Digital Solutions for Post-Remediation and Reclamation Vegetation Management: A Case Study from Northeastern Alberta

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Since 2014, Montrose Environmental Solutions (MES) Canada has supported a large portfolio of forested and peatland well leases in northeastern Alberta through assessment,remediation, and reclamation. As part of continual workflow and process improvements,off -the-shelf applications and digital solutions have been implemented over the past four years and configured for data collection, analysis and reporting for landscape, soil, and vegetation parameters to support reclamation certification.

The benefits to using such an approach leverage:

- digital data collection for repeatability of assessments in the field
- web mapping applications to support assessment, interpretation, and analysis spatially
- enterprise database functionality to assess year-over-year trends of the collected parameters in an interactive and meaningful way

Enabled with this information, practitioners can quickly and accurately assess and track when sites are ready for detailed site assessment and reclamation certification applications. For this presentation, we look at the anatomy of a digital web mapping and reporting solution within the context of this case study. Examples of specific technical questions our solution aims to address include:

- is the total area of weeds by well site increasing or decreasing over time?
- can we correlate the type of treatment with decreasing weed area trends over time by well site?

We will discuss not only our solution but describe our process as to “where do we even start”. We highlight commonalities this case study shares with many other field-based data collection projects and discuss how these solutions generally:

- elevate technical quality
- enable consistency and repeatability of assessments
- support data analysis and reporting to the client and regulator
- effectively collaborate with project partners
- ensuring the best available data and information is available and ‘at-the-ready’ for the project team with enhanced data management practices

Anecdotes, perspectives, and learnings through the project will be shared specific to ArcGISWeb Application, Portal and Enterprise and SQL Server Reporting Services.

Matt Wilkinson

Mr. Matt Wilkinson, MGIS is an Associate GIS Analyst at Montrose Environmental Solutions (MES)Canada. With experience spanning 17 years, he has demonstrated expertise in providing GIS services in spatial analysis, map production, and spatial database modeling, design and management. His experience spans supporting assessment, remediation and reclamation studies, water resources and engineering, environmental and regulatory permitting, and terrestrial ecology applied to mining, midstream, oil and gas, renewable energy, and municipal sectors across Canada.

Data management and integrity, data modeling and design, method documentation, and metadata are key elements incorporated into all workflows to ensure assessments are reproducible and defendable. Mr. Wilkinson works closely with MES Canada’s various teams to ensure spatial datasets, either collected in the field or generated through spatial modelling tasks, are compliant and fit-for-purpose with client, reporting, and project requirements and objectives.