

Case Study - Tunnel Invert & Annular Fill

E.L. Smith WTP Tunnel – August 2007 City of Edmonton, Alberta, Canada

Problem: Material was required to support a 1.5 metre diameter water line, and backfill a 3 metre diameter tunnel, 560 metres long, underneath the North Saskatchewan River near the E.L. Smith Water Treatment Plant.

Solution: CEMATRIX CMEF-700 engineered fill with a wet cast density of 700 kg/m³ was produced and placed to support the 1.5 metre diameter water line, providing 3 MPa compressive strength in 7 days. CEMATRIX then produced and placed a lighter weight material, CMG-500 grout, to backfill the annular space between the carrier pipe, and the tunnel. CMG-500 does not require vibration, rodding or compaction and it flows into place very easily, under low pumping pressures.

Advantages: The CEMATRIX solution provided speed of construction, ease of installation, high productivity rates, as well as quality of product and service.

The high capacity production equipment and flexibility of schedule by CEMATRIX contributed to meeting and exceeding a very aggressive construction schedule. Over 3,100 m³ was placed in 3 days.

NOTE: The City of Edmonton Drainage Design and Construction Asset Management and Public Works Department was awarded the 2008 Alberta Trenchless Society “Project of the Year” for the innovation and methodology incorporated and utilized in this Project.

