

Notice of Proposed Directive Amendments
Directive PNG016: Acknowledgement of Reclamation Requirements
Directive PNG018: Detailed Site Assessment Requirements

Background

The Ministry of Energy and Resources (ER) is engaging with the oil and gas industry to review proposed amendments to *Directive PNG016: Acknowledgement of Reclamation Requirements* and *Directive PNG018: Detailed Site Assessment Requirements* (the amended Directives). These revisions are intended to expedite timelines and to enhance clarity, consistency and technical accuracy in Acknowledgment of Reclamation (AOR) applications and Detailed Site Assessment (DSA) processes.

The Process

ER is launching industry consultations on the amended Directives from October 20, 2025, to November 10, 2025. Once the consultation period has been concluded, ER will review the feedback received in the preparation of the final drafts of the amended Directives to be brought forward for approval. The amended Directives are to come into effect in January 2026.

Summary of Proposed Changes

The changes featured in the amended Directives aim to streamline timelines and improve industry-landowner communications in the AOR process and to clarify and strengthen guidelines and criteria for a DSA, which forms part of an AOR application. Key proposed changes include:

- Measures to enhance industry-landowner communication and transparency in the AOR process, featuring a new landowner information letter requirement to explain and clarify landowner obligations and expectations in the process.
- Promoting quality and consistency in AOR submissions through clarified and updated DSA parameters and technical criteria for standardization to guide environmental consultants and to support timely and defensible AOR approvals.
- Removal of the minimum 90-day period in which attempts must be made to contact non-responsive landowners to sign a Reclamation Feedback Form to shorten timelines and to streamline the AOR process.

Miscellaneous items of note

- Clarified terminology and alignment with *The Financial Security and Site Closure Regulations*, IRIS system updates and previously revised forms (e.g. the Reclamation Feedback Form);
- New information requirements documenting landowner interactions in the AOR process, photographic standards for DSAs and the introduction of mandatory digital signatures; and

- Alignment with the requirements of other agencies such as the Saskatchewan Ministries of Agriculture and Environment, Environment and Climate Change Canada and Indian Oil and Gas Canada.

Review of Draft Directives

ER is seeking written comments on the proposed amendments to the Directives. Key amendments for Directive PNG016 are detailed within the side-by-side and a draft of the amended Directive PNG016 are attached to this notice as Appendix A and Appendix B, respectively. Key amendments for Directive PNG018 are detailed within the side-by-side and a draft of the amended Directive PNG018 are attached to this notice as Appendix C and Appendix D, respectively.

Please note that although the side-by-sides have rows to reflect all sections of the revised Directives, they are intended to draw attention to the significant changes. Therefore, those rows associated with sections featuring the more substantive changes will have the most detail while the rows associated with sections with minor (i.e. non-substantive) or no changes will have minimal section detail and a brief description of the changes in the third column.

Please direct comments or questions about the proposed amendments to:

ER Service Desk at ER.ServiceDesk@gov.sk.ca
Attention: Shaun Zunti, Liability Management
Energy Regulation Division

The deadline for submitting written comments is November 10, 2025.

Acknowledgement of Reclamation Requirements

Directive PNG016

November 2025

Revision 6

Governing Legislation:

Act: *The Oil and Gas Conservation Act*

Regulation: *The Financial Security and Site Closure Regulations*

Order: XXXX

Record of Change

Revision	Date	Description
0.0	October 20, 2009	
1.0	November 4, 2010	Updated information pertaining to the cover letter, detailed site assessment, surface release and submission sections
2.0	November 13, 2013	Guideline updated to be more comprehensive
3.0	July 29, 2014	Revisions to sections 2.2, 4.3, 4.4.1, 5.2, 6, 8.2, 9 and 10.
3.1	August 27, 2014	Minor revisions for clarification to sections 2.1, 4.3, 4.4.1, 5.2, 6.4.
3.2	January 29, 2015	Minor revisions for clarification and update mailing address in section 4.1.
4.0	November, 2015	Update to facilitate introduction of IRIS in 2015.
5.0	October, 2019	Updates to establish routine and non-routine AOR application types, including Risk-Based Site Closure and Administrative Controls non-routine AOR application types.
5.1	July, 2020	Clarification on Landowner Acknowledgement Form requirements in section 4.4.
6.0	November, 2025	Clarifications and updates to align with FSSCR, the latest IRIS updates, and industry-requested changes. This also includes process updates from the Ministry of Agriculture, Environment and Climate Change Canada, and Indian Oil and Gas

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1. Overview

This Directive is intended to provide clarification of the existing regulations and reclamation submission requirements overseen by the Ministry of Energy and Resources (ER).

Pursuant to *The Financial Security and Site Closure Regulations* (FSSCR), upon the abandonment of a well or decommissioning of a facility, the respective site is to be assessed, decommissioned and reclaimed and the licensee is to submit a report which substantiates the satisfactory reclamation of the site. The application for an Acknowledgement of Reclamation (AOR) serves as the report.

Under the AOR Program, there are four types of applications available to licensees seeking to satisfy their reclamation obligations for their well and facility sites:

- **Acknowledgement of Reclamation** – For sites reclaimed in accordance with the FSSCR;
- **Grandfathered Reclamation Release** – For sites that were reclaimed before the implementation of the AOR Program on June 19, 2007.
- **Full Exemption from Reclamation (fully overlapping activity)** – For sites where reclamation is delayed due to full overlapping well or facility activities on the land area;
- **Partial Exemption from Reclamation (partially overlapping activity)** – For sites where reclamation is delayed due to partial overlapping well or facility activities on the land area.

Licensees can obtain a list of wells and facilities that are subject to the AOR Program by viewing the Licensee Liability Rating (LLR) [Well List](#) or [LLR Facility List](#) available through the Integrated Resource Information System (IRIS). By applying the following selection criteria to the above-mentioned lists, a licensee can determine their wells or facilities with outstanding reclamation obligations.

- Select the licensee's name from the Operator Name column;
- Set the Well Status column to 'cancelled' or 'abandoned' (i.e. cut and capped for a well); and
- Set the Grandfathered Reclamation Release column to blank; and
- Set the AOR column to blank; and
- Set the Exemption from Reclamation column to blank or contains a "P".

2. Scope of the Acknowledgement of Reclamation Program

Pursuant to the FSSCR an application for an AOR must be submitted for any well or facility site in which reclamation has not been completed prior to June 19, 2007.

"Site" as defined in the FSSCR includes the access road and is not limited to the extent of the leased area. Furthermore, clause 6-1(1)(d) of the FSSCR requires reclamation of any area beyond the site boundary that has been damaged, contaminated or otherwise adversely affected by the operations of the well or facility.

"Reclamation" is defined in the FSSCR but for the purposes of this Directive also includes decommissioning of a site to remove surface infrastructure, equipment, machinery, concrete, refuse and materials.

An “improvement” is defined as any features to remain in place after reclamation. These include, but are not limited to fences, gates, approaches, cement pads, dugouts, culverts, lease roads, built up government road allowances and lease pads.

The licensee is expected to restore the site to the conditions reasonably similar to those existing prior to the time the well/facility operation was commenced, or conditions comparable to the surrounding adjacent land. Therefore, the licensee shall:

- Remove all refuse material from the site and access;
- Drain and fill all excavations;
- Remove equipment and machinery, if applicable;
- Remove all surface infrastructure associated with the well/facility site; this includes but is not limited to overhead power lines, culverts, fences, access roads (including used/built up government road allowances), trails, above/below ground storage tanks, cement pads, water wells, borrow pits, etc.; and
- Level the surface to blend with the surrounding drainage/contours. This includes all disturbed areas within/outside of surveyed lease boundaries that were disturbed to access the site.

It is incumbent upon the licensee to check for additional supplemental information on the AOR website as this information can be updated without notification from ER.

3. Alternatives to the Acknowledgement of Reclamation Application

Licensees seeking to satisfy their well or facility site reclamation obligations may qualify to be exempted from the AOR application submission required under the FSSCR. To determine if a site is eligible for one of the alternative application submissions, review the information provided below or visit www.saskatchewan.ca.

3.1 Grandfathered Reclamation Release Application Requirements

Licensees of well and/or facility sites that were reclaimed before the implementation of the AOR program on June 19, 2007 may qualify to be exempt (grandfathered) from an AOR application submission required under the FSSCR.

The Grandfathered Reclamation Release authorization applies to those well and facility sites that were reclaimed before June 19, 2007, where ER has no record of either:

- A surface lease release from the landowner after completion of the reclamation work; or
- A certificate of release for the restoration of the well or facility site issued by the Surface Rights Board of Arbitration.

If eligible, the licensee may submit the completed [Grandfathered Reclamation Release Form](https://www.saskatchewan.ca/business/agriculture-natural-resources-and-industry/oil-and-gas/liability-management/acknowledgement-of-reclamation/grandfathered-reclamation-release) (available at <https://www.saskatchewan.ca/business/agriculture-natural-resources-and-industry/oil-and-gas/liability-management/acknowledgement-of-reclamation/grandfathered-reclamation-release>) and required attachments for consideration:

- **Survey** (use the most recent proposed or as-drilled survey available that accompanied the well or facility licence) that clearly identifies:
 - Areas where land use differs from historical surrounding land use;

- Exemption from Reclamation areas approved by ER (highlighted in green) along with the Licensee and Licence number that retains reclamation responsibility of the exempted area;
- Landowner authorized “improvements” remaining on site (highlighted in red); and
- The remaining site and access road (highlighted in yellow).
- **Surface title(s)** from [Information Services Corporation \(ISC\)](#) identifying all current registered landowner(s) associated with the given well/facility site, including access roads.
- **Release** which may include one or more of the following documents:
 - Surface Lease Release signed by the landowner;
 - Certificate of Release issued by the Surface Rights Board of Arbitration;
 - NOTE: where the above documents do not match the current surface title holder(s) the Reclamation Feedback Form (available at <https://publications.saskatchewan.ca/api/v1/products/123811/formats/144106/download>) is required to ensure there are no existing issues at the site.
- **Evidence of the reclamation** must be submitted where a Surface Lease Release or Certificate of Release was not dated prior to June 19, 2007.
 - For example, a time stamped aerial photo dated prior to June 2007 may be accepted, provided it demonstrates that the site condition is consistent with the surrounding area and no issues or concerns are present.

For sites that would otherwise qualify as grandfathered, but where available information would suggest an issue may still be present (contamination or otherwise), ER may require that the AOR application process be followed instead.

3.2 Exemption from Reclamation Application Requirements for Cancelled Well Licence Sites without Surface Disturbance

Licensees of licensed cancelled well and facility sites qualify to be exempted from an AOR application required under the FSSCR provided no surface disturbance exists at the site.

ER considers surface disturbance to be any physical disturbance at a site by the licensee beyond the survey. This includes stripping soil or preparing the site, installing a fence, etc.

If surface disturbance exists solely due to the cancelled licence at a site ER will require an application in accordance with the AOR requirements in section 5.2 (licensed sites) or section 5.3 (unlicensed sites).

Licensees of licensed cancelled well and facility sites without surface disturbance are exempt from an AOR application and are not required to submit any form of application to zero the liability of the licence.

ER requires a survey to be submitted for unlicensed cancelled well or facility sites where no surface disturbance occurred.

3.3 Exemption from Reclamation Application Requirements for Sites with Overlapping Activity

Licensees of well and/or facility sites where timely reclamation is delayed due to overlapping activities on the land area may qualify to have the AOR application submission required under the FSSCR exempted in full or in part.

A licensee may apply for an exemption from reclamation when the land area of their cancelled/cut and cap abandoned well or decommissioned facility overlaps with another well or facility operation, belonging to the same or different licensees. However, an Exemption from Reclamation approval is not guaranteed. ER recommends the licensee seek and receive partial exemption approval before reclamation work is carried out at the site to ensure the licensee does not incur additional work (at their expense) in the future prior to ER granting an AOR approval.

Please note that only one AOR application may be submitted per site. If multiple wells or facilities are located within the same site, an exemption must be prepared to consolidate the reclamation responsibilities for the overlapping licences into a single application.

The following sections provide examples of situations where the exemption from reclamation may be applied to overlapping activities involving the same licensee (section 3.3.1), different licensees (section 3.3.2), or overlap due to the occurrence of a contamination event off lease (section 3.3.3).

If eligible, the licensee may submit the completed *Exemption from Reclamation (overlap activity) Form* (available on www.saskatchewan.ca) and required attachments for consideration:

- Obtain the most recent survey for both licences involved in the overlap land activity. Each survey must clearly define the following:
 - Boundary of the well or facility site;
 - Boundary of the associated access road, where applicable;
 - Surface co-ordinates of the given well, where applicable;
 - Surveyed area assigned to the given well or facility site; and
 - Surveyed area assigned to associated access road, where applicable
 - NOTE: in situations where a facility survey does not exist, it must be clearly discussed within the exemption form
- Complete the *Exemption from Reclamation (overlap activity) Form*:
 - All required information must be completed (i.e. if there is no non-exempt area remaining, a '0' must be entered – the field cannot be left blank);
 - Refer to the Integrated Resource Information System (IRIS) to ensure the correct owner names are provided for the licence numbers identified.
 - Both sections must be completed and signed/dated by an applicable employee of the licensee to validate the document regardless of whether the exemption involves a single or multiple licensee(s).
 - The first section provides details of the licensed well/facility site and the licensee requesting the Exemption from Reclamation due to overlapping land activity. Note: For deemed orphan well or facility sites, the Orphan Fund Procurement Manager is the representative signature required.

- The second section provides details of the licensed well/facility site and the licensee accepting responsibility to reclaim the exempted/overlapping area of land.
- Note: if the overlap activity involves different licensees the application must be completed jointly by the applicable licensees.
- Prepare each of the surveys involved in the overlap activity as follows:
 - Use an arrow to clearly indicate the applicable wellbore location or facility boundary and label it with the corresponding licence number.
 - Highlight the applicable areas (so you can still see the survey information beneath it):
 - Green - overlap area being requested for exemption.
 - Yellow - any non-exempt site or access area associated with the licence proposed for exemption.
 - Blue - any non-exempt site or access area associated with the licence proposed to take on the reclamation obligations of the exempted area.
 - Provide the calculations used to derive the area assigned to the site, access, overlap and non-overlap areas reported on the exemption form, where it is not obvious.
- Provide an aerial photo of the sites with lease boundaries outlined

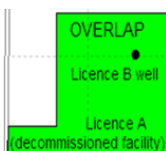
If an Exemption from Reclamation (overlap activity) is approved, the responsibility to reclaim the exempted area is transferred to the licensee identified in the application that accepted reclamation responsibility of the lands with the overlapping activity. ER will increase the reclamation liability of the licensee taking on the reclamation obligations of the exempted area to the highest liability between the two licences involved in the exemption if its current reclamation liability is less than the licence receiving the exemption. This is being done to ensure there is sufficient coverage to reclaim the exempted area.

3.3.1 Site Overlap Activities Involving a Single Licensee

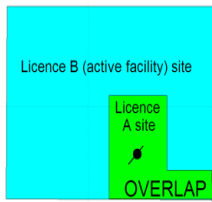
A single licensee may be unable to fully reclaim an abandoned/cancelled licensed well or decommissioned facility site because the entire land area, or a portion thereof, is still being used for another one of their well or facility operations.

In this situation the single licensee would complete both sections of the Exemption from Reclamation (overlap activity) Form, along with the survey requirements, as they would be applying to exempt the reclamation requirements of the overlap area (portion or entire site) associated with their one licensed site and accept to transfer the reclamation responsibility to their other licensed site. The licensee must disclose any known issues (contamination or otherwise) existing at the proposed exempted area within the exemption application.

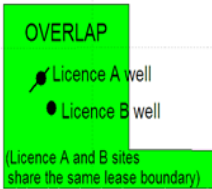
Some examples of activities that would be considered for full Exemption from Reclamation involving a single licensee are:



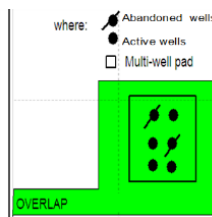
Example 1: A single licensee has a decommissioned facility site (licence A) and an active well (licence B) that share the exact same lease boundary. In this instance the licensee cannot reclaim the facility site as they need it for the well operation. Thus, the licensee may apply to ER to have the entire site overlap exempted from licence A's reclamation requirements and transferred to licence B.



Example 2: A single licensee has two leased sites in which the abandoned well (licence A) lease boundary is entirely contained within their active facility (licence B) lease boundary. In this instance the licensee cannot reclaim the well site as they need it for the facility operation. Therefore, the licensee may apply to ER to have the entire site overlap exempted from licence A's reclamation requirements and transferred to licence B.



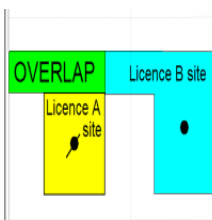
Example 3: A single licensee has an abandoned well (licence A) and active well (licence B) that share the exact same lease boundary. In this instance the licensee cannot reclaim the site as they need it for the licence B well operation. Therefore, the licensee may apply to ER to have the entire site overlap exempted from licence A's reclamation requirements and transferred to licence B.



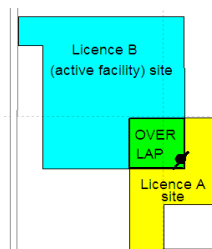
Example 4: A single licensee has a multi-well pad located on a single lease site that consists of both abandoned and active wells. In this instance the licensee cannot reclaim the site as they need it for operating the active wells. Therefore, the licensee can apply to ER to have the entire site overlap exempted from the abandoned wells reclamation requirements and transferred to one of the active wells on the pad. A separate exemption application is required for each abandoned well on the pad.

Example 5: A single licensee built and prepared a proposed wellsite. However, they did not drill the well within a year and the licence subsequently expired and was cancelled. The licensee does not want to reclaim the site because they intend to licence and drill a well on the built lease. Therefore, the licensee can apply to ER to have the entire site overlap exempted from the reclamation requirements of the cancelled well and transferred to the newly licensed well once it is drilled.

Some examples of overlap activities that would be considered for **partial Exemption from Reclamation:**



Example 1: A single licensee has two separately leased sites that are connected by the same access road. Entry to both sites is through the abandoned licence A well. In this instance the access road (overlap portion) cannot be reclaimed with the licence A site as it is needed to access the licence B site. Therefore, the licensee may apply to ER to have the overlap portion exempted from licence A's reclamation requirements and transferred to licence B.



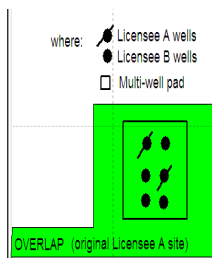
Example 2: A single licensee has two separately leased sites in which the abandoned licence A well site and the active Licence B facility site share a common land area. In this instance the overlap portion cannot be reclaimed with the licence A site as it is needed to operate the licence B site. Therefore, the licensee may apply to ER to have the overlap portion exempted from licence A's reclamation requirements and transferred to licence B.

3.3.2 Site Overlap Activities Involving Different Licensees

A licensee may be unable to fully reclaim an abandoned/cancelled licensed well or decommissioned facility site because another licensee is currently using a portion or the entire land area to operate their own licensed well or facility.

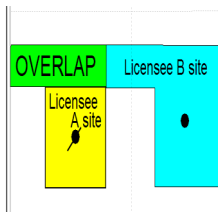
In this situation, the licensees must jointly complete the *Exemption from Reclamation (overlap activity) Form* whereby one licensee applies to exempt the overlapping area from their reclamation requirements, and the second licensee acknowledges responsibility for the future reclamation of the exempted area. The licensee who is applying for exemption must disclose any known issues (contamination or otherwise) existing at the proposed exempted area within the exemption application.

An example of overlap activities that would be considered for full exemption from reclamation involving different licensees:

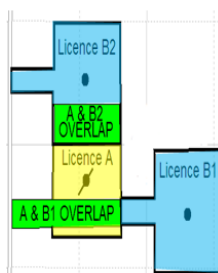


Licensee A has a multi-well pad located on a single lease site that consists of both abandoned and active wells. Licensee A decides to retain the abandoned wells and sells the active wells to licensee B. In this instance licensee A cannot reclaim the site as licensee B needs it to operate their active wells. Therefore, the licensees may jointly apply to ER to have the entire site overlap exempted from licensee A's reclamation requirements and transferred to one of the active licensee B wells. A separate exemption application would be required for each of the abandoned wells.

Some examples of overlap activities that would be considered for partial exemption from reclamation involving different licensees:



Example 1: Licensee A has an abandoned well site with an access road that is also being used by licensee B to gain entry to their licence B well site. In this instance the access road (overlap portion) cannot be reclaimed with licensee A's site as it is needed to access licensee B's site. Therefore, the licensees may jointly apply to ER to have the overlap portion exempted from licence A's reclamation requirements and transferred to licence B.

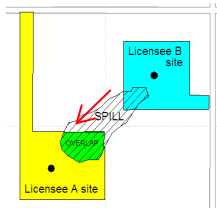


Example 2: Licensee A has an abandoned well site which is partially overlapped by two other active well sites operated by licensee B (licence B1 and B2). In this instance the two overlap areas cannot be reclaimed with licence A's non-overlap area as they are needed by licensee B. For licensee A to satisfy their reclamation obligations the licensees (A and B) must jointly apply to ER to have the overlap portions exempted from licence A's reclamation requirements and transferred to licence B1 and B2. A separate exemption application would be required to receive partial exemption for the licence A & B1 overlap and for the licence A & B2 overlap. After the partial exemption approvals have been obtained licensee A must reclaim the non-exempted portion of the licence A site and submit an AOR application to have the reclamation liability removed.

3.3.3 Overlap Due to Off-lease Contamination Issues

Situations may arise where the activities of one licensee's site may have adversely impacted another licensee's site (for example a spill occurred). The responsible party is expected to have the impacted lands reclaimed as soon as possible. Licensees are reminded that pursuant to section 17.01 of *The Oil and Gas Conservation Act* (OGCA), ER may intervene, if necessary and order the responsible party to carry out reclamation work for the purpose of public safety or the safety of any person, for the protection of property or the environment, etc.

ER realizes that reclamation of the impacted area in a timely manner may not always be possible. As such, ER may consider an Exemption from Reclamation (overlap activity) application that is jointly completed by both licensees and accompanied by a Phase II investigation, remediation plan and the applicable licence surveys. It is the responsibility of the licensee whose site the impact originated from to have the Phase II and remediation plan prepared.



For example, licensee A's site has been impacted by a spill originating from the operations at licensee B's site. The spill extends from the surface to the subsoil and groundwater. In this situation licensee A may apply to ER to have the impacted portion of their site exempted from their reclamation requirements and transferred to licensee B.

If all requirements of the application have been met, ER will notify both licensees that licence A has received a partial Exemption from Reclamation. At this time the liability associated with the licence A site will remain unchanged. However, the liability associated with the licence B site may be increased depending on the extent of contamination. When licensee A reclaims the remainder of their site they can submit an AOR application that excludes the area impacted by licensee B's site to have the liability removed. Likewise, when licensee B reclaims their site, assuming licensee A is no longer using the site, they must submit an AOR application that includes the impacted area exempted from licensee A's responsibility.

4. Acknowledgement of Reclamation Application Components

Pursuant to subsection 6-1(1) of the FSSCR, upon abandonment of a well or decommissioning of a facility, the respective site is required to be assessed, decommissioned and reclaimed and the licensee is required to submit a report (AOR application) that substantiates the satisfactory reclamation of the site.

The AOR application is required for all well and facility sites, including dry and abandoned wells, stratigraphic test wells, built not drilled well sites, and licensed wells associated with potash and coal exploration.

The AOR application must be prepared, except for the cover letter and reclamation feedback sections, and submitted by a qualified third-party consultant (as defined in section 4.8) and include the following components:

- **Cover Letter** – intent of application, licensee contact information, supplemental information and signed declaration;

- **Summary Statement of Conclusions and Recommendations (SSCR)** – consultants summary of the entire history of the site, landowner communication, contact information and signed declaration;
- **Reclamation Feedback Form** – provided to and filled out by the registered landowner(s) or authorized designate, along with corresponding details relating to the given site/access (i.e. current ISC surface titles, survey and disclosure of any pipelines and/or flowlines left onsite);
- **Environmental Site Assessment (ESA)** – Phase I ESA is mandatory; along with subsequent Phase II ESA, where required;
- **Remediation Report** – where applicable, summarizing the work conducted to address any issues identified at the site;
- **Reclamation Report** – where available, summarizing the work conducted to return the site to as similar as possible to the surrounding area. Where this information is not available it must be discussed in the SSCR.
- **Detailed Site Assessment (DSA)** – a soil, vegetation and landscape assessment of the re-contoured and re-vegetated site.

The minimum requirements for each component of the AOR application are explained in detail in the following sections.

It is the responsibility of the Third-Party consultant compiling the AOR application to review all prior work, and when incomplete or not in agreement, include additional reasoning and justification that the site meets all requirements of this Directive. Where the Third-Party consultant does not believe the requirements are met, further investigation is required.

The licensee/qualified third-party consultant must digitally sign and date as well as stamp (where applicable) all AOR required documents to validate the document.

4.1 Cover Letter Requirements

The licensee ultimately bears responsibility for their sites as it is the licensee that is seeking an AOR approval to remove the associated reclamation liability. Therefore, the licensee must prepare the cover letter to accompany the AOR submission made by the third-party consultant. Unsigned documents and/or incomplete submissions will result in the application being denied.

The cover letter must include the following information:

- **Well or facility site information**, such as:
 - Licence number (where applicable);
 - Unique well identifier (if applicable); and
 - Legal Land Description of the site Surface location.
- **Contact information** – licensee name and mailing address along with the licensee representatives name, phone number and email address (as ER may need to contact them to discuss a component of the submission).
- **Crown Land Disposition Number** – include the Crown Land Disposition Number that corresponds to all sites that are located on Crown owned land.
- **Intent of the application** – to apply for an AOR;
- **Supplementary information** – provide additional support, from the licensee's perspective, regarding the site that was not already addressed in the application (i.e. address why a

third-party consultant's recommendations may not have been carried out by including an alternate interpretation, or why a landowner complaint may not have been considered valid, etc.).

- **Declaration statement** – acknowledgement by the licensee representative that the site reclamation has met all ER requirements (including required signatures on all documents).
- **Signature** – the licensee representative must sign and date the cover letter to validate the declaration statement.

Although the cover letter will be submitted with the entire AOR application by the third-party consultant, the licensee may wish to address the cover letter to the following:

Remediation and Reclamation
Liability Management Branch
Ministry of Energy and Resources
610 – 1945 Hamilton Street
Regina, Saskatchewan S4P 2C7

4.2 Summary Statement of Conclusions and Recommendations Requirements

Following the cover letter, the third-party consultant must provide a letter summarizing the most relevant components of the AOR application as they pertain to the site. The letter must include the reclamation/restoration work performed at the site that supports the consultant's professional opinion that the site is suitable for AOR. ER considers this component extremely important, and it must be present and completed by a third-party consultant. Otherwise, the application will be denied.

The SSCR must include the following information:

- **Well or facility site information**, such as:
 - Licence number (where applicable);
 - Unique well identifier (if applicable); and
 - Legal Land Description of the site Surface location.
- **Contact information** – third-party consultant company name along with the name, phone number and email address of the consultant who prepared this summary (this should generally be the same consultant that prepared the passing DSA and will be submitting the AOR application on behalf of the licensee).
- **Summary** – this should include a chronological history of the site, the purpose of the site, the well or facility type, whether the well produced/injected, spill events, landowner communication, inconsistencies in data, potential justification if DSA or remediation criteria could not be met. **Landowner communication should be detailed and include all attempts to make contact, along with the dates of any discussions. Any concerns raised by the landowner must be thoroughly investigated, with documentation of actions taken to validate or address these concerns. This may include offering to meet the landowner on-site, completing additional reclamation work if required, and any other relevant follow up measures.** If the Phase I ESA was done prior to well abandonment (i.e. cut and cap) or a facility being fully decommissioned, then this summary must also address section C of the Phase I ESA Form (available on www.saskatchewan.ca). The summary should be as detailed

as possible and include all relevant information as well as why potential missing information or data gaps are not a concern.

- The following is a very brief, reduced example of a SSCR. A more detailed example of an SSCR is available on www.saskatchewan.ca. Please include as much information as possible to ensure no data gaps or questions remain:

“As part of the Phase I ESA, all available documentation was researched including drilling records, drilling waste disposal documentation, etc. There are no records of any spills or incidents that occurred on the site that would be of environmental concern. A site visit was conducted and there was no evidence of contamination or impacts to adjacent lands. The well was drilled in March 20XX as a stratigraphic test well for sampling purposes only; the well was not used for oil and gas production purposes, and it was subsequently abandoned in May 20XX. Based on the results of the Phase I ESA and the relative low risk of the well, it is concluded that the likelihood of adverse impacts caused by the existence of the well are remote and therefore it is recommended that further investigation is not warranted. A DSA was conducted in August 20XX and the results indicate a pass for all DSA criteria. The landowner was contacted prior to the DSA and did not raise any concerns with the reclamation and signed the Reclamation Feedback Form on September 12, 20XX. The landowner’s name was John Doe and can be reached at 306-555-5555 or at john.doe@email.net. It is concluded that the site has been successfully reclaimed and is recommended for Acknowledgement of Reclamation.”

- **Declaration statement** – acknowledgement by the consultant that the site reclamation has met all ER requirements (including required signatures on all documents);
- **Signature** – the qualified third-party consultant must digitally sign and date the document and professionally seal, where applicable, and indicate third-party consultant qualification (as defined in section 4.8) within the SSCR document to validate the declaration statement.

4.3 Landowner(s) Communication and Reclamation Feedback Form Requirements

ER has developed a Reclamation Feedback Form (RFF) available on www.saskatchewan.ca. The RFF must be completed jointly by the licensee (representative or third-party consultant) and all applicable landowner(s) or their authorized designate (via written agreement or documented verbal agreement). Multiple landowners residing at the same address may complete a single RFF, with all necessary signatures. The name, address, and contact information for all landowners or authorized designates must be provided within the RFF. For land owned by corporations, an ISC Corporate Registry Profile must be obtained with any director listed able to sign the RFF on behalf of the corporation.

ER considers a Landowner’s feedback to be an important component of the AOR application to substantiate the satisfaction of the landowner(s) with the reclamation that has occurred at the given site/access. Therefore, it is expected that the licensee will actively engage with the landowner, providing explanations and answering questions when attempting to obtain a filled out/signed RFF. Sending the AOR package and RFF via registered mail without follow-up is not adequate landowner engagement.

ER requires that the licensee make the AOR application available to the landowner(s) or their designates, if requested, and allow them 30 days to review all supplied information and to

investigate the site. As soon as the landowner returns the RFF, the licensee may apply for an AOR regardless of whether this 30-day review period has passed.

Landowners are not obligated to sign the RFF but are encouraged to fill the form out, including their contact information, to ensure that if concerns are raised, ER can contact them to discuss further. If a landowner states they are unwilling to fill out/sign the RFF, the licensee may apply for an AOR after the 30-day review period has passed. The landowner's unwillingness to sign the form should be documented and, if known, the reasons why they are unwilling to fill in/sign the RFF should be documented in the SSCR.

It is noted that land owned by the federal or provincial government (Crown Land) must be signed off by the appropriate representative. An AOR cannot be submitted for Crown Land until the required representative has reviewed the site and has provided a signed RFF.

A signed Reclamation Feedback Form does not constitute a surface lease release or has any relevance to the surface lease agreement made between the licensee and landowner(s) or the Surface Rights Board of Arbitration requirements.

Licensees are expected to make every necessary effort to resolve issues at the given site with the landowner(s) prior to submitting an AOR application. This includes meeting landowners on site to verify or refute their concerns. ER acknowledges that an on-site meeting may not always be possible. In such cases, the SSCR must clearly document why the meeting could not occur and outline the steps taken to address the landowner's concerns. If unresolved landowner issues are identified in the RFF, despite attempts by the licensee and/or third-party consultant to rectify these, ER will follow-up directly with the landowner to assess the scope and nature of the issue. If ER determines that the complaint is substantiated, the licensee will be notified that the AOR application is denied, and the applicant will be required to revisit the site and conduct additional work (at their own expense) before an AOR application will be considered.

It is recognized that there will be situations where the licensee is unable to establish contact with the landowner. It is expected that the licensee will make numerous contact attempts over a reasonable period of time. If after this period has occurred the licensee was not able to contact the landowner, an AOR application may be submitted documenting the following information:

- The date the landowner(s) were provided the RFF;
- The contact name and the company that was trying to contact the landowner(s);
- The contact method(s) used;
- Date/time of contact attempts; and
- The results of each attempt.

Prior to distributing the RFF and required attachments to the applicable landowner(s), the licensee must:

- Complete the General Information section;
- Complete questions 1 to 3 of the Reclamation Feedback section for situations that are not applicable so the landowner knows a response is not required;
- Complete question 2 of the Reclamation Feedback section, where applicable, to identify any "improvement" features where the licensee is seeking the landowner(s) authorization to remain in place. ER will not accept "improvements", even with the landowner(s)

authorization, if they are not legitimate or logical or if they pose a potential environmental risk, such as:

- Access roads or cement pads that are unstable, hazardous or erosive;
- Contaminated soil or groundwater that are not remediated or risk managed; or
- Areas that are not reclaimed and are not improvements for landowner use.
- Obtain the surface title(s) from ISC identifying all current registered landowner(s) associated with the given well/facility site and access road. ER must be notified if the licensee/consultant becomes aware of any changes made to the surface title ownership after the AOR application is submitted and prior to the AOR approval being issued;
- Obtain the applicable survey (use the most recent proposed or as-drilled survey that accompanied the well or facility licence) and clearly identify:
 - Areas where land use differs from historical surrounding land use;
 - Exemption from Reclamation areas approved by ER (highlighted in green) along with the licensee and licence number that retains reclamation responsibility of the exempted area;
 - Landowner authorized “improvements” remaining on site (highlighted in red); and
 - The remaining site and access road (highlighted in yellow).
- Obtain a disclosure survey, diagram or sketch, where applicable that identifies the approximate location of any pipelines, flowlines, or other underground lines remaining in-place that were used in the well/facility site operation;
- Obtain authorized designate documentation (via written agreement or documented verbal agreement), where applicable that clearly demonstrates the authority of the designate to complete the RFF on behalf of the registered landowner(s). Acceptable documentation may include:
 - A letter signed by the registered landowner(s) appointing a designate where multiple landowners are involved;
 - Documentation showing the designate as the executor of estate, power of attorney, or representing lawyer, where the title is held “in-trust” or to someone who has passed away or is incapacitated;
 - A business card or explanation of the designates affiliation with the organization (i.e. Ministry of Environment, Ministry of Agriculture, etc.) which is acting on behalf of) His Majesty King (HMK) (refer to the *Addresses for Service* portion of the surface title to determine the organization acting on HMK’s behalf);
 - Saskatchewan corporate registry Profile Report from ISC that clearly identifies the designated authority/role (i.e. the president, holding the majority of the voting shares in the corporation), where the surface title is held by a corporation; or
 - any other documents which demonstrate such authority.

4.4 Environmental Site Assessment

A third-party Environmental Site Assessment (ESA) (minimum Phase I ESA) is required to be conducted **upon abandonment of a well (i.e. cut and capped)** or **decommissioning** of a facility as per subsections) 6-1(1) of the FSSCR, except for built not drilled well sites (sections 5.2 and 5.3).

The ESAs must meet the standards set by *Directive PNG033: Phase II Environmental Site Assessment* (Directive PNG033, available on www.saskatchewan.ca) and Canadian Standards

Association (CSA) [Phase I ESA \(Z768-01\)](#) and [Phase II ESA \(Z769-00\)](#) documentation. The following sections will provide the Phase I and II ESA documentation requirements for the AOR application submission.

4.4.1 Phase I ESA Requirements

To standardize this component of the AOR application, ER has developed a *Phase I ESA Form* available on www.saskatchewan.ca. The *Phase I Form* is a fillable PDF that must be completed electronically to ensure the data entered meets the requirements of the dropdown options provided.

All sections within the *Phase I ESA Form* and required attachments are mandatory, unless otherwise indicated within the form, and the qualified third-party consultant must complete the declaration portion of the Phase I ESA Form to validate the document. An unsigned and/or incomplete Phase I ESA Form will result in the AOR application being denied.

The Phase I ESA may be conducted prior to well abandonment or facility decommissioning. However, where this occurs ER requires section C of the Phase I ESA Form to be addressed in the SSCR (section 4.3) component of the AOR application to ensure the application is complete.

All components of the Phase I ESA Form must be completed by a single third-party consultant company and address the following four principal components:

1. Record/Desk-top Review

The third-party consultant must conduct a search to acquire all relevant information regarding the site being investigated. At a minimum, the consultant must review the information listed in the table below:

Records to be reviewed	Source of Information
Surface Title Search	ISC – Land Titles
Aerial Photographs Include a minimum 1 pre-disturbance, 1 post-disturbance, and 1 photo for every 3 years of the site being active. Details of what is occurring in the photos needs to be discussed, this should be more than “pre-disturbance photo”. Where these are not available or no change has occurred between photos, it must be spoken to.	ISC – Maps & Photos , Google maps , etc.
Historical Site Activity (i.e. well, facility, pipeline, flow lines) This includes overlapping licences that do not have AOR approvals, facilities, etc. Overlapped Grandfathered sites must be fully investigated during the AOR.	Companies’ files, GeoScout, AccuMap or ER’s Info Map, ER’s IRIS system or hardcopy files* or the <i>Licensee Liability Rating (LLR) Well or Facility Lists</i> available on www.saskatchewan.ca
Previous ESA reports	Companies files or ER’s IRIS system or hardcopy files*

Site Specific Records (i.e. licence, survey, A1 form, daily drilling reports, landowner(s) approval to dispose of material off-site, drilling mud and additive list, tour reports, manifests, contractor invoices/truck ticket/invoices (Gas Migration, Abandonment Reports, Well Center Sampling, etc.)	Companies' files or ER's IRIS system or hardcopy files*
Upstream Incident/Spill Information All historical spills that are associated with the site, including pipeline releases off lease, must be investigated	1) Companies' files; or 2) Visit ER's Incident Management and Reporting Webpage (available on www.saskatchewan.ca) to obtain the <i>PNG Spill Directory</i> and The Saskatchewan Upstream Oil and Gas IRIS Incident Report; 3) View the incident reports through ER's IRIS system.
Site Topography, Soil Classification, Groundwater Maps, or Hydrological Reports	Company files or Water Security Agency of Saskatchewan
Salinity Maps	Agriculture & Agri-Foods - South Saskatchewan & North Saskatchewan Maps
*Non-confidential information may be viewed through IRIS by those with a valid Business Associate (BA) ID. Those without access to IRIS can make information requests through the ER Service Desk at 1-855-219-9373 or ER.servicedesk@gov.sk.ca.	

2. Site Visit/Inspection

A site visit is mandatory for the Phase I ESA and photographs must be included that substantiate the condition of the site along with any visual signs of on-site/off-site soil contamination (i.e. surface staining, reduced vegetation growth, visible salt crystals, etc.) that was noted at the time of the visit. Each picture must include a caption detailing the date taken, location taken from, direction facing and significance of what is being photographed. Unmanned Aerial Vehicle (UAV) photographs of the site should be submitted to provide additional details of the site.

3. Interviews

In some cases, a landowner/occupant is the only knowledgeable source of information on the history of the site. Therefore, an application is considered incomplete if there is no indication that the landowner was contacted during the Phase I ESA.

Several attempts must be made to contact the landowner, their designate or an occupant, and each attempt must be documented. A single unanswered phone call is not sufficient. If the landowner or occupant cannot be contacted after several attempts, proof of reasonable attempts by the consultant including the dates, time and method(s) used (phone, email, registered mail, in person, etc.) must be provided.

As part of the applicant's due diligence to determine potential sources of contamination, interviews must be conducted with the site landowner/occupant/operator and potentially the

adjacent landowner/occupant. For Crown land, a landowner interview is not required. However, an interview must be conducted with the occupant or renter, where one exists.

The details to be discussed during the interview include, but are not limited to, the following:

- Site history and location of facilities or structures;
- Waste management and waste disposal practices;
- Spills and the clean-up procedures implemented;
- Location of unproductive land (i.e. salt, sterilant or hydrocarbon damaged soil);
- Location of slumping soil (especially around the well head);
- Location of backfilled and/or previously remediated drilling sumps and pits; and
- Concerns or comments regarding any problem areas that may have been missed and the degree of satisfaction with the remediation/reclamation work.

If the third-party consultant conducting the assessment has a concern or receives a complaint from the landowner/occupant regarding the site it must be investigated and addressed prior to submission of the application. Furthermore, the application must document the licensee's response in addressing the concerns or complaints. Otherwise, the application will be denied.

4. Landowner Information letter

ER has created the landowner information letter (available at www.saskatchewan.ca) which is to be given to the landowner and explained in detail during the Phase I ESA. This is meant to properly explain the process from abandonment to AOR, what steps are involved, any questions the landowner has regarding the process, any remediation/reclamation concerns, or any other issues with the process the landowner has. This conversation should also explain that once an AOR application is approved by ER lease payments end (further questions regarding payments should be directed to licensees) and that as per Section 6-3(1) of the FSSCR the licensee is forever responsible for environmental liability associated with the site.

Note: For Phase I ESA's completed prior to January 1, 2026, this document must be discussed with the landowner prior to submission of the AOR application and documented within the SSCR.

5. Phase I ESA Evaluation (provided by the third-party consultant)

ER provides latitude to the qualified consultants (defined in section 4.8) to exercise their professional judgement to ensure their client meets the reclamation regulatory obligations and due diligence requirements. It is the responsibility of the consultant to determine if the information gathered during the Phase I ESA does or does not show evidence of actual or potential contamination and make recommendations as to whether a Phase II ESA and/or additional remediation work is required.

If information is not available, or evidence indicates further investigation is warranted because it cannot be concluded that the drilling waste was dealt with in a manner that was compliant with the *GL 99-01 Saskatchewan Drilling Waste Management Guideline* (available at www.saskatchewan.ca), then a **Phase II ESA of the site is required**.

4.4.2 Phase II ESA Requirements

The third-party consultant must refer to *Saskatchewan Environmental Quality Guidelines* (available on www.saskatchewan.ca), to determine the applicable sampling parameters, requirements and remediation criteria for the given site based on the amount, quality and nature of information obtained during the Phase I ESA. ER is not opposed to the use of site assessment guidelines and remediation criteria currently used in similar jurisdictions and prior approval from ER is not required. However, an explanation of the rationale for using the alternate criteria must be addressed in the application.

The Phase II submission must be prepared by a qualified third-party consultant (as defined in section 4.8) and include the following information as detailed in *Directive PNG033: Phase II Environmental Site Assessment* (Directive PNG033, available on www.saskatchewan.ca) and CCME *Phase II ESA (Z769-00)* document:

- **Well or facility site information** – licence number and surface location of site;
- **Contact information** – of the party that did the Phase II ESA investigation and prepared the report (preferably this should be the same consultant that prepared the passing DSA and will be submitting the AOR application on behalf of the licensee);
- **Site Diagram** outlining the site and identifying the sample locations in association with the historical site infrastructure (well head, storage tanks, production pad, sumps, pits, etc.) along with the direction of surface/groundwater flow and surface water bodies. The site diagram must also show all sample locations and highlight all locations where concentrations exceed criteria;
- **Sampling/Analytical Data Summary Table** that clearly identifies the following:
 - **Sample location identifier** – borehole number and associated investigation area (well center, AST, spill, control, etc.);
 - **Sample type** – control, topsoil, subsoil, groundwater, surface water, etc.;
 - **Sample depth** – provided in metric units;
 - **Analytical data results** – concentrations (exceeding criteria highlighted) and units; and
 - **Evaluation criteria** and source used.

Note: composite samples are not acceptable except when sampling stockpiles and laboratory data sheets must be included at the end of the report. Discrete samples are defined in section 14.1 of Directive PNG045: AOR for NaCl-Impacted Sites (Directive PNG045).

- **Photos** documenting the current condition of the site, including any environmental or contamination issue(s) associate with the site or adjacent land;
- **EM Survey** (with the site boundary and historical infrastructure identified) is a highly recommended tool. Note: ER may require an EM survey to be conducted, if not done prior to AOR submission, to provide further assurance that salt contamination is not present at a site;
- **Interpretation/Discussion** provided by the third-party consultant regarding the following:
 - Discussion of the soil at the site and location of any surface water bodies, depth of the water table and potential direction of surface/ground water flow (based on regional map information);
 - Interpretation derived from the EM survey, if one was conducted; and

- Interpretation of the sampling/analytical data based on the criteria used to assess the extent of the contamination present on and off-site.
- **Conclusions/Recommendations** provided by the third-party consultant regarding the extent of the contamination present on and off site and suggested follow up work required to remedy any issue(s) at the site.

The qualified third-party consultant must digitally sign and date as well as stamp (where applicable) the Phase II ESA to validate the document.

4.5 Remediation Report Requirements

If issues are identified in the Phase I and/or Phase II ESAs that indicated further work is required to remediate the site, the AOR submission must include a remediation report that summarizes the following information:

- **Well or facility site information** – licence number and surface location of the site;
- **Contact information** – of the party that did the remediation work and prepared the remediation report summary (include third-party consultant company name along with the name, phone number and email address of the consultant who prepared the summary)
- **Summary** – details of the remediation activities (including the dates conducted);
- **Site diagram** indicating the remediated area in relation to the site's historical infrastructure and previous ESA work. The site diagram must include the dimensions of the excavation (length of the sides and depth), location of excavation within the site, and location of samples collected from the excavation;
- **Confirmatory sample** results to confirm the soil and/or water remediation has been achieved. Samples from the excavated area are to include: wall and floor samples along with a background sample where justification is required for comparison. GPS coordinates of confirmatory sample locations should be recorded. Laboratory data sheets must be attached at the end of the report. The samples/analytical data collected must be summarized in a table which clearly identifies:
 - **Sample location identifier** – background controls, backfill, excavation walls and floor, etc.;
 - **Sample depth** – provided in metric units, where applicable;
 - **Analytical data results** – concentrations (exceeding criteria highlighted) and units; and
 - **Evaluation criteria** and source used.
- **Backfill samples** of the subsoil and topsoil being used to backfill the excavation. Location of the backfill source must be included. Laboratory data sheets must be attached at the end of the report;
- **Photos** of the site before, during and after remediation;
- **Waste Information** including the volume of excavated material, the disposal location and associated waste manifests; and
- **Interpretation/Discussion** provided by the third-party consultant regarding the sampling/analytical data based on the criteria used to assess the results of the remediation activities. The report must address any residual impacts that are to be left in situ and why they can remain.

Where historical information does not meet current standards, or required information is missing, a rationale must be provided explaining why the available information is acceptable and how it supports the fact that the site has been properly remediated.

4.6 Reclamation Report Requirements

Once any/all issues identified in the Phase I and/or Phase II ESAs have been corrected and the site has been remediated and reclaimed, the AOR submission shall include documentation that summarizes the following reclamation information:

- **Well or facility site information** – licence # and surface location of the site;
- **Contact information** – of the party that did the reclamation work and prepared the reclamation report summary (include company name along with the name, phone number and email address of the employee who prepared the summary);
- **Summary** – details of the reclamation activities (including the dates conducted);
- **Site diagram** – indicating the reclaimed area in relation to the site’s historical infrastructure and activities;
- **Information** – regarding seeding details and the use of fertilizers, herbicides, sterilant, or soil amendments such as manure, gypsum, straw, and peat must also be included where used to reclaim the site; and
- **Photos** of the site before, during and after reclamation. Please include UAV photographs of the site to provide a better perspective to those reviewing the AOR application.

As part of the reclamation reporting, it is required to submit any vegetation monitoring reports that were completed at the Site. These include but are not limited to site visits to check on site development, UAV photos that were taken and on-site photos taken prior to a passing DSA. These documents do not need to be finalized, professionally stamped reports, but instead are meant to show the work completed at the site over time (i.e. daily reports, etc.). This allows ER to review the progression of the vegetation on site. This can include licensee/consultant third party monitoring forms, or DSA forms.

Where this information is not available or cannot be obtained, it must be spoken to in the SSCR.

4.7 Detailed Site Assessments Requirements

The (DSA) includes the assessment of the landscape, soil and vegetation parameters of the entire site; including the access road. The DSA must be completed for all sites after final reclamation activities have been completed, unless otherwise noted, to ensure the site is comparable to the surrounding area and meets the reclamation requirements as defined in section 1-2 of the FSSCR.

As part of the AOR application the third-party consultant is required to complete the DSA Form (available on www.saskatchewan.ca) to provide evidence that the site meets the criteria requirements prescribed in *Directive PNG018: Detailed Site Assessment Requirements* (Directive PNG018), available on www.saskatchewan.ca). All sections within the DSA Form and required attachments are mandatory, unless otherwise indicated and the qualified third-party consultant must complete the declaration portion of the DSA Form to validate the document. A passing

DSA is required with the AOR application. An unsigned, incomplete or inaccurate DSA Form will result in the AOR application being denied.

DSA assessments must be conducted on healthy, undamaged vegetation. As such, DSAs cannot be completed on cultivated lands during years affected by severe weather events (drought, flooding, etc.) that result in vegetation conditions not comparable to historical averages. In regions of Saskatchewan where drought conditions are common, multiple years of vegetation data may be submitted to demonstrate consistent crop growth and overall vegetation health.

Please note that all previous failed/completed DSA and vegetation assessments should be included in the AOR package to enable ER to evaluate the vegetation progression between assessments. These do not need to be finalized reports. Rather, they serve to demonstrate the work completed at the site throughout the assessment period.

A signed RFF does not override the DSA results or the licensee's responsibility to remedy any issue(s) at the site. The primary purpose of RFF is to provide further evidence that the site has been successfully reclaimed. Therefore, if the DSA indicates that issues exist, ER will require the licensee to remedy those issues regardless of whether a completed RFF was obtained.

4.8 Third-Party Consultant Qualifications

Third-party (arm's length) consultants must be objective, free from influence, certified in their respective profession and familiar with applicable federal, provincial and municipal legislation and published guidelines and directives used to evaluate the presence of contamination on a property and successful site reclamation. The third-party consultant contracted to perform work under the AOR Program must be employed independent of the licensee to ensure there is no conflict of interest and to maintain the integrity of the AOR Program.

For the purposes of certifying the work and analysis carried out in the preparation of an AOR application, as well as the conclusions/recommendations based therein, ER defines third-party qualified consultants as any of the following:

- Licensed to engage in the practice of professional engineering/geoscience in Saskatchewan pursuant to *The Engineering and Geoscience Professions Act*;
- Licensed to practice agrology in Saskatchewan pursuant to *The Agrologists Act*;
- Licensed to practice as a biologist or chemist by professions legislation of a Canadian province or territory;
- Licensed to practice as a forester or forest technologist in Saskatchewan pursuant to *The Forestry Professions Act*;
- Certified as an applied science technologist in Saskatchewan, with 5 years of direct experience in site assessments pursuant to *The Saskatchewan Applied Science Technologist and Technicians Act*;

The AOR components, except for the cover letter, RFF sections and reclamation reports, must be signed and dated by a qualified third-party consultant to validate each document. In addition, the third-party consultant must clearly indicate (beside their signature) which above qualification allows them to sign the given document (use a stamp/seal if you have one).

4.9 Acknowledgement of Reclamation Application Types

AOR applications will be screened and classified according to their application type. The two main AOR application types are Routine and Non-Routine. Risk-Based Site Closure and Administrative Controls are subtypes of non-routine applications. The disclosure questions within IRIS are used to differentiate between Routine and Non-Routine AOR applications. Disclosure questions that are answered incorrectly based on the information provided will result in the AOR application being denied.

4.9.1 Routine Acknowledgement of Reclamation Application

Routine AOR applications are for sites that have a low probability of contamination or site reclamation issues. As a result, Routine applications require less scrutiny than Non-Routine. Routine applications are automatically approved within IRIS and all Routine applications can be audited for completeness, including formatting, page orientation, order, declaration signatures and a completed RFF. Select applications will be audited with a full technical review including follow-up with the landowner(s).

An AOR application will be considered Routine if:

- There are no known spills associated with the site or documentation exists indicating that sufficient spill remediation has occurred;
- There are **NO** contaminants of concern on- or off-lease that are above Tier 1 or Tier 2 Acceptable guidelines referenced in Directive PNG033. Any monitoring requirements related to sodium chloride impacts must be fulfilled and included in the AOR;
- No vegetation, soil, landscape or weed concerns are identified during the DSA;
- No improvements exist on site that change the end land use. These improvements do not include fences, gates, road approaches, etc. but refer to large features such as lease roads, lease pads, etc.;
- The RFF has been completed, and no concerns were declared OR the landowner did not complete the RFF but has supplied communication indicating that they have no concerns with the site.

4.9.2 Non-Routine Acknowledgement of Reclamation Application

Non-Routine AOR applications are designated for sites that have a higher probability of contamination and/or site reclamation issues than Routine sites. As a result, Non-Routine applications are subject to greater scrutiny than Routine applications. Due to the increased potential risk, all Non-Routine AOR applications will receive a comprehensive technical review.

An AOR application will be considered Non-Routine if:

- Any of the Routine criteria is not met;
- Any site where an AOR approval was revoked. This means that an application was received, approved and had the liability removed from the site, and then significant enough issues were found that ER revoked the approval, returned liability to the site, and a new AOR application will be required once the issue has been corrected;
- Any site where an AOR application was denied;
- The site uses Risk Based Site Closure;

- The site has Administrative Controls in place;
- Any contaminant remaining In Situ that exceeds Tier 1 or Tier 2 Acceptable guidelines referenced in Directive PNG033.

4.9.3 Risk Based Site Closures

Risk Based Site Closure as described in *Directive PNG045: AOR for NaCl-Impacted Sites* (Directive PNG045) is designated for sites that have sodium chloride impacts above regulatory but within site specific guidelines. Only sites in which it can be demonstrated that sodium chloride impacts remaining *in situ* do not present future risk to environmental receptors are eligible for Risk Based Site Closure.

As a result, Risk Based Site Closures are subject to a high level of scrutiny. Additional site assessment is needed and risks to all environmental receptors must be extensively investigated. A site must be pre-approved by ER prior to pursuing Risk Based Site Closure. Risk Based Site Closures will be determined and approved on a site-by-site basis.

Given the level of ER involvement, all Risk-Based Site Closure AOR applications must be sent to ER.servicedesk@gov.sk.ca for prior ER review and approval. Based on review of all submitted information a plan will be developed between industry and ER for a Risk Based Site Closure AOR. An authorized plan may then be submitted as a Non-Routine AOR application pursuant to section 4.9.2. Additionally, if a company would like to use Risk Based Site Closures for sites with contaminants other than NaCl, proposals can be sent to ER.servicedesk@gov.sk.ca.

4.9.4 Administrative Controls

Administrative Controls as described in Directive PNG045 may be designated for sites that have sodium chloride impacts above regulatory limits and site-specific guidelines where additional remediation has been determined to not be warranted. Only sites in which it can be demonstrated that sodium chloride impacts remaining *in situ* do not present future risk to environmental receptors outside of the existing footprint are eligible for Administrative Controls.

As a result, Administrative Controls are subject to a high level of scrutiny. Additional site assessment is needed and risks to all environmental receptors must be extensively investigated. A site must be pre-approved by ER prior to submitting an AOR application for Administrative Controls and ER must be involved in all steps leading up to an Administrative Controls AOR. Due to the increased involvement of ER in Administrative Controls, an agreement with industry and ER will be developed on a site-by-site basis regarding how administrative controls will be applied.

ER may request to be involved/request details in stakeholder communications in the Administrative Controls process. If sites are presented to ER where negotiations for compensation have already been completed without ER involvement the site may be deemed ineligible for an Administrative Controls AOR.

If in the opinion of the Minister the oil and gas licensee has not negotiated in good faith regarding the terms of compensation to the landowner(s), the Minister may order the licensee to complete full reclamation as deemed by *The Oil and Gas Conservation Act* section 17.01(1b).

Administrative Controls will be determined and approved on a site-by-site basis. As such, the investigations, registered interests and site restrictions will be unique for each individual site. Given the level of ER involvement, an application for Administrative Controls must be sent to ER.ServiceDesk@gov.sk.ca for prior ER review and approval. An authorized plan may then be submitted as a Non-Routine AOR application pursuant to section 4.9.2. Additionally, if a company would like to use Administrative Controls for sites with contaminants other than NaCl, proposals can be sent to ER.ServiceDesk@gov.sk.ca.

5. Modified AOR Application Submission Requirements

ER recognizes that reclamation is unique to each site and the standard AOR application components, as described in section 4, may not be practical for all sites. The following sections provide some of the sites where modified AOR application submission requirements are appropriate. Licensees seeking approval to submit a modified AOR application beyond those listed are advised to contact the ER Service Desk at ER.servicedesk@gov.sk.ca to discuss and obtain approval before submitting an AOR application.

5.1 Sites Located on Indian Oil and Gas Canada/First Nation Reserve Land

Indian Oil and Gas Canada (IOGC) is the regulatory agency that oversees the remediation, reclamation, and surrender of surface and subsurface agreements on First Nation Reserve Land (Reserve Land) in Saskatchewan. When abandoning facilities and wells on Reserve Land, authorization from ER is required. Authorization from IOGC is not required, however the Licensee must provide copies of the ER authorization for down hole and surface abandonment records to IOGC and the First Nation Council. When abandoning pipelines on Reserve Lands, authorization from both the ER and IOGC is required.

Oil and gas sites located on Reserve Land must be remediated and reclaimed according to the standards established by IOGC. Once the remediation and reclamation work is complete, the licensee submits a "Surface Contract Notice of Surrender" to IOGC that includes a Reclamation Application. A field inspection of the site involving representatives of the First Nation, IOGC, and the licensee is then carried out. If the site passes the inspection, IOGC will issue a Letter of Reclamation to the licensee. The licensee can submit this letter to the ER as proof that all their environmental responsibilities for the site have been fulfilled. For more information on IOGC's remediation, reclamation, and surrender requirements, visit the IOGC website or call (403) 292-5625 to speak with an Environmental Analyst

5.2 Sites Located on Federal Lands Administered by Environment and Climate Change Canada

Environment and Climate Change Canada (ECCC) manages many sensitive locations that are located on Federal Lands within Saskatchewan. This information should be included within your surface lease or licence agreement, however if you are unsure if your sites fall within ECCC administered lands, please reach out to the ECCC at cwsnwapermitprairie@ec.gc.ca.

In general, ECCC sites follow the same path to closure as other sites throughout Saskatchewan, however there are some key differences, specifically:

- All Reclamation Plans must be approved in advance by ECCC. Please contact ECCC prior to implementing any potential reclamation activities via email at: cwsnwapermitprairie@ec.gc.ca
- The timing of reclamation activities may be restricted in consideration of migratory birds, species at risk and impacts to pasture operations.
- ECCC Surface Lease Inspections are required prior to Acknowledgement of Reclamation submissions. As all inspections must occur between May and September, it is up to the lessee/licensee and their representative to ensure appropriate timing for ECCC staff to visit the site. AOR applications cannot be submitted without a passing inspection from ECCC staff.
- After the AOR is approved, the lessee must submit a request for termination to ECCC to formally terminate their legal lease agreement.
- Any questions about activities on ECCC lands or National Wildlife (NWAs) can be directed to: cwsnwapermitprairie@ec.gc.ca, or Canadian Wildlife Service, 115 Perimeter Road, Saskatoon, SK, S7N 0X4

5.3 Sites Located on Crown Land

All lands designated as Crown Land are required to have the RFF signed off by the administering Ministry. Additionally, all sites administered by the Ministry of Agriculture (AG) must follow the [Restoration of Saskatchewan's Agricultural Crown Rangelands: Guidelines and Procedures for Developers](#). Please ensure that you include the Crown Land Disposition Number that corresponds to the site within the Cover Letter of the AOR.

5.4 Licensed Built not Drilled Well Site with Surface Disturbance

In situations where a licensee may have obtained a well licence and proceeded to prepare or construct the site and subsequently chose not to drill the well and cancel the licence, ER requires an AOR application submission to ensure the site was reclaimed to the surrounding conditions and there is no compaction, weed control, topsoil and/or other possible issues with the site. ER realizes the contamination issues with the site are likely non-existent. Therefore, the Phase I ESA component (section 4.5.1) may be excluded from the AOR application submission requirements (section 4).

Note: if the licensee plans on obtaining a new licence to drill a well on the prepared site the AOR application requirement of the cancelled well is not required. Instead, once the licensee has licensed and drilled a new well on the site they should apply to have the cancelled well exempted from reclamation because of the overlap activity (refer to section 3.3 for more information).

5.5 Unlicensed Well or Facility Site with Surface Disturbance

There are infrequent instances where prior to receiving a well or facility licence a company may have obtained a surface lease, surveyed and even prepared or constructed a site and

subsequently chose not to drill a well or build a facility. In these instances, reclamation liability has not been assessed to the site under the LLR Program. However, there has been ground disturbance and subsequently ER requires an AOR application submission to ensure the site is reclaimed back to surrounding conditions and there are no compaction, weed control, topsoil and/or other possible issues with the site. ER realizes the contamination issues with the site are likely non-existent. Therefore, the Phase I ESA component (section 4.5.1) may be excluded from the AOR application submission requirements (section 4).

The ER Service Desk should be contacted at 1-855-219-9373 or ER.servicedesk@gov.sk.ca to obtain a licence for these locations so that an AOR application can be submitted through IRIS.

5.6 Deemed Orphan Well and Facility Sites

When a well or facility site has been deemed an orphan under the Saskatchewan Oil and Gas Orphan Fund Procurement Program there is no longer a viable licensee to carry out the reclamation obligation and AOR application submission requirement. Therefore, ER will contract a third-party consultant to prepare and submit an AOR application submission following the requirements of this Directive. Note: for deemed orphan well or facility sites the ER's Orphan Fund Procurement Manager is considered the licensee representative and their signature is required on the cover letter and other applicable AOR application components.

5.7 Partial Exemption from Reclamation Approved Well or Facility Sites

When a Partial Exemption from Reclamation is approved by ER the reclamation liability associated with the licence remains unchanged at that time even though the responsibility of the exempted area has been transferred to another licence.

To remove the reclamation liability associated with the partially exempted site the licensee must reclaim the non-exempted area associated with their licence that received partial exemption. After which the licensee must submit an AOR application, in accordance with the requirements in section 4, to ER which excludes the partially exempted area. If all requirements of the AOR application have been met, ER will grant AOR approval and remove the reclamation liability associated with the licence at that time.

6. Application for Reduction of Reclamation Liability on Designated Problem Sites

ER identifies licensed sites that require long term remediation, due to the presence of contamination, as designated problem sites in the applicable LLR Well List and LLR Facility List (available on www.saskatchewan.ca).

In the case of a long term site remediation project prior to completing the entire site remediation, the licensee may submit a request to ER to reduce the deemed reclamation liability based on remediation work that has already been completed at the site.

The request letter must include the following information:

- **Site information details**, such as:
 - Type of site (well, facility, pipeline, etc.);

- Licence number; and
- Surface location of site.
- **Contact information** – licensee name and mailing address along with the licensee representatives name, phone number and email address (as ER may need to contact them to discuss the submission).
- **Intent of the application** – to request a reduction in reclamation liability along with the reduction amount being proposed.
- **Supporting documentation to justify the request**, at a minimum must include:
 - A summary, including a diagram, showing the extent of contamination both on and off-site (refer to section 6 of Directive PNG033, available on www.saskatchewan.ca for further details on risk assessment).
 - A progress update of the site clean up to date;
 - An action plan, with proposed timeline, to address the remaining remediation issue(s) at the site;
 - An assessed cost estimate of the long term cost to fully remediate and reclaim the remaining issue(s) identified at the site to account for the uncertainty associated with future reclamation costs of the site should the property ever be sold; and
 - Details of any communication that occurred with the landowner during the remediation process.
- **Signature** – the licensee representative must sign and date the letter to validate the declaration statement.

Email the request letter as a single PDF attachment to ER via ER.ServiceDesk@gov.sk.ca with the subject line “Reduction in reclamation liability on a deemed problem site”. If all requirements of the submission have been met, ER will review the request and issue a response to the licensee with the details on the reclamation liability adjustment and reason for the decision.

7. Application Submissions

7.1 Timing Requirements of AOR Submissions

Pursuant to subsections 6-1(1) of the FSSCR, upon abandonment of a well or decommissioning of a facility, the respective site is required to be assessed, decommissioned and reclaimed and the licensee is required to submit a report (AOR application) which substantiates the satisfactory reclamation of the site.

7.2 How to Submit Applications

Once the application package has been compiled, in accordance with the requirements described in this Directive, the application must be submitted through IRIS. A valid BA ID with the appropriate permissions is required to submit applications through IRIS.

Application forms and processes can change without notification, and it is the applicant’s responsibility to ensure submissions follow the current standards available on www.saskatchewan.ca. ER realizes AOR applications take several years to complete and will therefore accept submissions as long as each component represents the standard available at the time of their completion.

8. Application Review and Notification Process

Application submissions are reviewed by ER for administrative and regulatory requirements. ER's decision will be communicated as a notification in IRIS to the Business Associate/applicant. If the application is incomplete, non-compliant with reclamation criteria, and/or contains inconsistent information the application will be denied and details of the issues will be provided to allow for corrections before a resubmission is made.

If the application meets ER's requirements and is approved, the applicant will receive an approval notification in IRIS. Alternatively, the approval notification will also be associated with the applicable well licence in IRIS to allow all users with a BA ID access to the information.

When an application is authorized, the reclamation liability associated with the abandoned/cancelled well or decommissioned facility site under the LLR Program is zeroed; except for a partial exemption from reclamation approval which will remain unchanged at that time. Licensees that sign into the LLR (available on www.saskatchewan.ca) to review their inventory and liability reports will see the change reflected the next day.

The approval will be indicated in the applicable *LLR Well List* or *LLR Facility List* (available on www.saskatchewan.ca) after the 1st of the month:

- Grandfathered Reclamation Release column contains a 'Y' (Yes, Grandfathered approval);
- Acknowledgement of Reclamation column contains a 'Y' (Yes, AOR approval);
- Exemption from Reclamation column contains a 'F' (Full Exemption from Reclamation);
- Exemption from Reclamation column contains a 'P' (Partial Exemption from Reclamation).

8.1 Disclaimer

Pursuant to subsection 6-3(1) of the FSSCR, the issuance of a Grandfathered or AOR Approval does not relieve a licensee, operator or working interest participant of past, present or future liability associated with a well or facility site.

If ER is notified of an issue at a site that received Grandfathered or AOR Approval, it will be investigated. If it is determined that the issue resulted from a former well or facility operation, ER will contact the licensee or working interest participant to address the issue in accordance with the FSSCR. Depending on the severity of the issue, ER, in accordance with subsection 6-2(3) of the FSSCR, reserves the right to cancel the approval and/or reinstate the reclamation liability if deemed necessary.

ER will require documentation to confirm the issue has been addressed, and confirmation that the landowner is satisfied with the actions taken by the licensee or working interest participant.

Pursuant to section 59 of the OGCR, ER may require the licensee or operator to remedy the issue within a specified period. If a licensee or operator does not comply, ER may carry out the necessary work, after which all costs and expenses incurred by ER are a debt due to the Crown in right of Saskatchewan by the licensee or operator and may be recovered in the manner authorized by *The Financial Administration Act, 1993* or in any other manner authorized by law.

As per section 55(2) of the amended Surface Rights Acquisition and Compensation Act, 2023, Surface lease agreements between landowners and licensees terminate on the issuance of an AOR pursuant to the FSSCR. The Surface Rights Board of Arbitration continues to deal with crop loss or damages prior to AOR approval as outlined in the FSSCR but once an AOR has been approved there is no longer a 5-year period to submit a grievance to the Surface Rights of Arbitration Board. A landowner grievance following an AOR approval can be sent to the ER Service Desk at 1-855-219-9373 or er.servicedesk@gov.sk.ca.

9. Audits

Each year, ER selects Saskatchewan well and facility sites where the reclamation has been previously approved under the AOR Program for audits to determine if the abandonment and reclamation standards continue to be met.

ER will notify the landowner(s) that the site has been selected for surface or subsurface audit and reiterate that this is not an indication that the site has any issues. Rather, it is simply one of several random audits, which are regularly carried out as part of ER's due diligence to ensure the AOR program is successful.

If issues are found during an audit, ER may notify the licensee of their responsibility to undertake further abandonment or reclamation work at the site. ER may advise that remediation is to be completed by a specified date.

It is the licensee's responsibility to obtain temporary access to the lease to remediate the issue(s) and ER will not force the licensee on the site if the landowner does not want the remediation unless the contamination is deemed to pose a threat or risk to human health, public safety, property or the environment.

9.1 Surface Audits

To ensure compliance with ER's legislation, ER will conduct surface audits of randomly selected Grandfathered Reclamation Released sites provided access to the site for the audit can be obtained from the landowner(s). Surface audits will be conducted by ER staff and include a file review, landowner interview and site visit. The licensee will be notified if any issues are found.

9.2 Subsurface Contamination Audits

To ensure compliance with ER's legislation, this Directive and Directive PNG018, ER will conduct yearly subsurface contamination audits of randomly selected AOR approved sites provided access to the site for the audit can be obtained from the landowner(s). The subsurface audits, advertised on [SaskTenders](#), will be conducted by third-party consultants and include a full file review, site visit, electromagnetic survey and intrusive sampling (soil and possibly groundwater) and analysis.

Changes to Directive PNG016: Acknowledgement of Reclamation Requirements

Existing Section/Wording	New Section/Wording	Explanation of Proposed Changes
1. Overview	1. Overview	Minor revisions to update regulation references and to promote clarity.
2. Scope of the Acknowledgement of Reclamation Program Pursuant to subsection 56(5) of the OGCR, an application for AOR must be submitted for any well or facility site in which reclamation has not been completed prior to June 19, 2007. A “site” as defined in the OGCR includes the access road and is not limited to the extent of the leased area. Furthermore, clauses 56(1)(d), 56(2)(d) and 56(3)(d) of the OGCR require reclamation of any area beyond the site boundary that has been damaged, contaminated or otherwise adversely affected by the operations of the well or facility. “Reclamation” is defined in the OGCR but for the purposes of this Directive also includes decommissioning a site to remove surface infrastructure, equipment, machinery, concrete, refuse and materials. An “improvement” is defined as any features to remain in place after reclamation. These include, but are not limited to fences, field access points through ditches, culverts, lease roads and lease pads. The licensee is expected to return the site as reasonably close to the conditions that existed prior to the time the well/facility operation was commenced or to reasonably close to conditions of the land directly adjacent. Therefore the licensee shall: • Remove all refuse material from the site and access; • Drain and fill all excavations; • Remove equipment and machinery, if applicable; • Remove all surface infrastructure associated with the well/facility site; this includes but is not limited to: overhead power lines,	2. Scope of the Acknowledgement of Reclamation Program Pursuant to subsection 56(5) of the OGCR, FSSCR, an application for AOR must be submitted for any well or facility site in which reclamation has not been completed prior to June 19, 2007. “Site” as defined in the OGCR FSSCR includes the access road and is not limited to the extent of the leased area. Furthermore, clauses 56(1)(d), 56(2)(d) and 56(3)(d) of the OGCR 6-1(1)(d) of the FSSCR require reclamation of any area beyond the site boundary that has been damaged, contaminated or otherwise adversely affected by the operations of the well or facility. “Reclamation” is defined in the OGCR FSSCR but for the purposes of this Directive also includes decommissioning of a site to remove surface infrastructure, equipment, machinery, concrete, refuse and materials. An “improvement” is defined as any features to remain in place after reclamation. These include, but are not limited to fences, field access points through ditches gates, approaches, cement pads, dugouts, culverts, lease roads, built up government road allowances and lease pads. The licensee is expected to return the site as reasonably close to the conditions that existed prior to the time the well/facility operation was commenced or to reasonably close to conditions of the land directly adjacent. Therefore, the licensee shall: • Remove all refuse material from the site and access; • Drain and fill all excavations; • Remove equipment and machinery, if applicable; • Remove all surface infrastructure associated with the well/facility site; this includes but is not limited to: overhead power lines, culverts, fences, access roads (including used/built up	Minor revisions to align with updated regulations – <i>The Financial Security and Site Closure Regulations</i> (FSSCR). More details have been added to the definition to provide clarification.

Existing Section/Wording	New Section/Wording	Explanation of Proposed Changes
culverts, fences, access roads, trails, above/below ground storage tanks, cement pads, water wells, borrow pits, etc.; and Level the surface to blend with the surrounding drainage/contours.	- government road allowances), trails, above/below ground storage tanks, cement pads, water wells, borrow pits, etc.; and - Level the surface to blend with the surrounding drainage/contours. This includes all disturbed areas within/outside of surveyed lease boundaries that were disturbed to access the site. It is incumbent upon the licensee to check for additional supplemental information on the AOR website as this information can be updated without notification from ER.	
3. Alternatives to the Acknowledgment of Reclamation Application	3. Alternatives to the Acknowledgement of Reclamation Application	Minor change update regulation reference.
3.1 Grandfathered Reclamation Release Application Requirements	3.1 Grandfathered Reclamation Release Application Requirements	Minor revisions to update links and wording.
3.2 Exemption from Reclamation Application Requirements for Cancelled Well Licence Sites without Surface Disturbance	3.2 Exemption from Reclamation Application Requirements for Cancelled Well Licence Sites without Surface Disturbance	Minor revisions to wording and section references.
3.3 Exemption from Reclamation Application Requirements for Sites with Overlapping Activity Licensees of well and/or facility sites where timely reclamation is prevented due to overlapping activities on the land area may qualify to have the AOR application submission required under the OGCR exempted in full or in part. A licensee may apply for an exemption from reclamation when the land area of their cancelled/cut and cap abandoned well or decommissioned facility overlaps with another well or facility operation, belonging to the same or different licensees. However, Exemption from Reclamation approval is not guaranteed. Therefore, ER recommends the licensee seek and receive partial exemption approval before reclamation work is carried out at the site to ensure the licensee does not incur additional work (at their expense) in the future prior to ER granting an AOR approval. The following sections provide examples of situations where the exemption from reclamation may be applied to overlapping activities involving the same licensee (section 3.3.1), different licensees (section 3.3.2), or overlap due to the occurrence of a contamination event off lease (section 3.3.3).	3.3 Exemption from Reclamation Application Requirements for Sites with Overlapping Activity Licensees of well and/or facility sites where timely reclamation is delayed due to overlapping activities on the land area may qualify to have the AOR application submission required under the FSSCR exempted in full or in part. A licensee may apply for an exemption from reclamation when the land area of their cancelled/cut and cap abandoned well or decommissioned facility overlaps with another well or facility operation, belonging to the same or different licensees. However, an Exemption from Reclamation approval is not guaranteed. ER recommends the licensee seek and receive partial exemption approval before reclamation work is carried out at the site to ensure the licensee does not incur additional work (at their expense) in the future prior to ER granting an AOR approval. Please note that only one AOR application may be submitted for a site. If multiple wells or facilities are located within the same site, an exemption must be prepared to consolidate the reclamation responsibilities for the overlapping licences into a single application.	Wording revised to provide clarity on potential liability of applicable overlapping licenses and define increase in reclamation liability.

Existing Section/Wording	New Section/Wording	Explanation of Proposed Changes
If eligible, the licensee may submit the completed Exemption from Reclamation (overlap activity) Form (available on www.saskatchewan.ca) and required attachments for consideration: - Obtain the most recent survey for both of the licences involved in the overlap land activity. Each survey must clearly define the following: - Boundary of the well or facility site; - Boundary of the associated access road, where applicable; - Surface co-ordinates of the given well, where applicable; - Surveyed area assigned to the given well or facility site; and - Surveyed area assigned to associated access road, where applicable - Complete the Exemption from Reclamation (overlap activity) Form: - All required information must be completed (i.e. if there is no non-exempt area remaining, a '0' must be entered – the field cannot be left blank); - Refer to the Integrated Resource Information System (IRIS) to ensure the correct owner names are provided for the licence numbers identified. - Both sections must be completed and signed/dated by their applicable representatives to validate the document regardless of whether the exemption involves a single or multiple licensees. - The first section provides details of the licensed well/facility site and the licensee requesting the exemption from reclamation due to overlapping land activity. Note: the Orphan Fund Procurement Manager is the representative signature required for deemed orphan well or facility sites. - The second section provides details of the licensed well/facility site and the licensee accepting responsibility to reclaim the exempted/overlapping area of land. - Note: if the overlap activity involves different licensees the application must be completed jointly by the applicable licensees. - Prepare each of the surveys involved in the overlap activity as follows:	The following sections provide examples of situations where the exemption from reclamation may be applied to overlapping activities involving the same licensee (section 3.3.1), different licensees (section 3.3.2), or overlap due to the occurrence of a contamination event off lease (section 3.3.3). If eligible, the licensee may submit the completed <i>Exemption from Reclamation (overlap activity) Form</i> (available on www.saskatchewan.ca) and required attachments for consideration: - Obtain the most recent survey for both licences involved in the overlap land activity. Each survey must clearly define the following: - Boundary of the well or facility site; - Boundary of the associated access road, where applicable; - Surface co-ordinates of the given well, where applicable; - Surveyed area assigned to the given well or facility site; and - Surveyed area assigned to associated access road, where applicable NOTE: in situations where a facility survey does not exist, it must be clearly discussed within the exemption form - Complete the <i>Exemption from Reclamation (overlap activity) Form</i>: - All required information must be completed (i.e. if there is no non-exempt area remaining, a '0' must be entered – the field cannot be left blank); - Refer to the Integrated Resource Information System (IRIS) to ensure the correct owner names are provided for the licence numbers identified. - Both sections must be completed and signed/dated by their an applicable representative employee of the licensee to validate the document regardless of whether the exemption involves a single or multiple licensee(s). - The first section provides details of the licensed well/facility site and the licensee requesting the Exemption from Reclamation due to overlapping land activity.	

Existing Section/Wording	New Section/Wording	Explanation of Proposed Changes
• Use an arrow to clearly indicate the applicable well surface location or facility boundary and label it with the corresponding licence number. • Highlight the applicable areas (so you can still see the survey information beneath it): • Green - overlap area being requested for exemption. • Yellow - any non-exempt site or access area associated with the licence proposed for exemption. • Blue - any non-exempt site or access area associated with the licence proposed to take on the reclamation obligations of the exempted area. • Provide the calculations used to derive the area assigned to the site, access, overlap and non-overlap areas reported on the exemption form, where it is not obvious. If an Exemption from Reclamation (overlap activity) is approved, the responsibility to reclaim the exempted area is transferred to the license identified in the application that accepted reclamation responsibility of the lands with the overlapping activity. ER may increase the reclamation liability of the licence taking on the reclamation obligations of the exempted area if its current reclamation liability is less than the licence receiving the exemption. This is done to ensure there is sufficient coverage to reclaim the exempted area.	NOTE: For deemed orphan wells or facility sites, the Orphan Fund Procurement Manager is the representative signature required. for deemed orphan well or facility sites. • The second section provides details of the licensed well/facility site and the licensee accepting responsibility to reclaim the exempted/overlapping area of land. • Note: if the overlap activity involves different licensees the application must be completed jointly by the applicable licensees. • Prepare each of the surveys involved in the overlap activity as follows: • Use an arrow to clearly indicate the applicable wellbore location or facility boundary and label it with the corresponding licence number. • Highlight the applicable areas (so you can still see the survey information beneath it): • Green - overlap area being requested for exemption. • Yellow - any non-exempt site or access area associated with the licence proposed for exemption. • Blue - any non-exempt site or access area associated with the licence proposed to take on the reclamation obligations of the exempted area. • Provide the calculations used to derive the area assigned to the site, access, overlap and non-overlap areas reported on the exemption form, where it is not obvious. • Provide an aerial photo of the sites with lease boundaries outlined If an Exemption from Reclamation (overlap activity) is approved, the responsibility to reclaim the exempted area is transferred to the licensee identified in the application that accepted reclamation responsibility of the lands with the overlapping activity. ER may increase the reclamation liability of the licensee taking on the reclamation obligations of the exempted area to the highest liability	

Existing Section/Wording	New Section/Wording	Explanation of Proposed Changes
	between the two licences involved in the exemption if its current reclamation liability is less than the licence receiving the exemption. This is done to ensure there is sufficient coverage to reclaim the exempted area.	
3.3.1 Site Overlap Activities Involving a Single Licensee	3.3.1 Site Overlap Activities Involving a Single Licensee	Example 5 (activities to be considered for full reclamation) removed as it is already explained in the previous listed examples.
3.3.2 Overlap Activities Involving Different Licences	3.3.2 Site Overlap Activities Involving Different Licences	No changes.
3.3.3 Overlap Due to Off-lease Contamination Issues	3.3.3 Overlap Due to Off-lease Contamination Issues	No changes.
4. Acknowledgement of Reclamation Application Components Pursuant to subsections 56(1) and 56(2) of the OGCR, upon abandonment of a well or decommissioning of a facility, the respective site is required to be assessed, decommissioned and reclaimed and the licensee is required to submit a report (AOR application) that substantiates the satisfactory reclamation of the site. The AOR application is required for all well and facility sites, including: dry and abandoned wells, stratigraphic test wells, built not drilled well sites, and licensed wells associated with potash and coal exploration. The AOR application must be prepared, with the exception of the cover letter and landowner acknowledgement sections, and submitted by a qualified third-party consultant (as defined in section 4.8) and include the following components: • Cover Letter – intent of application, licensee contact information and signed declaration; • AOR Application Checklist – checklist to confirm type of application; • Summary Statement of Conclusions and Recommendations– consultants summary of the site, contact information and signed declaration; • Landowner(s) Acknowledgement – acknowledgment signed by the registered landowner(s) or authorized designate, along with corresponding details relating to the given site/access (i.e. current ISC surface titles, survey and disclosure of any pipelines and/or flowlines left onsite);	4. Acknowledgement of Reclamation Application Components Pursuant to subsection 6-1(1) of the FSSCR, upon abandonment of a well or decommissioning of a facility, the respective site is required to be assessed, decommissioned and reclaimed and the licensee is required to submit a report (AOR application) that substantiates the satisfactory reclamation of the site. The AOR application is required for all well and facility sites, including dry and abandoned wells, stratigraphic test wells, built not drilled well sites, and licensed wells associated with potash and coal exploration. The AOR application must be prepared, except for the cover letter and landowner acknowledgement reclamation feedback sections, and submitted by a qualified third-party consultant (as defined in section 4.8) and include the following components: • Cover Letter – intent of application, licensee contact information, supplemental information and signed declaration; • AOR Application Checklist – checklist to confirm type of application; • Summary Statement of Conclusions and Recommendations (SSCR) – consultants summary of the entire history of the site, landowner communication, contact information and signed declaration; • Landowner(s) Acknowledgement – acknowledgment signed Reclamation Feedback Form – provided to and filled out by the registered landowner(s) or authorized designate, along with corresponding details relating to the given site/access (i.e.	Minor revisions to align with updated regulations and to reference updated names of AOR components. The “Landowner Acknowledgment Letter” has been renamed the “Reclamation Feedback Form” to better reflect its intended purpose. This change is made in response to concerns that the form as originally titled implied that it was a legally binding agreement, rather than a tool for providing input on reclamation activities. “Reclamation Report” was previously nested under the “Remediation Report” but has been separated out into its own report as they have different objectives.

Existing Section/Wording	New Section/Wording	Explanation of Proposed Changes
• Environmental Site Assessment (ESA) – Phase I ESA is mandatory; along with subsequent Phase II ESA, where required; • Remediation Report – where applicable, summarizing the work conducted to address any issues identified at the site; • Detailed Site Assessment (DSA) – a soil, vegetation and landscape assessment of the re-contoured and re-vegetated site. The minimum requirements for each component of the AOR application are explained in detail in the following sections	current ISC surface titles, survey and disclosure of any pipelines and/or flowlines left onsite); • Environmental Site Assessment (ESA) – Phase I ESA is mandatory; along with subsequent Phase II ESA, where required; • Remediation Report – where applicable, summarizing the work conducted to address any issues identified at the site; • Reclamation Report – where available, summarizing the work conducted to return the site to as similar as possible to the surrounding area. Where this information is not available it must be discussed in the SSCR. • Detailed Site Assessment (DSA) – a soil, vegetation and landscape assessment of the re-contoured and re-vegetated site. The minimum requirements for each component of the AOR application are explained in detail in the following sections. It is the responsibility of the Third-Party consultant compiling the AOR application to review all prior work, and when incomplete or not in agreement, include additional reasoning and justification that the site meets all requirements of this Directive. Where the Third-Party consultant does not believe the requirements are met, further investigation is required. The licensee/qualified third-party consultant must digitally sign and date as well as stamp (where applicable) all AOR required documents to validate the documents.	Incorporated requirement for a digital signature on all AOR components. This has been ER practice/policy since January 13, 2025 but is being codified here to correspond with industry standards.
4.1 Cover Letter Requirements	4.1 Cover Letter Requirements	Minor revision to require Crown Land Disposition Number to be included for sites located on Crown land. Also updated mailing address for ER Liability Management Branch.

Existing Section/Wording	New Section/Wording	Explanation of Proposed Changes
4.2 Acknowledgement of Reclamation Application Checklist Following the cover letter, the third-party consultant must provide a filled out copy of the AOR Application Checklist showing if the application being submitted is Routine or Non-Routine. The checklist can be found in the AOR Application section of www.saskatchewan.ca	Repealed	Repealed section due to redundancy following enhancements made to the IRIS system in 2020. Its content is addressed through current disclosure questions embedded within IRIS.
4.3 Summary Statement of Conclusions and Recommendations Requirements Following the cover letter, the third-party consultant must provide a concise statement that summarizes all of the components of the AOR application's most relevant information pertaining to the site. This must include the reclamation/restoration work performed at the site that supports the recommendation that the site is suitable for AOR in the professional opinion of the consultant. ER considers this component extremely important and it must be present and completed by a third-party consultant. Otherwise, the application will be rejected. The Summary Statement of Conclusions and Recommendations must include the following information: • Well or facility site information, such as: • Licence # (where applicable); • Unique well identifier(if applicable); and • Legal Land Description of the site Surface location. • Contact information – third-party consultant company name	4.2 Summary Statement of Conclusions and Recommendations Requirements Following the cover letter, the third-party consultant must provide a concise statement that summarizes all of the letter summarizing the most relevant components of the AOR application's most relevant information pertaining to the site as they pertain to the site. This The letter must include the reclamation/restoration work performed at the site that supports the consultant's professional opinion recommendation that the site is suitable for AOR in the professional opinion of the consultant. ER considers this component extremely important and it must be present and completed by a third-party consultant. Otherwise, the application will be rejected denied. The Summary Statement of Conclusion and Recommendations SSCR must include the following information: • Well or facility site information, such as: • Licence number (where applicable); • Unique well identifier (if applicable); and • Legal Land Description of the site Surface location.	Revised the section numbering, streamlined wording and enhanced the level of detail pertaining to communication efforts with landowners.

Existing Section/Wording	New Section/Wording	Explanation of Proposed Changes
• along with the name, phone number and email address of the consultant who prepared this summary (this should generally be the same consultant that prepared the passing DSA and will be submitting the AOR application on behalf of the licensee). • Summary – this may include a chronological history of the site, the purpose of the site, the well or facility type, whether or not the well produced/injected, spill events, inconsistencies in data, potential justification if DSA or remediation criteria could not be met. If the Phase I ESA was done prior to well abandonment (i.e. cut and cap) or a facility being fully decommissioned, then this summary must also address section C of the Phase I ESA Form (available on www.saskatchewan.ca). • The following is an example of a summary statement of conclusions and recommendations: <i>“As part of the Phase I ESA, all available documentation was researched including drilling records, drilling waste disposal documentation, etc. There are no records of any spills or incidents that occurred on the site that would be of environmental concern. A site visit was conducted and there was no evidence of contamination or impacts to adjacent lands. The well was drilled in March 2011 as a stratigraphic test well for sampling purposes only; the well was not used for oil and gas production purposes and it was subsequently abandoned in May 2011. Based on the results of the ESA and the relative low risk of the well, it is concluded that the likelihood of adverse impacts caused by the existence of the well are remote and therefore it is recommended that further investigation is not warranted. A DSA was conducted in August 2012 and the results indicate a pass for all DSA criteria. The landowner did not raise any concerns with the reclamation and signed the Landowner Acknowledgement Form on September 12, 2012. It is concluded that the site has been successfully reclaimed and is recommended for Acknowledgement of Reclamation.”</i> • Declaration statement – acknowledgement by the consultant that the site reclamation has met all ER requirements (including required signatures on all documents);	• Contact information – third-party consultant company name along with the name, phone number and email address of the consultant who prepared this summary (this should generally be the same consultant that prepared the passing DSA and will be submitting the AOR application on behalf of the licensee). • Summary – this should include a chronological history of the site, the purpose of the site, the well or facility type, whether the well produced/injected, spill events, landowner communication, inconsistencies in data, potential justification if DSA or remediation criteria could not be met. Landowner communication should be detailed and include all attempts to make contact, along with the dates of any discussions. Any concerns raised by the landowner must be thoroughly investigated, with documentation of actions taken to validate or address these concerns. This may include offering to meet the landowner on-site, completing additional reclamation work if required, and any other relevant follow up measures. If the Phase I ESA was done prior to well abandonment (i.e. cut and cap) or a facility being fully decommissioned, then this summary must also address section C of the Phase I ESA Form (available on www.saskatchewan.ca). The summary should be as detailed as possible and include all relevant information as well as why potential missing information or data gaps are not a concern. • The following is an a very brief, reduced example of a summary statement SSCR. A more detailed example of conclusions and recommendations an SSCR is available on www.saskatchewan.ca. Please include as much information as possible to ensure no data gaps or questions remain: <i>“As part of the Phase I ESA, all available documentation was researched including drilling records, drilling waste disposal documentation, etc. There are no records of any spills or incidents that occurred on the site that would be of environmental concern. A site visit was conducted and there was no evidence of contamination or impacts to adjacent lands. The well was drilled in March 20XX as a stratigraphic test well for sampling purposes only; the well was not used for oil and gas production purposes, and it was subsequently abandoned in May 20XX. Based on the</i>	

Existing Section/Wording	New Section/Wording	Explanation of Proposed Changes
• Signature – the qualified third-party consultant must sign, and professional seal, where applicable, date and indicate third-party consultant qualification (as defined in section 4.8) within the summary statement of conclusions and recommendations document to validate the declaration statement.	results of the Phase I ESA and the relative low risk of the well, it is concluded that the likelihood of adverse impacts caused by the existence of the well are remote and therefore it is recommended that further investigation is not warranted. A DSA was conducted in August 20XX and the results indicate a pass for all DSA criteria. The landowner was contacted prior to the DSA and did not raise any concerns with the reclamation and signed the Reclamation Feedback Landowner Acknowledgement Form on September 12, 20XX. The landowner's name was John Doe and can be reached at 306-555-5555 or at john.doe@email.net. It is concluded that the site has been successfully reclaimed and is recommended for Acknowledgement of Reclamation.” • Declaration statement – acknowledgement by the consultant that the site reclamation has met all ER requirements (including required signatures on all documents); • Signature – the qualified third-party consultant must sign, and professional digitally sign and date the document and professionally seal, where applicable, and indicate third-party consultant qualification (as defined in section 4.8) within the summary of statement of conclusions and recommendations SSCR document to validate the declaration statement.	
4.4 Landowner(s) Acknowledgement Requirements The Landowner Acknowledgement does <u>not</u> constitute a surface lease release or have any relevance to the surface lease agreement made between the licensee and landowner(s) or the Surface Rights Board of Arbitration requirements. ER has developed a Landowner Acknowledgement Form (LAF) available on www.saskatchewan.ca, see web-link on p. 7. The LAF must be completed jointly by the licensee (representative or third-party consultant) and all applicable landowner(s) or their authorized designate. Multiple landowners residing at the same address may complete a single LAF, with all necessary signatures. After a passing DSA has been achieved, the LAF is to be provided to all landowners. In addition, the AOR application should be made available upon request.	4.3 Landowner(s) Acknowledgement Communication and Reclamation Feedback Form Requirements The Landowner Acknowledgement does not constitute a surface lease release or have any relevance to the surface lease agreement made between the licensee and landowner(s) or the Surface Rights Board of Arbitration requirements. ER has developed a Landowner Acknowledgement Form (LAF) Reclamation Feedback Form (RFF) available on www.saskatchewan.ca. The RFF must be completed jointly by the licensee (representative or third-party consultant) and all applicable landowner(s) or their authorized designate (via written agreement or documented verbal agreement). Multiple landowners residing at the same address may complete a single LAF RFF, with all necessary signatures. After a passing DSA has been achieved, the LAF is to be provided to The name, address, and contact information for all	Section number updated. The “Landowner Acknowledgment Form” has been renamed the “Reclamation Feedback Form” to more accurately reflect the document’s intended purpose as a tool for providing input on reclamation activities. The previous 90-day requirement for contacting unresponsive landowners prior to AOR submission has been removed to streamline the process and expedite timelines. As well, it is now explicitly stated that all Crown-owned land must receive signoff prior to submission.

Existing Section/Wording	New Section/Wording	Explanation of Proposed Changes
ER considers a Landowner Acknowledgement to be an important component of the AOR application to substantiate the satisfaction of the landowner(s) with the reclamation that has occurred at the given site/access. Therefore, it is expected that the licensee will actively engage with the landowner, providing explanations and answering questions when attempting to obtain a signed LAF. Sending the AOR package and LAF via registered mail without follow-up is not adequate landowner engagement. ER requires that the licensee make the AOR application available to the landowner(s) or their designates, if requested and allow them 30 days to review all supplied information and to investigate the site. As soon as the landowner signs the LAF, the licensee may apply for an AOR regardless of whether this 30-day review period has passed. It is not absolutely necessary to obtain a signed LAF since in many instances a landowner may not have issues with the site but simply does not wish to sign the document. Once a landowner has communicated to the licensee that they will not sign the LAF, the licensee may apply for an AOR. The reasons why a signed LAF could not be obtained must be documented in the AOR application. Licensees are expected to make every necessary effort to resolve issues at the given site with the landowner(s) prior to submitting an AOR application. Where unresolved landowner issues are identified in the LAF, the landowner will be contacted by ER to assess the scope and nature of the issue. If ER determines that the complaint is substantiated, the licensee will be notified that the AOR application is rejected and the applicant will be required to revisit the site and conduct additional work (at their own expense) before an AOR application will be considered.	landowners. In addition, or authorized designates must be provided within the RFF. For land owned by corporations, an ISC Corporate Registry Profile must be obtained with any director listed able to sign the RFF on behalf of the corporation. AOR application should be made available upon request. ER considers a Landowners Acknowledgment Landowner's feedback to be an important component of the AOR application to substantiate the satisfaction of the landowner(s) with the reclamation that has occurred at the given site/access. Therefore, it is expected that the licensee will actively engage with the landowner, providing explanations and answering questions when attempting to obtain a filled out/signed LAF RFF. Sending the AOR package and LAF RFF via registered mail without follow-up is not adequate landowner engagement. ER requires that the licensee make the AOR application available to the landowner(s) or their designates, if requested, and allow them 30 days to review all supplied information and to investigate the site. As soon as the landowner signs returns the LAF RFF, the licensee may apply for an AOR regardless of whether this 30-day review period has passed. It is not absolutely necessary to obtain a signed LAF since in many instances a landowner may not have issues with the site but simply does not wish to sign the document. Once a landowner has communicated RFF but are encouraged to fill the form out, including their contact information, to the licensee ensure that if concerns are raised, ER can contact them to discuss further. If a landowner states they will not are unwilling to fill out/sign the LAF RFF, the licensee may apply for an AOR after the 30-day review period has passed. The landowner's unwillingness to sign the form should be documented and, if known, the reasons why they are unwilling to fill in/sign the RFF should be documented in the SSCR.	Additionally, it is now explicitly stated that all Crown-owned land owned must receive signoff prior to submission.

Existing Section/Wording	New Section/Wording	Explanation of Proposed Changes
It is recognized that there will be situations where the licensee is unable to make contact with the landowner. It is expected that the licensee will make numerous contact attempts over a period of at least 90 days from the date of the first contact attempt. If and when a landowner has communicated that they will not sign the LAF, the licensee may apply for AOR regardless of whether this 90-day review period has passed. If after 90 days the licensee was not able to contact the landowner, an AOR application may be submitted documenting the following information: • The date the landowner(s) were provided the LAF; • The contact name and the company that was trying to contact the landowner(s); • The contact method used; • Date/time of contact attempts; and • The results of each attempt. Prior to distributing the LAF and required attachments to the applicable landowner(s), the licensee must: • Complete the General Information section; • Complete questions 3 to 6 of the Reclamation Feedback section for situations that are not applicable so the landowner knows a response is not required; • Complete question 4 of the Reclamation Feedback section, where applicable, to identify any “improvement” features where the licensee is seeking the landowner(s) authorization to remain in place. ER will not accept “improvements”, even with the landowner(s) authorization, if they are not legitimate or logical or if they pose a potential environmental risk, such as: • Access roads or cement pads that are unstable, hazardous or erosive; • Contaminated soil or groundwater that are not remediated or risk managed; or • Areas that are not reclaimed and are not improvements for landowner use.	It is noted that land owned by the federal or provincial government (Crown Land) must be signed off by the appropriate representative. An AOR application cannot be submitted for Crown Land until the required representative has reviewed the site and has provided a signed RFF. A signed Reclamation Feedback Form does <u>not</u> constitute a surface lease release or has any relevance to the surface lease agreement made between the licensee and landowner(s) or the Surface Rights Board of Arbitration requirements. Licensees are expected to make every necessary effort to resolve issues at the given site with the landowner(s) prior to submitting an AOR application. Where unresolved landowner issues are identified in the LAF, This includes meeting landowners on site to verify or refute their concerns. ER acknowledges that an on-site meeting a may not always possible. In such cases, the SSCR must clearly document why the meeting could not occur and outline the steps taken to address the landowner’s concerns. If unresolved landowner issues are identified in the RFF, despite attempts to by the licensee and/or third-party consultant to rectify these issues, ER will follow-up directly with the landowner to assess the scope and nature of the issue. If ER determines that the complaint is substantiated, the licensee will be notified that the AOR application is rejected denied and the applicant will be required to revisit the site and conduct additional work (at their own expense) before an AOR application will be considered. It is recognized that there will be situations where the licensee is unable to make establish contact with the landowner. It is expected that the licensee will make numerous contact attempts over a period of at least 90 days from the date of the first contact attempt. If and when a landowner has communicated that they will not sign the LAF, the licensee may apply for AOR regardless of whether this 90-day review period has passed. If after 90 days a reasonable period of time.	

Existing Section/Wording	New Section/Wording	Explanation of Proposed Changes
- Obtain the surface title(s) from ISC identifying all current registered landowner(s) associated with the given well/facility site and access road. ER must be notified if the licensee/consultant becomes aware of any changes made to the surface title ownership after the AOR application is submitted and prior to the AOR approval being issued; - Obtain the applicable survey (use the most recent proposed or as-drilled survey that accompanied the well or facility licence) and clearly identify: - Areas where land use differs from historical surrounding land use; - Exemption from Reclamation areas approved by ER (highlighted in green) along with the Licensee and Licence # that retains reclamation responsibility of the exempted area; - Landowner authorized “improvements” remaining on site (highlighted in red); and - The remaining site and access road (highlighted in yellow). - Obtain a disclosure survey, diagram or sketch, where applicable that identifies the approximate location of any pipelines, flowlines, or other underground lines remaining in-place that were used in the well/facility site operation; - Obtain authorized designate documentation, where applicable that clearly demonstrates the authority of the designate to complete the LAF on behalf of the registered landowner(s). Acceptable documentation may include: - A letter signed by the registered landowner(s) appointing a designate where multiple landowners are involved; - Documentation showing the designate as the executor of estate, power of attorney, or representing lawyer, where the title is held “in-trust” or to someone who has passed away or is incapacitated; - A business card or explanation of the designates affiliation with the organization (i.e. Ministry of Environment, Ministry of Agriculture, etc.) which is acting on behalf of Her Majesty the Queen (HMQ) (refer to the <i>Addresses for Service</i> portion of the surface title to determine the organization acting on HMQ’s behalf);	If after this period has occurred the licensee was not able to contact the landowner, an AOR application may be submitted documenting the following information: - The date the landowner(s) were provided the LAF RFF; - The contact name and the company that was trying to contact the landowner(s); - The contact method(s) used; - Date/time of contact attempts; and - The results of each attempt. Prior to distributing the LAF RFF and required attachments to the applicable landowner(s), the licensee must: - Complete the General Information section; - Complete questions 31 to 63 of the Reclamation Feedback section for situations that are not applicable so the landowner knows a response is not required; - Complete question 42 of the Reclamation Feedback section, where applicable, to identify any “improvement” features where the licensee is seeking the landowner(s) authorization to remain in place. ER will not accept “improvements”, even with the landowner(s) authorization, if they are not legitimate or logical or if they pose a potential environmental risk, such as: - Access roads or cement pads that are unstable, hazardous or erosive; - Contaminated soil or groundwater that are not remediated or risk managed; or - Areas that are not reclaimed and are not improvements for landowner use. - Obtain the surface title(s) from ISC identifying all current registered landowner(s) associated with the given well/facility site and access road. ER must be notified if the licensee/consultant becomes aware of any changes made to the surface title ownership after the AOR application is submitted and prior to the AOR approval being issued;	

Existing Section/Wording	New Section/Wording	Explanation of Proposed Changes
• A business card or explanation of the designates affiliation with the organization (i.e. Ministry of Environment, Ministry of Agriculture, etc.) which is acting on behalf of Her Majesty the Queen (HMQ) (refer to the <i>Addresses for Service</i> portion of the surface title to determine the organization acting on HMQ’s behalf); • Saskatchewan corporate registry Profile Report from ISC that clearly identifies the designated authority/role (i.e. the president, holding the majority of the voting shares in the corporation), where the surface title is held by a corporation; or • Any other documents which demonstrate such authority.	• Obtain the applicable survey (use the most recent proposed or as-drilled survey that accompanied the well or facility licence) and clearly identify: • Areas where land use differs from historical surrounding land use; • Exemption from Reclamation areas approved by ER (highlighted in green) along with the licensee and licence number that retains reclamation responsibility of the exempted area; • Landowner authorized “improvements” remaining on site (highlighted in red); and • The remaining site and access road (highlighted in yellow). • Obtain a disclosure survey, diagram or sketch, where applicable that identifies the approximate location of any pipelines, flowlines, or other underground lines remaining in-place that were used in the well/facility site operation; Obtain authorized designate documentation (via written agreement or documented verbal agreement), where applicable that clearly demonstrates the authority of the designate to complete the LAF RFF on behalf of the registered landowner(s). Acceptable documentation may include: • A letter signed by the registered landowner(s) appointing a designate where multiple landowners are involved; • Documentation showing the designate as the executor of estate, power of attorney, or representing lawyer, where the title is held “in-trust” or to someone who has passed away or is incapacitated; • A business card or explanation of the designates affiliation with the organization (i.e. Ministry of Environment, Ministry of Agriculture, etc.) which is acting on behalf of His Majesty the King (HMK) (refer to the <i>Addresses for Service</i> portion of the surface title to determine the organization acting on HMK’s behalf);	

Existing Section/Wording	New Section/Wording	Explanation of Proposed Changes																																				
	Saskatchewan corporate registry Profile Report from ISC that clearly identifies the designated authority/role (i.e. the president, holding the majority of the voting shares in the corporation), where the surface title is held by a corporation; or any other documents which demonstrate such authority.																																					
4.5 Environmental Site Assessment	4.4 Environmental Site Assessment	Minor changes (regulation/section names).																																				
4.5.1 Phase I ESA Requirements	4.4.1 Phase I ESA Requirements	Updates to the section number and table.																																				
1. <u>Record/Desk-top Review</u> The third-party consultant must conduct a search to acquire all relevant information regarding the site being investigated. At a minimum, the consultant must review the information listed in the table below: <table><tr><th>Records to be reviewed</th><th>Source of Information</th></tr><tr><td>Surface Title Search</td><td>ISC – Land Titles</td></tr><tr><td>Aerial Photographs</td><td>ISC – Maps & Photos or Google maps</td></tr><tr><td>Historical Site Activity (i.e. well, facility, pipeline, flow lines)</td><td>Companies files or GeoScout or AccuMap or ER’s Info Map, ER’s IRIS system or hardcopy files* or the <i>Licensee Liability Rating (LLR) Well or Facility Lists</i> available on www.saskatchewan.ca</td></tr><tr><td>Previous ESA reports</td><td>Companies files or ER’s IRIS system or hardcopy files*</td></tr><tr><td>Site Specific Records (i.e. licence, survey, A1 form, daily drilling reports, landowner(s) approval to dispose of material off-site, drilling mud and additive list, tour reports, manifests, contractor invoices/truck ticket/invoices etc.)</td><td>Companies files or ER’s IRIS system or hardcopy files*</td></tr><tr><td>Upstream Incident/Spill Information</td><td>1) Companies files; or 2) Visit ER’s Incident Management and Reporting Webpage (available on www.saskatchewan.ca) to obtain the <i>PNG Spill Directory</i> and The Saskatchewan Upstream Oil and Gas IRIS Incident Report; 3) View the incident reports through ER’s IRIS system.</td></tr><tr><td>Site Topography, Soil Classification, Groundwater Maps, or Hydrological Reports</td><td>Company files or Water Security Agency of Saskatchewan</td></tr><tr><td>Salinity Maps</td><td>Agriculture & Agri-Foods - South Saskatchewan & North Saskatchewan Maps</td></tr></table> *Non-confidential information may be viewed through IRIS by those with a valid Business Associate (BA) ID. Those without access to IRIS can make information requests through the ER Service Desk at 1-855-219-9373 or ER.servicedesk@gov.sk.ca.	Records to be reviewed	Source of Information	Surface Title Search	ISC – Land Titles	Aerial Photographs	ISC – Maps & Photos or Google maps	Historical Site Activity (i.e. well, facility, pipeline, flow lines)	Companies files or GeoScout or AccuMap or ER’s Info Map, ER’s IRIS system or hardcopy files* or the <i>Licensee Liability Rating (LLR) Well or Facility Lists</i> available on www.saskatchewan.ca	Previous ESA reports	Companies files or ER’s IRIS system or hardcopy files*	Site Specific Records (i.e. licence, survey, A1 form, daily drilling reports, landowner(s) approval to dispose of material off-site, drilling mud and additive list, tour reports, manifests, contractor invoices/truck ticket/invoices etc.)	Companies files or ER’s IRIS system or hardcopy files*	Upstream Incident/Spill Information	1) Companies files; or 2) Visit ER’s Incident Management and Reporting Webpage (available on www.saskatchewan.ca) to obtain the <i>PNG Spill Directory</i> and The Saskatchewan Upstream Oil and Gas IRIS Incident Report; 3) View the incident reports through ER’s IRIS system.	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At a minimum, the consultant must review the information listed in the table below: <table><tr><th>Records to be reviewed</th><th>Source of Information</th></tr><tr><td>Surface Title Search</td><td>ISC – Land Titles</td></tr><tr><td>Aerial Photographs</td><td>ISC – Maps & Photos, Google maps, etc.</td></tr><tr><td>Historical Site Activity (i.e. well, facility, pipeline, flow lines)</td><td>Companies files, GeoScout, AccuMap or ER’s Info Map, ER’s IRIS system or hardcopy files* or the <i>Licensee Liability Rating (LLR) Well or Facility Lists</i> available on www.saskatchewan.ca</td></tr><tr><td>Previous ESA reports</td><td>Companies files or ER’s IRIS system or hardcopy files*</td></tr><tr><td>Site Specific Records (i.e. licence, survey, A1 form, daily drilling reports, landowner(s) approval to dispose of material off-site, drilling mud and additive list, tour reports, manifests, contractor invoices/truck ticket/invoices etc., Gas Migration, Abandonment Reports, Well Center Sampling, etc.)</td><td>Companies files or ER’s IRIS system or hardcopy files*</td></tr><tr><td>Upstream Incident/Spill Information</td><td>1) Companies files; or 2) Visit ER’s Incident Management and Reporting Webpage (available on www.saskatchewan.ca) to obtain the <i>PNG Spill Directory</i> and The Saskatchewan Upstream Oil and Gas IRIS Incident Report; 3) View the incident reports through ER’s IRIS system.</td></tr><tr><td>Site Topography, Soil Classification, Groundwater Maps, or Hydrological Reports</td><td>Company files or Water Security Agency of Saskatchewan</td></tr><tr><td>Salinity Maps</td><td>Agriculture & Agri-Foods - South Saskatchewan & North Saskatchewan Maps</td></tr></table> *Non-confidential information may be viewed through IRIS by those with a valid Business Associate (BA) ID. Those without access to IRIS can make information requests through the ER Service Desk at 1-855-219-9373 or ER.servicedesk@gov.sk.ca.	Records to be reviewed	Source of Information	Surface Title Search	ISC – Land Titles	Aerial Photographs	ISC – Maps & Photos, Google maps, etc.	Historical Site Activity (i.e. well, facility, pipeline, flow lines)	Companies files, GeoScout, AccuMap or ER’s Info Map, ER’s IRIS system or hardcopy files* or the <i>Licensee Liability Rating (LLR) Well or Facility Lists</i> available on www.saskatchewan.ca	Previous ESA reports	Companies files or ER’s IRIS system or hardcopy files*	Site Specific Records (i.e. licence, survey, A1 form, daily drilling reports, landowner(s) approval to dispose of material off-site, drilling mud and additive list, tour reports, manifests, contractor invoices/truck ticket/invoices etc., Gas Migration, Abandonment Reports, Well Center Sampling, etc.)	Companies files or ER’s IRIS system or hardcopy files*	Upstream Incident/Spill Information	1) Companies files; or 2) Visit ER’s Incident Management and Reporting Webpage (available on www.saskatchewan.ca) to obtain the <i>PNG Spill Directory</i> and The Saskatchewan Upstream Oil and Gas IRIS Incident Report; 3) View the incident reports through ER’s IRIS system.	Site Topography, Soil Classification, Groundwater Maps, or Hydrological Reports	Company files or Water Security Agency of Saskatchewan	Salinity Maps	Agriculture & Agri-Foods - South Saskatchewan & North Saskatchewan Maps	Minimum requirements are established in sections where key information is frequently omitted, enhancing clarity on submission expectations.
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Existing Section/Wording	New Section/Wording	Explanation of Proposed Changes
	4. Landowner Information Letter ER has created the landowner information letter (available at www.saskatchewan.ca) which is to be given to the landowner and explained in detail during the Phase I ESA. This is meant to properly explain the process from abandonment to AOR, what steps are involved, any questions the landowner has regarding the process, any remediation/reclamation concerns, or any other issues with the process the landowner has. This conversation should also explain that once an AOR application is approved by ER lease payments end (further questions regarding payments should be directed to licensees) and that as per Section 6-3(1) of the FSSCR the licensee is forever responsible for environmental liability associated with the site. NOTE: For Phase I ESA's completed prior to January 1, 2026, this document must be discussed with the landowner prior to submission of the AOR application and documented within the SSCR.	New section 4 added to introduce the Landowner Information Letter, which is designed to enhance communication between licensees/consultants and landowners, while also improving landowners' understanding of the process for the removal of wells and facilities from their property.
4.5.2 Phase II ESA Requirements The third-party consultant must refer to <i>Saskatchewan Environmental Quality Guidelines</i> (available on www.saskatchewan.ca), to determine the applicable sampling parameters, requirements and remediation criteria for the given site based on the amount, quality and nature of information obtained during the Phase I ESA. ER is not opposed to the use of site assessment guidelines and remediation criteria currently used in similar jurisdictions and prior approval from ER is not required. However, an explanation of the rationale for using the alternate criteria must be addressed in the application. The Phase II submission must be prepared by a qualified third-party consultant (as defined in section 4.8) and include the following information:	4.4.2 Phase II ESA Requirements The third-party consultant must refer to <i>Saskatchewan Environmental Quality Guidelines</i> (available on www.saskatchewan.ca), to determine the applicable sampling parameters, requirements and remediation criteria for the given site based on the amount, quality and nature of information obtained during the Phase I ESA. ER is not opposed to the use of site assessment guidelines and remediation criteria currently used in similar jurisdictions and prior approval from ER is not required. However, an explanation of the rationale for using the alternate criteria must be addressed in the application. The Phase II submission must be prepared by a qualified third-party consultant (as defined in section 4.8) and include the following information as detailed in <i>Directive PNG033: Phase II Environmental Site Assessment</i> (Directive PNG033), available on www.saskatchewan.ca and CCME <i>Phase II ESA (Z769-00)</i> document:	Minor revisions made to incorporate required Directive information and to emphasize commonly omitted details in applications.

Existing Section/Wording	New Section/Wording	Explanation of Proposed Changes
• Well or facility site information – licence # and surface location of site; • Site Diagram outlining the site and identifying the sample locations in association with the historical site infrastructure (well head, storage tanks, production pad, sumps, pits, etc.) along with the direction of surface/groundwater flow and surface water bodies. The site diagram must also show all sample locations and highlight all locations where concentrations exceed criteria; • Sampling/Analytical Data Summary Table that clearly identifies the following: • Sample location identifier – BH #, well center, AST, spill, control, etc.; • Sample type – control, topsoil, subsoil, groundwater, surface water, etc.; • Sample depth – provided in centimetres; • Analytical data results – concentrations (exceeding criteria highlighted) and units; and • Evaluation criteria and source used. Note: composite samples are <u>not</u> acceptable and laboratory data sheets must be included at the end of the report. • Photos documenting the current condition of the site, including any environmental or contamination issue(s) associate with the site or adjacent land; • EM Survey (with the site boundary and historical infrastructure identified) is a highly recommended tool. Note: ER may require an EM survey to be conducted, if not done prior to AOR submission to provide further assurance that salt contamination is not present at a site; • Interpretation/Discussion provided by the third-party consultant regarding the following: • Discussion of the soil at the site and location of any surface water bodies, depth of the water table and potential direction of surface/ground water flow (based on regional map information); • Interpretation derived from the EM survey, if one was conducted; and	• Well or facility site information – licence number and surface location of site; • Contact information – of the party that did the Phase II ESA investigation and prepared the report (preferably this should be the same consultant that prepared the passing DSA and will be submitting the AOR application on behalf of the licensee); • Site Diagram outlining the site and identifying the sample locations in association with the historical site infrastructure (well head, storage tanks, production pad, sumps, pits, etc.) along with the direction of surface/groundwater flow and surface water bodies. The site diagram must also show all sample locations and highlight all locations where concentrations exceed criteria; • Sampling/Analytical Data Summary Table that clearly identifies the following: • Sample location identifier – BH #, borehole number and associated investigation area (well center, AST, spill, control, etc.); • Sample type – control, topsoil, subsoil, groundwater, surface water, etc.; • Sample depth – provided in centimeters metric units; • Analytical data results – concentrations (exceeding criteria highlighted) and units; and • Evaluation criteria and source used. NOTE: composite samples are <u>not</u> acceptable except when sampling stockpiles and laboratory data sheets must be included at the end of the report. Discrete samples are defined in section 14.1 of Directive PNG045: AOR for NaCl-Impacted Sites (Directive PNG045). • Photos documenting the current condition of the site, including any environmental or contamination issue(s) associated with the site or adjacent land; • EM Survey (with the site boundary and historical infrastructure identified) is a highly recommended tool. Note: ER may require an EM survey to be conducted, if not done prior to AOR submission, to provide further assurance that salt contamination is not present at a site;	

Existing Section/Wording	New Section/Wording	Explanation of Proposed Changes
• Interpretation of the sampling/analytical data based on the criteria used to assess the extent of the contamination present on and off-site. • Conclusions/Recommendations provided by the third-party consultant regarding the extent of the contamination present on and off site and suggested follow up work required to remedy any issue(s) at the site. The qualified third-party consultant must sign, date and stamp (where applicable) the Phase II ESA to validate the document.	• Interpretation/Discussion provided by the third-party consultants regarding the following: • Discussion of the soil at the site and location of any surface water bodies, depth of the water table and potential direction of surface/ground water flow (based on regional map information; • Interpretation derived from the EM survey, if one was conducted; and • Interpretation of the sampling/analytical data based on the criteria used to assess the extent of contamination present and off-site. • Conclusion/Recommendations provided by the third-party consultant regarding the extent of the contamination present on and off site and suggested follow up work required to remedy any issue(s) at the site. The qualified third party consultant must sign, date and stamp (where applicable) the Phase II ESA to validate the document. The qualified third-party consultant must digitally sign and date as well as stamp (where applicable) the Phase II ESA to validate the document.	
4.6 Remediation Report Requirements If issues are identified in the Phase I and/or Phase II ESAs that indicated further work is required to reclaim the site, the AOR submission must include a remediation report that summarizes the following information: • Well or facility site information – licence # and surface location of site ; • Contact information – of the party that did the reclamation work and prepared the reclamation report summary (include third-party consultant company name along with the name, phone number and email address of the consultant who prepared the summary (preferably this should be the same consultant that prepared the passing DSA and will be submitting the AOR application on behalf of the licensee);	4.5 Remediation Report Requirement If issues are identified in the Phase I and/or Phase II ESAs that indicated further work is required to remediate the site, the AOR submission must include a reclaim remediate report that summarizes the following information: • Well or facility site information – licence number and surface location of the site; • Contact information – of the party that did the remediation work and prepared the reclamation remediation report summary (include third-party consultant company name along with the name, phone number and email address of the consultant who prepared the summary (preferably this should be the same consultant that prepared the passing DSA and will be submitting the AOR application on behalf of the licensee);	Revised the requirements for the remediation report to include additional information, ensuring a clearer and more comprehensive overview of the current conditions at the well site. Remediation report and reclamation report were previously one, but the reclamation report has been split off to become a separate report (addressed in new section 4.6 below).

Existing Section/Wording	New Section/Wording	Explanation of Proposed Changes
• Summary – details of the remediation activities (including the dates conducted); • Site diagram indicating the impacted area in relation to the site’s historical infrastructure; • Information regarding seeding details and the use of fertilizers, herbicides, sterilant, or soil amendments such as manure, gypsum, straw, and peat must also be included where used to remediate the site; • Photos of the site before and after reclamation; and • Confirmatory sampling and analysis results to confirm the soil and/or water remediation has been achieved. If excavation of contaminated soil was required as part of the site remediation strategy, the following details must also be provided in the remediation report: • Site diagram must include the dimensions of excavation (length of the sides and depth), location of excavation within the site and note the volume of excavated material hauled and the disposal location; • Photos of the excavated area before, during and after excavation; and • Confirmatory samples of the excavated area is to include: wall and floor samples along with a background sample for comparison. Laboratory data sheets must be attached at the end of the report; • Sampling/analytical data summary table that clearly identifies: • Sample location identifier – background control, excavation walls and floor; • Sample depth – provided in centimetres, where applicable; • Analytical data results – concentrations (exceeding criteria highlighted) and units; and • Evaluation criteria and source used.	• Summary – details of the remediation activities (including the dates conducted); • Site diagram indicating the impacted remediated area in relation to the site’s historical infrastructure and previous ESA work. The site diagram must include the dimensions of the excavation (length of the sides and depth), location of excavation within the site, and location of samples collected from the excavation; • Confirmatory sample results to confirm the soil and/or water remediation has been achieved. Samples from the excavated area are to include: wall and floor samples along with a background sample where justification is required for comparison. GPS coordinates of confirmatory sample locations should be recorded. Laboratory data sheets must be attached at the end of the report. The samples/analytical data collected must be summarized in a table which clearly identifies: • Sample location identifier – background controls, backfill, excavation walls and floor, etc.; • Sample depth – provided in metric units, where applicable; • Analytical data results – concentrations (exceeding criteria highlighted) and units; and • Evaluation criteria and source used. • Backfill samples of the subsoil and topsoil being used to backfill the excavation. Location of the backfill source must be included. Laboratory data sheets must be attached at the end of the report; • Photos of the site before, during and after remediation; • Waste Information including the volume of excavated material, the disposal location and associated waste manifests; and • Interpretation/Discussion provided by the third-party consultant regarding the sampling/analytical data based on the criteria used to assess the results of the remediation activities. The report must address any residual impacts that are to be left in situ and why they can remain.	

Existing Section/Wording	New Section/Wording	Explanation of Proposed Changes
	Where historical information does not meet current standards, or required information is missing, a rationale must be provided explaining why the available information is acceptable and how it supports the fact that the site has been properly remediated.	
4.6 Remediation Report Requirements If excavation of contaminated soil was required as part of the site remediation strategy, the following details must also be provided in the remediation report: • Site diagram must include the dimensions of excavation (length of the sides and depth), location of excavation within the site and note the volume of excavated material hauled and the disposal location; • Photos of the excavated area before, during and after excavation; and • Confirmatory samples of the excavated area is to include: wall and floor samples along with a background sample for comparison. Laboratory data sheets must be attached at the end of the report; • Sampling/analytical data summary table that clearly identifies: • Sample location identifier – background control, excavation walls and floor; • Sample depth – provided in centimetres, where applicable; • Analytical data results – concentrations (exceeding criteria highlighted) and units; and • Evaluation criteria and source used.	4.6 Reclamation Report Requirements Once any/all issues identified in the Phase I and/or Phase II ESAs have been corrected and the site has been remediated and reclaimed, the AOR submission shall include documentation that summarizes the following reclamation information: • Well or facility site information – licence number and surface location of the site; • Contact information – of the party that did the reclamation work and prepared the reclamation report summary (include company name along with the name, phone number and email address of the employee who prepared the summary); • Summary – details of the reclamation activities (including the dates conducted); • Site diagram – indicating the reclaimed area in relation to the site’s historical infrastructure and activities; • Information – regarding seeding details and the use of fertilizers, herbicides, sterilant, or soil amendments such as manure, gypsum, straw, and peat must also be included where used to remediate-reclaim the site; and • Photos of the site before, during and after reclamation; and. Please include UAV photographs of the site to provide a better perspective to those reviewing the AOR application.	Previous Section 4.6 has now been split into two sections and renumbered, separating the Reclamation Reporting Requirements (Section 4.5) from the Remediation Report Requirements (Section 4.6).

Existing Section/Wording	New Section/Wording	Explanation of Proposed Changes
	As part of the reclamation reporting, it is required to submit any vegetation monitoring reports that were completed at the Site. These include but are not limited to site visits to check on site development, UAV photos that were taken and on-site photos taken prior to a passing DSA. These documents do not need to be finalized, professionally stamped reports, but instead are meant to show the work completed at the site over time (i.e. daily reports, etc.). This allows ER to review the progression of the vegetation on site. This can include licensee/consultant third party monitoring forms, or DSA forms. Where this information is not available or cannot be obtained, it must be spoken to in the SSCR.	
4.7 Detailed Site Assessments Requirements The Detailed Site Assessment (DSA) includes the assessment of the landscape, soil quality/quantity/profile, and vegetation parameters of the entire site; including the access road. The DSA must be completed for all sites, unless otherwise noted, to ensure the site is compatible with its surroundings and meets the reclamation requirements as defined in section 2(jj) of the OGCR.	4.7 Detailed Site Assessments Requirements The Detailed Site Assessment (DSA) includes the assessment of the landscape, soil quality/quantity/profile, and vegetation parameters of the entire site; including the access road. The DSA must be completed for all sites after final reclamation activities have been completed, unless otherwise noted, to ensure the site is compatible with its surrounding comparable to the surrounding area and meets the reclamation requirements as defined in section (jj) of the OGCR 1-2 of the FSSCR.	

Existing Section/Wording	New Section/Wording	Explanation of Proposed Changes
As part of the AOR application the third-party consultant is required to complete the DSA Form (available on www.saskatchewan.ca) to provide evidence that the site meets the criteria requirements prescribed in <i>Directive PNG018: Detailed Site Assessment Requirements</i> (Directive PNG018, available on www.saskatchewan.ca). All sections within the DSA Form and required attachments are mandatory, unless otherwise indicated and the qualified third-party consultant must complete the declaration portion of the DSA Form to validate the document. A passing DSA is required with the AOR application. An unsigned, incomplete or inaccurate DSA Form will result in the AOR application being rejected. A signed landowner(s) acknowledgement does not override the DSA results or the licensee’s responsibility to remedy any issue(s) at the site. The primary purpose of landowner(s) acknowledgement is to provide further evidence that the site has been successfully reclaimed. Therefore, if the DSA indicates that issues exist, ER will require the licensee to remedy those issues regardless of whether a landowner(s) acknowledgement was obtained.	As part of the AOR application the third-party consultant is required to complete the DSA Form (available on www.saskatchewan.ca) to provide evidence that the site meets the criteria requirements prescribed in <i>Directive PNG018: Detailed Site Assessment Requirements</i> (Directive PNG018, available on www.saskatchewan.ca). All sections within the DSA Form and required attachments are mandatory, unless otherwise indicated and the qualified third-party consultant must complete the declaration portion of the DSA Form to validate the document. A passing DSA is required with the AOR application. An unsigned, incomplete or inaccurate DSA Form will result in the AOR application being rejected denied. DSA assessments must be conducted on healthy, undamaged vegetation. As such, DSAs cannot be completed on cultivated lands during years affected by severe weather events (drought, flooding, etc.) that result in vegetation conditions not comparable to historical averages. In regions of Saskatchewan where drought conditions are common, multiple years of vegetation data may be submitted to demonstrate consistent crop growth and overall vegetation health. Please note that all previous failed/completed DSA and vegetation assessments should be included in the AOR package to enable ER to evaluate the vegetation progression between assessments. These do not need to be finalized reports. Rather, they serve to demonstrate the work completed at the site throughout the assessment period. A signed landowner(s) acknowledgement RFF does not override the DSA results or the licensee’s responsibility to remedy any issue(s) at the site. The primary purpose of landowner(s) acknowledgement RFF is to provide further evidence that the site has been successfully reclaimed. Therefore, if the DSA indicates that issues exist, ER will require the licensee to remedy those issues regardless of whether a landowner(s) acknowledgement completed RFF was obtained.	Paragraphs added to clarify timing of DSA submissions in accordance with the Directive and to incorporate all relevant historical documentation.

Existing Section/Wording	New Section/Wording	Explanation of Proposed Changes
4.8 Third-Party Consultant Qualifications	4.8 Third-Party Consultant Qualifications	Minor revisions and revised section number. The phrase “Designated by Minister” has been removed to reflect that qualified consultants are now recognized through their professional licensure, which ensures accountability and competency under established regulatory frameworks.
4.9 Acknowledgement of Reclamation Application Types AOR applications will be screened and classified according to their application type. The two main AOR application types are Routine and Non-Routine. Risk-Based Site Closure and Administrative Controls are subtypes of non-routine applications. The AOR Application Checklist will accompany each AOR application and will distinguish between the different AOR types.	4.9 Acknowledgement of Reclamation Application Types AOR applications will be screened and classified according to their application type. The two main AOR application types are Routine and Non-Routine. Risk-Based Site Closure and Administrative Controls are subtypes of non-routine applications. The AOR Application Checklist will accompany each AOR application and will distinguish between the different AOR types. The disclosure questions within IRIS are used to differentiate between Routine and Non-Routine AOR applications. Disclosure questions that are answered incorrectly based on the information provided will result in the AOR application being denied.	Minor revisions were made to clarify the purpose of the IRIS disclosure questions and to eliminate outdated requirements that are no longer applicable.
4.9.1 Routine Acknowledgement of Reclamation Application Routine AOR applications are for sites that have a low probability of contamination or site reclamation issues. As a result, Routine AOR applications require less scrutiny than Non-Routine. Routine AOR applications will be reviewed for completeness, including formatting, page orientation, order, declaration signatures and a signed LAF. Select applications will be audited with a full technical review including follow up with the landowner(s). An AOR application will be considered Routine if: • There are no known spills; • Documentation exists indicating that sufficient spill remediation has occurred; • There are NO contaminants of concern on- or off-lease that are above guidelines referenced in Directive PNG033. This includes any monitoring requirements related to sodium chloride impacts	4.9.1 Routine Acknowledgement of Reclamation Application Routine AOR applications are for sites that have a low probability of contamination or site reclamation issues. As a result, Routine AOR applications require less scrutiny than Non-Routine. Routine AOR applications will be reviewed are automatically approved within IRIS and all Routine applications can be reviewed audited for completeness, including formatting, page orientation, order, declaration signatures and a signed LAF completed RFF. Select applications will be audited with a full technical review including follow-up with the landowner(s). An AOR application will be considered Routine if: • There are no known spills associated with the site or documentation exists indicating that sufficient spill remediation has occurred; • There are NO contaminants of concern on- or off-lease that are above Tier 1 or Tier 2 Acceptable guidelines referenced in	Clarified the requirements for routine AOR applications in accordance with the updated disclosure questions.

Existing Section/Wording	New Section/Wording	Explanation of Proposed Changes
that have not been fulfilled; • No vegetation, landscape or weed concerns identified during the DSA; • No improvements exist on site that change the end land use. These improvements do not include fences, gates, road approaches, etc. but refer to large features such as lease roads, lease pads, etc.; • The LAF has been signed, completed and no concerns were declared OR the landowner did not sign the LAF but has supplied communication indicating that they have no concerns with the site.	• Directive PNG033. This includes Any monitoring requirements related to sodium chloride impacts that have not been must be fulfilled and included in the AOR; • No vegetation, soil, landscape or weed concerns are identified during the DSA; • No improvements exist on site that change the end land use. These improvements do not include fences, gates, road approaches, etc. but refer to large features such as lease roads, lease pads, etc.; • The LAF RFF has been signed completed, and no concerns were declared OR the landowner did not sign complete the LAF RFF but has supplied communication indicating that they have no concerns with the site.	
4.9.2 Non-Routine Acknowledgement of Reclamation Application Non-Routine AOR applications are designated for sites that have a higher probability of contamination and/or site reclamation issues than Routine sites. As a result, Non-Routine applications are subject to greater scrutiny than Routine applications. In addition to the administrative review, all Non-Routine AOR applications will receive a comprehensive technical review. An AOR application will be considered Non-Routine if: • There is a record of historical spills on- or off-lease that lack reporting indicating final remediation has been completed; • Contaminants of concern on- or off-lease that are above guidelines referenced in Directive PNG033. This includes any monitoring requirements related to sodium chloride impacts that have not been fulfilled; • Vegetation, landscape, or weed concerns identified during the DSA; • Improvements exist on site that change the end land use. These improvements do not include fences, gates, road approaches, etc. but refer to large features such as lease roads, lease pads, etc.;	4.9.2 Non-Routine Acknowledgement of Reclamation Application Non-Routine AOR applications are designated for sites that have a higher probability of contamination and/or site reclamation issues than Routine sites. As a result, Non-Routine applications are subject to greater scrutiny than Routine applications. In addition Due to the administrative review increased potential risk, all Non-Routine AOR applications will receive a comprehensive technical review. An AOR application will be considered Non-Routine if: • There is a record of historical spills on- or off-lease that lack reporting indicating final remediation has been completed; • Contaminants of concern on- or off-lease that are above guidelines referenced in Directive PNG033. This includes any monitoring requirements related to sodium chloride impacts that have not been fulfilled; • Vegetation, landscape, or weed concerns identified during the DSA; • Improvements exist on site that change the end land use. These improvements do not include fences, gates, road approaches, etc. but refer to large features such as lease roads, lease pads, etc.;	Streamlined and clarified the criteria defining non-routine AOR applications.

Existing Section/Wording	New Section/Wording	Explanation of Proposed Changes
• Documented landowner concerns; • The LAF was not signed and no other communication has been supplied indicating that the landowner has concerns; • Risk Based Site Closure; • Administrative Controls; • Groundwater protection issues exist/have existed historically on site; • Uncultivated Crown-administered lands.	• Vegetation, landscape, or weed concerns identified during the DSA; • Improvements exist on site that change the end land use. These improvements do not include fences, gates, road approaches, etc. but refer to large features such as lease roads, lease pads, etc.; • Documented landowner concerns • Any of the Routine criteria is not met; • Any site where an AOR approval was revoked. This means that an application was received, approved and had the liability removed from the site, and then significant enough issues were found that ER revoked the approval, returned liability to the site, and a new AOR application will be required once the issue has been corrected; • Any site where an AOR application was denied; • The site uses Risk Based Site Closure; • The site has Administrative Controls in place; • Any contaminant remaining In Situ that exceeds Tier 1 or Tier 2 Acceptable guidelines referenced in Directive PNG033.	
4.9.3 Risk Based Site Closures	4.9.3 Risk Based Site Closures	Added reference to <i>Directive PNG045: AOR for NaCl-Impacted Sites</i> and minor changes to remove redundant wording.
4.9.4 Administrative Controls	4.9.4 Administrative Controls	Minor revisions to update legislation referenced.
5. Modified AOR Application Submission Requirements	5. Modified AOR Application Submission Requirements	No changes.
5.1 Sites Located on Indian Oil and Gas Canada/First Nation Reserve Land Indian Oil and Gas Canada (IOGC) is the regulatory agency that oversees the reclamation and surrender of surface and subsurface agreements on First Nation Reserve Land in Saskatchewan. However, the licensee will need to secure authorization from <u>both</u> ER and IOGC prior to abandoning the well or facility site. Well and facility sites located on First Nation Reserve Land must be assessed according to the standards laid out by IOGC. Subsequently, the licensee must submit an application to IOGC to receive a Memorandum of Surrender (MOS). For more information on IOGC's reclamation, surrender or remediation application processes visit the	5.1 Sites Located on Indian Oil and Gas Canada/First Nation Reserve Land Indian Oil and Gas Canada (IOGC) is the regulatory agency that oversees the remediation, reclamation, and surrender of surface and subsurface agreements on First Nation Reserve Land (Reserve Land) in Saskatchewan. However, the licensee will need When abandoning facilities and wells on Reserve Land, authorization from MER is required. Authorization from IOGC is not required, however the Licensee must provide copies of the ER authorization for down hole and surface abandonment records to IOGC and the First Nation Council. When abandoning pipelines on Reserve Lands, authorization from both the ER and IOGC prior to abandoning the well or facility	Revised to ensure alignment with new requirements from Indian Oil and Gas Canada.

Existing Section/Wording	New Section/Wording	Explanation of Proposed Changes
IOGC website or call (403) 292-5625 to speak with an Environmental Analyst. After the MOS has been issued, the licensee is required to submit a copy of the IOGC application and MOS to ER. If the IOGC application cannot be supplied or does not meet ER's reclamation requirements then, regardless of whether the MOS was dated prior to June 19, 2007, ER will require a full AOR application meeting the requirements outlined in section 4 with the MOS included as an attachment to the LAF (section 4.4).	site is required from both the ER and IOGC prior to abandoning the well or facility site is required. Well and facility Oil and gas sites located on First Nation Reserve Land must be remediated and reclaimed according to the standards laid out established by IOGC. Once the remediation and reclamation work is complete, the licensee submits a "Surface Contract Notice of Surrender" to IOGC that includes a Reclamation Application. A field inspection of the site involving representatives of the First Nation, IOGC, and the licensee is then carried out. If the sites passes the inspection, IOGC will issue a Letter of Reclamation to the licensee. The licensee can submit an application to IOGC this letter to receive a Memorandum of Surrender (MOS). the ER as proof that all their environmental responsibilities for the site have been fulfilled. For more information on IOGC's remediation, reclamation, and surrender or remediation application processes requirements, visit the IOGC website or call (403) 292-5625 to speak with an Environmental Analyst. After the MOS has been issued, the licensee is required to submit a copy of the IOGC application and MOS to ER. If the IOGC application cannot be supplied or does not meet ER's reclamation requirements then, regardless of whether the MOS was dated prior to June 19, 2007, ER will require a full AOR application meeting the requirements outlined in section 4 with the MOS included as an attachment to the LAF (section 4.4).	
N/A – NEW	5.2 Sites Located on Federal Lands Administered by Environment and Climate Change Environment and Climate Change Canada (ECCC) manages many sensitive locations that are located on Federal Lands within Saskatchewan. This information should be included within your surface lease or licence agreement, however if you are unsure if your sites fall within ECCC administered lands, please reach out to the ECCC at cwsnwapermitprairie@ec.gc.ca.	New section added to clarify requirements from Environment and Climate Change Canada.

Existing Section/Wording	New Section/Wording	Explanation of Proposed Changes
	In general, ECCC sites follow the same path to closure as other sites throughout Saskatchewan, however there are some key differences, specifically: • All Reclamation Plans must be approved in advance by ECCC. Please contact ECCC prior to implementing any potential reclamation activities via email at: cwsnwapermitprairie@ec.gc.ca • The timing of reclamation activities may be restricted in consideration of migratory birds, species at risk and impacts to pasture operations. • ECCC Surface Lease Inspections are required prior to Acknowledgement of Reclamation submissions. As all inspections must occur between May and September, it is up to the lessee/licensee and their representative to ensure appropriate timing for ECCC staff to visit the site. AOR applications cannot be submitted without a passing inspection from ECCC staff. • After the AOR is approved, the lessee must submit a request for termination to ECCC to formally terminate their legal lease agreement. • Any questions about activities on ECCC lands or National Wildlife (NWAs) can be directed to: cwsnwapermitprairie@ec.gc.ca, or Canadian Wildlife Service, 115 Perimeter Road, Saskatoon, SK, S7N 0X4	
N/A - NEW	5.3 Sites Located on Crown Land All lands designated as Crown Land are required to have the RFF signed off by the administering Ministry. Additionally, all sites administered by the Ministry of Agriculture (AG) must follow the <u>Restoration of Saskatchewan's Agricultural Crown Rangelands: Guidelines and Procedures for Developers</u>. Please ensure that you include the Crown Land Disposition Number that corresponds to the site within the Cover Letter of the AOR.	New section added to ensure sites on Crown land are completed in accordance with ER's requirements.
5.2 Licensed Built not Drilled Well Site with Surface Disturbance	5.4 Licensed Built not Drilled Well Site with Surface Disturbance	Revised section number, no substantive changes.
5.3 Unlicensed Well or Facility Site with Surface Disturbance	5.5 Unlicensed Well or Facility Site with Surface Disturbance	Revised section number and contact information for ER Service Desk.
5.4 Deemed Orphan Well and Facility Site	5.6 Deemed Orphan Well and Facility Sites	Revised section number

Existing Section/Wording		New Section/Wording		Explanation of Proposed Changes
5.5	Partial Exemption from Reclamation Approved Well or Facility Sites	5.7	Partial Exemption from Reclamation Approved Well or Facility Sites	Revised section number
6.	Application for Reduction of Reclamation Liability on Designated Problem Sites	6.	Application for Reduction of Reclamation Liability on Designated Problem Sites	No changes
7.	Application Submissions	7.	Application Submissions	No changes
7.1	Timing Requirements for AOR Submissions	7.1	Timing Requirements of AOR Submissions	Updated reference to new regulations.
7.2	How to Submit an Application	7.2	How to Submit Application	No substantive changes.
8	Application Review and Notification Process	8.	Application Review and Notification Process	Minor revisions to wording for clarity.
8.1	Disclaimer Pursuant to subsection 56(7) of the OGCR, the issuance of a Grandfathered or AOR Approval does not relieve a licensee, operator or working interest participant of past, present or future liability associated with a well or facility site. If ER is notified of an issue at a site that received Grandfathered or AOR Approval, it will be investigated. If it is determined that the issue resulted from a former well or facility operation, ER will contact the licensee or working interest participant to address the issue in accordance with the OGCR. Depending on the severity of the issue, ER, in accordance with subsection 56(8) of the OGCR, reserves the right to cancel the approval and/or reinstate the reclamation liability if deemed necessary. ER will require documentation to confirm the issue has been addressed, and confirmation that the landowner is satisfied with the actions taken by the licensee or working interest participant. Pursuant to section 59 of the OGCR, ER may require the licensee or operator to remedy the issue within a specified period. If a licensee or operator does not comply, ER may carry out the necessary work, after which all costs and expenses incurred by ER are a debt due to the Crown in right of Saskatchewan by the licensee or operator and may be recovered in the manner authorized by <i>The Financial Administration Act, 1993</i> or in any other manner authorized by law.	8.1	Disclaimer Pursuant to subsection 56(7) 6-3(1) of the FSSCR, the issuance of a Grandfathered or AOR Approval does not relieve a licensee, operator or working interest participant of past, present or future liability associated with a well or facility site. If ER is notified of an issue at a site that received Grandfathered or AOR Approval, it will be investigated. If it is determined that the issue resulted from a former well or facility operation, ER will contact the licensee or working interest participant to address the issue in accordance with the OGCR FSSCR. Depending on the severity of the issue, ER, in accordance with subsection 56(8) 6-2(3) of the OGCR FSSCR, reserves the right to cancel the approval and/or reinstate the reclamation liability if deemed necessary. ER will require documentation to confirm the issue has been addressed, and confirmation that the landowner is satisfied with the actions taken by the licensee or working interest participant. Pursuant to section 59 of the OGCR, ER may require the licensee or operator to remedy the issue within a specified period. If a licensee or operator does not comply, ER may carry out the necessary work, after which all costs and expenses incurred by ER are a debt due to the Crown in right of Saskatchewan by the licensee or operator and may be recovered in the manner authorized by <i>The Financial Administration Act, 1993</i> or in any other manner authorized by law.	Minor revisions to align with updated regulations and reference to <i>The Surface Rights Acquisition and Compensation Act</i>, which governs compensation for crop loss or damage prior to AOR approval.

Existing Section/Wording	New Section/Wording	Explanation of Proposed Changes
Surface lease agreements between land owners and licensees are not regulated under the OGCA or the OGCR. They are completely separate from the AOR program and accordingly the AOR approval process has no bearing on the cessation or reduction of surface lease payments or the timing thereof. Furthermore, the OGCA and the OGCR provide no authority to stipulate crop loss or damages or the requirements to obtain a temporary workspace lease. For information on these matters please contact the Surface Rights Board of Arbitration.	As per section 55(2) of <i>The Surface Rights Acquisition and Compensation Act</i>, surface lease agreements between land owners and licensees are not regulated under the OGCA or the OGCR. They are completely separate from the AOR program and accordingly the AOR approval process has no bearing terminate on the cessation or reduction of surface lease payments or the timing thereof. Furthermore, the OGCA and OGCR provide no authority issuance of an AOR pursuant to the FSSCR. stipulate crop loss or damages or the requirements to obtain a temporary workspace lease. For information on those matters please contact. The Surface Rights Board of Arbitration continues to deal with crop loss or damages prior to AOR approval as outlined in the FSSCR but once an AOR has been approved there is no longer a 5-year period to submit a grievance to the Surface Rights Board of Arbitration. A landowner grievance following an AOR approval can be sent to the ER Service Desk at 1-855-219-9373 or er.servicedesk@gov.sk.ca.	
9. Audits	9 Audits	No substantive changes
9.1 Surface Audits	9.1 Surface Audits	No changes
9.2 Subsurface Contamination Audits	9.2 Subsurface Contamination Audits	No changes
9.3 Technical Review Audit To confirm recommendations given in the Risk Based Site Closure and Administrative Controls AOR application are technically sound, selected sites will have an audit administered by ER conducted on documentation included in the AOR application. The Risk Based Site Closure and Administrative Controls audits, advertised on SaskTenders , will be conducted by a third-party consultant and include a full file review.	Repealed	Section removed as it is no longer applicable.

Detailed Site Assessment Requirements

Directive PNG018

November 2025

Revision 2.0

Governing Legislation:

Act: *The Oil and Gas Conservation Act*

Regulation: *The Financial Security Site Closure Regulations*

Order: XXXXXX

Record of Change

Revision	Date	Description
0.0	November 2013	Initial draft
1.0	November 2015	Updated to facilitate implementation.
2.0	November 2025	Clarifications and updates to align with FSSCR, the latest IRIS updates, and industry-requested changes. This also includes process updates from the Ministry of Agriculture, Environment and Climate Change Canada, and Indian Oil and Gas.

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1. Introduction

As per *The Financial Security Site Closure Regulations* (FSSCR), upon abandonment of a well or decommissioning of a facility the licensee must undertake activities that will result in reclamation of the associated site.

Note that “reclamation” as defined in section 1-2 of the FSSCR, includes two objectives:

- 1) Decontaminating, excavating, removing, sequestering, encapsulating, immobilizing, attenuating, degrading, processing or treating the contaminants in the soil or water in a manner so that, in the opinion of the minister, the contaminants no longer pose a threat or risk to human health, public safety, property or the environment; and
- 2) Re-contouring, landscaping, replacing or replenishing the topsoil and re-vegetating the surface of the soil so that it is compatible with its surroundings.

The focus of this document is with respect to the second part of the reclamation definition or the physical restoration of the site once it has been decontaminated and remediated. This document establishes the Detailed Site Assessment (DSA) requirements, to be used by the third-party consultants, within Saskatchewan as set out by the Ministry of Energy and Resources (ER) under the Acknowledgement of Reclamation (AOR) Program. As part of the AOR application the third-party consultant is required to complete the *DSA Form* (available on Saskatchewan.ca) to provide evidence that the site meets the criteria requirements in this Directive. An example of a completed DSA Form is provided in Appendix A.

1.1 Background

The restoration of abandoned well sites and associated facilities in Saskatchewan is the responsibility of the licensee. The intent of this document is to provide the licensee with restoration criteria that will ensure the consistent quality of restoration throughout industry resulting in reclaimed sites which are stable and have little risk of impaired capability.

It is important to recognize that restoration is impacted by construction practices, by operational management during the life cycle of the site and by practices used during the decommissioning, remediation and restoration processes. Proper soil conservation, prevention of contamination and timely remediation of contamination issues during the life of the site will result in a more successful restoration of the site at the end of its production life cycle.

Successful site reclamation will result in a site that is consistent in terms of land usage and vegetation with that of the surrounding area. Therefore, in the evaluation of the assessment criteria (landscape, soil, vegetation) the data and observations collected should be compared to suitably selected control points on adjacent or surrounding lands. In certain circumstances it is acceptable to find representative control land farther from the site, however, the reasons for doing this must be explained in the application.

Topsoil Salvage and Storage – Prior to site construction the topsoil should be stripped at the site and salvaged in a location that is away from potential disturbances (i.e. traffic routes, natural drainage, slopes, etc.). Topsoil stockpiles should be protected from wind and rain using appropriate seeding and other measures as necessary.

All contamination must be managed or removed prior to the completion of a DSA. Specific criteria for the assessment and remediation of contaminants (i.e. salts, metals, sterilants, petroleum hydrocarbons, organic chemicals, etc.) can be located within *Directive PNG033: Phase II Environmental Site Assessment* (Directive PNG033) available on Saskatchewan.ca. NOTE: the DSA accompanying the AOR application should be conducted after the minimum required monitoring period has passed where soils were left in place at a site which had salinity and/or sodicity concentrations which triggered monitoring criteria as specified in Directive PNG033.

AOR applications will be rejected if the DSA is incomplete and/or non-compliant. NOTE: If some parameters within the DSA fail to meet the requirements outlined in this document, the third-party consultant may still recommend the DSA passes, however, reasonable and detailed justification for doing so must be provided within the DSA.

The following sections describe the minimum acceptable assessment density and level of detail required within the DSA. On sites with a great deal of variability, or sites where justification for deviation from the criteria is submitted, more detail is required.

1.2 Governing Legislation

The requirements outlined in this Directive are based on *The Oil and Gas Conservation Act* (OGCA) and the FSSCR. Licensees should consult these documents in conjunction with this Directive.

It is the responsibility of all licensees, as specified in the legislation, to be aware of and to ensure compliance with these requirements through the life cycle of any well or facility licensed in Saskatchewan.

1.3 Definitions

Anomaly – an area outside the assessment point that does not appear representative of the assessment grid or control points being evaluated. If an anomaly is encountered, information such as measurements, photos, and applicable soil/vegetation parameter data, should be collected to compare to the conditions found in the controls.

Assessment Grid – an individual square or rectangle area that represents a portion of the lease, as detailed in Section 2.1.1.

Assessment Point – an individual point within a representative area of the assessment grid used to measure soil or vegetation parameters using a defined assessment method (linear metre, square metre, percent cover, etc).

Disturbed Area – in relation to a minimal disturbance site, is the area of disturbance at well center, typically consisting of the well head and tech fence, as well as any other areas of ground disturbance (sumps, excavations, reclamation areas, etc.), drilling rig placement, and/or driving areas within the lease boundaries used during oil and gas activities. For full disturbance sites it is assumed the entire lease has been disturbed.

Ecosite – a recurring site or stand level representation of ecosystems having a relatively homogeneous combination of soil, site, and vegetation characteristics.

Forage crops– Perennial agronomic species grown for the purpose of feed. Species include, but are not limited to, alfalfa, sweet clover, smooth brome, meadow brome, intermediate wheatgrass, crested wheatgrass, Russian wildrye grass, etc.

Justifications – Explanation of why a site should be approved for an AOR if some of the criteria have not been met. This information must be included in the Detailed Site Assessment.

One Full Growing Season – Is the vegetation assessment timing, which includes an over-wintering period and a minimum of 12 months after initial seeding. For example, a lease was abandoned and reclaimed in October 2020, it was then seeded in May 2021 and the crop runs one full growing cycle in 2021 (i.e. seeding, growing months, harvested). Therefore, the earliest the DSA could be conducted for this lease would be within the growing season of 2022 (i.e. June). For minor touch ups after full reclamation has occurred (i.e. a load of additional topsoil, etc.) the site can be reassessed in the next annual crop.

Organic Matter (OM) – The organic fraction of the soil includes plant and animal residues at various stages of decomposition, cells and tissues of soil organisms and substances synthesized by the soil population. Defined as soils that have been sieved through a 2.0-mm sieve. (Canada Department of Agriculture, 1976)

Peat – Unconsolidated soil material consisting largely of un-decomposed or only slightly decomposed organic matter; mainly derived from mosses or sedges. (Canada Department of Agriculture, 1976)

Public Lands – Land of the Crown in the Right of Saskatchewan or Right of Canada; includes provincial forests.

Site – means, when used in relation to a well, structure test hole, oil shale core hole or facility, the site of the well, structure test hole, oil shale core hole or facility and the area immediately adjacent to that site.

Step-Out Assessment – When a failed parameter is encountered at an assessment point, the third-party consultant may opt to conduct a step-out assessment to determine if it is representative of the assessment grid or not. A step-out consists of assessing a minimum of an additional three points. These additional points will be less than 10 m from the original point in a triangular shape around it.

Surface Soil – The uppermost mineral/organic material, commonly referred to as topsoil, valued as a growing medium. Surface soil is typically salvaged at the time of lease preparation to be used in the future reclamation of the site.

2. Reclamation Criteria for Cultivated Lands

Cultivated land includes any land that has been ploughed to prepare a seed bed at some point in time and has a well-defined ploughed surface including cultivated peat soils. The cultivated land criteria are applicable to lands under continuous and rotational cropping systems and hay land.

The following provides a summary of the criteria for which the DSA is to be conducted:

- Landscape: drainage, erosion, contour, stability, gravel & rocks, debris.
- Soil: surface soil quantity, distribution and quality (% admixing/texture/strength/aggregate size), topsoil and subsoil profiles.
- Vegetation: plant (species/health/height/density), bare areas, weeds (species/type[noxious/nuisance]/density).

DSA assessments should be completed on healthy, undamaged vegetation. Therefore, DSAs cannot be completed on cultivated lands during years experiencing severe weather events (such as drought, flooding, etc.) that deviate significantly from historical averages and result in insufficient vegetation comparison. In drought-prone areas of Saskatchewan, multiple years of vegetation data may be included to demonstrate consistent crop growth/health.

2.1 Site Assessment Sampling Scheme

In general, sites are to be assessed by establishing a suitable assessment grid (as described in the following sections); followed by measuring/observing the various assessment criteria within each assessment grid. The results are compared to suitably selected controls located on lands surrounding or adjacent to the site.

NOTE: that the term “site” as defined in the FSSCR is not constrained to the lease boundaries but rather includes any areas beyond the lease boundaries that were impacted by the operations at the site. Therefore, grids should be designed to encompass these impacted areas beyond the lease boundaries, unless those areas have been previously reclaimed and approved by ER.

NOTE: An assessment is not required on areas of the lease or access that have received an Exemption from Reclamation issued by ER or have been authorized by the landowner(s) to remain in place as an “improvement” (i.e. access road, cement pad, etc.).

2.1.1 Lease

For a standard 100 m x 100 m lease, the lease assessment should be conducted using nine assessment grids (each approximately 33 m x 33 m) and the edge of the lease assessment area should match up to the lease boundary, as shown in Figure 1.

The assessment grid and grid size should be adjusted to evenly cover the entire lease and account for odd size leases, for example:

- If the lease is < 40 m x 40 m, then 3 grids should be used.
- If the lease is 40 m x 40 m, then 4 grids, each at 20 m x 20 metre should be used.
- If the lease is 80 m x 80 m, then 4 grids, each at 40 m x 40 metre should be used.

- If the lease is 110 m x 110 m, then 9 grids, each at 37 m x 37 m should be used.
- If the lease is 120 m x 120 m, then 9 grids, each at 40 m x 40 m should be used.
- If the lease is > 120 m x 120 m, then 16 grids, each at $\leq 40 \text{ m} \times \leq 40 \text{ m}$ should be used.
- Grids cannot be greater than 40 m x 40m.

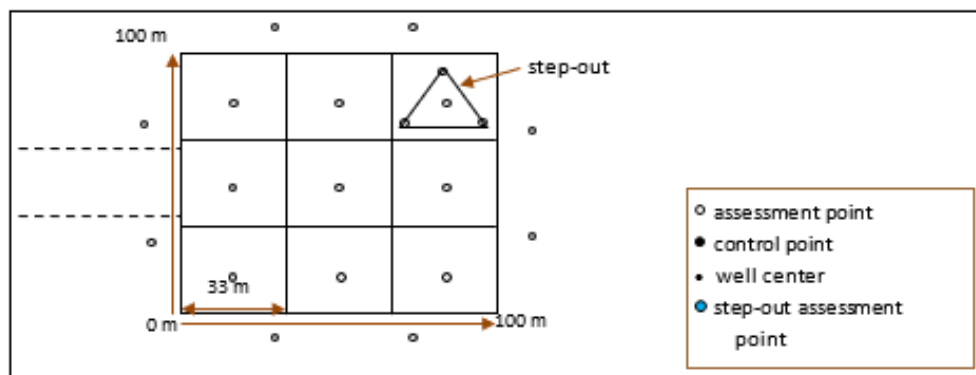


Figure 1. Assessment points within an approximate 33 m x 33 m assessment grid on a 100 m x 100 m lease. Soil and vegetation data are collected at each assessment point.

In general, the assessment point will be in the middle of each grid, however, additional assessment points should be completed when the following locations are known and outside of the middle of the grid: well centre, sump, flare pit, tank storage area, historical spill areas or areas of concern noted in the Phase I which haven't been investigated during a Phase II ESA. When a failed parameter is encountered at a lease assessment point, the third-party consultant may opt to conduct a "step-out" assessment to determine if it is representative of the entire assessment grid. The step-out assessment process consists of assessing three additional points (for all parameters) which can be up to 10 m from the original point in a triangular shape around it, as shown in Figure 1. The data for the original assessment point, along with the individual step-out data must be reported on the step-out portion of the DSA form. The average of the step out data, denoted as SO number, should then be transferred into the lease assessment table in place of the original assessment point data and used when assessing the criteria requirements for that particular grid. Step-out assessments cannot be completed at well centre on minimal disturbance sites, should not be completed at well center on full disturbance sites, and a maximum of two step-out assessments can be performed on a site.

2.1.2 Controls

In the evaluation of the assessment criteria (landscape, soil, vegetation) the data and observations collected should be compared to suitably selected control points on adjacent or surrounding lands. Care should be taken when selecting these points to ensure that they are representative of the average conditions that exist on the surrounding lands with respect to the various evaluation criteria. In particular, the quantity and quality of vegetation may be used as a primary indicator for determining the suitability of control points. Controls are to be taken outside of lease boundaries and away from disturbed land.

A minimum of eight control points (two on each side of the disturbed area) must be assessed to provide comparisons for the disturbed area (100 m x 100 m lease situation). In some cases, eight control points may not adequately represent the natural variability of the surrounding lands and

the third-party consultant must use their professional judgement. Where control points characteristics vary significantly, the third-party consultant may use relevant controls to represent portions of the site. It must be clearly documented which controls represent which assessment points.

Minimum control requirements for different lease sizes:

- If the lease is < 40 m x 40 m, then 3 control points should be used.
- If the lease is 40 m x 40 m, then 3 control points should be used.
- If the lease is 80 m x 80 m, then 4 control points should be used.
- If the lease is 110 m x 110 m, then 8 control points should be used.
- If the lease is $\geq$ 120 m x 120 m, then a minimum of 12 control points should be used.
- If the lease is > 150 m x 150 m, then a minimum of 16 control points should be used.

Controls can be averaged to determine the required replacement depth. If controls are variable, relevant controls can be compared to portions of the lease. Highlight the portion of the lease each control represents on the DSA Sketch (as shown in Figure 2). If controls are highly variable and the Minimum Replacement Depth (MRD) cannot be achieved, the third-party consultant may qualify results based on control variability. Figure 3 shows a generic control situation that is most common for upstream oil and gas sites in Saskatchewan.

NOTE: on sites that are different from the above standard, it is incumbent upon the consultant to explain their rationale of why the deviation in assessment has occurred. This information should include why the points taken are sufficient to prove comparability of the surrounding area and why the locations chosen are acceptable.

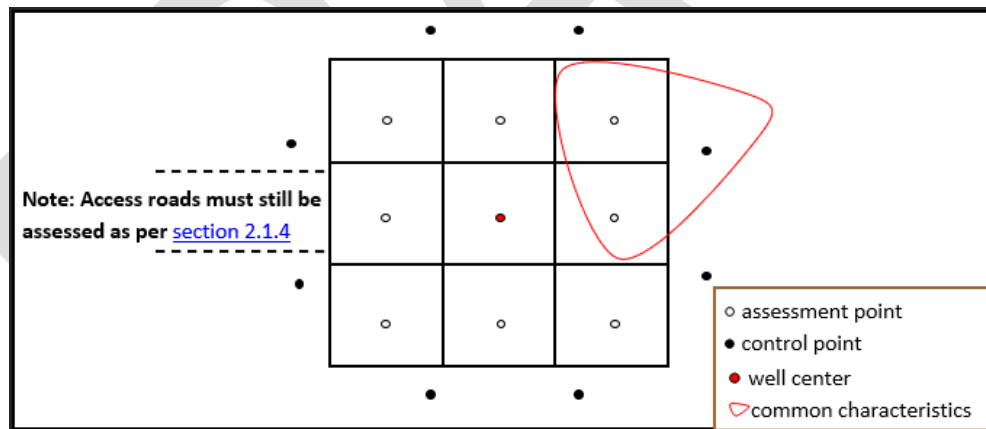


Figure 2. Example of a site that has variability in topography, soils and land management. Two grid sampling points are represented by a specific control sample point. This must be documented in the DSA form. NOTE: High variability sites may require additional sample points and control sites to properly assess the site.

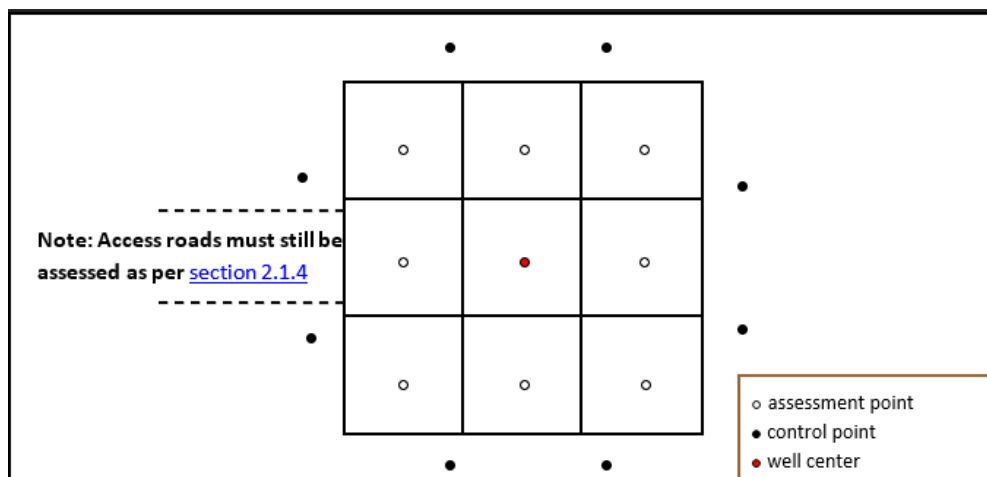


Figure 3. This is a generic control sample situation where the topography, soil characteristics and land management are consistent throughout the entire site. This is typical of most sites encountered in Saskatchewan. In this situation the eight controls would be averaged together in the assessment.

2.1.3 Access

For the access associated with the lease, the assessment shall be conducted on a paired assessment basis (one on the access and one in a control area). The assessment points should be adjusted so they are representative of disturbed and control areas but must also address variability. Assessment points should be adjusted so that the access approach areas are inspected.

At a minimum the access should be assessed as follows:

- For **access roads** ≤ 100 m in length, examine a minimum of two paired assessment points. If the topography is variable, more assessment points shall be used.
- For **access roads** > 100 m in length, assessment points should be located at intervals no more than 100 m apart. For example, for a 500 m road, a minimum of five paired assessment points would be required but they may not necessarily be evenly spaced. If the topography is variable, more assessment points should be used.

2.2 Landscape

After a minimum of one full growing season has passed, landscape criteria will be assessed by comparing the site with adjacent land. Differences between the site and the adjacent land must not interfere with normal land use and not show a negative impact on or off-site. Vegetation on the site should not impede the ability to assess the landscape parameters.

Landscape criteria are assessed by looking at the entire site rather than individual assessment points. It is necessary to do this from several vantage points on the site. While evaluation of landscape criteria can be somewhat subjective, the DSA should contain a discussion of each landscape parameter defined in Table 1 to make it clear that each of these criteria were considered.

Table 1 – DSA landscape parameters for cultivated lands.

Drainage	Site drainage should be consistent with the original patterns, directions and capacity or be comparable with the surrounding landscape. Facilities or features left in place (i.e. clay pads) must not negatively impact drainage.
Erosion	No more soil erosion (i.e. rills, gullies or blowouts) than on adjacent land allowed.
Contour	Contour and roughness must conform and blend with adjacent contours or be consistent with present or intended land use.
Stability	No visible evidence of slope movement, slumping, subsidence, or tension cracks allowed greater than on adjacent landscape.
Gravel and Rocks	May not be piled, windrowed or concentrated in one area. Gravel (<10 cm): No more than an increase of 10% in surface cover is allowed. Rocks (>10 cm): No increase in surface cover is allowed.
Debris	No industrial or domestic debris allowed.

2.3 Surface Soil Quantity, Distribution and Quality

After a minimum of one full growing season has passed, soil quantity, soil quality and admixing percent are to be included in the DSA soils assessment for each assessment point.

2.3.1 Topsoil Additions

There may be situations where additional topsoil is required at a site. In these cases, topsoil from another source with similar chemical and physical properties to the site and surrounding lands can be used provided the landowner is notified and in agreement. The addition of topsoil must be documented within the DSA (i.e. date of application, source, volume, etc.).

NOTE: Amendments (peat, manure, alfalfa pellets, organic material, etc.) are not considered a replacement for topsoil and must be documented in the DSA when applied as part of the remediation and reclamation of the site. A minimum waiting period of two years from the application date is required following the use of an amendment before conducting the DSA that will be submitted with the AOR application.

NOTE: Weed spraying is not considered an amendment and can be assessed the next growing season to determine successful eradication except for Japanese brome, scentless chamomile, downy brome, and leafy spurge

2.3.2 Quantity and Distribution of Replaced Surface Soil

The criteria regarding the quantity and distribution of surface soil will differ depending on whether the site was initiated before or after the implementation of the AOR process on June 19, 2007. The following sections provide the criteria requirements for both site situations.

2.3.2.1 Quantity and Distribution of Replaced Surface Soil for Sites After June 19, 2007

This section outlines the criteria required when the following conditions apply to the site:

- The well finished drill date is on or after June 19, 2007; or
- The facility licence date is on or after June 19, 2007; or
- The site prepared date (for built not drilled sites) is on or after June 19, 2007.

Surface Soil Quantity Criteria:

The *Average Replacement Depth (ARD)* is the overall average soil depth of the lease assessment points and must be equal to or greater than 85% of the average control soil depths associated with the lease.

- i.e. $ARD \text{ or average lease depth (cm)} \geq \text{average control depth (cm)} \times 0.85$

Access road soil depths are assessed on a paired basis by comparing the soil depth at the access assessment point to the corresponding paired control soil depth. If the soil depth at the access assessment point is equal to or greater than 85% of the corresponding paired control, then the access assessment point passes.

- i.e. $\text{Each access depth (cm)} \geq \text{corresponding paired control depth (cm)} \times 0.85$

Lease Surface Soil Distribution Criteria:

While the average replacement soil depth over the entire lease must be at least 85% of the average control depth, at any individual lease assessment point, the Minimum Replacement Depth (MRD) may be as low as 68% of the average control depth for the lease assessment point to pass.

i.e. $\text{Each lease depth (cm)} \geq MRD \text{ or (average control depth (cm)} \times 0.68)$

2.3.2.2 Quantity and Distribution of Replaced Surface Soil for Sites Predating June 19, 2007

This section outlines the criteria required when the following conditions apply to the site:

- The well finished drill date is before June 19, 2007; or
- The facility licence date is before June 19, 2007; or
- The site prepared date (for built not drilled sites) is before June 19, 2007.

Surface Soil Quantity Criteria:

The *Average Replacement Depth (ARD)* is the overall average soil depth of the lease assessment points and must be equal to or greater than 60% of the average control soil depths associated with the lease.

- i.e. $ARD \text{ or average lease depth (cm)} \geq \text{average control depth (cm)} \times 0.60$

Access road soil depths are assessed on a paired basis by comparing the soil depth at the access assessment point to the corresponding paired control soil depth. If the soil depth at the access assessment point is equal to or greater than 60% of the corresponding paired control, then the access assessment point passes.

- i.e. $\text{Each access depth (cm)} \geq \text{corresponding paired control depth (cm)} \times 0.60$

Lease Surface Soil Distribution Criteria:

While the average replacement soil depth over the entire lease must be at least 60% of the average control depth, at any individual lease assessment point, the Minimum Replacement Depth (MRD) may be as low as 50% of the average control depth for the lease assessment point to pass.

i.e. Each lease depth (cm) $\geq$ MRD or (average control depth (cm) $\times$ 0.50)

2.3.3 Quality of Replaced Surface Soil

At each assessment point, the third-party consultant will document the soil quality parameters (defined in Table 2) within the DSA. The soil quality parameters should be assessed after one full growing season.

When compared with representative controls (i.e. from similar depths with similar light and moisture conditions), the lease and access assessment points must meet the criteria defined in Table 2 for the assessment point to pass.

Table 2 – DSA Soil Quality Parameters for Cultivated Lands

Admixing %	Remain in the same class (0 to 30%, >30% to 60%, and >60%) or lower class of admixing when compared to controls.
Texture	Remain in the same texture class (within the dark lines) when compared to controls. Texture Class Triangle The Soil Texture Classes Triangle was taken from Alberta Environment, 1995 <i>Reclamation Criteria for Wellsites and Associated Facilities – 1995 Update.</i>

Soil Strength	Remain in the same class (friable; firm; and hard) when compared to controls.
Soil Aggregate Size	Remain in the same class (<2 cm, 2 cm to 5 cm, and >5 cm to 10 cm) when compared to controls. No soil aggregates greater than 10 cm are allowed unless similar size soil aggregates are present in the control soil.
Soil Profile Assessment	NOTE: When more than one horizon is mixed to make up the minimum requirement for salvaged soil, the control for the quality comparison must be mixed across the same depth as the salvaged soil horizons. <u>Assessment Depth</u> Soils will be assessed to a depth of 50 cm (or to a soil restrictive layer) on a grid basis on-site, with appropriate off-site measurements (controls). If a soil restriction occurs before the required assessment depth of 50 cm is reached then the assessment is not required to advance any deeper into the soil, however, the assessment depth measurement must be reported in the DSA. <u>Restriction Assessment</u> The process restriction parameters are: • Water permeability. • Vertical root elongation. • Soil aeration. • Compaction Document in the DSA the topsoil and subsoil process restriction parameters as either “restrictive” or “non-restrictive” as compared to the control. NOTE: a restrictive soil profile is a FAILED class parameter if the representative controls are non-restrictive. Gravel or rocks found in the soil profile must be comparable to conditions found in the controls. Any anomalies observed in the soil profile must be recorded on the DSA Form. Professional judgment should be used to determine whether parameters are restrictive to root growth and establishment. For more details on assessing process restrictions refer to Appendix B. NOTE: Since root elongation is being assessed, soil profile assessment should be done when fully developed roots are present. <u>Lease and Control Assessments</u> Soil profile assessments for cultivated lands will be conducted at every second assessment point on and off the lease. For example, a 100 m x 100 m lease would require a minimum of nine soil profile assessments (five on-site assessment points and four off-site control points). <u>Access Roads and Paired Control Assessments</u> Soil profile assessments are to be carried out at each paired assessment point. For example, a 500 m access road would require a minimum of ten soil profile assessments (five access assessment points and the five paired control points).

Appendix C

2.3.4 Soil Tolerance

A summary of the passing soil depth quantity and distribution criteria is provided below:

Table 3 – Soil Depth Quantity and Distribution Criteria

	Average Lease	Each Access Point	Each Lease Point
Sites After June 19, 2007	≥ 85% of average control	≥ 85% of paired control	≥ 68% of Average control
Sites Before June 19, 2007	≥ 60% of average control	≥ 60% of paired control	≥ 50% of average control
NOTE: The replacement depth of any individual lease or access assessment point should never be less than 30% of the control soil depth. If this situation exists on a site further reclamation of the site and subsequent passing DSA would be required.			

It is recognized that it may be difficult to meet the soil criteria (defined above) across the entire site; especially where salvage topsoil was minimal. Therefore, to account for this, it is acceptable that one of the grids may vary from the desired soil outcome. This means a single assessment grid within the DSA can fail by soil depth, soil quality, or a combination of these for a maximum of one grid failure on the entire site (which is comprised of the lease and access road).

NOTE: Within a single grid it is acceptable to fail in one or more of the soil quality parameters listed in Table 2.

NOTE: For smaller lease sizes (i.e. 40 m x 60 m) the tolerance criteria still apply even though fewer grids are assessed and a single grid failure would mean a greater percentage of the disturbed area is below the target criteria in comparison to a larger site. This is acceptable as it is recognized that there is less overall disturbance to the land by using the smaller lease size and credit is given to operators who attempt to minimize disturbance.

The following examples illustrate acceptable soil quantity, distribution and quality tolerances:

Example #1: If the average control soil depth is 18 cm for a lease with a finished drill date on or after June 19, 2007 and the 98m long access road paired controls are (AC1=20 cm and AC2=19 cm), then:

Surface Soil Quantity Criteria:

The Average Replacement Depth (ARD) of the lease must be $\geq 18 \text{ cm} \times 0.85 = 15.3 \text{ cm}$; for the lease to pass.

The replacement depth at the first access assessment point (A1) must be $\geq 20 \text{ cm} \times 0.85 = 17$ and the replacement depth at the second access assessment point (A2) must be $\geq 19 \text{ cm} \times 0.85 =$

16.2; for each access grid to pass. NOTE: If $A1 < 20 \text{ cm} \times 0.30 = 6 \text{ cm}$ or $A2 < 19 \text{ cm} \times 0.30 = 5.7 \text{ cm}$, then further reclamation work is required.

Soil Tolerance:

In the case where the soil quantity, distribution and quality are not found to pass for every grid within the lease and access only one the following variations would be acceptable for DSA submission:

- Only one lease grid may fail soil depth (i.e. soil depth between 5.4 cm and 12.2 cm) and not fail any of the soil quality parameters; or
- Only one access grid may fail soil depth (i.e. soil depth at A1 between 6 cm and 17 cm or soil depth at A2 between 5.7 cm and 16.2 cm) and not fail any of the soil quality parameters; or
- Only one lease or access grid may fail soil depth and the same grid may also fail in one or more of the soil quality parameters (i.e., only one grid in total is affected); or
- All lease and access grids pass soil depth (i.e. lease grids $\geq 12 \text{ cm}$ and $A1 \geq 17$, $A2 \geq 16.2 \text{ cm}$) and only one grid within either the lease or access may fail in one or more of the soil quality parameters.

Example #2: If the average control soil depth is 18 cm for a lease with a finished drill before June 19, 2007, and the 98m long access road paired controls are (AC1=20 cm and AC2=19 cm), then:

Surface Soil Quantity Criteria:

The Average Replacement Depth (ARD) of the lease must be $\geq 18 \text{ cm} \times 0.60 = 10.8 \text{ cm}$; for the lease to pass.

The replacement depth at the first access assessment point (A1) must be $\geq 20 \text{ cm} \times 0.60 = 12$ and the replacement depth at the second access assessment point (A2) must be $\geq 19 \text{ cm} \times 0.60 = 11.4$; for each access grid to pass. NOTE: If $A1 < 20 \text{ cm} \times 0.30 = 6 \text{ cm}$ or $A2 < 19 \text{ cm} \times 0.30 = 5.7 \text{ cm}$, then further reclamation work is required.

Lease Surface Soil Distribution Criteria:

The replacement depth at each lease assessment point must be $\geq 18 \text{ cm} \times 0.50 = 9 \text{ cm}$; for each lease grid to pass.

NOTE: If any lease assessment points is $< 18 \text{ cm} \times 0.30 = 5.4 \text{ cm}$, then further reclamation work is required.

Soil Tolerance:

In the case where the soil quantity, distribution and quality are not found to pass for every grid within the lease and access only one the following variations would be acceptable for DSA submission:

- Only one lease grid may fail soil depth (i.e. soil depth between 5.4 cm and 9 cm) and not fail any of the soil quality parameters; or
- Only one access grid may fail soil depth (i.e. soil depth at A1 between 6 cm and 12 cm or soil depth at A2 between 5.7 cm and 11.4 cm) and not fail any of the soil quality parameters; or
- Only one lease or access grid may fail soil depth, and the same grid may also fail in one or more of the soil quality parameters (i.e., only one grid in total is affected); or

- All lease and access grids pass soil depth (i.e. lease grids ≥ 9 cm and A1 ≥ 12 , A2 ≥ 11.4 cm) and only one grid within either the lease or access may fail in one or more of the soil quality parameters.

2.4 Vegetation

Vegetation parameters, along with bare areas and weeds/undesirable plants, must be assessed at each assessment point and documented within the DSA.

Vegetation must be present at the time of the assessment. No special management practices, not consistent with those used on the control area, are allowed on the site that would affect the vegetation results. Fertilizer and/or amendment applications will be considered consistent with the control area if:

- the landowner applied fertilizer and/or an amendment to the site as part of their normal management practice; or
- the licensee applied fertilizer and/or an amendment to the site to bring it up to the same nutrient levels as the control soils (based on lab fertility analyses).

NOTE: Fertilizer and/or amendment additions applied by the licensee must be documented within the DSA (i.e. type, application rate, quantity, etc.) if applied during remediation and/or reclamation of the site.

2.4.1 Use of Non-native Species

Non-native species can be used where their benefits to site properties are known and the species are part of a plan to improve a site. For example, the use of agronomic annuals can be used for erosion control on recently restored sites. However, these species cannot be persistent and must not contribute to the vegetation criteria. The overall objective of the DSA standard is to ensure well/facility sites have been reclaimed properly and are comparable with the surrounding area. Leaving non-native species on-site would not meet this objective.

2.4.2 Timing of Vegetation Assessments

The timing of the DSA vegetation assessment will vary depending on the type of cultivated crop (annual or perennial) at the site. Further clarification is provided in the following sections.

NOTE: Where fertilizer and/or an amendment has been applied by the licensee, as part of the remediation and reclamation of the site, a minimum waiting period of two years from the application date is required before conducting the DSA that will be submitted with the AOR application.

NOTE: Weed spraying is not considered an amendment and can be assessed the next growing season to determine successful eradication except for Japanese brome, scentless chamomile, downy brome, and leafy spurge

2.4.2.1 Annual Crops

For annual crops, without fertilizer or amendment addition, the vegetation assessment should be conducted when the crop is fully headed or podded out after a minimum of one full growing season. Please be advised that it is acceptable for the vegetation to be assessed on sites where the crop has been cut but not removed if and only if all measurements can be accurately measured and documented.

Please be advised that in the situation where fully headed or podded out crop data is not available due to annual harvest then stubble data may be assessed, however, it must be accompanied by a passing DSA soil assessment and the AOR application must include a filled out *Reclamation Feedback Form (RFF)* as referred to in the AOR Directive, to provide further proof that the site production is satisfactory and no vegetation issues are evident at the site. If a filled-out RFF is not obtained, then the vegetation assessment portion of the DSA is required when the crop is fully headed or podded out to be considered a passing DSA for AOR submission.

2.4.2.2 Perennial Crops

For perennial crops, commonly referred to as forage crops, without fertilizer or amendment addition, the vegetation assessment should be conducted after a minimum of one full growing season.

2.4.3 Vegetation Assessment Criteria

At each assessment point, the third-party consultant will document the vegetation parameters (defined in Table 4) within the DSA. The vegetation assessments are based on a visual comparison between the site (lease and access) and the representative controls therefore vegetation must be present at the time of assessment.

When compared with representative controls, the lease and access assessment points must meet the criteria defined in Table 4 for the assessment point to pass. NOTE: The lease and access must pass all the criteria defined in Table 4 to be considered an acceptable DSA within an AOR application submission.

Table 4 – DSA Vegetation Parameters for Cultivated Lands

Plant Species Composition	Re-vegetation species and species composition should be comparable with control vegetation or meet reasonable land management objectives. NOTE: Weeds and undesirable plants <u>cannot</u> contribute to plant species composition.
Plant Health	Plant health must be equal to or better than that of the control vegetation. Plant health should be documented within the DSA as either poor, fair, good or excellent. Ideally, plants should be healthy; characteristics to look for and note are vigour, colour (ripening stage), disease-free and vegetation quality. Plant maturity should be comparable to the surrounding site. Therefore, if the lease is maturing faster or slower than the surrounding area, the site is not comparable.

	Excellent	Vigorous, healthy, no evidence of disease or stress
	Good	Less than 25% evidence of stress/disease/discoloration
	Fair	25%-50% evidence of stress/disease/discoloration
	Poor	Greater than 50% evidence of stress/disease/discoloration, dead or not present
	NOTE: Evidence of stressed vegetation should be documented within the DSA and must be comparable to the control vegetation. Where there is evidence of stressed vegetation, a description along with photographic evidence must be supplied in the DSA to demonstrate both on-site and off-site effects are comparable.	
Plant Height	Plant height must be equal to or greater than 80% of the control vegetation. - Each lease point $\geq$ (average control $\times$ 0.80); and - Each access point $\geq$ (corresponding paired control $\times$ 0.80). NOTE: At each assessment point the third-party consultant shall document the average crop height (expressed in cm) by measuring a minimum of 10 plants.	
Plant Density	Plant density must be equal to or greater than 80% of the control vegetation. - Each lease point $\geq$ (average control $\times$ 0.80); and - Each access point $\geq$ (corresponding paired control $\times$ 0.80). NOTE: At each assessment point the third party consultant shall document the plant density of live/desirable/healthy plants. NOTE: The crop species type, growth phase and other factors will affect the easiest method of measuring plant density; therefore, the results may be expressed in plants, stems per square meter or linear meter, or percentage cover for the representative area. The measurement methodology must be documented in the DSA and must be consistent across all assessment points and controls.	
Plant Productivity Rating	The Plant Productivity Rating will be an average rating assigned to each assessment and control point that will be comprised of three different categories: seed/head/pod/tuber health, seed development, and pod density. Each of the three categories will get a rating on a scale of 1 to 4, and then an averaged assessment point rating will be calculated. Each location's three categories and Plant Productivity Rating must be equal to or greater than the control average minus 1. - Each lease assessment point $\geq$ (average control minus 1); and - The average onsite rating must be no less than 0.5 of the average rating offsite - Each access assessment point $\geq$ corresponding paired control minus 1 Table 5 provides the rating scale used to calculate the plant productivity rating for each category. Photos of the seed/head/pod/tubers should be taken at every other assessment point and included within the DSA photolog. Seed/Head/Pod/Tuber Health The health of the seeds/heads/pods/tubers at each assessment and control point will be assessed and rated based on the scale provided in Table 5. Ideally, the seeds/heads/pods/tubers should be healthy, full of seeds, with no signs of stress, disease or seed abortion, and should be comparable to the surrounding controls.	

	Seed Development The seed development at each assessment point will be assessed and rated based on the scale provided in Table 5. Ideally, seeds should be full and evenly developed, and show no signs of stress, reduction, or lack of health, and should be comparable to the surrounding controls. Pod Density The pod density at each assessment point will be assessed and rated based on the scale provided in Table 5. The pod density will be visually assessed and rated as heavy, medium, light, or none, and should be comparable to the surrounding controls. NOTE: Cereal crops should be left blank for Pod Density.
Head/Pod/ Tuber Length	The head/pod/tuber length will be collected from the seed producing portion of the plant by collecting the average length of ten representative plant heads/pods/tubers at each assessment and control point. The assessment points must be equal to or greater than 80% of the control vegetation. - Each lease assessment point $\geq$ (average control $\times$ 0.80); and - Each access assessment point $\geq$ (corresponding paired control $\times$ 0.80). Photos of the head/pod measurements should be taken at every other assessment point and included within the DSA photo log. NOTE: The crop type, growth phase and other factors will affect the easiest method of measuring head/pod/tuber length; therefore, the following methods should be used for specified plant type: Cereals – Once heads are developed, ten representative heads will be measured and the average length calculated for each assessment and control location. Canola – Once pods are developed, ten representative plants will be measured on the portion of the stem with producing pods growing and the average length calculated for each assessment and control point. Pulse Crops (peas, lentils, faba bean, dry beans, soybean, etc.) – Once pods are developed, 10 representative pods will be measured and the average length calculated for each assessment and control point. Perennial Crops – Once/if heads are developed, they should be measured, 10 representative heads will be measured and the average length calculated for each assessment and control location. Specialty Crops – Once heads/pods/tubers/ears are developed, 10 representative heads/pods/tubers/ears will be measured and the average length calculated for each assessment and control point.
Bare Area	The bare area refers to the areas with exposed soil that are devoid of vegetation; areas between seed rows are not included in this definition. The assessment point must have a representative bare area when compared to the rest of the grid area. The bare area percent at assessment points should not be greater than 10% as compared to the control. Each lease assessment point $\leq$ average control + 10%; and

	Each access assessment point $\leq$ corresponding paired control + 10%. NOTE: Bare areas that are located outside the assessment point must be comparable to those found offsite. If an anomaly is encountered, the locations must be detailed on the DSA sketch and information such as measurements, photos, and applicable vegetation parameter data must be collected to compare to the conditions found in the controls.
Weeds & Undesirable Plants	Weeds are to be managed on all lands as per The Weed Control Act which is regulated by the Ministry of Agriculture. NOTE: Once a weed species has been identified at a site, please refer to the Minister's Order Designating Prohibited, Noxious and Nuisance Weeds (Weed List) to determine the type of weed and potential action required under <i>The Weed Control Act</i> and ER's criteria as defined below: <u>Weed & Undesirable Plant Species Composition</u> Weeds and undesirable plant species identified on-site must also be present in the off-site controls; otherwise, the on-site weed and/or undesirable plant species must be managed in accordance with typical agriculture practices. NOTE: The presence of weeds/undesirable plants may or may not have been directly influenced by well/facility activity. The third-party consultant must ensure that the control samples are representative of the surrounding area. If no weed species are present at an assessment point, enter "not applicable" in the weed species column and "0" in the weed density column to indicate the weed assessment was conducted. <u>Weed & Undesirable Plant Species Type</u> Depending on the species type identified, ER's requirements differ as follows: <u>Prohibited Weeds</u> – must be eradicated on-site to prevent their movement out of the area; <u>Noxious Weeds</u> – must be contained and controlled on-site and any isolated infestations found on-site must be eradicated. <u>Nuisance Weeds and Undesirable Plants</u> – must be controlled on-site. <u>Weed & Undesirable Plant Density</u> No prohibited weeds are allowed on-site. The density of noxious weeds, nuisance weeds, and undesirable plants on-site must be less than or equal to the same species found in the controls. average lease $\leq$ average control; and each access point $\leq$ corresponding paired control. NOTE: The density results may be expressed in weeds per square meter, linear meter, or percentage cover for the representative area. The measurement methodology must be documented in the DSA and must be consistent across all assessment points and controls.

Table 5 – Plant Productivity Rating Guide

Rating	Seed/Head/Pod/Tuber Health	Seed Development	Pod Density
4	Complete head, full healthy seeds, no seed abortion	Full and evenly developed	High Pod Density
3	80% full and healthy seeds, similar seed size, <20% seed abortion	Unevenly developed	Medium Pod Density
2	<80% full and healthy seeds, reduction in seed size, 25 to 50% diseased	Reduced and/or shriveled	Low Pod Density
1	>50% diseased seeds/no seed present	No seeds/Lack of Maturity	No Pods

3. Reclamation Criteria for Grasslands

Grasslands include lands that are permanently grassed that include a native component. Native grasslands commonly present a mixture of different native grass species, forbs (flowering/broad-leaved species), shrubs (woody species) and tree species, whereas tame grasslands produce agronomic seeded grass and legume species.

When constructing a grasslands site, minimal disturbance of native grassland is recommended. Where disturbance occurs, surface soil must be salvaged for replacement. At the time of reclamation, the salvaged soil should be replaced as evenly as possible across the site, and the use of native species is encouraged to re-vegetate native grassland.

Modified grasslands have a percentage of both native and tame species and are to be assessed under grassland criteria. For grasslands that have been cultivated/seeded to agronomic species, and the land use goal is to be managed as tame forage for hay; assessment should be conducted under the cultivated land criteria provided in section 2.

The following provides a summary of the criteria upon which the DSA is to be conducted:

- Landscape: drainage, erosion, contour, stability, gravel & rocks, debris.
- Soil: surface soil quantity, distribution and quality (% admixing/texture/strength/aggregate size), topsoil and subsoil profiles.
- Vegetation: plant (species/health/density), bare areas, weeds

3.1 Site Assessment Sampling Scheme

In general, sites are to be assessed by establishing a suitable assessment grid followed by measuring/observing the various assessment criteria within each grid. The results are compared to suitably selected controls located on lands surrounding or adjacent to the site.

NOTE: The term “site” as defined in the FSSCR is not constrained to the boundaries of the lease but rather includes any areas beyond the lease boundaries that were impacted by the operations at the site. Therefore, assessment grids should be designed to include these impacted areas beyond the lease boundaries; unless these areas were previously reclaimed and received the approval of the ministry.

NOTE: An assessment is not required on areas of the lease or access that have received an Exemption from Reclamation issued by ER or were authorized by the landowner(s) to be left in place as an “improvement” (i.e. access road, cement pad, etc.).

The sampling scheme for grasslands is the same as previously defined for cultivated land. Therefore, for grasslands assessments please refer to the lease (section 2.1.1), controls (section 2.1.2), and access (section 2.1.3) cultivated land schemes.

3.1.1 Minimal Disturbance Lease

Where it can be proven that construction practices have minimized the level of disturbance on a lease, a reduction in sampling intensity can be justified for grassland sites. On minimally disturbed sites within grasslands, the undisturbed and disturbed areas must be delineated on the provided sketch and a minimum of three samples from each area (disturbed, undisturbed and control) taken, as shown in Figure 4. Step-out assessments cannot be completed on minimal disturbance lease assessments. Minimum disturbance assessments cannot be completed on annually cultivated lands.

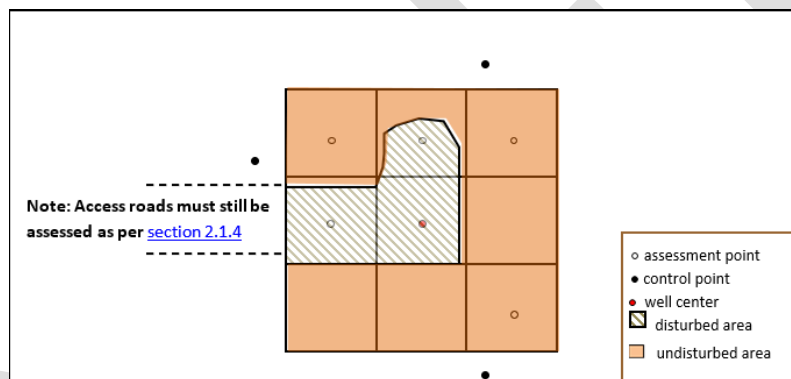


Figure 4. Example of a minimally disturbed site. The minimum sampling requirement is three assessment points on the disturbed portion of the lease, three assessment points on the undisturbed portion of the lease and three control assessment points off-lease. Where the site does not follow the above scheme, it must be clearly explained why the assessment points were chosen and they must be sufficiently spaced throughout the disturbed area to ensure adequate assessment of the disturbed area (three assessment points around well centre is not sufficient). Additional assessment points can be completed for further proof of acceptable reclamation

3.2 Landscape

Landscape criteria will be assessed by comparing the site with adjacent land. Differences between the site and the adjacent land must not interfere with normal land use and not show a negative impact on or off-site.

Landscape criteria are assessed by looking at the site rather than individual assessment points. It is necessary to do this from several vantage points on the site. While evaluation of landscape criteria can be somewhat subjective, the DSA should contain a discussion of each landscape parameter defined in Table 5 to make it clear that each of these criteria were considered.

Table 6 – DSA Landscape Parameters for Grasslands

Drainage	Site drainage should be consistent with the original patterns, directions and capacity or be comparable with the surrounding landscape. Facilities or features left in place (i.e. clay pads) must not negatively impact drainage.
Erosion	No more soil erosion (i.e. rills, gullies or blowouts) than on adjacent land allowed.
Contour	Contour and roughness must conform and blend with adjacent contours or be consistent with present or intended land use.
Stability	No visible evidence of slope movement, slumping, subsidence, or tension cracks allowed greater than on adjacent landscape.
Gravel and Rocks	May not be piled, windrowed or concentrated in one area. Gravel (<10 cm) plus rock (>10 cm): No more than an increase of 20% in surface cover is allowed.
Debris	No industrial or domestic debris allowed. Woody debris (roots, slash, etc.) must not interfere with adjacent or normal land use. No large, woody debris and no woody debris (roots and slash) that could be removed with a brush rake is allowed.

3.3 Surface Soil Quantity, Distribution and Quality

After one full growing season, soil quantity, soil quality and admixing percent are to be included in the DSA soils assessment for each assessment point.

3.3.1 Topsoil Additions

Grasslands topsoil addition criteria are the same as previously defined for cultivated lands, therefore, please refer to section 2.3.1 of the cultivated land topsoil addition criteria.

NOTE: Amendments (peat, manure, alfalfa pellets, organic material, etc.) are not considered a replacement for topsoil and must be documented in the DSA when applied as part of the remediation and reclamation of the site. A minimum waiting period of two years from the application date is required following the use of an amendment before conducting the DSA that will be submitted with the AOR application.

NOTE: Weed spraying is not considered an amendment and can be assessed the next season to determine successful eradication except for Japanese brome, scentless chamomile, downy brome, and leafy spurge.

3.3.2 Quantity and Distribution of Replaced Surface Soil

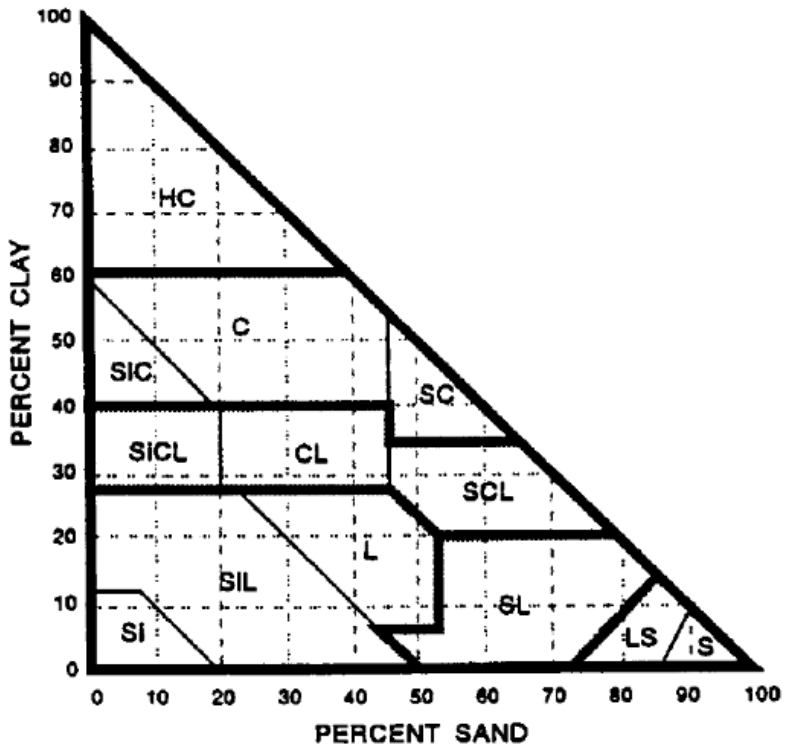
The criteria regarding the quantity and distribution of surface soil differs depending whether the site was initiated before or after the implementation of the AOR process on June 19, 2007. Grasslands quantity and distribution of surface soil criteria are the same as previously defined for cultivated lands, therefore, please refer to section 2.3.2.1 (for sites after June 19, 2007) and/or section 2.3.2.2 (for sites predating June 19, 2007).

3.3.3 Quality of Replaced Surface Soil

At each assessment point, except for the soil profile assessment, the third-party consultant will document the soil quality parameters (defined in Table 6) within the DSA.

When compared with representative controls (i.e. from similar depths with similar light and moisture conditions), the lease and access assessment points must meet the criteria defined in Table 6 for the assessment point to pass.

Table 7 – DSA Soil Quality Parameters for Grasslands

Admixing %	Remain in the same class (0 to 30%, >30% to 60%, and >60%) or lower class of admixing when compared to controls.
Texture	Remain in the same texture class (within the dark lines) when compared to controls.  Texture Class Triangle The Soil Texture Classes Triangle was taken from Alberta Environment, 1995 - <i>Reclamation Criteria for Wellsites and Associated Facilities – 1995 Update</i>.

Soil Strength	Remain in the same class (friable; firm; and hard) when compared to controls.
Soil Aggregate Size	Remain in the same class (<2 cm, 2 cm to 5 cm, and >5 cm to 10 cm) when compared to controls. No soil aggregates greater than 10 cm are allowed unless similar size soil aggregates are present in the control soil.
Soil Profile Assessment	NOTE: When more than one horizon is mixed to make up the minimum requirement for salvaged soil, the control for the quality comparison must be mixed across the same depth as the salvaged soil horizons. <u>Assessment Depth</u> Soils will be assessed to a depth of 50 cm (or to a soil restrictive layer) on a grid basis on-site, with appropriate off-site measurements (controls). If a soil restriction occurs before the required assessment depth of 50 cm is reached then the assessment is not required to advance any deeper into the soil, however, the assessment depth measurement must be reported in the DSA. <u>Restriction Assessment</u> The process restriction parameters are: • Water permeability. • Vertical root elongation. • Soil aeration. • Compaction Document in the DSA the topsoil and subsoil process restriction parameters as either “restrictive” or “non-restrictive” as compared to the control. NOTE: a restrictive soil profile is a FAILED class parameter if the representative controls are non-restrictive. Gravel or rocks found in the soil profile must be comparable to conditions found in the controls. Any anomalies observed in the soil profile must be recorded on the DSA Form. Professional judgment should be used to determine whether parameters are restrictive to root growth and establishment. For more details on assessing process restrictions refer to Appendix B. NOTE: Since root elongation is being assessed, soil profile assessment should be done when fully developed roots are present. <u>Lease and Control Assessments</u> Soil profile assessments for cultivated lands will be conducted at every second assessment point on and off the lease. For example, a 100 m x 100 m lease would require a minimum of nine soil profile assessments (five on-site assessment points and four off-site control points). <u>Access Roads and Paired Control Assessments</u> Soil profile assessments are to be carried out at each paired assessment point. For example, a 500 m access road would require a minimum of ten soil profile assessments (five access assessment points and the five paired control points).

3.3.4 Soil Tolerance

A summary of the passing soil depth quantity and distribution criteria is provided in Table 3, within Section 2.3.4.

It is recognized that it may be difficult to meet the soil criteria (defined above) across the entire site; especially where salvage topsoil was minimal. Therefore, to account for this, it is acceptable that one of the grids may vary from the desired soil outcome. This means a single assessment grid within the DSA can fail by soil depth, soil quality, or a combination of these for a maximum of one grid failure on the entire site (which is comprised of the lease and access road).

NOTE: Within a single grid it is acceptable to fail in one or more of the soil quality parameters listed in Table 6.

NOTE: For smaller lease sizes (i.e. 40 m x 60 m) the tolerance criteria still apply even though fewer grids are assessed and a single grid failure would mean a greater percentage of the disturbed area is below the target criteria in comparison to a larger site. This is acceptable as it is recognized that there is less overall disturbance to the land by using the smaller lease size and credit is given to operators who attempt to minimize disturbance.

Please refer to the examples provided in section 2.3.4 which illustrate acceptable soil quantity, distribution and quality tolerances.

3.4 Vegetation

Vegetation parameters, along with bare areas and weeds/undesirable plants, must be assessed at each assessment point and documented within the DSA.

Vegetation must be present at the time of the assessment. No special management practices, not consistent with those used on the control area, are allowed on the site that would affect the vegetation results. Fertilizer and/or amendment applications will be considered consistent with the control area if

- the landowner applied fertilizer and/or an amendment to the site as part of their normal management practice; or
- the licensee applied fertilizer and/or an amendment to the site to bring it up to the same nutrient levels as the control soils (based on lab fertility analyses).

NOTE: On public lands, it is expected that native species will not be fertilized unless approval from the appropriate governing body is received. Fertilizer and/or amendment additions must be documented within the DSA (i.e. type, application rate, quantity, etc.) if applied during remediation and/or reclamation of the site.

3.4.1 Use of Non-native Species

Non-native species can be used where their benefits to site properties are known and the species are part of a plan to improve a site. For example, the use of agronomic annuals can be used for erosion control on recently restored sites. However, these species cannot be persistent and must not contribute to the vegetation criteria. The overall objective of the DSA standard is

to ensure well/facility sites have been reclaimed properly and are comparable with the surrounding area. Leaving non-native species on-site would not meet this objective.

3.4.2 Timing of Assessment

For grasslands, without fertilizer or amendment addition, the vegetation assessment should be conducted after a minimum of one full growing season. On sites where fertilizer and/or an amendment has been applied by the licensee, as part of the remediation and reclamation of the site, a minimum waiting period of two years from the application date is required before conducting the DSA that will be submitted with the AOR application. The assessment must occur prior to senescence.

NOTE: Weed spraying is not considered an amendment and can be assessed the next season to determine successful eradication except for Japanese brome, scentless chamomile, downy brome, and leafy spurge.

3.4.3 Vegetation Assessment

At each assessment point, the third-party consultant will document the vegetation parameters (defined in Table 7) within the DSA. The vegetation assessments are based on a visual comparison between the site (lease and access) and the representative controls therefore vegetation must be present at the time of assessment.

When compared with representative controls, the lease and access assessment points must meet the criteria defined in Table 7 for the assessment point to pass. NOTE: The lease and access must pass all the criteria defined in Table 7 to be considered an acceptable DSA within an AOR application submission.

Table 8 – DSA Vegetation Parameters for Grasslands

Plant Species Composition	Re-vegetation species and species composition should be comparable with control vegetation or meet reasonable land management objectives. NOTE: Weeds and undesirable plants <u>cannot</u> contribute to the plant species composition.								
Plant Health	Plant health must be equal to or better than that of the the control vegetation. Plant health should be documented within the DSA as either poor, fair, good or excellent. Ideally, plants should be healthy; characteristics to look for and note are vigour, colour (ripening stage), disease-free and vegetation quality. <table><tr><td>Excellent</td><td>Vigorous, healthy, no evidence of disease or stress</td></tr><tr><td>Good</td><td>Less then 25% evidence of stress/disease/discoloration</td></tr><tr><td>Fair</td><td>25%-50% evidence of stress/disease/discoloration</td></tr><tr><td>Poor</td><td>Greater than 50% evidence of stress/disease/discoloration, dead or not present</td></tr></table> NOTE: Evidence of stressed vegetation should be documented within the DSA and must be comparable to the control vegetation. Where there is evidence of stressed	Excellent	Vigorous, healthy, no evidence of disease or stress	Good	Less then 25% evidence of stress/disease/discoloration	Fair	25%-50% evidence of stress/disease/discoloration	Poor	Greater than 50% evidence of stress/disease/discoloration, dead or not present
Excellent	Vigorous, healthy, no evidence of disease or stress								
Good	Less then 25% evidence of stress/disease/discoloration								
Fair	25%-50% evidence of stress/disease/discoloration								
Poor	Greater than 50% evidence of stress/disease/discoloration, dead or not present								

	vegetation, a description along with photographic evidence must be supplied in the DSA to demonstrate both on-site and off-site effects are comparable.
Plant Density	Plant density must be equal to or greater than 80% of the control vegetation. - each lease point $\geq$ (average control $\times$ 0.80); and - each access point $\geq$ (corresponding paired control $\times$ 0.80). NOTE: At each assessment point the third-party consultant shall document the plant density of live/desirable/healthy plants. NOTE: The species type, growth phase and other factors will affect the easiest method of measuring plant density. Therefore, the results may be expressed as percentage cover for the representative area (lump all plant species together into a single density value and note any observable differences in species composition). The measurement methodology must be documented in the DSA and must be consistent across all assessment points and controls.
Bare Area	The bare area refers to the areas with exposed soil that are devoid of vegetation. The assessment point must have a representative bare area when compared to the rest of the grid area. The bare area percent at assessment points should not be greater than 10% as compared to the control. - each lease assessment point $\leq$ average control + 10%; and - each access assessment point $\leq$ corresponding paired control + 10%. NOTE: Bare areas that are located outside the assessment point must be comparable to those found offsite. If an anomaly is encountered, the locations must be detailed on the DSA sketch and information such as measurements, photos, and applicable vegetation parameter data must be collected to compare to the conditions found in the controls.
Weeds & Undesirable Plants	Weeds are to be managed on all lands as per The Weed Control Act which is regulated by the Ministry of Agriculture. NOTE: Once a weed species has been identified at a site, please refer to the Minister's Order Designating Prohibited, Noxious and Nuisance Weeds (Weed List) to determine the type of weed and potential action required under <i>The Weed Control Act</i> and ER's criteria as defined below: <u>Weed & Undesirable Plant Species Composition</u> Weeds and undesirable plant species identified on-site must also be present in the off-site controls; otherwise, the on-site weed and/or undesirable plant species must be removed. NOTE: The presence of weeds/undesirable plants may or may not have been directly influenced by well/facility activity. The third-party consultant must ensure that the control samples are representative of the surrounding area. If <u>no weed species</u> are present at an assessment point enter "not applicable" in the weed species column and "0" in the weed density column to indicate the weed assessment was conducted. <u>Weed & Undesirable Plant Species Type</u> Depending on the species type identified, ER's requirements differ as follows:

	• <u>Prohibited Weeds</u> – must be eradicated on-site to prevent their movement out of the area; • <u>Noxious Weeds</u> – must be contained and controlled on-site and any isolated infestations found on-site must be eradicated. • <u>Nuisance Weeds and Undesirable Plants</u> – must be controlled on-site. <u>Weed & Undesirable Plant Density</u> No prohibited weeds are allowed on-site. The density of noxious weeds, nuisance weeds, and undesirable plants on-site must be less than or equal to the same species found in the controls. • average lease $\leq$ average control; and • each access point $\leq$ corresponding paired control. NOTE: The density results may be expressed in weeds per square meter, linear meter, or percentage cover for the representative area. The measurement methodology must be documented in the DSA and must be consistent across all assessment points and controls.
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4. Reclamation Criteria for Peatlands

Peatlands are areas of land with a naturally accumulated layer of peat. Peat is an unconsolidated soil material consisting largely of un-decomposed or only slightly decomposed organic matter; mainly derived from mosses or sedges. Peatlands also include functioning bogs or fens.

When constructing a site in peatlands, the requirements for salvaging surface soil and subsequent reclamation may differ as follows:

- **Deep Peat (>40 cm)** – surface soil salvage is not required as the pad will likely be constructed over the peat. If the land is potentially arable no salvage is required but pad removal may be required at the time of site reclamation.
- **Thin Peat (<40 cm)** – surface soil salvage required (minimum 15 cm depth to maximum depth of 40 cm or to the mineral soil contact). If surface soil has been salvaged, replace what is available as evenly as possible across the site at the time of reclamation.

Peatlands that have not been cultivated, and may or may not be treed, are to be assessed under the peatlands criteria.

NOTE: All cultivated peat soils shall be assessed under the cultivated land criteria provided in section 2.

The following provides a summary of the criteria upon which the DSA is to be conducted:

- Landscape: drainage, erosion, contour, stability, gravel & rocks, debris.
- Vegetation: plant (species/health/density), bare areas, weeds (species/type/density).

4.1 Site Assessment Sampling Scheme

Peatlands do not have a defined sampling scheme. In general, the landscape criteria are assessed by looking at the site (lease and access) as a whole. Both landscape and vegetation

criteria are assessed from several vantage points on the site and compared to the lands surrounding or adjacent to the site.

NOTE: An assessment is not required on areas of the lease or access that have received an Exemption from Reclamation issued by ER or were authorized by the landowner(s) to be left in place as an “improvement” (i.e. access road, cement pad, etc.).

4.2 Landscape

Landscape criteria will be assessed by comparing the site with adjacent land. Differences between the site and the adjacent land must not interfere with normal land use and not show a negative impact on or off-site.

Landscape criteria are assessed by looking at the site rather than individual assessment points. It is necessary to do this from several vantage points on the site. While evaluation of landscape criteria can be somewhat subjective, the DSA should contain a discussion of each landscape parameter defined in Table 8 to make it clear that each of these criteria were considered.

Table 9 – DSA Landscape Criteria for Peatlands

Drainage	Site drainage should be consistent with the original patterns, directions and capacity or be comparable with the surrounding landscape. Facilities or features left in place (i.e. clay pads) must not negatively impact drainage or adjacent forest growth.
Erosion	No more soil erosion (i.e. rills, gullies or blowouts) than on adjacent land allowed.
Contour	Contour and roughness must conform and blend with adjacent contours or be consistent with present or intended land use.
Stability	No visible evidence of slope movement, slumping, subsidence, or tension cracks allowed greater than on adjacent landscape.
Gravel and Rocks	May not be piled, windrowed or concentrated in one area.
Debris	No industrial or domestic debris allowed. Woody debris (roots, slash, etc.) must not interfere with adjacent or normal land use.

4.3 Vegetation

Vegetation parameters, along with bare areas and weeds/undesirable plants, must be assessed at each assessment point and documented within the DSA.

Vegetation must be present at the time of the assessment. No special management practices, not consistent with those used in the control area, are allowed on the site that would affect the vegetation results. Fertilizer and/or amendment applications will be considered consistent with the control area if:

- the landowner applied fertilizer and/or an amendment to the site as part of his/her normal management practice; or

- the licensee applied fertilizer and/or an amendment to the site to bring it up to the same nutrient levels as the control soils (based on lab fertility analyses).

NOTE: Fertilizer and/or amendment additions must be documented within the DSA (i.e. type, application rate, quantity, etc.) if applied during remediation

4.3.1 Use of Non-native Species

Non-native species can be used where their benefits to site properties are known and the species are part of a plan to improve a site. For example, the use of agronomic annuals can be used for erosion control on recently restored sites. However, these species cannot be persistent and must not contribute to the vegetation criteria. The overall objective of the DSA standard is to ensure well/facility sites have been reclaimed properly and are comparable with the surrounding area. Leaving non-native species on-site would not meet this objective.

4.3.2 Timing of Vegetation Assessment

For peatlands, without fertilizer or amendment addition, the vegetation assessment should be conducted after a minimum of one full growing season. On sites where fertilizer and/or an amendment has been applied as part of the remediation and reclamation of the site, a minimum waiting period of two years from the application date is required before conducting the DSA that will be submitted with the AOR application.

NOTE: Weed spraying is not considered an amendment and can be assessed the next season to determine successful eradication except for Japanese brome, scentless chamomile, downy brome, and leafy spurge.

4.3.3 Vegetation Assessment Criteria

At each assessment point, the third-party consultant will document the vegetation parameters (defined in Table 9) within the DSA. The vegetation assessments are based on a visual comparison between the site (lease and access) and the representative controls therefore vegetation must be present at the time of assessment.

When compared with representative controls, the lease and access assessment points must meet the criteria defined in Table 9 for the assessment point to pass.

NOTE: The lease and access must pass all the criteria defined in Table 9 to be considered an acceptable DSA within an AOR application submission.

Table 10 – DSA Vegetation Parameter for Peatlands

Plant Species Composition	Re-vegetation species and species composition should be comparable with control vegetation or meet reasonable land management objectives. NOTE: Weeds and undesirable plants <u>cannot</u> contribute to the plant species composition.
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Plant Health	Plant health must be equal to or better than the control vegetation Plant health should be documented within the DSA as either poor, fair, good or excellent. Ideally, plants should be healthy; characteristics to look for and note are vigour, colour (ripening stage), disease-free and vegetation quality. Plant maturity should be comparable to the surrounding site, as such if the lease is maturing faster or slower than the surrounding area, the site is not comparable. <table border="1"> <tr> <td>Excellent</td><td>Vigorous, healthy, no evidence of disease or stress</td></tr> <tr> <td>Good</td><td>Less than 25% evidence of stress/disease/discoloration</td></tr> <tr> <td>Fair</td><td>25%-50% evidence of stress/disease/discoloration</td></tr> <tr> <td>Poor</td><td>Greater than 50% evidence of stress/disease/discoloration, dead or not present</td></tr> </table> NOTE: Evidence of stressed vegetation should be documented within the DSA and must be comparable to the control vegetation. Where there is evidence of stressed vegetation, a description along with photographic evidence must be supplied in the DSA to demonstrate both on-site and off-site effects are comparable.	Excellent	Vigorous, healthy, no evidence of disease or stress	Good	Less than 25% evidence of stress/disease/discoloration	Fair	25%-50% evidence of stress/disease/discoloration	Poor	Greater than 50% evidence of stress/disease/discoloration, dead or not present
Excellent	Vigorous, healthy, no evidence of disease or stress								
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Fair	25%-50% evidence of stress/disease/discoloration								
Poor	Greater than 50% evidence of stress/disease/discoloration, dead or not present								
Plant Density	Plant density must be equal to or greater than 80% of the control vegetation. - each lease point $\geq$ (average control $\times$ 0.80); and - each access point $\geq$ (corresponding paired control $\times$ 0.80). NOTE: At each assessment point the third-party consultant shall document the plant density of live/desirable/healthy plants. NOTE: The species type, growth phase and other factors will affect the easiest method of measuring plant density; therefore, the results may be expressed in plants, stems per square meter or linear meter, or percentage cover for the representative area (lump all plant species together into a single density value and note any observable differences in species composition). The measurement methodology must be documented in the DSA and must be consistent across all assessment points and controls.								
Bare Area	The bare area refers to the areas with exposed soil that are devoid of vegetation. The assessment point must have a representative bare area when compared to the rest of the grid area. The bare area percent at assessment points should not be greater than 10% as compared to the control. - each lease assessment point $\leq$ average control + 10%; and - each access assessment point $\leq$ corresponding paired control + 10%. NOTE: Bare areas that are located outside the assessment point must be comparable to those found offsite. If an anomaly is encountered, the locations must be detailed on the DSA sketch and information such as measurements, photos, and applicable vegetation parameter data must be collected to compare to the conditions found in the controls.								

Weeds & Undesirable Plants	Weeds are to be managed on all lands as per The Weed Control Act which is regulated by the Ministry of Agriculture. NOTE: Once a weed species has been identified at a site, please refer to the Minister's Order Designating Prohibited, Noxious and Nuisance Weeds (Weed List) to determine the type of weed and potential action required under <i>The Weed Control Act</i> and ER's criteria as defined below: <u>Weed & Undesirable Plant Species Composition</u> Weeds and undesirable plant species identified on-site must also be present in the off-site controls; otherwise, the on-site weed and/or undesirable plant species must be removed. NOTE: The presence of weeds/undesirable plants may or may not have been directly influenced by well/facility activity. The third-party consultant must ensure that the control samples are representative of the surrounding area. If no weed species are present at an assessment point enter "not applicable" in the weed species column and "0" in the weed density column to indicate the weed assessment was conducted. <u>Weed & Undesirable Plant Species Type</u> Depending on the species type identified, ER's requirements differ as follows: • <u>Prohibited Weeds</u> – must be eradicated on-site to prevent their movement out of the area; • <u>Noxious Weeds</u> – must be contained and controlled on-site and any isolated infestations found on-site must be eradicated. • <u>Nuisance Weeds and Undesirable Plants</u> – must be controlled on-site. <u>Weed & Undesirable Plant Density</u> No prohibited weeds are allowed on-site. The density of noxious weeds, nuisance weeds, and undesirable plants on-site must be less than or equal to the same species found in the controls. • average lease $\leq$ average control; and • each access point $\leq$ corresponding paired control. NOTE: The density results may be expressed in weeds per square meter, linear meter, or percentage cover for the representative area. The measurement methodology must be documented in the DSA and must be consistent across all assessment points and controls.
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5. Reclamation Criteria for Forested Lands

Public Lands (Provincial Forests)

Any leases located on provincial forested lands are required to follow the reclamation criteria of the provincial governing entity that manages the land(s), such as the Ministry of Environment (ENV) or the Ministry of Agriculture (AGR). Once reclamation is completed, all that is required by ER is a submission of the release/approval verifying that the forested lands have been reclaimed to the satisfaction of ENV or AGR. There is no DSA component within the AOR application for these sites.

Private lands

For leases located on private lands the reclamation and DSA will be handled on a site-by-site basis. The licensee is required to submit a reclamation site plan prepared by a third-party

consultant for approval by ER before commencing any reclamation activity on the site. Once approved, the licensee will complete the reclamation as outlined in the submitted plan and will complete a DSA after a timeframe specified by ER. As the DSA criteria are site specific for private forested lands ER will prescribe the DSA criteria when necessary.

6. Changes to Land Use and Applicability of Assessment Criteria

In some cases, it may be acceptable that the endpoint land use for a reclaimed site may differ from that of the surrounding area. For example, a reclaimed site located within a forested area may be reclaimed to a pond or may be cultivated for grazing or crops or may be reclaimed to provide for other future industrial/commercial land uses.

In these situations, the applicable endpoint land use criteria should be used for the reclamation assessment. However, it is recognized that representative controls may not be available for proper evaluation of a successful reclamation. In these instances, professional judgement with supporting rationale should be supplied in the DSA along with written landowner approval.

NOTE: For provincial forested lands, preapproval from the Ministry of Environment is required before any changes made to the land are completed.

NOTE: On sites where proposed development is requested (i.e. residential/commercial) as a change in land use, approval will be required from the registered landowner, ER and the Rural Municipality (RM) who governs the area before proceeding.

7. Mandatory Photographs

To ensure adequate photographic evidence of the conditions at the site, the following photographs are required:

- At each corner of the lease, photos should be taken along the lease boundary line in each direction and towards the center of the lease to show the surrounding area off the lease compared to on the lease.
- At well center, photos should be taken standing 5 to 10 metres back of well center in each cardinal direction towards well centre showing what is occurring at well center and the surrounding area of the lease. These photos should not be taken standing on well center.
- At all soil assessment points, photos must be taken of the soil in-situ showing the depth of the topsoil, the total dig depth, soil profile, root restrictions, etc. to ensure all necessary information is captured.
- At every other vegetation assessment point, photos should be taken of the bare areas, plant density, and plant height with measurement equipment. Multiple photos of different plant heads up close must be provided to show the health of the plants.
- At anomaly areas onsite and offsite, photos should be taken to show the onsite issues and comparable offsite issues, as well as the appropriate measurements and illustrated on a site sketch where each is occurring.

Unmanned Aerial Vehicle (UAV) photos providing an overhead view of the lease and surrounding area are recommended to demonstrate comparability are recommended. A well-center marker should be included on the UAV photos to allow for proper review.

While these photos are not required to be included in the DSA form, they should be retained on file and made available upon request by ER. Examples of these photos are included in Appendix C: Mandatory Photographs.

NOTE: In situations where the photos described above could not be collected (i.e. due to weather conditions preventing UAV flights, etc.), the reason must be explained in the SSCR why they could not be collected.

8. References

Glossary of Terms in Soil Science. Research Branch, revised 1976. Canada Department of Agriculture, Ottawa. Publication 1459.

Alberta Environment, 2010. *2010 Reclamation Criteria for Wellsites and Associated Facilities for Cultivated Lands*, Alberta Environment, Edmonton, Alberta. 2011.

Alberta Environment, 1995. *Reclamation Criteria for Wellsites and Associated Facilities – 1995 Update*, Alberta Environment, Edmonton, Alberta. 1995.

Appendix A: Example of Detailed Site Assessment



Detailed Site Assessment

A passing DSA is a mandatory component of the AOR application. For further details on DSA requirements, assessment criteria and timing for conducting the assessment please refer to *Directive PNG018*.

Prepared By (Consultant Company Name): Environmental Services Org.
 Contact Person: John Doe Position: Senior Environmental Consultant, P.Eng
 Phone #: (306) 555-5555 ext: 203 Email: john.doe@eso.sk.ca

Prepared For (Licensee Name): Rndo Oil and Gas Company Inc.
 Site Type: ☒ Well ☐ Facility
 Licence Number: 99Q123
 Lease Surface Location: 16-36-064-29W3
 Access Surface Location: 16-36-064-29W3

ACTIVITY TYPE	DESCRIPTION	DATE (mm/dd/yyyy)
Site Initialized	Provide finished drilling date (for well site)	01/02/2000
Abandonment Completed	Provide well cut & capped date (for drilled well site)	04/25/2019
Site Restoration Completed	Provide approximate date restored by third party	10/29/2021
Topsoil Addition	Not Applicable	
Fertilizer Addition	Provide date added (provide further details in question 8 below)	10/15/2022
Amendment Addition	Not Applicable	

1) Land use criteria (indicate all that apply):

☒ Cultivated (Annual Crop) ☐ Cultivated (Perennial Crop) ☒ Grasslands ☐ Peat lands ☐ Forest

2) Does the endpoint land use differ from the historical land use of the site? Yes; approval(s) attached and explanation provided below:

A large portion of the lease was converted from Grasslands to Cultivated Annual Crop usage as per the landowners request. Landowner provided approval and sign-off for this within the Reclamation Feedback Form.

3) Has the landowner agreed to allow "improvements" to remain on site? Yes; list of improvement feature(s) provided below:

The Texas gate and a portion of the fence remain on site. Landowner provided approval and sign-off for this within the Reclamation Feedback Form.

4) Has an Exemption from Reclamation been approved by ER for any portion of the site or access? Yes

5) How was the site accessed? Access Road (Developed/Undeveloped/Minimal Disturbance)

6) Were low/minimal disturbance practices used to construct the site and/or access? No

7) If topsoil additions were applied during site restoration provide additional details below (i.e. date of application, incorporation method, source, volume, chemical/physical composition compatibility with the site, weed content, etc):

No topsoil additions were applied to the site.

8) If fertilizers or amendments were applied during site restoration provide additional details below (i.e. type, application rate, quantity, location where applied):

50 pounds of fertilizer XYZ were applied to the lease and access road on October 15, 2022. A DSA was conducted after the required minimum 2 year waiting period was completed.

Appendix C

A. Landscape Assessment

Landscape criteria is assessed by comparing the site with the adjacent land. This assessment should be conducted by looking from several vantage points at the site as a whole (not at individual assessment points). Any differences noted between the site and the adjacent land must not interfere with normal land use and not show a negative impact on or off-site.

Licence # or Lease Surface Location	Assessors Name	Assessment Date
99Q123	John Doe	08/27/2025

While the evaluation of landscape criteria is somewhat subjective, a discussion of each of the following parameters is required:

DRAINAGE		
1) Is the surface water flow and onsite drainage (i.e. cross site flow, direction, dispersion, ponding, depressional storage) comparable to adjacent land offsite?		Yes; Site Passes
2) Are there any facilities or features left in place (i.e. clay pads, etc) onsite that would negatively impact drainage?		No; Site Passes
EROSION		
1) Is there any soil erosion (i.e. rills, gullies or blowouts) occurring onsite?		No
2) Based on a qualitative assessment of bare soil in relation to cover, is the onsite erosion comparable to the adjacent land offsite?		Yes; Site Passes
CONTOUR		
1) Does the contour/roughness onsite conform and blend with adjacent land offsite, and is it consistent with the present and/or intended land use?		Yes; Site Passes
STABILITY		
1) Is there any slope movement, slumping, subsidence, or tension cracks occurring onsite?		No
2) Is the onsite stability comparable to the adjacent land offsite?		Yes; Site Passes
GRAVEL & ROCKS		
1) Is there any gravel (<10cm) and/or rocks (>10cm) piled, windrowed or concentrated in areas onsite?		No; Site Passes
2) For Cultivated Sites:	Is there more than a 10% gravel increase in the surface cover anywhere onsite?	No; Site Passes
	Is there a rock increase in the surface cover anywhere onsite?	No; Site Passes
3) For Grassland Sites:	Is there more than a 20% gravel (plus rock) increase in the surface cover anywhere onsite?	No; Site Passes
DEBRIS		
1) Is there any industrial or domestic debris/refuse onsite?		No; Site Passes
2) For Grassland & Peatland Sites:	Is the organic debris (i.e. straw, wood) onsite consistent with adjacent land offsite?	Yes; Site Passes
	Is there any woody debris (i.e. roots, slash) onsite that is interfering with normal land use or the adjacent lands offsite?	No; Site Passes
COMMENTS OR JUSTIFICATION (provide additional information regarding landscape criteria below):		
A secondary site visit was completed on October 19, 2025, in order to discuss some roughness concerns the landowner had. The secondary site visit was completed once harvest was completed so the vegetation was not impeding the landscape assessment. It was determined that the roughness the landowner was feeling in the sprayer was not at the lease boundary, and was not caused by the oil and gas operations at this location. The landscape at the site passes.		

Appendix C

B. Lease Sketch

Licence # or Lease Surface Location	Assessor's Name	Assessment Date
99Q123	John Doe	08/27/2025

LEGEND									
Control Point • C#	Assessment Point • S#	Step Out 	Lease Boundary 	Access Road Boundary 	Drainage Direction 	Former Wellhead 	Former Storage Tank 	Former Sump/Pit 	Former Cement Pad

LANDSCAPE CRITERIA	VEGETATION CRITERIA	SOIL CRITERIA	OTHER INFORMATION
PD - Poor Drainage WP - Water Pooling G/R - Gravel/Rocks ST - Stability	E - Erosion C - Contour D - Debris VS - Vegetation Stress PH - Poor Health Areas BA - Bare Areas W - Weeds	AD - Admixing PR - Profile Restriction	 text DEFINE Approved Reclamation Exempted Area

Lease Size	
Length (m)	100.0
Width (m)	100.0
Area (ha)	1.00

Grid Size (m x m)	
	33m X 33 m

Land Use / Vegetation	
Lease	Cultivated (Wheat)/ Grasslands
North	Cultivated (Wheat)
East	Cultivated (Wheat)/ Grasslands
South	Grasslands
West	Cultivated (Wheat)/ Grasslands

COMMENTS

The north 2/3 of the well site consisted of annual cultivated cropland (wheat) and the south 1/3 of the site and access road was seeded to a native pasture grassland mix approved by the landowner to match the surrounding. The Native Pasture Species was comprised of Alfalfa, Fescue and Bromegrass. This was consistent with the species observed offsite in the controls.

A step-out was completed at S1 due to soil admixing in the topsoil, as well as some larger aggregates found in this assessment point. The admixing and larger aggregate was not noticed within the step-out assessment points, and is localized to a small area. The vegetation did not appear to be impacted by this difference. No other areas of admixing or larger aggregates were observed in the other assessment points.

A bare area (approx. 2m by 6m) was noticed in Assessment Grid 3 that appeared to be a seeding error. This was confirmed by the landowner. This bare area was an anomaly, and is not representative of the grid space, and was not due to oil and gas activities, so the grid assessment point was taken outside of this area.

Appendix C

C. Lease Soil Assessment

Licence # or Lease Surface Location		Assessor's Name				Assessment Date			
99Q123		John Doe				08/27/2025			
Lease Assessment Points	Topsoil					Soil Profile Assessment			Comments/Anomalies Observed
	Depth (cm)	Admixing (%)	Texture	Strength	Aggregate Size (cm)	Depth (cm)	Topsoil	Subsoil	
SO-1	12.3	0 to 30	CL	Friable	<2	50.0	NR	NR	Step-out was completed due to admixing and aggregate size. Admixing and larger aggregate was not observed in step-out locations.
S2	11.0	0 to 30	CL	Friable	<2				
S3	15.0	0 to 30	CL	Friable	<2	35.0	NR	R	Hardpan noticed at 35 cm. Did not impact root elongation and was discovered east of well center, both on and off lease.
S4	9.0	0 to 30	CL	Friable	<2				
S5	16.0	0 to 30	CL	Friable	<2	50.0	NR	NR	
S6	12.0	0 to 30	CL	Friable	<2				
S7	13.0	0 to 30	CL	Friable	<2	50.0	NR	NR	
S8	15.0	0 to 30	CL	Friable	<2				
S9	11.0	0 to 30	CL	Friable	<2	33.0	NR	R	Hardpan noticed at 33 cm. Did not impact root elongation and was discovered east of well center, both on and off lease.
Average	12.7								

Control Assessment Points	Topsoil					Soil Profile Assessment			Comments/Anomalies Observed
	Depth (cm)	Admixing (%)	Texture	Strength	Aggregate Size (cm)	Depth (cm)	Topsoil	Subsoil	
C1	12.0	0 to 30	CL	Friable	<2	50.0	NR	NR	
C2	11.0	0 to 30	CL	Friable	<2				
C3	14.0	0 to 30	CL	Friable	<2	50.0	NR	NR	
C4	10.0	0 to 30	CL	Friable	<2				
C5	13.0	0 to 30	CL	Friable	<2	32.0	NR	R	Hardpan noticed at 32 cm. Did not impact root elongation and was discovered east of well center, both on and off lease.
C6	15.0	0 to 30	CL	Friable	<2				
C7	10.0	0 to 30	CL	Friable	<2	50.0	NR	NR	
C8	13.0	0 to 30	CL	Friable	<2				
60% Average		7.4							
50% Average		6.1							

C. Lease Soil Assessment (Step Out Data)

When a failed parameter is encountered at a lease soil assessment location, the third party consultant may opt to conduct a step-out assessment to determine if it is representative of the assessment grid or not. A step-out consists of assessing three additional locations which can be up to 10 m from the original point in a triangular shape around it.

The data for the original assessment location, along with the individual step-out data must be reported on the step-out portion of the DSA form. The average of the step out data, denoted as SO #, should then be transferred into the lease soil assessment table in place of the original assessment point data and used when assessing the criteria requirements for that particular grid.

Licence # or Lease Surface Location		Assessors Name				Assessment Date			
99Q123		John Doe				08/27/2025			
		Topsoil				Soil Profile Assessment			
Assessment Points	Depth (cm)	Admixing (%)	Texture	Strength	Aggregate Size (cm)	Depth (cm)	Topsoil	Subsoil	Comments/Distance from Failed Point
SI (original)	12.0	>30 to 60	CL	Friable	2 to 5	50.0	NR	NR	
SO #1	14.0	0 to 30	CL	Friable	<2	50.0	NR	NR	
SO #2	11.0	0 to 30	CL	Friable	<2	50.0	NR	NR	
SO #3	12.0	0 to 30	CL	Friable	<2	50.0	NR	NR	
12.3		Average of the 3 Step-Out Locations							

Appendix C

D. Lease Vegetation Assessment

Licence #	Assessor's Name	Assessment Date
99Q123	John Doe	08/27/2025

The assessment method used on and offsite were consistent and defined as follows:	Plant Density	Bare Area	Weeds
	# of plants per linear meter	% bare	% cover

Lease Assessment Points	Plant Species Composition & 80% Requirement					Plant Productivity Ratings								Comments
	Desirable Species Type	Plant Health	Plant Height	Plant Density	Head Length	Seed Health	Seed Development	Pod Density	Average Rating	Bare Area (%)	Weeds Species Type	Nox Density	Nut Density	
S0-1	Wheat	Good	83.3	29	6.5	3.7	3.3		3.5	0	None	0	0	
S2	Wheat	Good	84.0	31	6.3	3.0	3.0		3.0	0	None	0	0	
S3	Wheat	Good	86.0	28	8.1	3.0	4.0		3.5	0	None	0	0	
S4	Wheat	Good	82.0	34	7.8	3.0	3.0		3.0	0	None	0	0	
S5	Wheat	Good	88.3	29	6.5	3.7	3.0		3.4	0	None	0	0	
S6	Wheat	Good	88.0	33	6.1	4.0	3.0		3.5	0	None	0	0	
Lease Average			86.1	30.7	6.9	3.4	3.2	#DIV/0!	3.3			0.0	0.0	

Control Assessment Points	Plant Species Composition & 80% Requirement					Plant Productivity Ratings								Comments
	Desirable Species Type	Plant Health	Plant Height	Plant Density	Head Length	Seed Health	Seed Development	Pod Density	Average Rating	Bare Area (%)	Weeds Species Type	Nox Density	Nut Density	
C1	Wheat	Good	83.0	35	6.5	3.0	3.0		3.0	0	None	0	0	
C2	Wheat	Good	88.0	29	8.3	4.0	4.0		4.0	0	None	0	0	
C3	Wheat	Good	91.0	32	5.9	3.0	3.0		3.0	0	None	0	0	
C4	Wheat	Good	82.0	33	6.8	4.0	4.0		4.0	0	None	0	0	
Minimum Requirement Averages			68.8	25.8	5.5	2.5	2.5	#DIV/0!	3.0	10		0.0	0.0	

D. Lease Vegetation Assessment (Step Out Data)

When a failed parameter is encountered at a lease vegetation assessment location, the third party consultant may opt to conduct a step-out assessment to determine if it is representative of the assessment grid. A step-out consists of assessing three additional locations which can be up to 10 m from the original point in a triangular shape around it.

The data for the original assessment location, along with the individual step-out data must be reported on the step-out portion of the DSA form. The average of the step out data, denoted as SO #, should then be transferred into the lease vegetation assessment table in place of the original assessment point data and used when assessing the criteria requirements for that particular grid.

Licence #	Assessor's Name	Assessment Date
99Q123	John Doe	8/27/2025

Assessment Points	Plant Species Composition & 80% Requirement					Plant Productivity Ratings								Comments
	Desirable Species Type	Plant Health	Plant Height	Plant Density	Head Length	Seed Health	Seed Development	Pod Density	Average Rating	Bare Area (%)	Weeds Species Type	Nox Density	Nut Density	
S1 (original)	Wheat	Good	90.0	29	6.6	4.0	4.0		4.0	0	None	0	0	
SO #1	Wheat	Good	88.0	27	6.1	3.0	3.0		3.0	0	None	0	0	5 m from failed point
SO #2	Wheat	Good	92.0	30	6.8	4.0	4.0		4.0	0	None	0	0	4 m from failed point
SO #3	Wheat	Good	85.0	29	6.5	4.0	3.0		3.5	0	None	0	0	5 m from failed point
Average of the 3 Step-Out Locations:			88.3	29	6.5	3.7	3.3	#DIV/0!	3.5	0		0.0	0.0	

D. Lease Vegetation Assessment

Licence #	Assessor's Name	Assessment Date
99Q123	John Doe	08/27/2025

The assessment method used on and offsite were consistent and defined as follows:	Plant Density	Bare Area	Weeds
	% cover	% bare	% cover

Lease Assessment Points	Plant Species Composition & 80% Requirement					Plant Productivity Ratings								Comments
	Desirable Species Type	Plant Health	Plant Height	Plant Density	Head Length	Seed Health	Seed Development	Pod Density	Average Rating	Bare Area (%)	Weeds Species Type	Nox Density	Nut Density	
S7	Al, Fe, Br	Good		90					#DIV/0!	10	None	0	0	Al = Alfalfa, Fe = Fescue, Br = Bromegrass
S8	Al, Fe, Br	Good		85					#DIV/0!	15	None	0	0	
S9	Al, Fe, Br	Good		90					#DIV/0!	10	None	0	0	
Lease Average		#DIV/0!	88.3	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!			0.0	0.0	

Control Assessment Points	Plant Species Composition & 80% Requirement					Plant Productivity Ratings								Comments
	Desirable Species Type	Plant Health	Plant Height	Plant Density	Head Length	Seed Health	Seed Development	Pod Density	Average Rating	Bare Area (%)	Weeds Species Type	Nox Density	Nut Density	
C6	Al, Fe, Br	Good		85					#DIV/0!	15	None	0	0	
C6	Al, Fe, Br	Good		90					#DIV/0!	10	None	0	0	
C7	Al, Fe, Br	Good		95					#DIV/0!	5	None	0	0	
C8	Al, Fe, Br	Good		85					#DIV/0!	15	None	0	0	
Minimum Requirement Averages		#DIV/0!	71.0	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	21		0.0	0.0	

Appendix C

E. Access Sketch

Licence # or Access Surface Location		Assessors Name		Assessment Date (mm/dd/yyyy)	
99Q123		John Doe		08/27/2025	

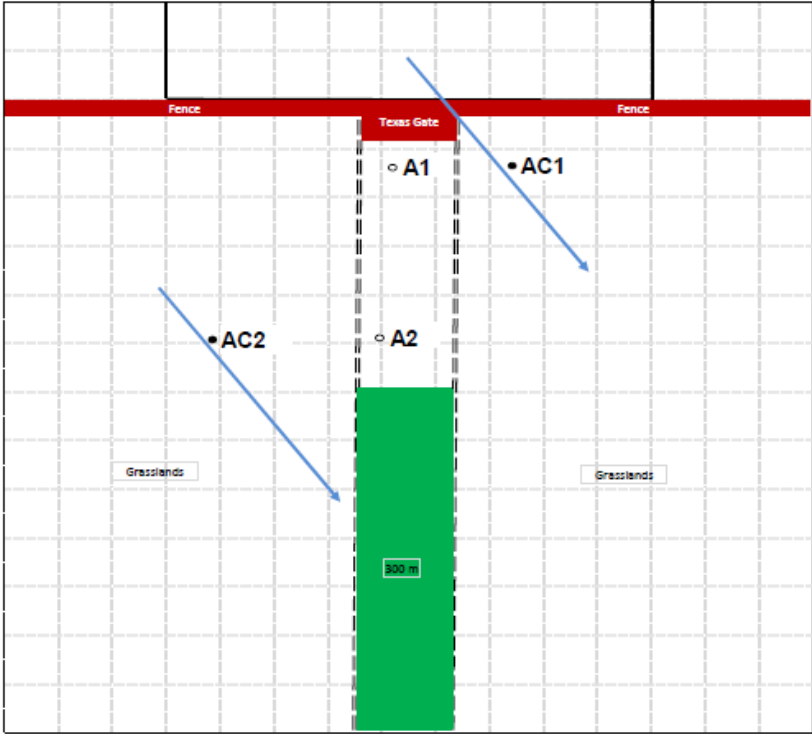
LEGEND					
Access Control Point • AC#		Access Assessment Point ○ A#		Lease Boundary — — — —	Access Road Boundary = = = =
Drainage Direction →					
LANDSCAPE CRITERIA		VEGETATION CRITERIA		SOIL CRITERIA	
PD - Poor Drainage	E - Erosion	VS - Vegetation Stress	AD - Admixing	☐ Improvement Feature Remaining Onsite DEFINE	
WP - Water Pooling	C - Contour	PH - Poor Health Areas	PR - Profile Restriction		
G/R - Gravel/Rocks	D - Debris	BA - Bare Areas			
ST - Stability		W - Weeds			
OTHER INFORMATION					
Approved Reclamation Exempted Area ☐					

Access Size

Length (m)	450.0
Width (m)	20.0
Area (ha)	0.9

Land Use / Vegetation

Access	Grasslands
North	Grasslands
East	Grasslands
South	Grasslands
West	Grasslands



The map shows a grid with a red horizontal line at the top labeled 'Fence'. A 'Texas Gate' is marked on the fence. A vertical dashed line runs through the center. A green rectangular area at the bottom is labeled '300 m'. Access points are marked: AC1 (top right), AC2 (middle left), and A1 (top center), A2 (middle center). Blue arrows indicate drainage directions. The area is labeled 'Grasslands'.

COMMENTS
The access road is located within grasslands. The southern 300 m of the access road is exempted to a wellsite located within 10-36-64-29W2 (Licence #00K123). The Texas gate and fence remain on site as improvements by request of the landowner.

Appendix C

F. Access Soil Assessment

Licence # or Access Surface Location		Assessors Name				Assessment Date			
99Q123		John Doe				08/27/2025			
		Topsoil				Soil Profile Assessment			
Assessment Points	Depth (cm)	Admixing (%)	Texture	Strength	Aggregate Size (cm)	Depth (cm)	Topsoil	Subsoil	Comments/Anomalies Observed
A1	12.0	0 to 30	CL	Friable	<2	38.0	NR	R	
AC1	13.0	0 to 30	CL	Friable	<2	35.0	NR	R	
A2	11.0	0 to 30	CL	Friable	<2	50.0	NR	NR	
AC2	10.0	0 to 30	CL	Friable	<2	50.0	NR	NR	

G. Access Vegetation Assessment

Licence # or Access Surface Location		Assessors Name		Assessment Date										
99Q123		John Doe		08/27/2025										
The assessment method used on and offsite were consistent and defined as follows:		Plant Vegetation		Bare Area		Weeds / Undesirable Plants								
		# of plants per linear meter		% bare		% cover								
Plant Species Composition & 80% Requirement														
Plant Productivity Ratings:														
Assessment Points	Desirable Species Type	Plant Health	Plant Height	Plant Density	Head Length	Seed Health	Seed Development	Pod Density	Average Rating	Bare Area (%)	Weed Species True	Nex Density	Nut Density	Comments
A1	Al, Fa, Br	Good		85					#DIV/0!	15.0	None	0	0	Al = Alfalfa, Fa = Fescue, Br = Bromegrass
AC1	Al, Fa, Br	Good		90					#DIV/0!	10.0	None	0	0	
A2	Al, Fa, Br	Good		90					#DIV/0!	10.0	None	0	0	
AC2	Al, Fa, Br	Good		85					#DIV/0!	15.0	None	0	0	

H. Photos

	Licence # or Lease Surface Location	Detailed Site Assessment Photos Prepared by:
	99Q123	John Doe

PHOTO # 1	
Date Taken:	
08/27/2025	
Location:	
East of Well Center	
Description:	Photo of well center and surrounding crop. Well center is denoted by the stake. No noticeable difference in the vegetation can be found at well center compared to surrounding.

PHOTO # 2	
Date Taken:	
08/27/2025	
Location:	
Assessment point S4, looking north	
Description:	View of the site, looking north, at assessment point S4, where the ASTs were previously located. No noticeable difference in the vegetation can be found within the area of previous ASTs compared to surrounding.

	Licence # or Lease Surface Location	Detailed Site Assessment Photos Prepared by:
	99Q123	John Doe

PHOTO # 3			
Date Taken:			
08/27/2025			
Location:			
Assessment point S4			
Description:	View of Vegetation Assessment at S4, with measuring reference.		

PHOTO # 4	
Date Taken:	
08/27/2025	
Location:	
Assessment point 4	
Description:	View of the soil profile assessment at S4, with measuring reference.

	Licence # or Lease Surface Location	Detailed Site Assessment Photos Prepared by:
	99Q123	John Doe

PHOTO # 5	
Date Taken:	
10/19/2025	
Location:	
View from the west side of the lease, looking northeast	
Description:	View of the landscape after the crop was harvested, in order to not impede the assessment. The landscape was found to be comparable on and off site.

PHOTO # 6		
Date Taken:		
08/27/2025		
Location:		
Description:	This is an example of a UAV Photo which provides a good aerial image of the site, along with a navigation panel that shows the lease boundary, as well as the location and direction of the photo being taken.	

I. Summary

Licence # or Lease Surface Location	Assessors Name	Assessment Date
99Q123	John Doe	08/27/2025

Landscape Assessment Criteria Summary	Lease & Access
1) Is the landscape on-site comparable to the adjacent lands offsite?	Yes; Site Passes (Summary and Justification provided in section A)

Soil Assessment Criteria Summary	Lease	Access
1) Has topsoil been adequately replaced as per topsoil depth requirements?	Yes; Site Passes	Yes; Site Passes
2) Is the topsoil admixing onsite comparable to the admixing offsite?	Yes; Site Passes	Yes; Site Passes
3) Is the topsoil texture onsite comparable to offsite?	Yes; Site Passes	Yes; Site Passes
4) Is the topsoil strength onsite comparable to offsite?	Yes; Site Passes	Yes; Site Passes
5) Is the topsoil aggregate size onsite comparable to offsite?	Yes; Site Passes	Yes; Site Passes
6) Is there a restrictive layer in the topsoil or subsoil profile onsite that is not comparable to offsite?	No; Site Passes	No; Site Passes

Vegetation Assessment Criteria Summary	Lease	Access
1) Is the plant species composition onsite comparable to the plant species composition found offsite?	Yes; Site Passes	Yes; Site Passes
2) Is the plant health onsite comparable to the plant health offsite?	Yes; Site Passes	Yes; Site Passes
3) Is the plant height onsite comparable to the plant height offsite?	Yes; Site Passes	Not Applicable
4) Is the plant density onsite comparable to the plant density offsite?	Yes; Site Passes	Yes; Site Passes
5) Is the plant productivity rating onsite equal to or greater than the productivity rating offsite?	Yes; Site Passes	Not Applicable
6) Is the head/pod/tuber length onsite comparable to the head/pod/tuber length offsite?	Yes; Site Passes	Not Applicable
7) Are the % bare areas onsite comparable to the % bare areas offsite?	Yes; Site Passes	Yes; Site Passes
8) Is the weed or undesirable plant species onsite also found offsite?	Yes; Site Passes	Yes; Site Passes
9) Is the density of noxious/nuisance weeds or undesirable plants onsite greater than offsite?	No; Site Passes	No; Site Passes
10) Were any prohibited weeds found onsite eradicated?	Not Applicable	Not Applicable

COMMENTS OR JUSTIFICATION (in the space below provide additional information regarding soil/vegetation criteria and justification, where applicable)
The north 2/3 of the site consisted of annual cultivated cropland (wheat) and the south 1/3 of the site and access road was seeded to a native pasture grassland mix approved by the landowner. The native pasture species was comprised of Alfalfa, Fescue and Bromegrass. This was consistent with the species observed offsite in the controls. A step-out was completed at S1 due to soil admixing in the topsoil, as well as some larger aggregates found in this assessment point. The admixing and larger aggregate was not noticed within the step-out assessment points, and is localized to a small area. The vegetation did not appear to be impacted by this difference. No other areas of admixing or larger aggregates were observed in the other assessment points. A bare area (approx. 2m by 6m) was noticed in Assessment Grid 3 that appeared to be a seeding error. This was confirmed by the landowner. This bare area was an anomaly, and is not representative of the grid space, and was not due to oil and gas activities, so the grid assessment point was taken outside of this area. The access road is located within grasslands. The southern 300 m of the access road is exempted to a wellsite located within 10-36-64-29W2 (Licence #00K123). The Texas gate and fence remain on site as improvements by request of the landowner.

J. Conclusions and Recommendations

Licence # or Lease Surface Location	Assessors Name	Assessment Date
99Q123	John Doe	08/27/2025
CONCLUSIONS		
1) Overall does any area on the site or access fail to meet landscape criteria where justification could not be provided?		No; Landscape DSA Passes
2) Overall does more than one grid fail to meet soil criteria where justification could not be provided?		No; Soil DSA Passes
3) Overall do any grids fail to meet vegetation criteria where justification could not be provided?		No; Vegetation DSA Passes
RECOMMENDATIONS (Based on the professional opinion of the qualified third party consultant, the DSA for the given site and access)		
PASSES (landscape/soil/vegetation conclusions above all pass)		
ADDITIONAL WORK REQUIRED		
No additional work is required. It is recommended that the site continue onto an Acknowledgement of Reclamation Application.		

K. DeclarationDSA Completeness Checklist

Please check off the appropriate boxes indicating the sections completed and included in this DSA.

- | | | |
|--|---|--|
| ☒ Title Page | ☒ D. Lease Vegetation Assessment | ☒ H. Photos |
| ☒ A. Landscape Assessment | ☒ E. Access Sketch | ☒ I. Summary |
| ☒ B. Lease Sketch | ☒ F. Access Soil Assessment | ☒ J. Conclusions & Recommendations |
| ☒ C. Lease Soil Assessment | ☒ G. Access Vegetation Assessment | ☒ K. Declaration by Qualified Third Party Consultant |

This Detailed Site Assessment was conducted on behalf of Rndo Oil and Gas Company Inc.
for the site, with surface located at 16-36-064-29W3).

I John Doe of Environmental Services Org.

certify that all applicable sections within this DSA form have been completed and, to the best of my knowledge, all of the aforementioned information is accurate and has been provided. I understand that all applicable sections within this form (and required attachments) are mandatory as part of the DSA submission to the Ministry of the Energy and Resources, and an incomplete submission will result in the application being rejected.

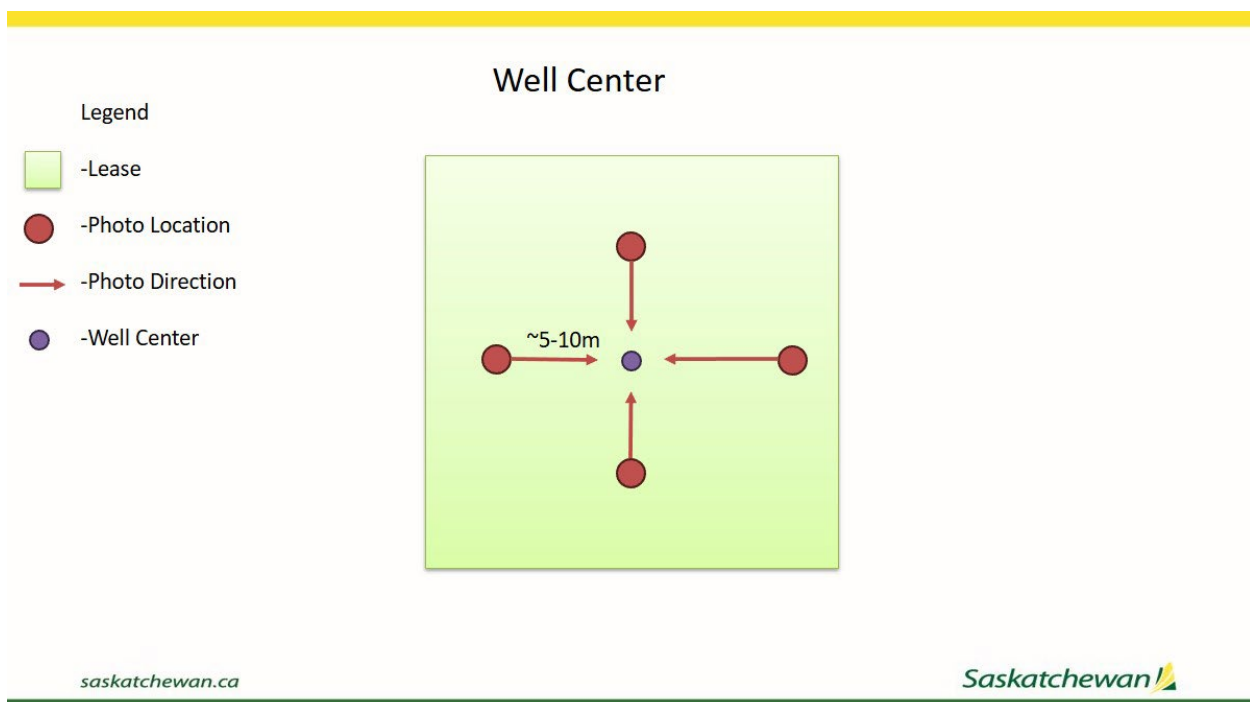
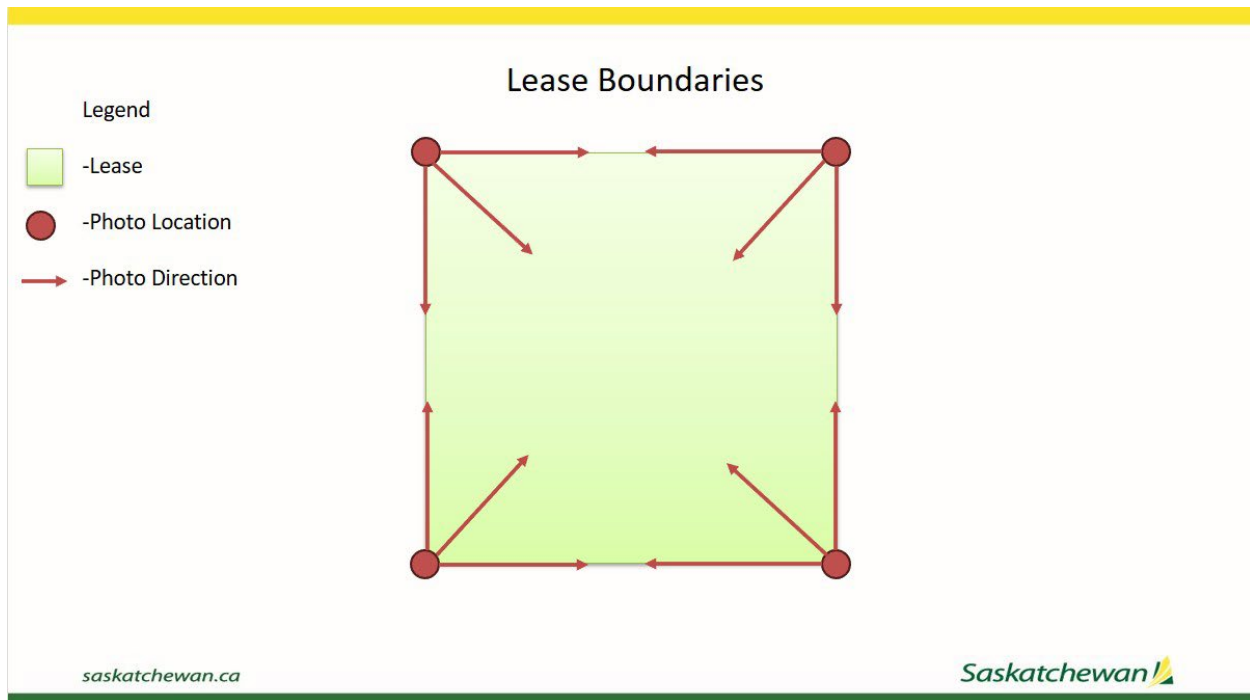
Doe, John Digitally signed by Doe, John Date: 2025.12.12 13:48:12 -0800	12/12/2025 Date	 Third Party Consultant Qualifications
Qualified Third Party Consultant Signature		
The above signature must meet the third party consultant qualifications provided in the AOR Directive.		

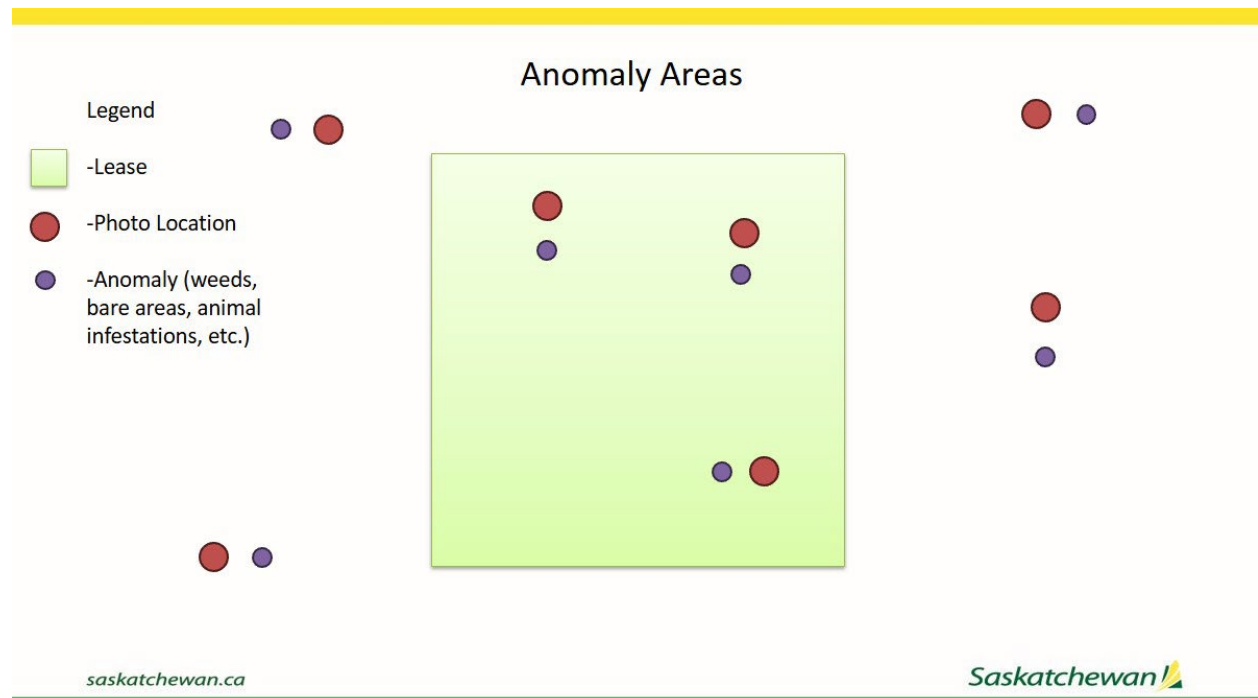
Appendix B – Root, Permeability, and Aeration Restriction Indicators

Commonly observed indicators of root, permeability and aeration restriction indicators to look for when completing the soil profile assessment.

Vertical Root Elongation Restriction Indicators	Water Permeability Restriction Indicators	Soil Aeration Restriction Indicators
• Presence of root mats and bunches • Presence of flattened and highly branched roots • Presence of horizontal roots • Presence of exposed roots • Presence of soil layers or abrupt texture or structure transitions • Absence of roots within or below reconstructed profile zones • Presence of dense and massive soil structure • Absence of roots within soil aggregates • Presence of early maturing crop with reduced height and density • In mixed pasture or haylands, uneven distribution of species • Uneven crop height and density in cropland	• Presence of surface ponding • Presence of surface vehicle (equipment) ruts • Presence of stratified or abrupt moisture changes within the soil profile • Presence of dense, massive or layered structure (compaction) • Presence of flooded (yellow or stunted) crop conditions • Presence of abrupt texture or structure transitions	• Presence of dense, massive or layered soil structure (compaction) • Presence of reduced pore size and pore space • Presence of brownish-red ped surfaces • Presence of sour odours

Appendix C – Mandatory Photographs



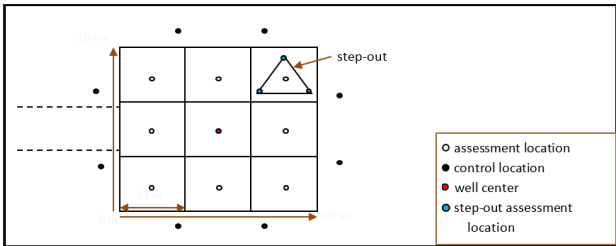
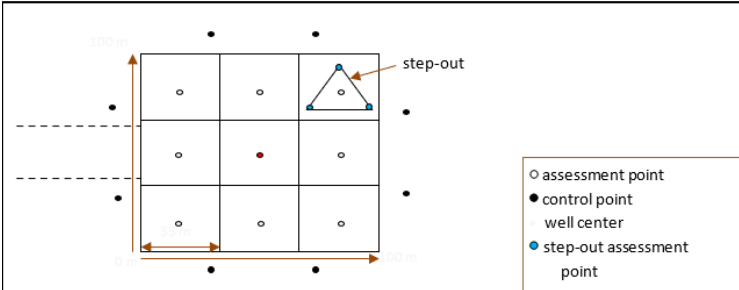


Changes to Directive PNG018: Detailed Site Assessment Requirements

Existing Section/Wording	New Section and Wording	Explanation of Proposed Changes
1. Introduction	1. Introduction	Minor revisions made to update regulations referenced and to remove redundant info.
1.1 Background	1.1 Background	Minor revisions made to update directive reference and wording.
1.2 Governing Legislation	1.2 Governing Legislation	Minor change to update regulations.
1.3 Definitions Anomaly – A result at an assessment location that does not appear representative of the entire grid being evaluated. If an anomaly is encountered, a step-out assessment procedure may be used to see if the location is anomalous or representative of the grid. Ecosite – a recurring site or stand level representation of ecosystems having a relatively homogeneous combination of soil, site, and vegetation characteristics. Forage – Perennial agronomic species grown for the purpose of feed. Justifications – Explanation of why a site should be approved for an AOR if some of the criteria have not been met. This information must be included in the Detailed Site Assessment. One Full Growing Season – Is the vegetation assessment timing for grasslands, cultivated (perennial) lands or peatlands; which includes an over-wintering period and a minimum of 12 months after initial seeding. For example, a lease was abandoned and reclaimed in October 2010, it was then seeded in May 2011 and the crop runs one full growing cycle in 2011 (i.e. seeding, growing months, harvested). Therefore the earliest a DSA could be conducted for this lease would be within the growing season of 2012 (i.e. June). Organic Matter (OM) – The organic fraction of the soil includes plant and animal residues at various stages of decomposition, cells and tissues of soil organisms and substances synthesized by the soil	1.3 Definitions Anomaly – A result at an area outside the assessment location point that does not appear representative of the entire assessment grid or control points being evaluated. If an anomaly is encountered, a step-out assessment procedure may be used to see if information such as measurements, photos, and applicable soil/vegetation parameter data, should be collected to see if compare to the conditions found in the controls location is anomalous or representative of the grid. Assessment Grid – an individual square or rectangle area that represents a portion of the lease as detailed in Section 2.1.1. Assessment Point – an individual square or rectangle area that represents a portion of the lease, as detailed in Section 2.1.1. Disturbed Area – in relation to a minimal disturbance site, is the area of disturbance at well center, typically consisting of the well head and tech fence, as well as any other areas of ground disturbance (sumps, excavations, reclamation areas, etc.), drilling rig placement, and/or driving areas within the lease boundaries used during oil and gas activities. For full disturbance sites it is assumed the entire lease has been disturbed. Ecosite – a recurring site or stand level representation of ecosystems having a relatively homogeneous combination of soil, site, and vegetation characteristics. Forage crops – Perennial agronomic species grown for the purpose of feed. Species include, but are not limited to, alfalfa, sweet clover,	Updates and addition of new definitions to clarify interpretive issues. NOTE: The term “location” has been switched to “point” here and throughout the Directive.

Existing Section/Wording	New Section and Wording	Explanation of Proposed Changes
population. It is usually determined on soils that have been sieved through a 2.0-mm sieve. (Canada Department of Agriculture, 1976) Peat – Unconsolidated soil material consisting largely of un-decomposed or only slightly decomposed organic matter; mainly derived from mosses or sedges. (Canada Department of Agriculture, 1976). Public Lands – Land of the Crown in the Right of Saskatchewan; includes provincial forests. Site – means, when used in relation to a well, structure test hole, oil shale core hole or facility, the site of the well, structure test hole, oil shale core hole or facility and the area immediately adjacent to that site. Step-Out Assessment – When an anomaly is encountered at an assessment location, the third party consultant may opt to conduct a step-out assessment to determine if it is representative of the whole grid or not. A step-out consists of assessing a minimum of an additional 3 locations. These additional locations will be less than 10 m from the original point in a triangular shape around it. Surface Soil – The uppermost mineral/organic material valued as a growing medium. Surface soil is typically salvaged at the time of lease preparation to be used in the future reclamation of the site.	smooth brome, meadow brome, intermediate wheatgrass, crested wheatgrass, Russian wildrye grass, etc. Justifications – Explanation of why a site should be approved for an AOR if some of the criteria have not been met. This information must be included in the Detailed Site Assessment. One Full Growing Season – Is the vegetation assessment timing for grasslands, cultivated (perennial) lands or peatlands, which includes an over-wintering period and a minimum of 12 months after initial seeding. For example, a lease was abandoned and reclaimed in October 2020, it was then seeded in May 2021, and the crop runs one full growing cycle in 2021 (i.e. seeding, growing months, harvested). Therefore, the earliest the DSA could be conducted for this lease would be within the growing season of 2022 (i.e. June). For minor touch ups after full reclamation has occurred (i.e. a load of additional topsoil, etc.) the site can be reassessed in the next annual crop. Organic Matter (OM) – The organic fraction of the soil includes plant and animal residues at various stages of decomposition, cells and tissues of soil organisms and substances synthesized by the soil population. It is usually determined on Defined as soils that have been sieved through a 2.0-mm sieve. (Canada Department of Agriculture, 1976) Peat – Unconsolidated soil material consisting largely of un-decomposed or only slightly decomposed organic matter; mainly derived from mosses or sedges. (Canada Department of Agriculture, 1976) Public Lands – Land of the Crown in the Right of Saskatchewan or Right of Canada; includes provincial forests. Site – means, when used in relation to a well, structure test hole, oil shale core hole or facility, the site of the well, structure test hole, oil shale core hole or facility and the area immediately adjacent to that site.	Revisions to “One Full Growing Season” definition to make example dates more recent.

Existing Section/Wording	New Section and Wording	Explanation of Proposed Changes
	Step-Out Assessment – When an anomaly a failed parameter is encountered at an assessment point, the third-party consultant may opt to conduct a step-out assessment to determine if it is representative of the whole assessment grid or not. A step-out consists of assessing a minimum of an additional three points. These additional points will be less than 10 m from the original point in a triangular shape around it. Surface Soil – The uppermost mineral/organic material, commonly referred to as topsoil, valued as a growing medium. Surface soil is typically salvaged at the time of lease preparation to be used in the future reclamation of the site.	
2. Reclamation Criteria – Cultivated Lands Cultivated land includes any land that has been ploughed to prepare a seed bed at some point in time and has a well-defined ploughed surface including cultivated peat soils. The cultivated land criteria apply to lands under continuous and rotational cropping systems and hay land. The following provides a summary of the criteria upon which the DSA is to be conducted: • <u>Landscape</u>: drainage, erosion, contour, stability, gravel & rocks, debris. • <u>Soil</u>: surface soil quantity, distribution and quality (% admixing/texture/strength/aggregate size), topsoil and subsoil profiles. • <u>Vegetation</u>: plant (species/health/height/density), bare areas, weeds (species/type/density).	2. Reclamation Criteria for Cultivated Lands Cultivated land includes any land that has been ploughed to prepare a seed bed at some point in time and has a well-defined ploughed surface including cultivated peat soils. The cultivated land criteria are applicable to lands under continuous and rotational cropping systems and hay land. The following provides a summary of the criteria for which the DSA is to be conducted: • <u>Landscape</u>: drainage, erosion, contour, stability, gravel & rocks, debris. • <u>Soil</u>: surface soil quantity, distribution and quality (% admixing/texture/strength/aggregate size), topsoil and subsoil profiles. • <u>Vegetation</u>: plant (species/health/height/density), bare areas, weeds (species/type[noxious/nuisance]/density). DSA assessments should be completed on healthy, undamaged vegetation. Therefore, DSAs cannot be completed on cultivated lands during years experiencing severe weather events (such as drought, flooding, etc.) that deviate significantly from historical averages and result in insufficient vegetation for a valid comparison. In drought-prone areas of Saskatchewan, multiple years of vegetation data may be included to demonstrate consistent crop growth/health.	Revisions to add detail on the timing of the Detailed Site Assessment (DSA) to ensure it is conducted on healthy vegetation and to provide a clearer definition of what constitutes healthy vegetation.

Existing Section/Wording	New Section and Wording	Explanation of Proposed Changes
2.1 Site Assessment Sampling Scheme 2.1.1 Lease For a standard 100 m x 100 m lease, the lease assessment should be conducted using 9 grids (each approximately 33 m x 33 m) and the edge of the lease assessment area should match up to the lease boundary, as shown in Figure 1. The assessment grid and grid size should be adjusted to evenly cover the entire lease and account for odd size leases, for example: • If the lease is < 40 m x 40 m, then 3 grids should be used. • If the lease is 40 m x 40 m, then 4 grids, each at 20 m x 20 m should be used. • If the lease is 80 m x 80 m, then 4 grids, each at 40 m x 40 m should be used. • If the lease is 110 m x 110 m, then 9 grids, each at 37 m x 37 m should be used. • If the lease is 120 m x 120 m, then 9 grids, each at 40 m x 40 m should be used. • If the lease is > 120 m x 120 m, then 9 grids, each at ≤ 50 m x ≤ 50 m should be used. • If the lease is > 150 m x 150 m, then 16 grids, each at > 38 m x > 38 m should be used. 	2.1 Site Assessment Sampling Scheme 2.1.1 Lease For a standard 100 m x 100 m lease, the lease assessment should be conducted using nine assessment grids (each approximately 33 m x 33 m) and the edge of the lease assessment area should match up to the lease boundary, as shown in Figure 1. The assessment grid and grid size should be adjusted to evenly cover the entire lease and account for odd size leases, for example: • If the lease is < 40 m x 40 m, then 3 grids should be used. • If the lease is 40 m x 40 m, then 4 grids, each at 20 m x 20 m should be used. • If the lease is 80 m x 80 m, then 4 grids, each at 40 m x 40 m should be used. • If the lease is 110 m x 110 m, then 9 grids, each at 37 m x 37 m should be used. • If the lease is 120 m x 120 m, then 9 grids, each at 40 m x 40 m should be used. • If the lease is > 120 m x 120 m, then 9 16 grids, each at ≤ 50 40 m x ≤ 50 40 m should be used. • Grids cannot be greater than 40 m x 40 m • If the lease is > 150 m x 150 m, then 16 grids, each at > 38 m x > 38 m should be used. 	Minor revisions to update regulation references and to streamline wording. Revised to clarify the minimum number of assessment locations required for larger sites and to eliminate step-outs on minimal disturbance sites, as this represents the sole area of disturbance and reclamation.

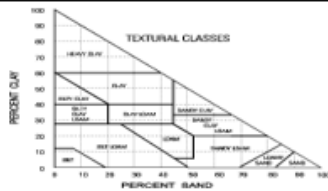
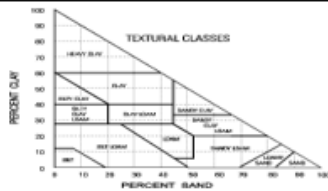
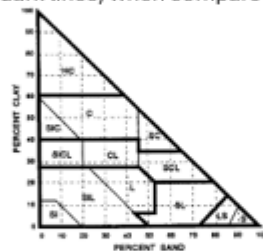
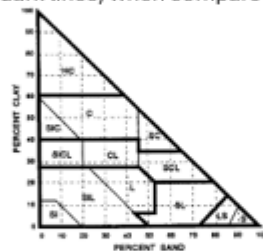
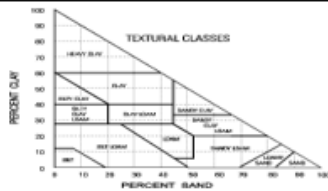
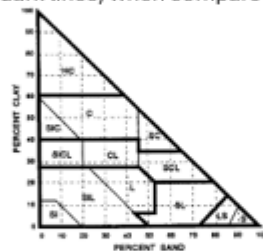
Existing Section/Wording	New Section and Wording	Explanation of Proposed Changes
In general, the assessment location will be in the middle of each grid, however, adjustments should be made or additional locations assessed when the following locations are known: well centre, sump, flare pit, tank storage area, entrance to lease, historical spill areas or areas of concern noted in either the Phase I or Phase II ESA's. When an anomaly is encountered at a lease assessment location, the third party consultant may opt to conduct a “step-out” assessment to determine if the anomaly is representative of the entire grid. The step-out assessment process consists of assessing three additional locations which can be up to 10 m from the original point in a triangular shape around it, as shown in Figure 1. The data for the original assessment location, along with the individual step-out data must be reported on the step-out portion of the DSA form. The average of the step out data, denoted as SO #, should then be transferred into the lease assessment table in place of the original assessment point data and used when assessing the criteria requirements for that particular grid.	In general, the assessment point will be in the middle of each grid. However, adjustments additional assessment points should be made or additional locations assessed completed when the following locations are known and outside of the middle of the grid: well centre, sump, flare pit, tank storage area, entrance to lease, historical spill areas or areas of concern noted in either the Phase I or which have not been investigated during a Phase II ESA's. When an anomaly a failed parameter is encountered at a lease assessment point, the third-party consultant may opt to conduct a “step-out” assessment to determine if the anomaly it is representative of the entire assessment grid. The step-out assessment process consists of assessing three additional points (for all parameters) which can be up to 10 m from the original point in a triangular shape around it, as shown in Figure 1. The data for the original assessment point, along with the individual step-out data must be reported on the step-out portion of the DSA form. The average of the step out data, denoted as SO number, should then be transferred into the lease assessment table in place of the original assessment point data and used when assessing the criteria requirements for that particular grid. Step-out assessments cannot be completed at well center on minimal disturbance sites, should not be completed at well center on full disturbance sites, and a maximum of two step-out assessments can be performed on a site.	
2.1.2 Controls In the evaluation of the assessment criteria (landscape, soil, vegetation) the data and observations collected should be compared to suitably selected control locations on adjacent or surrounding lands. Care should be taken when selecting these locations to ensure that they are representative of the average conditions that exist on the surrounding lands with respect to the various evaluation criteria. In particular, the quantity and quality of vegetation may be used as a primary indicator for determining the suitability of control locations.	2.1.2 Controls In the evaluation of the assessment criteria (landscape, soil, vegetation) the data and observations collected should be compared to suitably selected control points on adjacent or surrounding lands. Care should be taken when selecting these points to ensure that they are representative of the average conditions that exist on the surrounding lands with respect to the various evaluation criteria. In particular, the quantity and quality of vegetation may be used as a primary indicator for determining the suitability of control locations points. Controls are to be taken outside of lease boundaries and away from disturbed land.	Minor revisions regarding the number of controls required for larger sites, specifying where controls should be implemented and how to properly assess with variable conditions.

Existing Section/Wording	New Section and Wording	Explanation of Proposed Changes
A minimum of eight control sites (two on each side of the disturbed area) must be assessed to provide comparisons for the disturbed area (100 m x 100 m lease situation). In some cases, eight control sites may not adequately represent the natural variability of the surrounding lands and the third party consultant must use their professional judgement. Where control site characteristics vary significantly, the third party consultant may use relevant controls to represent portions of the site. It must be clearly documented which controls represent which assessment points. Minimum control requirements for different lease sizes: • If the lease is < 40 m x 40 m, then 3 control points should be used. • If the lease is 40 m x 40 m, then 3 control points should be used. • If the lease is 80 m x 80 m, then 4 control points should be used. • If the lease is 110 m x 110 m, then 8 control points should be used. • If the lease is > 120 m x 120 m, then a minimum of 8 control points should be used. • If the lease is > 150 m x 150 m, then a minimum of 16 control points should be used. Controls can be averaged to determine required replacement depth. If controls are variable, relevant controls can be compared to portions of the lease. Highlight the portion of the lease each control represents on the DSA Sketch (as shown in Figure 2). If controls are highly variable and the Minimum Replacement Depth (MRD) cannot be achieved, the third party consultant may qualify results based on control variability. Figure 3 shows a generic control situation that is most common for most upstream oil and gas sites in Saskatchewan.	A minimum of eight control sites points (two on each side of the disturbed area) must be assessed to provide comparisons for the disturbed area (100 m x 100 m lease situation). In some cases, eight control sites points may not adequately represent the natural variability of the surrounding lands and the third party consultant must use their professional judgement. Where control site points characteristics vary significantly, the third-party consultant may use relevant controls to represent portions of the site. It must be clearly documented which controls represent which assessment points. Minimum control requirements for different lease sizes: • If the lease is < 40 m x 40 m, then 3 control points should be used. • If the lease is 40 m x 40 m, then 3 control points should be used. • If the lease is 80 m x 80 m, then 4 control points should be used. • If the lease is 110 m x 110 m, then 8 control points should be used. • If the lease is > 120 m x 120 m, then a minimum of 8 12 control points should be used. • If the lease is > 150 m x 150 m, then a minimum of 16 control points should be used. Controls can be averaged to determine the required replacement depth. If controls are variable, relevant controls can be compared to portions of the lease. Highlight the portion of the lease each control represents on the DSA Sketch (as shown in Figure 2). If controls are highly variable and the Minimum Replacement Depth (MRD) cannot be achieved, the third-party consultant may qualify results based on control variability. Figure 3 shows a generic control situation that is most common for most upstream oil and gas sites in Saskatchewan. NOTE: on sites that are different from the above standard, it is incumbent upon the consultant to explain their rationale of why the deviation in assessment has occurred. This information should include why the points taken are sufficient to prove comparability of the surrounding area and why the locations chosen are acceptable.	

Existing Section/Wording	New Section and Wording	Explanation of Proposed Changes
Figure 2. Example of a site that has variability in topography, soils and land management. Two grid sampling points are represented by a specific control sample point. This must be documented in the DSA form. NOTE: High variability sites may require addition sample points and control sites to properly assess the site. Figure 3. This is a generic control sample situation where the topography, soil characteristics and land management are consistent throughout the entire site. This is typical of the majority of sites encountered in Saskatchewan. In this situation the eight controls would be averaged together in the assessment.	Figure 2. Example of a site that has variability in topography, soils and land management. Two grid sampling points are represented by a specific control sample point. This must be documented in the DSA form. NOTE: High variability sites may require addition sample points and control sites to properly assess the site. Figure 3. This is a generic control sample situation where the topography, soil characteristics and land management are consistent throughout the entire site. This is typical of most sites encountered in Saskatchewan. In this situation the eight controls would be averaged together in the assessment.	
2.1.4 Access	2.1.3 Access	Revised section number, minor wording update.

Existing Section/Wording		New Section and Wording	Explanation of Proposed Changes																																				
2.2	Landscape Landscape criteria will be assessed by comparing the site with adjacent land. Differences between the site and the adjacent land must not interfere with normal land use and not show a negative impact on or off-site. Landscape criteria are assessed by looking at the site as a whole rather than individual assessment points. It is necessary to do this from several vantage points on the site. While evaluation of landscape criteria can be somewhat subjective, the DSA should contain a discussion of each landscape parameter defined in Table 1 to make it clear that each of these criteria were considered. Table 1. DSA landscape parameters for cultivated lands. <table><tr><td>Drainage</td><td>Site drainage should be consistent with the original patterns, directions and capacity or be compatible with the surrounding landscape.</td></tr><tr><td></td><td>Facilities or features left in place (i.e. clay pads) must not negatively impact drainage.</td></tr><tr><td>Erosion</td><td>No more soil erosion (i.e. rills, gullies or blowouts) than on adjacent land allowed.</td></tr><tr><td>Contour</td><td>Contour and roughness must conform and blend with adjacent contours or be consistent with present or intended land use.</td></tr><tr><td>Stability</td><td>No visible evidence of slope movement, slumping, subsidence, or tension cracks allowed greater than on adjacent landscape.</td></tr><tr><td>Gravel and Rocks</td><td>May not be piled, windrowed or concentrated in one area.</td></tr><tr><td></td><td>Gravel (<10 cm): No more than an increase of 10% in surface cover is allowed.</td></tr><tr><td></td><td>Rocks (>10 cm): No increase in surface cover is allowed.</td></tr><tr><td>Debris</td><td>No industrial or domestic debris allowed.</td></tr></table>	Drainage	Site drainage should be consistent with the original patterns, directions and capacity or be compatible with the surrounding landscape.		Facilities or features left in place (i.e. clay pads) must not negatively impact drainage.	Erosion	No more soil erosion (i.e. rills, gullies or blowouts) than on adjacent land allowed.	Contour	Contour and roughness must conform and blend with adjacent contours or be consistent with present or intended land use.	Stability	No visible evidence of slope movement, slumping, subsidence, or tension cracks allowed greater than on adjacent landscape.	Gravel and Rocks	May not be piled, windrowed or concentrated in one area.		Gravel (<10 cm): No more than an increase of 10% in surface cover is allowed.		Rocks (>10 cm): No increase in surface cover is allowed.	Debris	No industrial or domestic debris allowed.	Landscape After a minimum of one full growing season has passed, landscape criteria will be assessed by comparing the site with adjacent land. Differences between the site and the adjacent land must not interfere with normal land use and not show a negative impact on or off-site. Vegetation on the site should not impede the ability to assess the landscape parameters. Landscape criteria are assessed by looking at the entire site as a whole rather than individual assessment points. It is necessary to do this from several vantage points on the site. While evaluation of landscape criteria can be somewhat subjective, the DSA should contain a discussion of each landscape parameter defined in Table 1 to make it clear that each of these criteria were considered. Table 1 – DSA landscape parameters for cultivated lands. <table><tr><td>Drainage</td><td>Site drainage should be consistent with the original patterns, directions and capacity or be comparable with the surrounding landscape.</td></tr><tr><td></td><td>Facilities or features left in place (i.e. clay pads) must not negatively impact drainage.</td></tr><tr><td>Erosion</td><td>No more soil erosion (i.e. rills, gullies or blowouts) than on adjacent land allowed.</td></tr><tr><td>Contour</td><td>Contour and roughness must conform and blend with adjacent contours or be consistent with present or intended land use.</td></tr><tr><td>Stability</td><td>No visible evidence of slope movement, slumping, subsidence, or tension cracks allowed greater than on adjacent landscape.</td></tr><tr><td>Gravel and Rocks</td><td>May not be piled, windrowed or concentrated in one area.</td></tr><tr><td></td><td>Gravel (<10 cm): No more than an increase of 10% in surface cover is allowed.</td></tr><tr><td></td><td>Rocks (>10 cm): No increase in surface cover is allowed.</td></tr><tr><td>Debris</td><td>No industrial or domestic debris allowed.</td></tr></table>	Drainage	Site drainage should be consistent with the original patterns, directions and capacity or be comparable with the surrounding landscape.		Facilities or features left in place (i.e. clay pads) must not negatively impact drainage.	Erosion	No more soil erosion (i.e. rills, gullies or blowouts) than on adjacent land allowed.	Contour	Contour and roughness must conform and blend with adjacent contours or be consistent with present or intended land use.	Stability	No visible evidence of slope movement, slumping, subsidence, or tension cracks allowed greater than on adjacent landscape.	Gravel and Rocks	May not be piled, windrowed or concentrated in one area.		Gravel (<10 cm): No more than an increase of 10% in surface cover is allowed.		Rocks (>10 cm): No increase in surface cover is allowed.	Debris	No industrial or domestic debris allowed.	Minor revisions to align with definition of “one full growing season”.
Drainage	Site drainage should be consistent with the original patterns, directions and capacity or be compatible with the surrounding landscape.																																						
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Existing Section/Wording	New Section and Wording	Explanation of Proposed Changes
2.3 Surface Soil Quantity, Distribution and Quality Soil quantity, soil quality and admixing percent are to be included in the DSA soils assessment for each assessment location. The DSA soil assessment should be conducted as follows: • If the control surface soil is ≥15 cm deep, then the DSA soil assessments may be done after cultivation; or • If the control surface soil is <15 cm deep, then the DSA soil assessments must be done after cultivation of the site has occurred, however, the third party consultant may wish to assess depth of replaced surface soil before cultivation in order to ensure adequate soil is replaced.	2.3 Surface Soil Quantity, Distribution and Quality After a minimum of one full growing season has passed, soil quantity, soil quality and admixing percent are to be included in the DSA soils assessment for each assessment location. The DSA soil assessment should be conducted as follows: point: • If the control surface soil is ≥15 cm deep, then the DSA soil assessments may be done after cultivation; or • If the control surface soil is <15 cm deep, then the DSA soil assessments must be done after cultivation of the site has occurred, however, the third party consultant may wish to assess depth of replaced surface soil before cultivation in order to ensure adequate soil is replaced.	Minor revisions to align with definition of “one full growing season”.
2.3.1 Topsoil Additions There may be situations where additional topsoil is required at a site. In these cases, topsoil from another source with similar chemical and physical properties to the site and surrounding lands can be used provided the landowner is notified and in agreement. The addition of topsoil must be documented within the DSA (i.e. date of application, source, volume, etc.). NOTE: Amendments (peat, manure, etc.) are not considered a replacement for topsoil and must be documented in the DSA when applied as part of the remediation and reclamation of the site. A minimum waiting period of two years is required following the use of an amendment before conducting the DSA that will be submitted with the AOR application.	2.3.1 Topsoil Additions There may be situations where additional topsoil is required at a site. In these cases, topsoil from another source with similar chemical and physical properties to the site and surrounding lands can be used provided the landowner is notified and in agreement. The addition of topsoil must be documented within the DSA (i.e. date of application, source, volume, etc.). NOTE: Amendments (peat, manure, alfalfa pellets, organic materials, etc.) are not considered a replacement for topsoil and must be documented in the DSA when applied as part of the remediation and reclamation of the site. A minimum waiting period of two years from the application date is required following the use of an amendment before conducting the DSA that will be submitted with the AOR application. NOTE: Weed spraying is not considered an amendment and can be assessed during the next growing season to determine successful eradication except for Japanese brome, scentless chamomile, downy brome, and leafy spurge.	Revised to clarify that weed spraying is not considered an amendment, addressing common questions from industry.
2.3.2 Quantity and Distribution of Relaced Surface Soil	2.3.2 Quantity and Distribution of Relaced Surface Soil	No substantive changes.
2.3.2.1 Quantity and Distribution of Replaced Surface Soil for Sites After June 19, 2007	2.3.2.1 Quantity and Distribution of Replaced Surface Soil for Sites After June 19, 2007	Minor updates to align with definitions. All references to “point” have been switched to “location”.

Existing Section/Wording	New Section and Wording	Explanation of Proposed Changes												
2.3.2.2 Quantity and Distribution of Replaced Surface Soil for Sites Predating June 19, 2007	2.3.2.2 Quantity and Distribution of Replaced Surface Soil for Sites Predating June 19, 2007	Same as above.												
2.3.3 Quality of Replaced Surface Soil At each assessment location, with the exception of the soil profile assessment, the third party consultant will document the soil quality parameters (defined in Table 2) within the DSA. The soil quality parameters should be assessed after cultivation. When compared with representative controls (i.e. from similar depths with similar light and moisture conditions), the lease and access assessment locations must meet the criteria defined in Table 2 for the assessment location to pass. Table 2. DSA soil quality parameters for cultivated lands. <table><tr><td>Admixing %</td><td>Remain in the same class (0 to 30%, >30% to 60%, and >60%) or lower class of admixing when compared to controls.</td></tr><tr><td>Texture</td><td> Remain in the same texture class (within the dark lines) when compared to controls. The Soil Texture Classes Triangle was taken from the Government of Canada, Agriculture and Agri-Food Canada, 2011, http://sis.agr.gc.ca/cansis/glossary/t/#figure1.</td></tr><tr><td>Soil Strength</td><td>Remain in the same class (friable; firm; and hard) when compared to controls.</td></tr><tr><td>Soil Aggregate Size</td><td>Remain in the same class (<2 cm, 2 cm to 5 cm, and >5 cm to 10 cm) when compared to controls. No soil aggregates greater than 10 cm are allowed unless similar size soil aggregates are present in the control soil.</td></tr></table>	Admixing %	Remain in the same class (0 to 30%, >30% to 60%, and >60%) or lower class of admixing when compared to controls.	Texture	 Remain in the same texture class (within the dark lines) when compared to controls. The Soil Texture Classes Triangle was taken from the Government of Canada, Agriculture and Agri-Food Canada, 2011, http://sis.agr.gc.ca/cansis/glossary/t/#figure1 .	Soil Strength	Remain in the same class (friable; firm; and hard) when compared to controls.	Soil Aggregate Size	Remain in the same class (<2 cm, 2 cm to 5 cm, and >5 cm to 10 cm) when compared to controls. No soil aggregates greater than 10 cm are allowed unless similar size soil aggregates are present in the control soil.	2.3.3 Quality of Replaced Surface Soil At each assessment location, with the exception of the soil profile assessment point, the third party consultant will document the soil quality parameters (defined in Table 2) within the DSA. The soil quality parameters should be assessed after cultivation one full growing season. When compared with representative controls (i.e. from similar depths with similar light and moisture conditions), the lease and access assessment points must meet the criteria defined in Table 2 for the assessment points to pass. Table 2. DSA soil quality parameters for cultivated lands. <table><tr><td>Admixing %</td><td>Remain in the same class (0 to 30%, >30% to 60%, and >60%) or lower class of admixing when compared to controls.</td></tr><tr><td>Texture</td><td>Remain in the same texture class (within the dark lines) when compared to controls.  Texture Class Triangle The Soil Texture Classes Triangle was taken from Alberta Environment, 1995 – Reclamation Criteria for Wellsites the Government of Canada, Agriculture and Agri-Food Canada, 2011, http://sis.agr.gc.ca/cansis/glossary/t/#figure1.</td></tr></table>	Admixing %	Remain in the same class (0 to 30%, >30% to 60%, and >60%) or lower class of admixing when compared to controls.	Texture	Remain in the same texture class (within the dark lines) when compared to controls.  Texture Class Triangle The Soil Texture Classes Triangle was taken from Alberta Environment, 1995 – Reclamation Criteria for Wellsites the Government of Canada, Agriculture and Agri-Food Canada, 2011, http://sis.agr.gc.ca/cansis/glossary/t/#figure1 .	Minor updates to align with definitions, new soil texture picture for clarity and clarification regarding restrictive layers on- and off-site.
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Existing Section/Wording		New Section and Wording		Explanation of Proposed Changes
Soil Profile Assessment	NOTE: When more than one horizon is mixed to make up the minimum requirement for salvaged soil, the control for the quality comparison must be a mix of the salvaged soil horizons. <u>Assessment Depth</u> Soils will be assessed to a depth of 50 cm on a grid basis on-site, with appropriate off-site measurements (controls). The assessment depth may need to be deeper than 50 cm in order to successfully identify the restriction; however, the assessment depth does not need to continue below 1 m. If a soil limitation (i.e. root restrictions) occurs before the required assessment depth of 50 cm is reached than the assessment is not required to advance any deeper into the soil, however, the assessment depth measurement must be reported in the DSA. <u>Restriction Assessment</u> The process restriction parameters are: • Water permeability. • Vertical root elongation. • Soil aeration. • Compaction For the locations assessed, document in the DSA the topsoil and subsoil process restriction parameters as either “restrictive” or “non-restrictive” as compared to the control. NOTE: a restrictive soil profile is a FAILED class parameter if the representative controls are non-restrictive. Professional judgment should be used to determine whether parameters are restrictive to root growth and establishment. For more details on assessing process restrictions refer to Appendix A. NOTE: Since root elongation is being assessed, soil profile assessment should be done at the same time as the vegetation assessment. <u>Lease and Control Assessments</u> Soil profile assessments will be conducted at every second assessment location on and off the lease. For example, a 100 m x 100 m lease would require a total of 8 soil profile assessments. (4 on-site	Soil Strength	Remain in the same class (friable; firm; and hard) when compared to controls.	
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Existing Section/Wording	New Section and Wording	Explanation of Proposed Changes
assessment locations and 4 off-site control locations). NOTE: If the following five locations (well centre, sump, flare pit, tank storage area and entrance to lease) on the lease are known, then lease soil profile assessments will be conducted at these five locations. If these five locations are not known, then soil profile assessments will be conducted at every second assessment location on the lease as mentioned above. <u>Access Roads and Paired Control Assessments</u> Soil profile assessments are to be carried out on each paired assessment location. For example, a 500 m access road would require a total of 10 soil profile assessments (5 access assessment locations and the 5 paired control locations).	Professional judgment should be used to determine whether parameters are restrictive to root growth and establishment. For more details on assessing process restrictions refer to Appendix B Appendix A. NOTE: Since root elongation is being assessed, soil profile assessment should be done at the same time as the vegetation assessment. NOTE: Since Root elongation is being assessed, soil profile assessments should be done when fully developed roots are present. <u>Lease and Control Assessments</u> Soil profile assessments for cultivated lands will be conducted at every second assessment location point on and off the lease. For example, a 100 m x 100 m lease would require a total minimum of 8 nine soil profile assessments (4 five on-site assessment locations points and four off-site control locations). NOTE: If the following five locations (well centre, sump, flare pit, tank storage area and entrance to lease) on the lease are known, then lease soil profile assessments will be conducted at these five locations. If these five locations are not known, then soil profile assessments will be conducted at every second assessment location on the lease as mentioned above. <u>Access Roads and Paired Control Assessments</u> Soil profile assessments are to be carried out on at each paired assessment point. For example, a 500 m access road would require a total minimum of ten soil profile assessments (five access assessment points and the five paired control points).	
2.3.4 Soil Tolerance	2.3.4 Soil Tolerance	Minor changes switching “location” to “point”. Table has been relocated to Section 3.3.4.
2.4 Vegetation	2.4 Vegetation	Minor changes for clarification.
2.4.1 Use on Non-native Species	2.4.1 Use on Non-native Species	Minor changes.

Existing Section/Wording	New Section and Wording	Explanation of Proposed Changes
2.4.2 Timing of Vegetation Assessments The timing of the DSA vegetation assessment will vary depending on the type of cultivated crop (annual or perennial) at the site. Further clarification is provided in the following sections. NOTE: Where fertilizer and/or an amendment has been applied, by the licensee, as part of the remediation and reclamation of the site, a minimum waiting period of two years is required before conducting the DSA that will be submitted with the AOR application.	2.4.2 Timing of Vegetation Assessments The timing of the DSA vegetation assessment will vary depending on the type of cultivated crop (annual or perennial) at the site. Further clarification is provided in the following sections. NOTE: Where fertilizer and/or an amendment has been applied by the licensee, as part of the remediation and reclamation of the site, a minimum waiting period of two years from the application date is required before conducting the DSA that will be submitted with the AOR application. NOTE: Weed spraying is not considered an amendment and can be assessed during the next growing season to determine successful eradication except for Japanese brome, scentless chamomile, downy brome, and leafy spurge.	Updated to add that weed spraying is not considered an amendment due to common questions from industry.
2.4.2.1 Annual Crops	2.4.2.1 Annual Crops	Minor paragraph rewording and clarification.
2.4.2.2 Perennial Crops For perennial crops (includes most forage crops), without fertilizer or amendment addition, the vegetation assessment should be conducted after a minimum of one full growing season which includes an over-wintering period and a minimum of twelve months from time of seeding.	2.4.2.2 Perennial Crops For perennial crops (includes most commonly referred to as forage crops), without fertilizer or amendment addition, the vegetation assessment should be conducted after a minimum of one full growing season which includes an over-wintering period and a minimum of twelve months from time of seeding.	Minor revisions for clarification.
2.4.3 Vegetation Assessment Criteria At each assessment location, the third party consultant will document the vegetation parameters (defined in Table 3) within the DSA. The vegetation assessments are based on a visual comparison between the site (lease and access) and the representative controls therefore vegetation must be present at the time of assessment. When compared with representative controls, the lease and access assessment locations must meet the criteria defined in Table 3 for the assessment location to pass. NOTE: The lease and access must pass all of the criteria defined in Table 3 to be considered an acceptable DSA within an AOR application submission.	2.4.3 Vegetation Assessment Criteria At each assessment point, the third-party consultant will document the vegetation parameters (defined in Table 34) within the DSA. The vegetation assessments are based on a visual comparison between the site (lease and access) and the representative controls therefore vegetation must be present at the time of assessment. When compared with representative controls, the lease and access assessment point must meet the criteria defined in Table 3 for the assessment point to pass. NOTE: The lease and access must pass all of the criteria defined in Table 34 to be considered an acceptable DSA within an AOR application submission.	New clarified criteria for assessing plant health, bare areas, and weed presence. Additionally, Plant Productivity Rating and Head/Pod/Tuber Length criteria have been introduced to ensure industry obtains more accurate, clear and defensible information addressing landowner concerns related to crop yield.

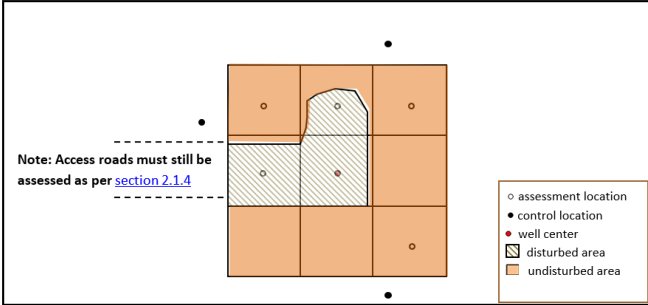
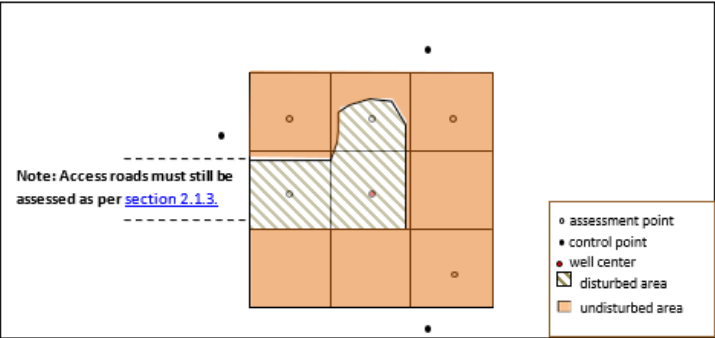
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Where there is evidence of stressed vegetation, a description along with photographic evidence must be supplied in the DSA to demonstrate both on-site and off-site effects are comparable.</td></tr><tr><td>Plant Height</td><td>Plant height must be equal to or greater than 80% of the control vegetation.</td></tr><tr><td></td><td> - each lease location ≥ (average control x 0.80); and - each access location ≥ (corresponding paired control x 0.80). </td></tr><tr><td></td><td>NOTE: At each assessment location the third party consultant shall document the average crop height (expressed in cm) by measuring a minimum of 10 plants.</td></tr><tr><td>Plant Density</td><td>Plant density must be equal to or greater than 80% of the control vegetation.</td></tr><tr><td></td><td> - each lease location ≥ (average control x 0.80); and - each access location ≥ (corresponding paired control x 0.80). </td></tr><tr><td></td><td>NOTE: At each assessment location the third party consultant shall document the plant density of live/desirable/healthy plants.</td></tr><tr><td></td><td>NOTE: The crop type, growth phase and other factors will affect the easiest method of measuring plant density; therefore, the results may be expressed in</td></tr></table>	Plant Species Composition	Re-vegetation species and species composition should be compatible with control vegetation or meet reasonable land management objectives.		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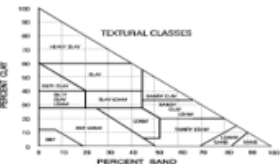
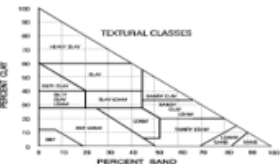
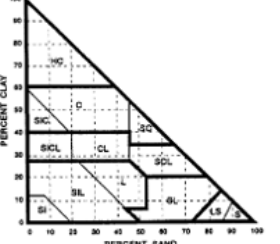
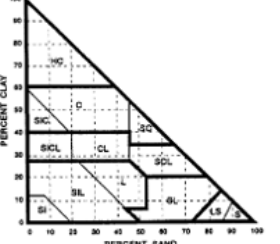
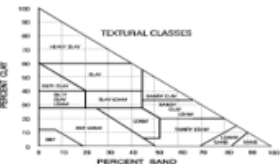
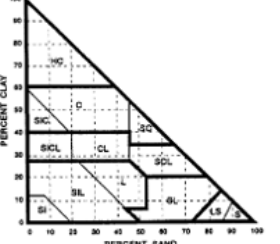
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	plants, stems or tillers per square meter or linear meter, or percentage cover for the representative area. The measurement methodology must be documented in the DSA and must be consistent across all assessment locations and controls.			
Bare Area	The bare area refers to the areas with exposed soil that are devoid of vegetation; areas between seed rows are not included in this definition. The bare area percent should not be greater than 10% as compared to the control. - each lease location $\leq$ average control + 10%; and - each access location $\leq$ corresponding paired control + 10%. NOTE: It is important to ensure the grid size is consistent across all assessment locations and controls as the results are to be expressed as % bare area over the entire assessment grid.			
Weeds & Undesirable Plants	Weeds are to be managed on all lands as per The Weed Control Act which is regulated by the Ministry of Agriculture. NOTE: Once a weed species has been identified at a site, please refer to the Minister's Order Designating Prohibited, Noxious and Nuisance Weeds (Weed List) to determine the type of weed and potential action required under <i>The Weed Control Act</i> and ER's criteria as defined below: <u>Weed & Undesirable Plant Species Composition</u> Weeds and undesirable plant species identified on-site must also be present in the off-site controls; otherwise the on-site weed and/or undesirable plant species must be removed. NOTE: The presence of weeds/undesirable plants may or may not have been directly influenced by well/facility activity. The third party consultant must ensure that the control samples are representative of the surrounding area. If <u>no weed species</u> are present at an assessment location enter "not applicable" in the weed species column and "0" in the weed density column to indicate the weed assessment was conducted.	Plant Height Plant height must be equal to or greater than 80% of the control vegetation. - each lease location $\geq$ (average control x 0.80); and - each access location $\geq$ (corresponding paired control x 0.80). NOTE: At each assessment <u>point</u> the third-party consultant shall document the average crop height (expressed in cm) by measuring a minimum of ten plants. Plant Density Plant density must be equal to or greater than 80% of the control vegetation. - each lease <u>point</u> $\geq$ (average control x 0.80); and - each access <u>point</u> $\geq$ (corresponding paired control x 0.80). NOTE: At each assessment <u>point</u> the third-party consultant shall document the plant density of live/desirable/healthy plants. NOTE: The crop <u>species</u> type, growth phase and other factors will affect the easiest method of measuring plant density; therefore, the results may be expressed in plants, <u>stems per square meter or linear meter</u>, or tillers per square meter or linear meter, or percentage cover for the representative area. The measurement methodology must be documented in the DSA and must be consistent across all assessment locations and controls. Plant Productivity Rating The plant productivity Rating will be an average rating assigned to each assessment and control point that will be comprised of three different categories: seed/head/pod/tuber health, seed development, and pod density. Each of the three categories will get a rating on a scale of 1 to 4, and then an averaged assessment point rating will be calculated. Each location's three categories and Plant Productivity rating must be equal to or greater than the control average minus one. - Each lease assessment point $\geq$ (average control minus 1); and		

Existing Section/Wording	New Section and Wording	Explanation of Proposed Changes
<u>Weed & Undesirable Plant Species Type</u> Depending on the species type identified, ER’s requirements differ as follows: • <u>Prohibited Weeds</u> – must be eradicated on-site to prevent their movement out of the area; • <u>Noxious Weeds</u> – must be contained and controlled on-site and any isolated infestations found on-site must be eradicated. • <u>Nuisance Weeds and Undesirable Plants</u> – must be controlled on-site. <u>Weed & Undesirable Plant Density</u> No prohibited weeds are allowed on-site. The density of noxious/nuisance weeds and undesirable plants on-site must be less than or equal to that found on the controls. • average lease ≤ average control; and • each access location ≤ corresponding paired control. NOTE: The density results may be expressed in weeds per square meter or linear meter, or percentage cover for the representative area. The measurement methodology must be documented in the DSA and must be consistent across all assessment locations and controls.	• The average onsite rating must be no less than 0.5 of the average offsite rating. • Each access assessment point ≥ corresponding paired control minus 1. Table 5 provides the rating scale used to calculate the plant productivity rating for each category. Photos of the seed/head/pod/tubers should be taken at ever other assessment point and included within the DSA photolog. Seed/Head/Pod/Tuber Health The health of the seeds/heads/pods/tubers at each assessment and control point will be assessed and rated based on the scale provided in Table 5. Ideally, the seeds/heads/pods/tubers should be healthy, full of seeds, with no signs of stress, disease or seed abortion, and should be comparable to each of the surrounding controls. Seed Development The seed development at each assessment point will be assessed and rated based on the scale provided in Table 5. Ideally, seeds should be full and evenly developed, and show no signs of stress, reduction, or lack of health, and should be comparable to the surrounding controls. Pod Density The pod density at each assessment point will be assessed and rated based on the scale provided in Table 5. The pod density will be visually assessed and rated as heavy, medium, light, or none, and should be comparable to the surrounding controls. Note: Cereal crops should be left blank for Pod Density. Head/Pod/Tuber Length The head/pod/tuber length will be collected from the seed producing portion of the plant by collecting the average length of ten representative plant heads/pods/tubers at each assessment and control point. The assessment points must be equal to or greater than 80% of the control vegetation. • Each lease assessment point ≥ (average control x 0.80); and	

Existing Section/Wording	New Section and Wording	Explanation of Proposed Changes				
	<table><tr><td></td><td> - Each access assessment point 2 (corresponding paired control x 0.80). Photos of the head/pod measurements should be taken at every other assessment point and included within the DSA photo log. NOTE: The crop type, growth phase and other factors will affect the easiest method of measuring head/pod/tuber length; therefore, the following methods should be used for specified plant type: Cereals Once heads are developed, ten representative heads will be measured and the average length calculated for each assessment and control location. Canola Once pods are developed, ten representative plants will be measured on the portion of the stem with producing pods growing and the average length calculated for each assessment and control location. Pulse Crops (peas, lentils, faba bean, dry beans, soybean, etc.) Once pods are developed, 10 representative pods will be measured and the average length calculated for each assessment and control point. Perennial Crops Once/if heads are developed, they should be measured, ten representative heads will be measured and the average length calculated for each assessment and control location. Specialty Crops Once heads/pods/tubers/ears are developed, ten representative heads/pods/tubers/ears will be measured and the average length calculated for each assessment and control location. </td></tr><tr><td>Bare Area</td><td> The bare area refers to the areas with exposed soil that are devoid of vegetation; areas between seed rows are not included in this definition. The assessment point must have a representative bare area when compared to the rest of the grid area. The bare area percent at assessment points should not be greater than 10% as compared to the control. </td></tr></table>		- Each access assessment point 2 (corresponding paired control x 0.80). Photos of the head/pod measurements should be taken at every other assessment point and included within the DSA photo log. NOTE: The crop type, growth phase and other factors will affect the easiest method of measuring head/pod/tuber length; therefore, the following methods should be used for specified plant type: Cereals Once heads are developed, ten representative heads will be measured and the average length calculated for each assessment and control location. Canola Once pods are developed, ten representative plants will be measured on the portion of the stem with producing pods growing and the average length calculated for each assessment and control location. Pulse Crops (peas, lentils, faba bean, dry beans, soybean, etc.) Once pods are developed, 10 representative pods will be measured and the average length calculated for each assessment and control point. Perennial Crops Once/if heads are developed, they should be measured, ten representative heads will be measured and the average length calculated for each assessment and control location. Specialty Crops Once heads/pods/tubers/ears are developed, ten representative heads/pods/tubers/ears will be measured and the average length calculated for each assessment and control location.	Bare Area	The bare area refers to the areas with exposed soil that are devoid of vegetation; areas between seed rows are not included in this definition. The assessment point must have a representative bare area when compared to the rest of the grid area. The bare area percent at assessment points should not be greater than 10% as compared to the control.	
	- Each access assessment point 2 (corresponding paired control x 0.80). Photos of the head/pod measurements should be taken at every other assessment point and included within the DSA photo log. NOTE: The crop type, growth phase and other factors will affect the easiest method of measuring head/pod/tuber length; therefore, the following methods should be used for specified plant type: Cereals Once heads are developed, ten representative heads will be measured and the average length calculated for each assessment and control location. Canola Once pods are developed, ten representative plants will be measured on the portion of the stem with producing pods growing and the average length calculated for each assessment and control location. Pulse Crops (peas, lentils, faba bean, dry beans, soybean, etc.) Once pods are developed, 10 representative pods will be measured and the average length calculated for each assessment and control point. Perennial Crops Once/if heads are developed, they should be measured, ten representative heads will be measured and the average length calculated for each assessment and control location. Specialty Crops Once heads/pods/tubers/ears are developed, ten representative heads/pods/tubers/ears will be measured and the average length calculated for each assessment and control location.					
Bare Area	The bare area refers to the areas with exposed soil that are devoid of vegetation; areas between seed rows are not included in this definition. The assessment point must have a representative bare area when compared to the rest of the grid area. The bare area percent at assessment points should not be greater than 10% as compared to the control.					

Existing Section/Wording	New Section and Wording	Explanation of Proposed Changes																				
	Table 5. Plant Productivity Rating Guide <table><tr><th>Rating</th><th>Seed/Head/Pod/Tuber Health</th><th>Seed Development</th><th>Pod Density</th></tr><tr><td>4</td><td>Complete head, full healthy seeds, no seed abortion</td><td>Full and evenly developed</td><td>High Pod Density</td></tr><tr><td>3</td><td>80% full and healthy seeds, similar seed size, <20% seed abortion</td><td>Unevenly developed</td><td>Medium Pod Density</td></tr><tr><td>2</td><td><80% full and healthy seeds, reduction in seed size, 25 to 50% diseased</td><td>Reduced and/or shriveled</td><td>Low Pod Density</td></tr><tr><td>1</td><td>>50% diseased seeds/no seed present</td><td>No seeds/Lack of Maturity</td><td>No Pods</td></tr></table>	Rating	Seed/Head/Pod/Tuber Health	Seed Development	Pod Density	4	Complete head, full healthy seeds, no seed abortion	Full and evenly developed	High Pod Density	3	80% full and healthy seeds, similar seed size, <20% seed abortion	Unevenly developed	Medium Pod Density	2	<80% full and healthy seeds, reduction in seed size, 25 to 50% diseased	Reduced and/or shriveled	Low Pod Density	1	>50% diseased seeds/no seed present	No seeds/Lack of Maturity	No Pods	
Rating	Seed/Head/Pod/Tuber Health	Seed Development	Pod Density																			
4	Complete head, full healthy seeds, no seed abortion	Full and evenly developed	High Pod Density																			
3	80% full and healthy seeds, similar seed size, <20% seed abortion	Unevenly developed	Medium Pod Density																			
2	<80% full and healthy seeds, reduction in seed size, 25 to 50% diseased	Reduced and/or shriveled	Low Pod Density																			
1	>50% diseased seeds/no seed present	No seeds/Lack of Maturity	No Pods																			
3. Reclamation Criteria – Grasslands	3. Reclamation Criteria for Grasslands	Minor changes, not substantive.																				
3.1 Site Assessment Sampling Scheme	3.1 Site Assessment Sampling Scheme	Minor changes.																				
2.1.3 Minimal Disturbance Lease Where construction practices have minimized the level of disturbance on a lease a reduction in sampling intensity can be justified. On minimally disturbed sites the undisturbed and disturbed areas must be delineated and a minimum of three samples from each area (disturbed, undisturbed and control) should be taken, as shown in Figure 4.	3.1.1 Minimal Disturbance Lease Where it can be proven that construction practices have minimized the level of disturbance on a lease, a reduction in sampling intensity can be justified for grassland sites. On minimally disturbed sites within grasslands, the undisturbed and disturbed areas must be delineated on the provided sketch and a minimum of three samples from each area (disturbed, undisturbed and control) taken, as shown in Figure 4. Step-out assessments cannot be completed on minimal disturbance lease assessments. Minimum disturbance assessments cannot be completed on annually cultivated lands.	Section moved from Cultivated to Grasslands (Section 2.1.3) as minimal disturbance assessments were only meant to reduce disturbance within environmentally sensitive areas such as grasslands.																				

Existing Section/Wording	New Section and Wording	Explanation of Proposed Changes
 Figure 4. Example of a minimally disturbed site. The minimum sampling requirement is three assessment locations on the disturbed portion of the lease, three assessment locations on the undisturbed portion of the lease and three control assessment locations off-lease.	 Figure 4. Example of a minimally disturbed site. The minimum sampling requirement is three assessment points on the disturbed portion of the lease, three assessment points on the undisturbed portion of the lease and three control assessment points off-lease. Where the site does not follow the above scheme, it must be clearly explained why the assessment points were chosen and they must be sufficiently spaced throughout the disturbed area to ensure adequate assessment of the disturbed area (three assessment points around well centre is not sufficient). Additional assessment points can be completed for further proof of acceptable reclamation.	New details have been added to figure for to provide further clarity on sampling and documentation requirements.
3.2 Landscape	3.2 Landscape	Minor changes.
3.3 Surface Soil Quantity, Distribution and Quality	3.3 Surface Soil Quantity, Distribution and Quality	Minor change.
3.3.1 Topsoil Additions Grasslands topsoil addition criteria are the same as previously defined for cultivated lands, therefore, please refer to section 2.3.1 of the cultivated land topsoil addition criteria. NOTE: Amendments (peat, manure, etc.) are not considered a replacement for topsoil and must be documented in the DSA when applied as part of the remediation and reclamation of the site. A minimum waiting period of two years is required following the use of an amendment before conducting the DSA that will be submitted with the AOR application.	3.3.1 Topsoil Additions Grasslands topsoil addition criteria are the same as previously defined for cultivated lands, therefore, please refer to section 2.3.1 of the cultivated land topsoil addition criteria. NOTE: Amendments (peat, manure, alfalfa pellets, organic material, etc.) are not considered replacements for topsoil and must be documented in the DSA when applied as part of the remediation and reclamation of the site. A minimum waiting period of two years from the application date is required following the use of an amendment before conducting the DSA that will be submitted with the AOR application.	Revised section to clarify that ER does not consider weed spraying as an amendment, which addresses frequent questions ER has received from industry.

Existing Section/Wording	New Section and Wording	Explanation of Proposed Changes																
	NOTE: Weed spraying is not considered an amendment and can be assessed during the next growing season to determine successful eradication except for Japanese brome, scentless chamomile, downy brome, and leafy spurge.																	
3.3.2 Quantity and Distribution of Replaced Surface Soil	3.3.2 Quantity and Distribution of Replaced Surface Soil	No changes.																
3.3.3 Quality of Replaced Surface Soil At each assessment location, with the exception of the soil profile assessment, the third party consultant will document the soil quality parameters (defined in Table 5) within the DSA. When compared with representative controls (i.e. from similar depths with similar light and moisture conditions), the lease and access assessment locations must meet the criteria defined in Table 5 for the assessment location to pass. Table 5. DSA soil quality parameters for grasslands. <table><tr><td>Admixing %</td><td>Remain in the same class (0 to 30%, >30% to 60%, and >60%) or lower class of admixing when compared to controls.</td></tr><tr><td>Texture</td><td>Remain in the same texture class (within the dark lines) when compared to controls.  The Soil Texture Classes Triangle was taken from the Government of Canada, Agriculture and Agri-Food Canada, 2011, http://sis.agr.gc.ca/cansis/glossary/t/#figure1. </td></tr><tr><td>Soil Strength</td><td>Remain in the same class (friable; firm; and hard) when compared to controls.</td></tr><tr><td>Soil Aggregate Size</td><td>Remain in the same class (<2 cm, 2 cm to 5 cm, and >5 cm to 10 cm) when compared to controls. No soil aggregates greater than 10 cm are allowed unless similar size soil aggregates are present in the control soil </td></tr></table>	Admixing %	Remain in the same class (0 to 30%, >30% to 60%, and >60%) or lower class of admixing when compared to controls.	Texture	Remain in the same texture class (within the dark lines) when compared to controls.  The Soil Texture Classes Triangle was taken from the Government of Canada, Agriculture and Agri-Food Canada, 2011, http://sis.agr.gc.ca/cansis/glossary/t/#figure1.	Soil Strength	Remain in the same class (friable; firm; and hard) when compared to controls.	Soil Aggregate Size	Remain in the same class (<2 cm, 2 cm to 5 cm, and >5 cm to 10 cm) when compared to controls. No soil aggregates greater than 10 cm are allowed unless similar size soil aggregates are present in the control soil	3.3.3 Quality of Replaced Surface Soil At each assessment point, except for the soil profile assessment, the third-party consultant will document the soil quality parameters (defined in Table 5) within the DSA. When compared with representative controls (i.e. from similar depths with similar light and moisture conditions), the lease and access assessment points must meet the criteria defined in Table 5 for the assessment point to pass. Table 6. DSA Soil Quality Parameters for Grasslands <table><tr><td>Admixing %</td><td>Remain in the same class (0 to 30%, >30% to 60%, and >60%) or lower class of admixing when compared to controls.</td></tr><tr><td>Texture</td><td>Remain in the same texture class (within the dark lines) when compared to controls.  Texture Class Triangle The Soil Texture Classes Triangle was taken from the Government of Canada, Agriculture and Agri-Food Canada, 2011, http://sis.agr.gc.ca/cansis/glossary/t/#figure1, Alberta Environment, 1995 – Reclamation Criteria for Wellsites and Associated Facilities – 1995 update. </td></tr><tr><td>Soil Strength</td><td>Remain in the same class (friable; firm; and hard) when compared to controls.</td></tr><tr><td>Soil Aggregate Size</td><td>Remain in the same class (<2 cm, 2 cm to 5 cm, and >5 cm to 10 cm) when compared to controls. Soil aggregates greater than 10 cm are not allowed unless similar-sized soil aggregates are present in the control soil. </td></tr></table>	Admixing %	Remain in the same class (0 to 30%, >30% to 60%, and >60%) or lower class of admixing when compared to controls.	Texture	Remain in the same texture class (within the dark lines) when compared to controls.  Texture Class Triangle The Soil Texture Classes Triangle was taken from the Government of Canada, Agriculture and Agri-Food Canada, 2011, http://sis.agr.gc.ca/cansis/glossary/t/#figure1, Alberta Environment, 1995 – Reclamation Criteria for Wellsites and Associated Facilities – 1995 update.	Soil Strength	Remain in the same class (friable; firm; and hard) when compared to controls.	Soil Aggregate Size	Remain in the same class (<2 cm, 2 cm to 5 cm, and >5 cm to 10 cm) when compared to controls. Soil aggregates greater than 10 cm are not allowed unless similar-sized soil aggregates are present in the control soil.	Minor revisions to align with definitions, new soil texture picture for more clarity and clarification regarding restrictive layers on and offsite.
Admixing %	Remain in the same class (0 to 30%, >30% to 60%, and >60%) or lower class of admixing when compared to controls.																	
Texture	Remain in the same texture class (within the dark lines) when compared to controls.  The Soil Texture Classes Triangle was taken from the Government of Canada, Agriculture and Agri-Food Canada, 2011, http://sis.agr.gc.ca/cansis/glossary/t/#figure1.																	
Soil Strength	Remain in the same class (friable; firm; and hard) when compared to controls.																	
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Soil Strength	Remain in the same class (friable; firm; and hard) when compared to controls.																	
Soil Aggregate Size	Remain in the same class (<2 cm, 2 cm to 5 cm, and >5 cm to 10 cm) when compared to controls. Soil aggregates greater than 10 cm are not allowed unless similar-sized soil aggregates are present in the control soil.																	
		New graphic added to table.																

Existing Section/Wording	New Section and Wording	Explanation of Proposed Changes
Soil Profile Assessment NOTE: When more than one horizon is mixed to make up the minimum requirement for salvaged soil, the control for the quality comparison must be a mix of the salvaged soil horizons. <u>Assessment Depth</u> Soils will be assessed to a depth of 50 cm on a grid basis on-site, with appropriate off-site measurements (controls). The assessment depth may need to be deeper than 50 cm in order to successfully identify the restriction; however, the assessment depth does not need to continue below 1 m. If a soil limitation (i.e. root restrictions) occurs before the required assessment depth of 50 cm is reached then the assessment is not required to advance any deeper into the soil, however, the assessment depth measurement must be reported in the DSA. <u>Restriction Assessment</u> The process restriction parameters are: • Water permeability. • Vertical root elongation. • Soil aeration. • Compaction For the locations assessed, document in the DSA the topsoil and subsoil process restriction parameters as either “restrictive” or “non-restrictive” as compared to the control. NOTE: a restrictive soil profile is a FAILED class parameter if the representative controls are non-restrictive. Professional judgment should be used to determine whether parameters are restrictive to root growth and establishment. For more details on assessing process restrictions refer to Appendix A. NOTE: Since root elongation is being assessed, soil profile assessment should be done at the same time as the vegetation assessment. <u>Lease and Control Assessments</u> Soil profile assessments will be conducted at every second assessment location on and off the lease. For example, a 100 m x 100 m lease would require a total of 8 soil profile assessments. (4 on-site assessment locations and 4 off-site control locations).	Soil Profile Assessment NOTE: When more than one horizon is mixed to make up the minimum requirement for salvaged soil, the control for the quality comparison must be a mix of the salvaged soil horizons. <u>Assessment Depth</u> Soils will be assessed to a depth of 50 cm or to a soil restrictive layer on a grid basis on-site, with appropriate off-site measurements (controls).The assessment depth may need to be deeper than 50 cm in order to successfully identify the If a soil restriction however, the assessment depth does not need to continue below 1 m. If a soil limitation (i.e. root restrictions) occurs before the required assessment depth of 50 cm is reached then the assessment is not required to advance any deeper into the soil. However, the assessment depth measurement must be reported in the DSA. <u>Restriction Assessment</u> The process restriction parameters are: • Water permeability. • Vertical root elongation. • Soil aeration. • Compaction For the points assessed, document in the DSA the topsoil and subsoil process restriction parameters as either “restrictive” or “non-restrictive” as compared to the control. NOTE: A restrictive soil profile is a FAILED class parameter if the representative controls are non-restrictive. Gravel or rocks found in the soil profile must be comparable to conditions found in the controls. Any anomalies observed in the soil profile must be recorded on the DSA Form. Professional judgment should be used to determine whether parameters are restrictive to root growth and establishment. For more details on assessing process restrictions refer to Appendix B.	

Existing Section/Wording	New Section and Wording	Explanation of Proposed Changes
NOTE: If the following five locations (well centre, sump, flare pit, tank storage area and entrance to lease) on the lease are known, then lease soil profile assessments will be conducted at these five locations. If these five locations are not known, then soil profile assessments will be conducted at every second assessment location on the lease as mentioned above. <u>Access Roads and Paired Control Assessments</u> Soil profile assessments are to be carried out on each paired assessment location. For example, a 500 m access road would require a total of 10 soil profile assessments (5 access assessment locations and the 5 paired control locations).	NOTE: Since root elongation is being assessed, soil profile assessment should be done at the same time as the vegetation assessment when fully developed roots are present. <u>Lease and Control Assessments</u> Soil profile assessments for full disturbance grasslands sites will be conducted at every second assessment point on and off the lease. For example, a 100 m x 100 m lease would require a total minimum of eight soil profile assessments. (four on-site assessment points and 4 off-site control points). NOTE: If the following five locations (well centre, sump, flare pit, tank storage area and entrance to lease) on the lease are known, then lease soil profile assessments will be conducted at these five locations if they have not been investigated during a Phase II ESA. If these five locations are not known, then soil profile assessments will be conducted at every second assessment locations points on the lease as mentioned above. NOTE: If the site is being assessed using a minimal disturbance assessment, two soil profile assessments must be completed at each area (i.e. two disturbed points, two undisturbed points, and two control points). <u>Access Roads and Paired Control Assessments</u> Soil profile assessments are to be carried out on each paired assessment point. For example, a 500 m access road would require a total minimum of 10 soil profile assessments (5 access assessment points and the 5 paired control assessment points).	
3.3.4 Soil Tolerance	3.3.4 Soil Tolerance	Minor revisions, table moved to section 2.3.4.
3.4 Vegetation	3.4 Vegetation	Minor changes.
3.4.1 Use of Non-native Species.	3.4.1 Use of Non-native Species	Minor change, replacing the word “compatible” with “comparable”.
3.4.2 Timing of Assessment For grasslands, without fertilizer or amendment addition, the vegetation assessment should be conducted after a minimum of one full growing season which includes an over-wintering period and a minimum of twelve months from time of seeding. On sites where fertilizer and/or an amendment has been applied, by the licensee, as part of the remediation and reclamation of the site, a minimum waiting period of two years is required before conducting the DSA	3.4.2 Timing of Assessment For grasslands, without fertilizer or amendment addition, the vegetation assessment should be conducted after a minimum of one full growing season which includes an over-wintering period and a minimum of twelve months from time of seeding. On sites where fertilizer and/or an amendment has been applied, by the licensee, as part of the remediation and reclamation of the site, a minimum waiting period of two years from the application date is required	Revised section to clarify that ER does not consider weed spraying as an amendment, which addresses frequent questions ER has received from industry.

Existing Section/Wording	New Section and Wording	Explanation of Proposed Changes				
that will be submitted with the AOR application.	before conducting the DSA that will be submitted with the AOR application. The assessment must occur prior to senescence. NOTE: Weed spraying is not considered an amendment and can be assessed during the next growing season to determine successful eradication except for Japanese brome, scentless chamomile, downy brome, and leafy spurge.					
3.4.3 Vegetation Assessment Criteria At each assessment location, the third party consultant will document the vegetation parameters (defined in Table 6) within the DSA. The vegetation assessments are based on a visual comparison between the site (lease and access) and the representative controls therefore vegetation must be present at the time of assessment. When compared with representative controls, the lease and access assessment locations must meet the criteria defined in Table 6 for the assessment location to pass. NOTE: The lease and access must pass <u>all</u> of the criteria defined in Table 6 to be considered an acceptable DSA within an AOR application submission. Table 6. DSA vegetation parameters for grasslands. <table><tr><td>Plant Species Composition</td><td>Re-vegetation species and species composition should be compatible with control vegetation or meet reasonable land management objectives. NOTE: Weeds and undesirable plants <u>cannot</u> contribute to the plant vegetation.</td></tr></table>	Plant Species Composition	Re-vegetation species and species composition should be compatible with control vegetation or meet reasonable land management objectives. NOTE: Weeds and undesirable plants <u>cannot</u> contribute to the plant vegetation.	3.4.3 Vegetation Assessment Criteria At each assessment point, the third-party consultant will document the vegetation parameters (defined in Table 6) within the DSA. The vegetation assessments are based on a visual comparison between the site (lease and access) and the representative controls therefore vegetation must be present at the time of assessment. When compared with representative controls, the lease and access assessment points must meet the criteria defined in Table 6 for the assessment point to pass. NOTE: The lease and access must pass <u>all</u> the criteria defined in Table 6 to be considered an acceptable DSA within an AOR application submission. Table 8. DSA vegetation parameters for grasslands. <table><tr><td>Plant Species Composition</td><td>Re-vegetation species and species composition should be compatible comparable with control vegetation or meet reasonable land management objectives. NOTE: Weeds and undesirable plants <u>cannot</u> contribute to the plant vegetation.</td></tr></table>	Plant Species Composition	Re-vegetation species and species composition should be compatible comparable with control vegetation or meet reasonable land management objectives. NOTE: Weeds and undesirable plants <u>cannot</u> contribute to the plant vegetation.	New clarified criteria for assessing plant health, bare areas, and weed presence to provide increased detail on the quality of vegetation to compare to control areas.
Plant Species Composition	Re-vegetation species and species composition should be compatible with control vegetation or meet reasonable land management objectives. NOTE: Weeds and undesirable plants <u>cannot</u> contribute to the plant vegetation.					
Plant Species Composition	Re-vegetation species and species composition should be compatible comparable with control vegetation or meet reasonable land management objectives. NOTE: Weeds and undesirable plants <u>cannot</u> contribute to the plant vegetation.					

Existing Section/Wording		New Section and Wording		Explanation of Proposed Changes
Plant Health	Plant health must be equal to or better than the control vegetation.	Plant Health	Plant health must be equal to or better than that of the control vegetation.	
	Plant health should be documented within the DSA as either poor, fair, good or excellent. Ideally, plants should be healthy; characteristics to look for are vigour, height, colour, disease-free and vegetation quality.		Plant health should be documented in the DSA using the categories: poor, fair, good or excellent. Ideally, plants should be healthy; characteristics to look for are vigour, height, colour (ripening stage), disease-free and vegetation quality.	
	NOTE: Evidence of stressed vegetation should be documented within the DSA and must be comparable to the control vegetation. Where there is evidence of stressed vegetation, a description along with photographic evidence must be supplied in the DSA to demonstrate both on-site and off-site effects are comparable.			
Plant Density	Plant density must be equal to or greater than 80% of the control vegetation.	Plant Density	NOTE: Evidence of stressed vegetation should be documented within the DSA and must be comparable to the control vegetation. Where there is evidence of stressed vegetation, a description along with photographic evidence must be supplied in the DSA to demonstrate both on-site and off-site effects are comparable.	
	• each lease location ≥ (average control x 0.80); and • each access location ≥ (corresponding paired control x 0.80).		Plant density must be equal to or greater than 80% of the control vegetation.	
	NOTE: At each assessment location the third party consultant shall document the plant density of live/desirable/healthy plants.			
	NOTE: The species type, growth phase and other factors will affect the easiest method of measuring plant density; therefore, the results may be expressed as percentage cover for the representative area (lump all plant species together into a single density value and note any observable differences in species composition). The measurement methodology must be documented in the DSA and must be consistent across all assessment locations and controls.			

Existing Section/Wording		New Section and Wording		Explanation of Proposed Changes
	Bare Area The bare area refers to the areas with exposed soil that are devoid of vegetation; areas between seed rows are not included in this definition. The bare area percent should not be greater than 10% as compared to the control. - each lease location ≤ average control + 10%; and - each access location ≤ corresponding paired control + 10%. NOTE: It is important to ensure the grid size is consistent across all assessment locations and controls as the results are to be expressed as % bare area over the entire assessment grid.		Bare Area The bare area refers to the areas with exposed soil that are devoid of vegetation. The assessment point must have a representative bare area when compared to the rest of the grid area. areas between seed rows are not included in this definition. The bare area percent at assessment points should not be greater than 10% as compared to the control. - each lease location ≤ average control + 10%; and - each access location ≤ corresponding paired control + 10%. NOTE: Bare areas that are located outside the assessment point must be comparable to those found offsite. If an anomaly is encountered, the locations must be detailed on the DSA sketch and information such as measurements, photos, and applicable vegetation parameter data must be collected to compare to the conditions found in the controls. It is important to ensure the grid size is consistent across all assessment locations and controls as the results are to be expressed as % bare area over the entire assessment grid.	
	Weeds & Undesirable Plants Weeds are to be managed on all lands as per The Weed Control Act which is regulated by the Ministry of Agriculture. NOTE: Once a weed species has been identified at a site, please refer to the Minister's Order Designating Prohibited, Noxious and Nuisance Weeds (Weed List) to determine the type of weed and potential action required under The Weed Control Act and ER's criteria as defined below: Weed & Undesirable Plant Species Composition Weeds and undesirable plant species identified on-site must also be present in the off-site controls; otherwise the on-site weed and/or undesirable plant species must be removed. NOTE: The presence of weeds/undesirable plants may or may not have been directly influenced by well/facility activity. The third party consultant must ensure that the control samples are representative of the surrounding area. If no weed species are present at an assessment location enter "not applicable" in the weed species column and "0" in the weed density column to indicate the weed assessment was conducted. Weed & Undesirable Plant Species Type Depending on the species type identified, ER's requirements differ as follows:		Weeds & Undesirable Plants Weeds are to be managed on all lands as per The Weed Control Act which is regulated by the Ministry of Agriculture. NOTE: Once a weed species has been identified at a site, please refer to the Minister's Order Designating Prohibited, Noxious and Nuisance Weeds (Weed List) to determine the type of weed and potential action required under The Weed Control Act and ER's criteria as defined below: Weed & Undesirable Plant Species Composition Weeds and undesirable plant species identified on-site must also be present in the off-site controls; otherwise, the on-site weed and/or undesirable plant species must be removed. NOTE: The presence of weeds/undesirable plants may or may not have been directly influenced by well/facility activity. The third-party consultant must ensure that the control samples are representative of the surrounding area. If no weed	

Existing Section/Wording	New Section and Wording	Explanation of Proposed Changes
• <u>Prohibited Weeds</u> – must be eradicated on-site to prevent their movement out of the area; • <u>Noxious Weeds</u> – must be contained and controlled on-site and any isolated infestations found on-site must be eradicated. • <u>Nuisance Weeds and Undesirable Plants</u> – must be controlled on-site. <u>Weed & Undesirable Plant Density</u> No prohibited weeds are allowed on-site. The density of noxious/nuisance weeds and undesirable plants on-site must be less than or equal to that found on the controls. • average lease $\leq$ average control; and • each access location $\leq$ corresponding paired control. NOTE: The density results may be expressed in weeds per square meter or linear meter, or percentage cover for the representative area. The measurement methodology must be documented in the DSA and must be consistent across all assessment locations and controls.	species are present at an assessment point enter "not applicable" in the weed species column and "0" in the weed density column to indicate the weed assessment was conducted. <u>Weed & Undesirable Plant Species Type</u> Depending on the species type identified, ER's requirements differ as follows: • <u>Prohibited Weeds</u> – must be eradicated on-site to prevent their movement out of the area; • <u>Noxious Weeds</u> – must be contained and controlled on-site and any isolated infestations found on-site must be eradicated. • <u>Nuisance Weeds and Undesirable Plants</u> – must be controlled on-site. <u>Weed & Undesirable Plant Density</u> No prohibited weeds are allowed on-site. The density of noxious/nuisance weeds and undesirable plants on-site must be less than or equal to that found in the controls. • average lease $\leq$ average control; and • each access location $\leq$ corresponding paired control. NOTE: The density results may be expressed in weeds per square meter, or linear meter, or percentage cover for the representative area. The measurement methodology must be documented in the DSA and must be consistent across all assessment locations and controls.	
4. Reclamation Criteria – Peatlands	4. Reclamation Criteria – Peatlands	Minor changes.
4.1 Site Assessment Sampling Scheme	4.1 Site Assessment Sampling Scheme	No changes.
4.2 Landscape	4.2 Landscape	Minor changes for clarification.
4.3 Vegetation	4.3 Vegetation	Minor changes.
4.3.1 Use of Non-native Species	4.3.1 Use of Non-native Species	Minor changes.

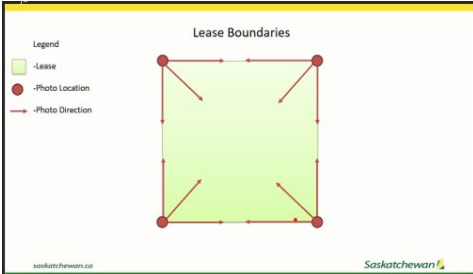
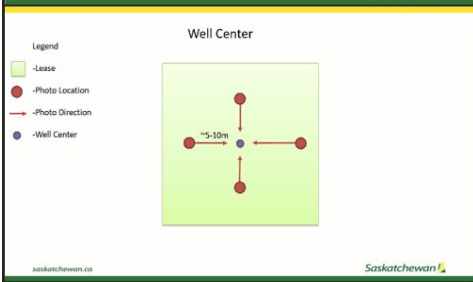
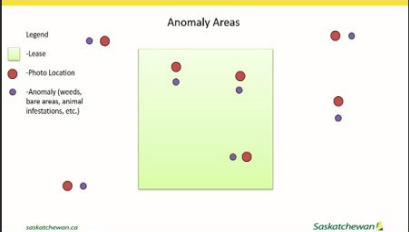
Existing Section/Wording	New Section and Wording	Explanation of Proposed Changes								
4.3.2 Timing of Vegetation Assessment For peatlands, without fertilizer or amendment addition, the vegetation assessment should be conducted after a minimum of one full growing season which includes an over-wintering period and a minimum of twelve months from time of seeding. On sites where fertilizer and/or an amendment has been applied as part of the remediation and reclamation of the site, a minimum waiting period of two years is required before conducting the DSA that will be submitted with the AOR application.	4.3.2 Timing of Vegetation Assessment For peatlands, without fertilizer or amendment addition, the vegetation assessment should be conducted after a minimum of one full growing season which includes an over-wintering period and a minimum of twelve months from time of seeding. On sites where fertilizer and/or an amendment has been applied as part of the remediation and reclamation of the site, a minimum waiting period of two years from the application date is required before conducting the DSA that will be submitted with the AOR application. NOTE: Weed spraying is not considered an amendment and can be assessed during the next growing season to determine successful eradication except for Japanese brome, scentless chamomile, downy brome, and leafy spurge.	Revised to streamline wording and to clarify that weed spraying is not considered an amendment in response to frequent industry inquiries.								
4.3.3 Vegetation Assessment Criteria At each assessment location, the third party consultant will document the vegetation parameters (defined in Table 8) within the DSA. The vegetation assessments are based on a visual comparison between the site (lease and access) and the representative controls therefore vegetation must be present at the time of assessment. When compared with representative controls, the lease and access assessment locations must meet the criteria defined in Table 8 for the assessment location to pass. NOTE: The lease and access must pass <u>all</u> of the criteria defined in Table 8 to be considered an acceptable DSA within an AOR application submission. Table 8. DSA vegetation parameters for peatlands. <table><tr><td>Plant Species Composition</td><td>Re-vegetation species and species composition should be compatible with control vegetation or meet reasonable land management objectives.</td></tr><tr><td></td><td>NOTE: Weeds and undesirable plants <u>cannot</u> contribute to the plant vegetation.</td></tr></table>	Plant Species Composition	Re-vegetation species and species composition should be compatible with control vegetation or meet reasonable land management objectives.		NOTE: Weeds and undesirable plants <u>cannot</u> contribute to the plant vegetation.	4.3.3 Vegetation Assessment Criteria At each assessment point, the third-party consultant will document the vegetation parameters (defined in Table 9) within the DSA. The vegetation assessments are based on a visual comparison between the site (lease and access) and the representative controls therefore vegetation must be present at the time of assessment. When compared with representative controls, the lease and access assessment locations must meet the criteria defined in Table 9 for the assessment point to pass. Note: The lease and access must pass <u>all</u> of the criteria defined in Table 8 to be considered an acceptable DSA within an AOR application submission. Table 10. DSA vegetation parameters for peatlands. <table><tr><td>Plant Species Composition</td><td>Re-vegetation species and species composition should be compatible comparable with control vegetation or meet reasonable land management objectives.</td></tr><tr><td></td><td>NOTE: Weeds and undesirable plants <u>cannot</u> contribute to the plant vegetation.</td></tr></table>	Plant Species Composition	Re-vegetation species and species composition should be compatible comparable with control vegetation or meet reasonable land management objectives.		NOTE: Weeds and undesirable plants <u>cannot</u> contribute to the plant vegetation.	Increased detail on how to assess plant health, bare areas, and weeds. Additionally, Plant Productivity Rating criteria have been introduced to ensure industry obtains more accurate, clear, and defensible information addressing landowner concerns.
Plant Species Composition	Re-vegetation species and species composition should be compatible with control vegetation or meet reasonable land management objectives.									
	NOTE: Weeds and undesirable plants <u>cannot</u> contribute to the plant vegetation.									
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Existing Section/Wording		New Section and Wording		Explanation of Proposed Changes								
Plant Health	Plant health must be equal to or better than the control vegetation. Plant health should be documented within the DSA as either poor, fair, good or excellent. Ideally, plants should be healthy; characteristics to look for are vigour, height, colour, disease-free and vegetation quality. NOTE: Evidence of stressed vegetation should be documented within the DSA and must be comparable to the control vegetation. Where there is evidence of stressed vegetation, a description along with photographic evidence must be supplied in the DSA to demonstrate both on-site and off-site effects are comparable.	Plant Health	Plant health must be equal to or better than the control vegetation. Plant health should be documented within the DSA as either poor, fair, good or excellent. Ideally, plants should be healthy; characteristics to look for and note are vigour, height, color (ripening stage), disease-free and vegetation quality. Plant maturity should be comparable to the surrounding site, as such if the lease is maturing faster or slower than the surrounding area, the site is not comparable. <table><tr><td>Excellent</td><td>Vigorous, healthy, no evidence of disease or stress</td></tr><tr><td>Good</td><td>Less than 25% evidence of stress/disease/discoloration</td></tr><tr><td>Fair</td><td>25%-50% evidence of stress/disease/discoloration</td></tr><tr><td>Poor</td><td>Greater than 50% evidence of stress/disease/discoloration, dead or not present</td></tr></table> NOTE: Evidence of stressed vegetation should be documented within the DSA and must be comparable to the control vegetation. Where there is evidence of stressed vegetation, a description along with photographic evidence must be supplied in the DSA to demonstrate both on-site and off-site effects are comparable.	Excellent	Vigorous, healthy, no evidence of disease or stress	Good	Less than 25% evidence of stress/disease/discoloration	Fair	25%-50% evidence of stress/disease/discoloration	Poor	Greater than 50% evidence of stress/disease/discoloration, dead or not present	
Excellent	Vigorous, healthy, no evidence of disease or stress											
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Plant Density	Plant density must be equal to or greater than 80% of the control vegetation. • each lease location $\geq$ (average control x 0.80); and • each access location $\geq$ (corresponding paired control x 0.80). NOTE: At each assessment location the third party consultant shall document the plant density of live/desirable/healthy plants. NOTE: The species type, growth phase and other factors will affect the easiest method of measuring plant density; therefore, the results may be expressed in plants, stems or tillers per square meter or linear meter, or percentage cover for the representative area (lump all plant species together into a single density value and note any observable differences in species composition). The measurement methodology must be documented in the DSA and must be consistent across all assessment locations and controls.	Plant Density	Plant density must be equal to or greater than 80% of the control vegetation. • each lease location point $\geq$ (average control x 0.80); and • each access location point $\geq$ (corresponding paired control x 0.80). NOTE: At each assessment location point the third-party consultant shall document the plant density of live/desirable/healthy plants. NOTE: The species type, growth phase and other factors will affect the easiest method of measuring plant density; therefore, the results may be expressed in plants, stems or tillers per square meter or linear meter, or percentage cover for the representative area (lump all plant species together into a single density value and note any observable differences in species composition). The measurement methodology must be documented in the DSA and must be consistent across all assessment locations point and controls.									

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5. Reclamation Criteria – Forested Lands	5. Reclamation Criteria for Forested Lands	No changes.
6. Change to Land Use and Applicability of Assessment of Criteria	6. Changes to Land Use and Applicability of Assessment of Criteria	No substantive changes.
N/A – NEW	7. Mandatory Photographs To ensure adequate photographic evidence of the conditions at the site, the following photographs are required: • At each corner of the lease, photos should be taken along the lease boundary line in each direction and towards the center of the lease to show the surrounding area off the lease compared to on-lease. • At well center, photos should be taken standing 5-10 meters back of well center in each cardinal direction towards well center showing what is occurring at well center and the surrounding area of lease. These photos should not be taken standing on well center. • At all soil assessment points, photos must be taken of the soil in-situ showing the depth of the topsoil, the total dig depth, soil profile, root restrictions, etc. to ensure all necessary information is captured.	New section added to clarify expectations of what photographic evidence should be submitted along with the DSA to document conditions of the site and what steps should be taken if required photographs are unable to be taken at time of assessment.

Existing Section/Wording	New Section and Wording	Explanation of Proposed Changes
	- At every other vegetation assessment point, photos should be taken of the bare areas, plant density, and plant height with measurement equipment. Multiple photos of different plant heads up close must be provided to show the health of the plants. - At anomaly areas onsite and offsite, photos should be taken to show the onsite issues and comparable offsite issues, as well as the appropriate measure and illustrated on a site sketch where each is occurring. Unmanned Aerial Vehicle (UAV) photos providing an overhead view of the lease and surrounding area are recommended to demonstrate comparability are recommended. A well-center marker should be included on the UAV photos to allow for proper review. While these photos are not required to be included in the DSA form, they should be retained on file and made available upon request by ER. Examples of these photos are included in Appendix C: Mandatory Photographs. NOTE: In situations where the photos described above could not be collected (i.e. due to weather conditions preventing UAV flights, etc.), the reason must be explained in the SSCR why they could not be collected.	
7. References	8. References	No changes.
Appendix A – Root, Permeability, and Aeration restriction indicators	Appendix A – Detailed Site Assessment Example	No changes (switched with Appendix B).
Appendix B – DSA Example	Appendix B: Root, Permeability, and Aeration restriction indicators	No changes (switched with Appendix A).

Existing Section/Wording	New Section and Wording	Explanation of Proposed Changes
N/A - NEW	Appendix C: Mandatory Photographs    	New appendix to provide guidance on the expected standards for submitted photographs pursuant to new section 7.