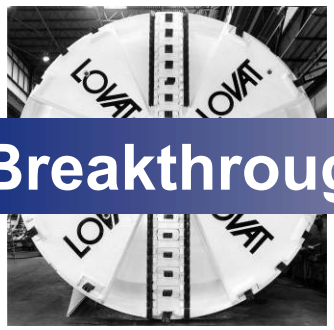

LOVAT

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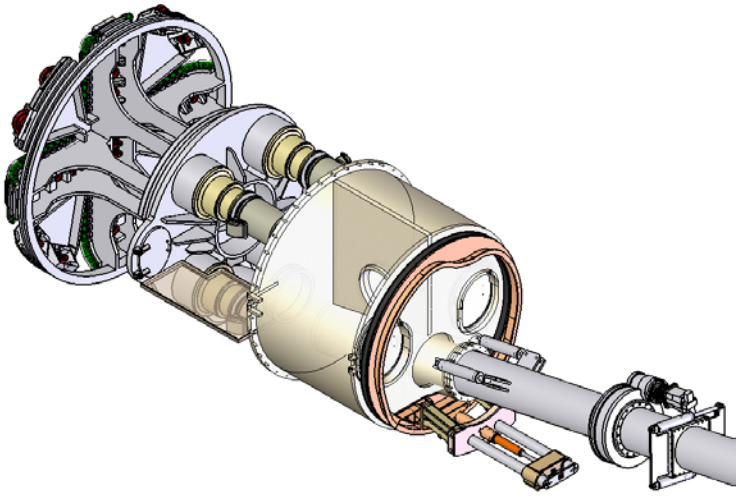
New TBM for Jay Dee/Coluccio/Taisei J.V. - Brightwater Conveyance System, West Contract



The Joint Venture of Jay Dee / Coluccio / Taisei has purchased a new LOVAT RME184SE Series 23600 Earth Pressure Balance Tunnel Boring Machine [TBM]. The TBM will be used in the construction of the Brightwater Conveyance System, Tunnel Section 4 in Seattle, USA. The contract was signed at LOVAT's offices in early April, 2007.

The 4.7 meter diameter mixed face TBM will bore the 6,400 meter long tunnel along a maximum slope of 2%, with the entire tunnel alignment below the groundwater surface. Groundwater heights above tunnel invert vary from 9 to 49 m. Due to the presence of the aquitard and the elevation of the discharge points, there will be considerable difference in the head levels between the east and west portions of the tunnel alignment. Hydrostatic heads in the western portion of the tunnel will range from about 1 to 2 bar, while hydrostatic heads in the eastern portion will range from 3 to 5 bar.

The tunnel will be constructed through glacial and non-glacial sediments. Nested boulders are likely to be encountered. It is estimated that 56 boulders, ranging in size from 1.5 to 3 ft, and 14 boulders greater than 3 feet are expected during excavation.

As changes at the tunnel face are expected to occur frequently access to the tunnel face for maintenance checks will be required on a regular basis. To accomplish this the TBM will be equipped with an integral airlock. The lock will be constructed to ASME and local WOSHA standards and will comprise 2 parallel inline airlocks (operationally independent of each other) to facilitate maintenance in high pressure conditions.

The TBM is scheduled for delivery in February, 2008.