Conservation and Reclamation
INFORMATION LETTER

Environmental Protection Guidelines for Oil Production Sites - Revised January 2002

CHANGES TO THE INFORMATION LETTER

This Information Letter has been updated to reflect changes in how oil production sites are identified as Class I or Class II (see following two sections). The document has also been updated with new references.

The previous version of the Information Letter (C&R/IL/94-6) should be discarded.

BACKGROUND

The designation of Class I and II oil production sites in the *Guide for Oil Production Sites Pursuant to the Environmental Protection and Enhancement Act and Regulations* and C&R/IL/94-6 *Environmental Protection Guidelines for Oil Production Sites* is incorrect.

The criteria for determining Class I sites were modified in the *Activities Designation Regulation* in 1996 (Alberta Regulation 211/96). The two documents listed above were inadvertently not modified at that time.

The two documents refer to Class I sites being based on the field production facilities for recovering heavy oil or oil sands where the total area of well pads was greater than 5.7 hectares per quarter section within a designated area of the province, or where an EIA was called. The two documents also referred to a proposed change to the definition of "heavy oil". The change was not needed because the new definition refers to "oil or oil sands" instead.

The purpose of this Information Letter is to communicate the change.

NEW CLASS DESIGNATION

Class I Oil Production Sites

Class I oil production sites require a Conservation and Reclamation (C&R) Approval under the *Environmental Protection and Enhancement Act* prior to any surface disturbance.

Class I oil production site means the field production facilities for recovering oil or oil sands by drilling or other in-situ methods, including any injection or pumping facilities and any associated infrastructure, where:

> (i) the site is located within the area illustrated in the guideline entitled *Guide For Oil Production Sites* published by the Department (see attached copy of the map), and
> (ii) an environmental impact assessment report is required in respect of the proposed activity or was required under the *Land Surface Conservation and Reclamation Act.*

Class I sites are directed by the conditions of the approval. These Environmental Protection Guidelines provide additional guidance for oil production site operators. Class I oil production sites are subject to environmental protection orders and must obtain reclamation certificates**.**

Class II Oil Production Sites

Class II oil production sites are the field production facilities for recovering oil or oil sands by drilling or other in-situ methods, including any injection or pumping facilities and any associated infrastructure, that fall within the map area but did not have an EIA called. **Class II sites do not require a C&R Approval but are subject to the *Code of Practice for Oil Production Sites***. These Environmental Protection Guidelines provide additional guidance for oil production site operators. Class II oil production sites are subject to environmental protection orders and must obtain reclamation certificates.

Oil Production Sites on Public Land

All oil production sites on public land require a surface disposition from Public Lands Division of Alberta Sustainable Resource Development.

For Class I oil production sites, environmental protection terms and conditions will normally be in the C&R Approval. Site-specific operating conditions not addressed in the C&R Approval may be attached to the surface disposition. For Class II oil production sites that do not require a C&R Approval, site-specific operating conditions may be attached to the surface disposition to supplement the Code of Practice.

Precedence

Conditions in a C&R Approval, the *Code of Practice for Oil Production Sites* or a public land surface disposition take precedence over these guidelines.

OVERVIEW OF THE GUIDELINES

The Environmental Protection Guidelines apply to the construction, operation, and reclamation of oil production sites in Alberta. Following the guidelines will help ensure successful conservation, reclamation and certification. ***The Environmental Protection Guidelines apply to both Class I and Class II oil production sites.*** The guidelines are of particular relevance to Class II sites since they do not go through a formal conservation and reclamation review and approval process. Conservation and Reclamation Inspectors

will expect to see the guidelines being followed in the field

The guidelines promote and encourage:

- The return of a disturbed site to a land capability equivalent to the pre-disturbance land capability.
- Acceptance of pre-development soil, landscape and vegetation conditions as the standard for post-development conditions.
- Identification of potential environmental concerns through pre-construction site assessments and pre-planning.
- Protection of the environmental characteristics of the project site to minimize post-construction remedial requirements.
- Awareness of the value of soil, the sensitivity of soil to disturbance, and the difficulty of reclaiming degraded soils.
- Awareness of the importance of native vegetation and the need for protection and rapid reestablishment of vegetation that is similar to, or compatible with, the adjacent land.
- Monitoring and on-site supervision by personnel responsible for environmental quality control of all activities to ensure a complete record of conservation, degradation, mitigation and reclamation events.
- Reclamation of as much of the disturbed area as possible each year to minimize land disturbance.
- Site assessments following reclamation which provide a complete evaluation of soil, landscape and vegetation conditions and compare them to pre-development conditions, prior to application for a reclamation certificate.
- Monitoring during the operating life of the facility to ensure that integrity of the environment on and adjacent to the site is maintained.

ENVIRONMENTAL PROTECTION GUIDELINES

The following sections outline Environmental Protection Guidelines for project planning; site preparation, construction and operation; and site reclamation. Further information can be obtained from regional Conservation and Reclamation Inspectors.

1. Project Planning

Advance planning and early discussions with regulatory authorities and landowners will lead to a smooth process with few surprises. Planning should minimize the overall impact of the development and promote the return of the land to equivalent land capability. Plans should be flexible to allow for unforeseen events (e.g., adverse weather). Plans must be developed for off-site disturbances (e.g., remote sumps, borrow pits) as well as for the main site (including roads, pipelines, and batteries).

1.1 Communication

Objective: To ensure that all affected parties understand what is planned and what is happening on the site and have the opportunity for input into conservation and reclamation planning.

Considerations:

- Start communicating with landowners, occupants, other affected parties, and Conservation and Reclamation Inspectors before starting work on the site.
- Discuss with the landowner ways of minimizing impacts on the landowner's operation (e.g., timing, fencing, access, etc.).
- Educate on-site construction and operation personnel about environmental concerns on the site and the Environmental Protection Guidelines.

1.2 Site Location

Objective: To locate the well pad and associated facilities (roads, pipelines) to minimize disturbance and adverse environmental effects. Proper siting can greatly reduce the difficulty and cost of conservation and reclamation and facilitate reclamation certification.

Considerations:

- Where possible, consider drilling techniques that allow multi-well pads to be built, thereby reducing surface disturbance (e.g., directional wells, slant wells, horizontal wells).
- Avoid environmentally sensitive areas such as erodible knolls, saline or sodic depressions, unstable sidehills, waterbodies and wetlands, streams and seepage areas.
- Avoid areas likely to have rare plant or animal species, or other areas where the environment could be compromised.
- Set well pads and associated facilities appropriate distances back from valley breaks, ravines, stream and river banks, and lakeshore lands.
- Consult the document *Principles for Minimizing Surface Disturbance in Native Prairie and Parkland Areas* (EUB IL2001-8).
- Avoid disrupting drainage.
- Minimize significant cut and fill.
- Minimize interference with agricultural or silvicultural practices.

1.3 Scheduling/Timing

Objective: To schedule activities to avoid adverse environmental effects and interference with the landowner's activities.

Considerations:

- Contact appropriate agencies regarding timing restrictions on the operation due to wildlife activity, land use, etc.
- Contact the landowner regarding his views on the timing of any activities associated with the oil production site.

1.4 End Land Use

Objective: To determine the end land use for the site at the planning stage and to identify soil conservation, reclamation and revegetation methods to achieve this land use.

Considerations:

- Begin early consultation with the landowner and appropriate provincial and municipal agencies (Municipal District, County, Improvement District) to determine the desired end land use.

2. Site Preparation, Construction and Operation

Site preparation, construction and operation should be conducted to conserve and protect the soil, vegetation and landform features of the site. Care taken at this phase will reduce final reclamation costs.

2.1 Timber Salvage and Clearing

Objective: To create a suitable area for development. To minimize soil loss and degradation, disturbance of adjacent forest cover, and loss of merchantable timber.

Considerations:

- Consult the *Alberta Timber Management Regulations* administered by Public Lands Division, Alberta Sustainable Resource Development for specific requirements on public lands.
- Minimize the area required for development.
- Minimize soil loss during clearing by using appropriate equipment, procedures and scheduling.

2.2 Soil Salvage

Objective: To salvage, store and protect sufficient soil materials for future replacement and reclamation.

Considerations:

- It is highly recommended that the operator identifies and documents topsoil depths to guide soil salvage and to provide documentation for future reclamation certification.
- Selectively salvage and store topsoil for future replacement, unless otherwise approved by the Conservation and Reclamation Inspectors. Make every effort to maximize topsoil salvage. On forested land in the Green Area, the top 15 cm of mineral soil and surface organic material is to be salvaged, unless otherwise authorized by the Conservation and Reclamation Inspectors. Selectively salvage and replace sufficient suitable subsoil to improve reclamation success.
- Prevent excessive soil handling and overstripping.
- Locate topsoil stockpiles in a secure area at the edge of the well pad away from: grade, subsoil and spoil materials; drilling activities; and day to day operations.
- Contour and seed soil stockpiles to minimize loss by wind and water erosion.

2.3 Construction and Operation

Objective: To plan and control all construction and operation activities to prevent environmental degradation and to simplify reclamation of the site.

Considerations:

- Prevent or control soil or water contamination (pollution), soil erosion and landscape instability.
- Avoid disrupting drainage.
- Avoid off-lease contamination.
- Dispose of drilling wastes according to Alberta Energy and Utilities Board *Guide G-50* ***Drilling Waste Management***), Informational Letter IL 93-6 *Drilling Waste Management, Hydrocarbon/Salt Disposal Plan Content and Data Base Reporting*, and *Interim Directive ID 93-1 Drilling Waste Manual.*
- Locate sump and flare pits a minimum of three meters from soil stockpiles.
- During construction, contour cut and fill slopes such that they are not steeper than 2:1 (27°). Recontour cut slopes to a 3:1 (18°) slope or less once drilling is complete and production begins.
- Once a well is operating, reclaim as much of the lease as possible to reduce the area of disturbance.
- Store the remaining salvaged soil so that it is accessible and available for replacement during final reclamation.

3. Site Reclamation

This section refers to the final reclamation of the site with the goal of meeting the reclamation certification criteria.

3.1 Contaminant Identification and Remediation

Objective: To ensure levels of contaminants on the site do not form a hazard to human or animal health, do not detrimentally affect water quality and do not impede germination, growth, survival or management of the vegetation used for site reclamation.

Considerations:

- Contain and clean up all spills as soon as possible.
- Document and report all spills to the appropriate authority.
- Remediate chemical contamination to meet the requirements of Alberta Environment (AENV).
- Undertake remediation on-site unless otherwise authorized.
- Resample soils following remediation to confirm that remediation goals have been met.

3.2 Site Reconstruction

Objective: To contour the site and prepare it for soil replacement and revegetation.

Considerations:

- Contour the site to conform to, or blend into, the surrounding topography unless otherwise approved.
- Avoid backfilling sumps with frozen materials where year round access is available. Backfilling with frozen material may require remediation of subsidence.
- Use spoil materials for site grading and contouring. Salvaged subsoil may only be used for minor grading. Do not use salvaged topsoil for grading and contouring.
- Restore surface and subsurface drainage to conform to the adjacent drainage system.
- Do not divert, block or impound natural surface or subsurface drainage.
- If necessary, use appropriate erosion control or stabilization measures.
- Remove rocks, roots, slash or debris on or within the soil.
- Remove and dispose of garbage and debris at an approved waste management facility, unless otherwise approved.
- Remove physical equipment and facilities from the site. Remove all solid materials, or when necessary,

compact the material and bury it at least 1.2 metres beneath the final land surface.

3.3 Soil Replacement

Objective: To replace salvaged soil material so that soil depth and quality is equivalent to the original or representative undisturbed land. In cases where the land capability and end land use will change, soil depth and quality may vary from representative lands, but variances must be approved, in advance, by the Conservation and Reclamation Inspectors.

Considerations:

- Replace salvaged subsoil evenly across the site.
- Alleviate subsoil compaction, before topsoil replacement, to help establish suitable subsoil conditions and rooting depth.
- Replace topsoil evenly across the site only after contouring is complete and subsidence is no longer a concern.
- When necessary, apply soil amendments to return soil capability.

3.4 Revegetation

Objective: To ensure the establishment and growth of species compatible with the intended land capability and end land use. The vegetation should be self-sustaining in uncultivated areas or sustainable under normal management practices in cultivated areas.

Considerations:

- Cultivate the entire site to alleviate topsoil compaction.
- Avoid pulverization of the soil.
- Discuss revegetation methods and species with the landowner or public land manager.
- Re-establish vegetation (species, composition) so that it is compatible with original or adjacent vegetation.
- Where required, use native species or mixes that will allow the establishment of native species. Consult the document *Native Plant Revegetation Guidelines for Alberta* (Alberta Agriculture, Food and Rural Development and Alberta Environment).
- Minimize the introduction of undesirable species and eliminate those that are inconsistent with the adjacent land (exceptions are granted for cover crops).

FURTHER INFORMATION

Copies of the *Guide for Oil Production Sites Pursuant to the Environmental Protection and Enhancement Act and Regulations* and the *Code of Practice for Oil Production Sites* are available from
Alberta Environment,
Information Centre,
Main Floor, 9920 108 Street,
Edmonton, Alberta, T5K 2M4

Phone: (780) 422-2079

http://www.gov.ab.ca/env/info/infocentre

CONTACTS

The following can be reached toll free by calling 310-0000 and then dialing the number shown below.

For Green Area public lands:

Alberta Sustainable Resource Development
Public Lands Division,
3rd Floor, 9915 - 108 Street,
EDMONTON, Alberta T5K 2G8.

Phone: (780) 427-3570
Fax: (780) 422-4251
e-mail reclaim@env.gov.ab.ca

For White Area public lands:

Alberta Sustainable Resource Development
Public Lands Division,
Room 200, J. G. O'Donoghue Building,
7000 - 113 Street,
EDMONTON, Alberta T6H 5T6.

Phone: (780) 427-6597
Fax: (780) 422-4244
Website: www.gov.ab.ca/navigation/sustain/publiclands/index.html

For all other lands:

Alberta Environment,
Science and Standards Division,
4th Floor, 9820-106 Street,
EDMONTON, Alberta T5K 2J6

Phone: (780) 427-5883
Fax: (780) 422-4192
e-mail: land.management@gov.ab.ca

APPENDIX "A"

OIL PRODUCTION SITES AREAS