

**Missouri Society of Professional Engineers**  
**June Luncheon**  
Thursday June 20th, 2019  
MSD Project Clear – Maline Creek



**Abstract:**

Project Clear is a \$4 billion dollar Metropolitan St. Louis Sewer District (MSD) initiative to improve water quality throughout St. Louis City and County.

The Maline Creek Tunnel is the third Project Clear storage project to be constructed, and will be the first large diameter chamber to store combined sewer water. The underground storage facility will reduce the volume of discharge into Maline Creek, and ultimately, the Mississippi River.

The underground cavern is 175 feet below the ground surface, constructed through a 50' diameter circular shaft excavation supported by secant piles. Drill and blast techniques were used to excavate the cavern in an urban setting under a USACE floodwall. A mobile form carrier and 41' long segmental form is used to cast the 28' diameter cavern concrete liner. The three drop shafts have been drilled and excavated, along with the five vent shafts. A world record was set by Kiewit Foundations Group for the 11' diameter rock drill used to excavate the larger drop shafts. Intake structures were constructed within large excavations supported by either secant piles, or sheet piles. Each required internal bracing to excavation depths of 40 feet. The excavations have adapted to 100 year flooding, water main breakages and flooding, overhead and underground utilities, and varied groundwater conditions. The presentation will summarize the construction progress, methods, and challenges to date.

**About the Presenter:**

**John Deeken** is a geotechnical engineer for Black & Veatch residing near St. Louis, MO. John has over 14 years of professional experience in the US and 6 foreign countries, involved in construction and design of numerous power generation and transmission projects. He is experienced in heavy civil, marine, power generation, power transmission, and nuclear design and construction. As a geotechnical specialist he is a member of several ASCE, DFI, and AISC groups. He is currently the Resident Engineer for the Maline Creek CSO project.

**Kevin Nelson** is a civil engineer and construction manager for Black & Veatch in St. Louis, MO. During his 29 year career, he has been involved in the design and construction of numerous water and wastewater system projects throughout the United States. He is currently the Construction Manager of a program consisting of construction of five tunnels and three large relief sewer projects for the Metropolitan St. Louis Sewer District.

**Time, Date, Location**

11:30am to 1:00pm, June 20<sup>th</sup>, 2019, at the Engineering Center, 4359 Lindell, St. Louis 63018. Registration starts at 11:30am and lunch is served at Noon. The program will begin promptly at 12:15pm. One (1.0) PDH is available.

**Cost**

\$20/person, students and members in transition \$5

**Registration**

Please register and pay online using the link below for reservations by Friday before the event @ 5:00 PM. If you've signed up and can't make it, please cancel by Friday before the meeting or we may have to charge you for the meal.

**Contacts**

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