

Case Study

State-of-the-Art Field Performance Monitoring System

**Enterprise Cape Breton Corporation (ECBC)
Historic Coal Mines, NS, Canada**

> Background

ECBC implemented a remediation program for the closure of historic coal mines located near Sydney, Nova Scotia. Several waste rock piles (WRPs) were reclaimed with cover systems, three of them including a geosynthetic layer. Okane was engaged to design and install an advanced field performance monitoring system across several of the WRPs to inform the effectiveness of different remediation cover systems.

> Approach

Looking at the in-service performance of cover systems that utilize geosynthetics and natural materials, monitoring showed unique water balances developed because of subtle cover system design differences at the various sites. Data showed that successful performance (in terms of managing net percolation) was driven by robust lateral drainage and reducing seepage induced erosion, in addition to landform stability and plant available water, rather than managing hole development during construction.

> Client Benefit

Okane's detailed performance monitoring was able to achieve high data capture rates which allowed for reasoned and effective communication of performance to stakeholders. Integration with cover system construction crews allowed for the schedule to be maintained.

Performance monitoring showed that the sites had unique water balances and water dynamics stemming from subtle design differences; all of which have significant impact on performance in terms of closure.

**Integrated Mine Closure
and Relinquishment Solutions**



(2012). Scotchtown Summit. Public Works and Government Services Canada