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Wetlands — Development of a Functional Matrix

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Conservation of wetlands is gaining more popularity. People understand that preserving and reclaiming wetlands are part of the valued sustainable ecosystem approach. Wetlands are valued ecosystem component and provide numerous biological, hydrological, and socio-economical functions. Assessing and assigning values to the functions is a complex task. It requires thoughtful analysis of the functional effectiveness and opportunity of the wetland. However, understanding the functional aspects of wetlands is extremely important in developing policies, protecting them and reclaiming them.

For the Project, the existing wetland areas were classified, delineated, and functionally evaluated by developing a Functional Assessment Matrix. The Matrix assigns Functional Points to wetland acreage resulting in a Functional Unit. This provides a quantitative value that defines the wetlands baseline functional ability. This value provides the basis for comparing wetlands to facilitate mitigation for unavoidable wetland losses, for determining the success (or failure) of programs and policies intended to protect or manage wetland resources, and assists in identifying long-term trends in the condition of wetland resources. The Matrix was developed to address all the functions a wetland is capable of performing. The scientific basis for the ranking criteria was based on the evaluation of optimal conditions.

Andrea Borkenhagen

Ms. Andrea Borkenhagen is a vegetation ecologist at WorleyParsons and has a degree in Biological Sciences as a Botany Major from the University of Calgary. She has experience in vegetation and ecosystem data collection, and reporting for environmental impact assessments and monitoring projects. Andrea is passionate about wetland issues and has acted as the wetland assessment consultant on pipeline, monitoring, and reclamation projects. Her interest in wetlands includes integrating functional assessments with reclamation and compensation management plans. Andrea has developed the Wetland Functional Matrix in conjunction with Ms. Valerie Veenstra and Dr. Geetha Ramesh.

Dr. Geetha Ramesh.

Dr. Ramesh has more than 19 years of experience in the field of aquatics, environmental assessments, risk assessments, health assessments, and toxicology. Her expertise includes Environmental and Health Impact Assessments. She has been the project manager and technical lead for various mining projects, oil sands and other Environmental Impact assessments both across Canada and Internationally. Was the first to use phytoremediation in superfund site in United States. She has been the project lead for several Oil Sands Environmental Impact Assessments (EIAs) in Alberta for both CSS and SAGD projects. Working with De Beers mining in Yellowknife, she was responsible for developing site specific criteria using the new species sensitivity distributions for the first time in Canada. She was part of the wetland committee in Florida. She is currently working on developing an integrated approach for wetlands functional matrix.

Currently she is the Technical director for Canada and Global manager for Health assessments with WorleyParsons.