Salt Affected Soils, Quantifying Impacts to Develop Scientifically Based Remediation

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Salt affected soils are can be caused by anthropogenic activities such as excessive irrigation, application of organic amendments, road salt runoff, mining and oil and gas exploration and development. Salt affected soils in Alberta must be remediated to meet government criteria for topsoil and subsoil horizons. The criteria are based on soil electrical conductivity and sodium adsorption ratio. Applicability of these salinity measures and values for all salt affected soils in the province and their relationship to successful remediation and reclamation is questioned. Observations in the field suggest successful reclamation can occur on salt affected soils that do not meet current criteria. The Petroleum Technology Alliance Canada (PTAC) contracted the University of Alberta to review and assess the available scientific literature on salt affected soils to evaluate against current regulatory requirements, to identify knowledge gaps in the science, to provide recommendations on the

scientific validity of current remediation guidelines in Alberta, and to make recommendations for an alternative approach to reclamation of these salt affected soils. This report was written to provide a scientific basis for potential development of a new risk based assessment system for salt affected soil in Alberta.

2018 Final Report – University of Alberta
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2019 Rationale Document
2020 Update