



# Draft Reclamation Certificate Site Assessment Directives for Pits and Quarries

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Forested Lands  
Cultivated Lands



# Outline

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- Introduction and context
- Overview of the draft Reclamation Certificate Site Assessment (RCSA) Directives
- Next Steps

# RCSA Directives

## Introduction and Context

# Developing the draft Directives

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First draft of RCOSA Directives was a collaboration between:

- Alberta Environment and Parks
- Alberta Sand & Gravel Association (ASGA)
  - Land & Environment Committee
- Alberta Transportation

# RCSA Development Team

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## **Alberta Environment and Parks**

- Kyle Jones, Reclamation Policy Specialist
- Susan McGillivray, Reclamation Policy Specialist
- Elise Neumann, Land Management Specialist
- Natasha Page, Reclamation Policy Specialist
- Shane Patterson, Reclamation Policy Specialist

- Joanne Sweeney, Team Lead Aggregate Unit
- Marsha Trites-Russell, Wetland Specialist
- Shannon Yacyshyn, Reclamation Approval Coordinator

## **ASGA Land & Environment Committee**

- Foy, Lesley (Chair for the Land & Environment Committee)

# Land & Environment Committee:

## Thank you for reviewing the first draft!

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- Ross Salvador, AECON
- Travis Coates, Burnco Rock Products Ltd.
- Carley Dobko, E-Construction Ltd.
- Joe Hustler, Knelsen Sand and Gravel
- Jessica Sabell, Lehigh Hanson Materials Limited
- Dale Soetaert, Lehigh Hanson Materials Limited
- Caroline Jing, Lafarge Canada Inc.
- Brock Helm, Mixcor Aggregates (Lafarge Canada Inc.)
- Jamie Adair, Pidherney's Inc.
- Lauren Greenhough, Sureway Construction Group Ltd.
- Lelsey Foy, Aspen Land Group Inc.
- Michele Corry, Aspen Land Group Inc.
- Kailey Smith, Aspen Land Group Inc.
- Jamie Poettcker, Aspen Land Group Inc.
- Mark Cross, Core Geomatics
- Candace Serben, CPP Environmental Corp
- Andy Etmanski, ETCON Environmental Services Ltd.
- Emma Hesse, The Lornel Group
- Segun Oyewole, The Lornel Group
- Martin Baker, The Lornel Group
- Richard Lambert, The Lornel Group
- Janeen Ogloza, TerraShift Engineering

# RCSA Directives work linked to...

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- Digital Regulatory Assurance System (DRAS)
  - Highlighted a lack of clarity on reclamation certificate assessment requirements.
- ASGA permitting report recommendations
  - Submit reclamation certificate applications under OneStop
  - More clarity needed on reclamation certificate requirements

# Filling a Gap

CRR & PLAR

C&R Plans  
EPEA  
Approvals/Registration/  
Formal Dispositions

- End Land Use Type
- Slope
- Soil Conservation
- Soil Replacement
- Seed Mixes

- Pits
- Quarries

*Directive For Reclamation Certificate Site Assessment*

CRR

Reclamation  
Certificate  
Application

- RC Application Form
- RCSA



# RCSA Directives Overview

# Who will use the Directives?

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- Aggregate Producers
  - Sand and gravel pits and quarries on private and public land
    - Pits: Surface extraction of Sand, Gravel, Clay, Marl
    - Quarry: Surface extraction of Minerals
- Qualified Professionals (Appendix B)
  - Environmental consultants with competencies in conservation and reclamation

# RCSA is not applicable to:

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- Mines (coal / oil sands)
- Borrow activities incidental to other activities (e.g. forestry or oil and gas activities).

# What do the RCSA Directives Apply to?

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## Pits and Quarries Reclaimed to:

### 1. Cultivated Land

- Annual Crops
- Tame Pasture

### 2. Forested Land:

- Authorized for woody species
- Authorized for Native boreal grasses



### 3. Wetlands

- Wet Transitional Zones
- Marsh/Swamp Complexes

# RCSA Framework

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- **Historical Context**
- Assessment Approach
- Sampling Methodology
- Comparison Methods
- RCSA Components



# Historical Context

Table 1. RCSA Requirements by Authorization Date for Cultivated lands

	Pre-1989 Issuance Date of the Statutory Authorization or Where No Statutory Authorization was Required	1989-2001 Issuance Date of the Statutory Authorization	Post-2001 Issuance Date of the Statutory Authorization				
Landscape	<p>All landscape requirements within this Directive apply.</p> <p>Slope set in the <b>Statutory Authorization</b>, or where no <b>Statutory Authorization</b> was given, slopes must be shallower than:</p> <table border="1"> <tr> <td>Interior Slopes:</td> <td>Property Boundary Slopes/end pit lakes:</td> </tr> <tr> <td>- 10:1 or gentler</td> <td>- Stable, non-erosive for property boundary slopes and slopes adjacent to end pit lakes.</td> </tr> </table>	Interior Slopes:	Property Boundary Slopes/end pit lakes:	- 10:1 or gentler	- Stable, non-erosive for property boundary slopes and slopes adjacent to end pit lakes.	<ul style="list-style-type: none"> <li>- All landscape requirements within this Directive apply.</li> <li>- Slope set in the <b>Statutory Authorization</b> or gentler (including interior slopes, property boundary slopes, and slopes adjacent to end pit lakes).</li> </ul>	
Interior Slopes:	Property Boundary Slopes/end pit lakes:						
- 10:1 or gentler	- Stable, non-erosive for property boundary slopes and slopes adjacent to end pit lakes.						
Soil	<p>Topsoil requirements within a <b>Statutory Authorization</b> apply. Where no <b>Statutory Authorization</b> was given or where provisions for topsoil salvage were not included:</p> <ul style="list-style-type: none"> <li>- Topsoil and subsoil, where stockpiled on site, must be replaced.</li> <li>- Requirements within this Directive for topsoil depth do not apply.</li> <li>- Documentation of soil conditions and efforts to improve soil quality (e.g. soil amendments, alleviation of surface stoniness or compaction) is required.</li> <li>- Soil grid assessments are at the discretion of the assessor based on areas of concern(s).</li> </ul>	<ul style="list-style-type: none"> <li>- Topsoil requirements within a <b>Statutory Authorization</b> apply.</li> <li>- All topsoil requirements within this Directive apply.</li> <li>- Where subsoil was stockpiled, it must be replaced.</li> <li>- Soil grid assessments for subsoil are at the discretion of the assessor based on areas of concern(s).</li> </ul>	<ul style="list-style-type: none"> <li>- Topsoil and subsoil requirements within a <b>Statutory Authorization</b> apply.</li> <li>- All topsoil and subsoil requirements within this Directive apply.</li> </ul>				

Table continues on the next page.

# Historical Context (con't)

	Pre-1989 Issuance Date of the Statutory Authorization or Where No Statutory Authorization was Required	1989-2001 Issuance Date of the Statutory Authorization	Post-2001 Issuance Date of the Statutory Authorization
Vegetation	All vegetation requirements within this Directive apply.		
Note:	<ul style="list-style-type: none"> <li>- Alternate performance measures may be used in the <b>RCSA</b> that were provisions in the <b>Statutory Authorization</b>. For example, if soil sloping or material replacement occurred as directed in the <b>Statutory Authorization</b> in place at the time the work was completed; those requirements can be used in the <b>RCSA</b> (See Section 3.1 Historical Context). <b>Reclamation units</b> may be stratified based on the historical context (e.g. for pits where soil salvage was completed for different areas under different <b>Statutory Authorizations</b> or for historical sites where no <b>Statutory Authorization</b> was required).</li> <li>- Mineral wetlands must meet the landscape, soil, and vegetation thresholds for wet transitional zones unless they were authorized as a marsh complex. For <b>Statutory Authorizations</b> where marsh complexes were authorized, the thresholds in Table 6E apply.</li> <li>- <b>Reclamation units</b> within Special Areas must meet the direction given within the Special Areas Board authorization at the time of seeding.</li> <li>- The <i>Weed Control Act</i> and direction from the local municipality on <b>regulated weeds</b> must be addressed for all the above time periods prior to applying for reclamation certification.</li> </ul>		

# RCSA Framework

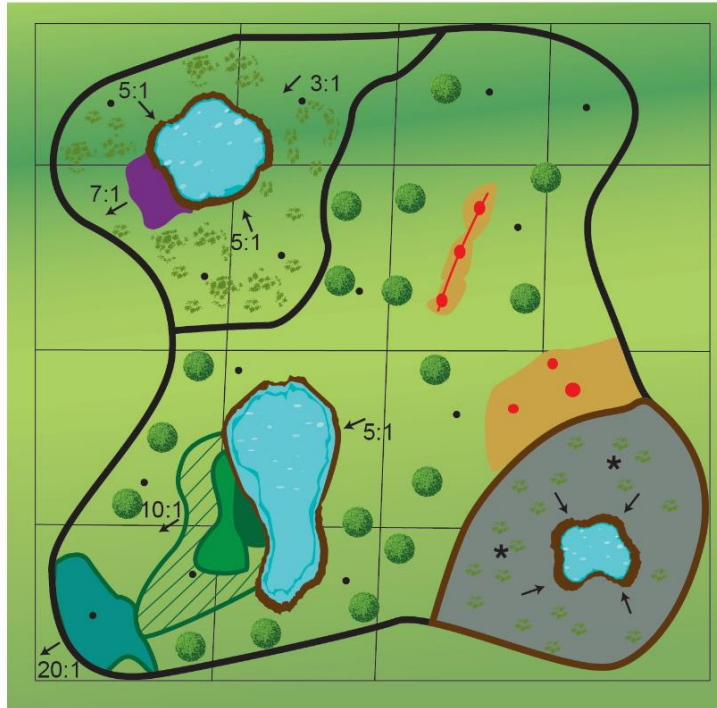
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- Historical Context
- **Assessment Approach**
  1. Reclamation Units
  2. Areas of Concern
  3. Standard/Enhanced Assessment
  4. Routine/non-routine pathway
  5. Professional Rationale / Justification
- Sampling Methodology
- Comparison Methods
- RCSA Components





# Assessment Approach: 1) Reclamation Units



- Area of concern
- Deep open water
- Less than 5m EPL wet transitional vegetation (Landscape Assessment only)

## Reclamation Units

- Authorized pre-1989 Concentric Reclamation Unit
- Wood forested
- Boreal native grass

## Mineral Wetland

- Wet transitional area
- Wet meadow zone
- Emergent zone
- Shallow open water zone
- Swamp

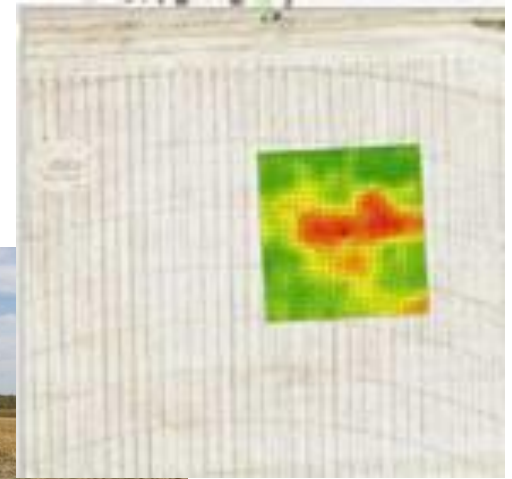
## Representative Sampling

- Soil and vegetation assessment
- Vegetation assessment
- Area of concern - transect
- Area of concern - step out

One Grid = 100m x 100m  
RCSA Area = 16ha

# Assessment Approach: 2) Areas of Concern (AOC)

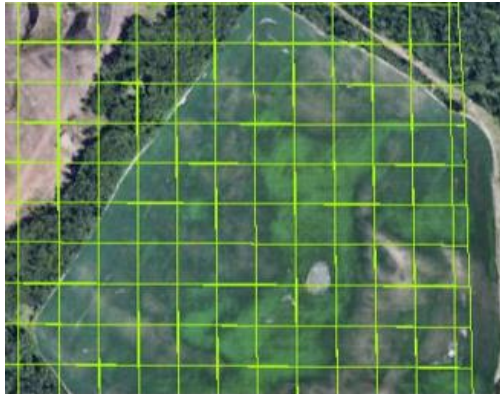
- One or more parameters (landscape/soil/veg) may be resulting in adverse effect to vegetation growth or capability of plant community.



*(Shane Patterson, personal communication, 2022. Rapideye sensor; NDVI)*

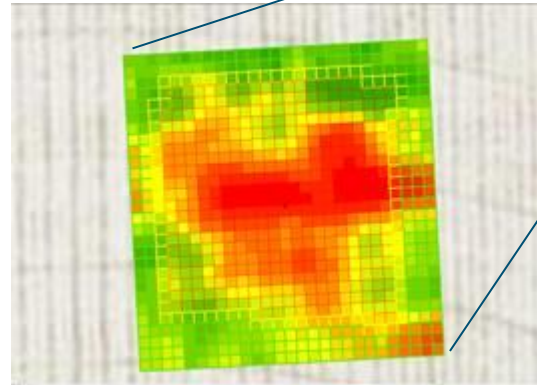
# Assessment Approach: 3) Standard or Enhanced Assessment

## A) Standard

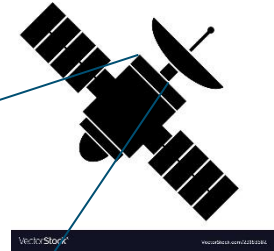


(Google Earth, 2022. 40x40 Grid)

## B) Enhanced



(Shane Patterson, personal communication, 2022.  
Rapideye sensor; NDVI)



# Assessment Approach:

4) Routine non-routine pathways  
5) Prof. Rationale vs. Justification

Pathway	Characteristics	Prof. Rationale	Prof. Justification
<b>Routine</b>	<ul style="list-style-type: none"> <li>✓ Water Act auth req's addressed</li> <li>✓ NO Areas of Concern identified</li> <li>✓ Appropriate historical thresholds (Table 1) met</li> <li>✓ Comparison methods contained with the RCSA Directive were used</li> </ul>	<p>Required for all RCSA Reports</p> <ul style="list-style-type: none"> <li>✓ Like an executive summary – provides context for why it meets requirements set within RCSA Directive.</li> </ul>	Not Required
<b>Non-routine</b>	<ul style="list-style-type: none"> <li>✓ Alternative comparisons or sampling approaches (not discussed with AEP)</li> <li>✓ One or more thresholds (Table 1) NOT met</li> <li>✓ Areas of Concern were verified</li> <li>✓ Registered owner has unresolved concerns</li> <li>✓ Change in land use</li> </ul>	<p>Required for all RCSA Reports</p> <ul style="list-style-type: none"> <li>✓ Like an executive summary – provides context for why it meets requirements set within RCSA Directive.</li> </ul>	<p>Required</p> <ul style="list-style-type: none"> <li>✓ Explanation as to why an area is ready for certification but has not met all RCSA components</li> </ul>

# RCSA Framework

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# Sampling Methodology

Grid/ Assessment Point	Irregular Shaped RUs	Linear Features	Areas of Concern (AOC)	RCSA Timing
<ul style="list-style-type: none"> <li>• Systematic way to determine where to take samples</li> <li>• Sampling densities determine based on size of RCSA area</li> </ul>	<ul style="list-style-type: none"> <li>• Provides guidance for calculating # of samples on RU's that are difficult to overlay a grid on</li> <li>• E.g., around wetlands or EPL's</li> </ul>	<ul style="list-style-type: none"> <li>• E.g., Access Roads</li> <li>• Paired inspection assessment (one on/one off site).</li> </ul>	<ul style="list-style-type: none"> <li>• Direction on minimum size where an AOC must be assessed.</li> <li>• Extent must be delineated.</li> <li>• Use of step-outs or transects to delineate.</li> </ul>	<ul style="list-style-type: none"> <li>• Soil and Veg data do not have to be collected same year.</li> <li>• Veg data no earlier than 2 years before applying (unless confirmed comparable)</li> <li>• Enhanced:               <ul style="list-style-type: none"> <li>• Cultivated: 4 yrs (annual); 2 years (tame pasture)</li> <li>• Forested – no requirement</li> </ul> </li> </ul>



# RCSA Framework

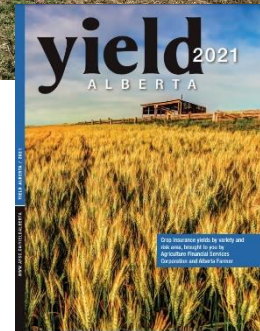
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- Historical Context
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# Comparison Methods

- Performance Measures in Statutory Authorizations
  - Approval clauses or “Approved Plan” commitments
- Thresholds
  - Performance measure values in Tables in RCSA Directives
- Reference Comparisons
  - Controls (off site; undisturbed; representative of onsite)
  - Historical or Regional Data



(Agriculture Financial Services Corporation. *Yield Alberta.*)





# Hierarchy Of ELC Parameters

## Authorization Requirements

- Historical authorizations issued for the activity / operation.

## Non Authorization Thresholds

- For Pits with no authorizations (e.g., Class II pits)
- Authorizations is Silent on a given parameter.

## Desired Outcomes

- Where a parameter does not meet:
  - authorization requirement;
  - threshold.
- Justification provided

# RCSA Framework

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- Historical Context
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# RCSA Components:

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- RCSA components:
  1. Landscape
  2. Soil
  3. Vegetation
- Components are assessed to determine if the site is ready to apply for a Reclamation Certificate
  - Professional justifications may be required

# Questions?

Contact: Kyle Jones, Natasha Page

Land Conservation and Reclamation Policy,  
Alberta Environment and Parks

