

LOVSUNS Press Release 02-2017

LOVSUNS delivers first Chinese-Built TBM to North American Project

TBM arrives at Blacksnake Creek Stormwater Project in Missouri

St. Joseph, Missouri (USA)/Toronto (CDN)/Liaoyang (CN), December 2017.

The Canadian-Chinese LOVSUNS Tunneling Canada Ltd. delivers for the Blacksnake Creek Stormwater Separation Improvement Project in St. Joseph, Missouri (USA) the first China-Built TBM of the North American market. “This is a huge step for LNSS and LOVSUNS in achieving our target to deliver high-quality tunnelling machines to the North American market,” said Hongyu Xue, General Manager of LOVSUNS in Toronto.

The double shield rock TBM with 3.3 m diameter will be delivered by early 2018 to Super Excavators Inc. to dig the tunnel for the 27 million USD Blacksnake Creek Stormwater Separation Improvement project in St. Joseph, Missouri. The machine is designed and engineered by the Canadian LOVSUNS team and built by its parent company Liaoning Censcience Industry Co. Ltd. (LNSS) at its Liaoyang facilities in China. The TBM is equipped with a main drive power cutterhead with 2 electric water cooled motors with 300 KW each. The machine is prepared to operate in double shield mode with a primary conveyor belt and can be converted to operate in an EPB environment under pressure up to 4 bar.

Project Description

The Blacksnake Creek project will intercept and convey flows from the creek away from the combined sewer system via a new bored tunnel system. That means that the new project may use a combination of new pipes, tunnels, stream channels and other methods to separate wastewater and stormwater and to convey the rainwater flow directly to the Missouri River. This will reduce the quantity of water in the existing sewer during storms and the quantity of combined storm- and wastewater that overflows to the river.

The project comprises an around 2.32 km long tunnel with 2.3 m inner diameter of segmental concrete lining (precast gaskets) and an around 38 m long crossing of the railroad with 2.3 m diameter auger boring. Altogether, five shafts including launch and target shaft will be built.

Ground Conditions

With view on the soil profile, mixed geology is expected with soft ground to hard rock as well as some mixed face conditions. Due to the expected ground conditions, the following soil and rock engineering units were classified.

Soil Engineering Unit 1 (Coarse-Grained Soils):

Fine to coarse sand and gravel, silty sand and sub-angular to angular rock fragments in varying proportions with less than 50 % passing the 200-mm-sieve.

Soil Engineering Unit 2 (Fine-Grained Soils):

Silts and clays in varying proportions with more than 50 % passing the 200-mm-sieve.

Rock Engineering Unit 1:

Designed as shale with latan limestone formation present in seams.

Unconfined Compressive Strength 2,000 PSI.

The tunnel will transit soft ground and rock along each end of the tunnel alignment and mixed face conditions shall be anticipated for reaches along these subsurface transitions with the following expected proportions:

- 23 % of soil engineering units 1 and 2,
- 63 % of the rock engineering unit and
- 14 % of mixed ground.

Additional Construction Works

The construction includes also a 11.3 m diameter baffle drop shaft, an around 15 m reinforced concrete box culvert which is close to the surface, a ventilation shaft with 61 cm diameter, more than 51 m open cut steel pipe installation with 2.3 m diameter, a more than 38 m long jacked steel pipe with 2.3 m diameter, an energy dissipation structure, site restoration and further various job site works.

The construction works are expected to be complete in mid to end of 2019.

LOVSUNS Tunneling Canada Ltd.

LOVSUNS, former Lovat which was sold to Caterpillar, carried on the Tunnel Boring Business as the wholly owned subsidiary of Liaoning Censcience Industry Co. Ltd. – LNSS only one month after the Caterpillar Tunneling assets were sold to the Chinese LNSS in November 2014 with the order of the 3.9 m diameter EPB TBM to bore two wastewater tunnels in Istanbul, Turkey. Further TBM orders for several drives of the new Metro Line extensions followed. "We designed and engineered tailormade TBMs for Istanbul and now for the US-market in Toronto and completely produced the TBMs in the facility in Liaoyang China. That means that we very successfully

united the best practice, knowledge and technology of both companies for the highest advantage of our customers", explains Hongyu Xue, General Manager of LOVSUNS Tunneling Canada Ltd.

Further information you may find on
www.lovsuns.com

((Text: 4,550 characters with spaces/740 words/1 picture))

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Figures:



Figure 1: Hongyu Xue (second from left), General Manager of LOVSUNS Tunneling Canada Ltd., with proud owners of a TBM (model in the middle) Walter Trisi (CRS/Super Excavators), Pete Schraufnagel, Jeff Weakly, Mike Garbeth (Super Excavators) and Sanjay Birbal from LOVSUNS (left to right)



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