F A C T S H E E T

JWPCP Effluent Outfall Tunnel Project Geotechnical Investigation Program

Sanitation Districts of Los Angeles County

Background

The Sanitation Districts approved and certified the Clearwater Program Master Facilities Plan and Environmental Impact Report/Environmental Impact Statement (EIR/EIS) on November 28, 2012. A major component of the Clearwater Program is a new 6.9-mile-long, 18-foot-internal-diameter tunnel that will convey highly treated wastewater from the Joint Water Pollution Control Plant (JWPCP) in the City of Carson to Royal Palms Beach at White Point off the Palos Verdes Peninsula, where the tunnel will connect to existing offshore outfall pipes. The new tunnel will allow for the dewatering and any necessary repairs of two existing effluent outfall tunnels—completed in 1937 and 1958—which cross the Palos Verdes Fault and have not been inspected in over 50 years.

A state-of-the-art tunnel boring machine (TBM) will be used to construct the new tunnel at depths ranging from 70 to 450 feet below ground level. This will eliminate traffic and noise impacts typically associated with conventional open-trench construction methods. A temporary shaft site at the JWPCP will be used to construct the tunnel, and a temporary shaft site located primarily on Sanitation Districts-owned property at Royal Palms Beach will be used to retrieve the TBM at the end of construction.

Beginning in 2006, the Clearwater Program included over 500 public outreach meetings with public officials; civic and community groups; businesses; environmental organizations; news media; and various local, state, and federal agencies. Final design for the tunnel began in April 2013. Tunnel construction is anticipated to begin in 2016 and will last 6.5 years.

Geotechnical Program

Mitigation measures in the Clearwater Program EIR/EIS require that geotechnical investigations be performed during final design to provide site-specific characterizations and recommendations to mitigate potential geotechnical issues at the JWPCP West shaft site, along the tunnel alignment, and at the Royal Palms shaft site.

The geotechnical investigation consists of borings, geophysical surveys, cone penetration tests (CPTs), and test pits occurring over a 12- to 18-month period. Approximately 54 to 69 borings are being proposed along the entire tunnel alignment at depths ranging from 100 to 520 feet. The majority of the borings will be spaced approximately 750 feet apart, but much of the work will be concentrated in the Palos Verdes and Cabrillo Fault Zones.

A two-phased approach will be utilized to allow for flexibility in the second phase based on the results of the first phase. Phase 1 consists of 23 borings along the tunnel alignment (including 7 at the JWPCP and 3 at Royal Palms Beach), geophysical surveys within the Palos Verdes and Cabrillo Fault Zones, potholing at Royal Palms Beach, and CPTs in the soil areas. Phase 2 consists of 31 to 46 borings along the tunnel alignment (including up to 3 at Royal Palms Beach), shallow trenching at the edges of Palos Verdes Fault Zone, and CPTs in the soil areas.

Work Description

Boring equipment typically includes a drill rig, a slurry trailer or slurry truck, and 1 to 3 support vehicles (light trucks) at each boring site. Boreholes would be 6 to 8 inches in diameter. Shallow boring through soil would take less than 1 week, and deeper borings through rock could take 2 to 4 weeks. CPT equipment includes a CPT rig and 1 to 2 support vehicles. A cone tipped sensor rod will be hydraulically pushed into the ground from the bottom of the CPT rig to a soil depth of up to 200 feet. Geophysical survey equipment includes a low-impact vibrator mounted on a small truck and 2 to 3 support vehicles. A 1,000-foot line of geophones would be laid across the ground surface of the fault zone to detect subsurface sound reflections. Fault trenching and potholing equipment includes a backhoe or excavator, trench shoring, compaction equipment, water truck, dump truck, and 2 to 4 support vehicles. The shallow trenches (test pits less than 30 feet in depth) will be excavated within private property.

Work hours will be dictated by permitting requirements. Eight-hour work days (Monday through Friday) are required for the boring work, although 10- to 12-hour days (Monday through Saturday) are preferred to expedite the work. Equipment would be left on site overnight and on weekends. CPT testing, fault trenching, and potholing could be accommodated within 8-hour work days. With respect to geophysical testing, evening/night hours when traffic is minimal would be preferred in order to reduce traffic noise interference.

Although the Sanitation Districts will obtain temporary easements on private property to the extent feasible, much of the work will occur within public right-of-way. A traffic control plan will be developed by a traffic control specialist and submitted with the permit application. Lane shifts and closures will be minimized.

All bored material will be temporarily stored onsite in containers or taken offsite for analysis, preservation, or disposal. Upon completion of drilling, boreholes will be permanently sealed in accordance with permit and regulatory requirements, and the sites will be restored to original condition. In some instances, the boreholes may be used as long-term groundwater level monitoring wells, which would be capped with small-diameter, flush-mounted lids.

Contact Information

General information about the Clearwater Program is available at www.ClearwaterProgram.org. Specific questions regarding the geotechnical exploration program can be referred to:

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CLEARWATER Program

SANITATION DISTRICTS OF LOS ANGELES COUNTY

TYPICAL GEOTECHNICAL FIELD EQUIPMENT

Soil Boring Rig

Slurry Trailer

Cone Penetration Test (CPT) Truck

Geophysical Vibration Rig

Test Pit/Potholing Excavator

Monitoring Well Cap