the water pipeline alignment will turn north from Pittsburg-Antioch Highway on Arcy Lane. Due to the large elevation difference between grade level and the excavated channel of Kirker Creek at this location, installation of the pipeline under the creek via jack-and-bore is not feasible.

The water pipelines will be located underground, except at the intersection of Harbor Street, where the pipeline will cross overhead adjacent to the railroad tracks, consistent with the location of the existing unused fuel oil pipeline.

The potable water supply pipeline will connect to the existing water supply pipelines and will be installed in a trench. Standard pipeline installation techniques will be used. Spoils from trenching will be stored alongside the trench. The pipe sections will be joined by fusion welding and laid in the trench on a sand base. To the extent possible, excavation spoils will be used for backfill. Where trenching spoils are not suitable, imported backfill will be used. Once backfilled, the surface will be either paved or covered with compacted soil and/or gravel.

Dewatering during construction may be required where excavation is below the groundwater table. To ensure proper disposal of dewatered groundwater, a dewatering plan will be developed prior to excavation. The plan will include requirements for water sampling, analysis, and analytical review. The plan will define discharge options based on volume, chemical analysis, and permit discharge limits. Prior to proceeding with discharge, all appropriate regulatory agencies will be consulted and/or notified and all required special conditions or permit variance conditions will be met.

6.4 LAWS, ORDINANCES, REGULATIONS, AND STANDARDS

All applicable state and local regulations concerning the construction of the treatment facilities and the connection and routing of water piping used for potable services will be followed in the design of this system. A description of the laws, ordinances, regulations, and standards that pertain to the construction of the treatment system is included in Section 2.10. Those that pertain to the water supply pipeline are included in Section 7.14.5.