PROPOSED TERMS OF REFERENCE
ENVIRONMENTAL IMPACT ASSESSMENT REPORT

FOR THE PROPOSED

SYNCRUDE CANADA LTD.
SOUTH WEST SAND STORAGE CONVERSION PROJECT

Approximately 40 km north of Fort McMurray, Alberta

Prepared by: Syncrude Canada Ltd.

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1 INTRODUCTION

Due to the nature of the proposed project, the Terms of Reference (TOR) and resulting Environmental Impact Assessment (EIA) report are narrowly focused and therefore different than for a typical oil sands mine. The Syncrude South West Sand Storage (SWSS) Conversion Project is located within an approved, operational, currently disturbed large-scale oil sands mine project (the Mildred Lake facility). The *Environmental Protection and Enhancement Act* (EPEA) approval (No. 26-02-00) for the Syncrude Canada Ltd. (Syncrude) Mildred Lake facility was recently renewed (June 24, 2007) following public and First Nation's consultation. Therefore the discussion of anticipated environmental and socio-economic effects will focus on understanding how the proposed amendment to the existing oil sands mine operation will alter the effects predicted in the approval renewal application and previous EIA report (Mildred Lake Expansion, July 1998).

1.1 BACKGROUND

[A] Syncrude will prepare and submit an EIA report to explain the environmental effects of the construction, operation, decommissioning and reclamation of the proposed South West Sand Storage Conversion (the Project).

[B] The Project is the conversion of the SWSS facility to permit interim storage of increased volumes of Mature Fine Tailings (MFT). The SWSS facility is located in the southwest corner of the Mildred Lake facility, bordered by the AOSTRA road on the south and southwest, with the MacKay River to the west of the facility. The SWSS facility was commissioned in 1993 with three coarse tailings systems and a fluid return system. The facility was designed to provide coarse tailings sand storage, returning water and thin fine tailings to other sites within the Mildred Lake facility.

[C] An interim increase in containment capacity will be required in 2009 to contain mature fine tailings until in-pit tailings storage space becomes available in the North Mine in 2014. Syncrude proposes to utilize the SWSS facility to contain these interim mature fine tailings volumes. Changes to the design of the SWSS facility will be required to increase the fluid storage capacity of this facility.

[D] Current approvals for the SWSS facility include the construction of the upstream dyke to a final crest elevation of 400 metres above sea level (masl), maintaining internal fluid levels at or below 385 masl. The redesign of the facility does not change the maximum dyke crest elevation but requires a design change from upstream to centerline dyke construction, extension of the dyke, and elevated fluid levels to attain the increase in containment capacity.

[E] As fluid storage space becomes available in the North Mine, MFT transfer from the SWSS to in-pit tailings facilities will begin. Subsequent to the removal of fluids, the SWSS will be capped and reclaimed as a dry sand storage facility.

[F] No additional types of solid waste, liquid effluent, or gaseous emissions are expected from the Project. No additional volumes of fresh water are required for the Project.

[G] The Project requires minimal additional manpower, no construction camp, and no new roads.

[H] The purpose of this document is to identify for Syncrude and appropriate stakeholders the information required by government agencies for an Environmental Impact Assessment report prepared under EPEA.

1.2 SCOPE

[A] Syncrude will prepare and submit an EIA report that examines the environmental and socio-economic effects of converting the existing approved SWSS area to allow interim storage of increased volumes of MFT.

[B] The Study Area for the EIA shall include the Project Area, as well as, the spatial and temporal limits of individual environmental components outside the Project Area boundaries where an effect can be reasonably expected. The Study Area includes both the Local Study Area and Regional Study Area.

[C] The EIA report shall be prepared with consideration to all applicable provincial legislation, codes of practice, guidelines, standards and directives. Syncrude must identify the legislation, policies, approvals and current multi-stakeholder planning initiatives applicable to the review of this Project.

[D] The EIA report shall be prepared in accordance with these Terms of Reference and the environmental information requirements prescribed under EPEA and associated regulations. The EIA report will form part of Syncrude's application to the Energy Resources Conservation Board (ERCB). An EIA report summary will also be included as part of the ERCB Application.

[E] The EIA report will include a glossary of terms and a list of abbreviations to assist the reader in understanding the material presented. It will also include concordance tables that cross-reference the report to the sub-section level of the EIA Terms of Reference.

2 PROJECT DESCRIPTION

2.1 THE PROPONENT

[A] Provide:

a) a corporate profile;
b) the name of the legal entity that will develop, manage and operate the Project and hold the operating approvals;
c) a description of Syncrude's environmental management systems; and
d) a description of Syncrude's tailings research.

[B] Describe Syncrude's history in Alberta's oil sands industry, with specific reference to development of the Mildred Lake site and the site's tailings management system.

2.2 THE PROJECT

[A] Describe the current status of the SWSS, including:

a) purpose of the SWSS;
b) location, size (areal extent), and design (elevations, slopes and fluid levels);
c) construction and operations history;
d) source and type of construction materials;
e) solid and liquid materials balance for inflows and outflows, including a description of the sources and disposal areas of the inflows and outflows, respectively
f) expected timeframes for operation, decommissioning and reclamation;
g) source and type of reclamation materials;
h) planned reclamation outcomes (land use, capability, wildlife habitat);
i) air, water and terrestrial monitoring programs; and
j) wildlife deterrent programs.

[B] Describe the construction, operation, decommissioning and reclamation of the modified SWSS, including:

a) purpose of SWSS;
b) location, size (areal extent), and design (elevations, slopes and fluid levels);
c) source and type of construction materials;
d) solid and liquid materials balance for inflows and outflows, including a description of the sources and disposal areas of the inflows and outflows, respectively;
e) expected timeframes for construction, operation, decommissioning and reclamation;
f) source and type of reclamation materials;

g) planned reclamation outcomes (land use, capability, wildlife habitat);
h) air, water and terrestrial monitoring programs; and
i) wildlife deterrent programs.

[C] Describe how the Project will comply with the ERCB's draft tailings management directive (*Tailings Performance Criteria and Requirements for Oil Sands Mining Schemes*, June 26, 2008).

2.3 EVALUATION OF ALTERNATIVES

[A] Discuss the need for the Project addressing:
a) the suitability of the SWSS site as an active tailings management facility;
b) the alternatives evaluated;
c) the reasons for not selecting any identified alternatives; and
d) implications resulting from a delay in proceeding with the Project, or any phase of the Project.

[B] Discuss the implications of not going ahead with the Project.

3 ENVIRONMENTAL ASSESSMENT

3.1 POTENTIAL IMPACTS

[A] Summarize expected changes to the Project Area arising from the Project, including:
a) the approved footprint (areal extent, elevations and slopes);
b) operating life, time of decommissioning and time of reclamation;
c) reclamation outcomes (land use, capability, wildlife habitat); and
d) waterbodies and watercourses immediately adjacent to SWSS.

[B] Summarize expected changes to the area outside the Project Area, including:
a) expected flows in reclaimed watercourses and waterbodies, including need for new watercourses or waterbodies or removal of planned watercourses or waterbodies;
b) changes in air emissions (type, rate, source, distribution); and
c) changes to other parts of the Mildred Lake operation including water balances, sand/fines balances, CT production, water recycling rates (water use efficiency) reclamation material balances and timing and outcomes of reclamation.

[C] Describe the potential environmental impacts arising from the modified SWSS at the Project, local and regional scales, with specific reference to:
a) groundwater quality;
b) hydrology;
c) surface water quality; and
d) wildlife.

[D] Describe how the impacts were assessed and the confidence in the assessments.

[E] Describe potential impacts to and by other current and planned activities in the region, with particular reference to adjacent activities.

3.2 MITIGATION

[A] Discuss measures planned to mitigate the impacts of construction and operation of the modified SWSS at the Project, local and regional scales.

[B] Describe the residual impacts of the Project and Syncrude's plans to manage those effects.

3.3 MONITORING

[A] Discuss any changes to existing monitoring programs or additional monitoring programs Syncrude will conduct to evaluate project impacts and mitigation efforts.

4 PUBLIC ENGAGEMENT AND ABORIGINAL CONSULTATION

[A] Document the public engagement program implemented for the Project.

[B] Document the aboriginal consultation program implemented for the Project.

[C] Identify how traditional ecological knowledge was gathered and incorporated into the EIA.

[D] Describe plans to maintain the public engagement and aboriginal consultation process following completion of the EIA review to ensure that the public and aboriginal peoples have an appropriate forum for expressing their views on the ongoing development, operation and reclamation of the Project.

5 HISTORICAL RESOURCES

[A] Summarize existing historical resource issues for the Project.

[B] Assess potential for further historical resource issues for the Project.

[C] Recommend management of historical resource issues for the Project.

[D] Describe consultation with Alberta Culture and Community Spirit (ACCS) concerning historical resource requirements for the Project.

6 PUBLIC HEALTH AND SAFETY ASSESSMENT

[A] Describe those aspects of the Project that may have implications for public health or the delivery of regional health services. Determine whether there may be implications for public health arising from the Project. Specifically, where appropriate:

a) assess the potential health implications of the compounds that will be released to the environment from the proposed Project in relation to exposure limits established to prevent acute and chronic adverse effects on human health;
b) provide the data, exposure modeling calculations, and describe the methods Syncrude used to assess impacts of the Project on human health and safety;
c) provide information, including chemical analyses and modeling results, on samples of selected environmental media (e.g., soil, water, air, vegetation, wild game, etc.) used in the assessment;
d) discuss the potential for changes to water quality, air quality and soil quality to increase human exposure to contaminants taking into consideration all Project activities;
e) identify the human health impact of the potential contamination to country foods and natural food sources taking into consideration all Project activities;
f) document any health concerns raised by stakeholders during consultation on the Project;
g) document any health concerns identified by aboriginal communities or groups due to impacts of existing development and of the Project specifically on their traditional lifestyle and include an aboriginal receptor type in the assessment;
h) assess the cumulative human health effects to receptors, including First Nations and Métis receptors;
i) as appropriate, describe anticipated follow-up work, including regional cooperative studies. Discuss how such work will be implemented and coordinated with ongoing air, soil and water quality initiatives;
j) describe the potential health impacts due to higher regional traffic volumes and the increased risk of accidental leaks and spills; and

k) discuss mitigation strategies to minimize the potential impact of the Project on human health.

[B] Describe those aspects of the Project that may have implications for public safety. Determine whether there may be implications for public safety arising from the Project. Specifically:

a) provide a summary of the Proponent's emergency response plan including public notification protocol and safety procedures;
b) document any safety concerns raised by stakeholders during consultation on the Project;
c) describe how local residents will be contacted during an emergency and the type of information that will be communicated to them;
d) describe the existing agreements with area municipalities or industry groups such as safety cooperatives, emergency response associations, regional mutual aid programs and municipal emergency response agencies;
e) describe the potential safety impacts due to higher regional traffic volumes; and
f) discuss mitigation plans to ensure workforce and public safety during the life of the Project from accidental release or spill of chemicals to the environment and failures of structures retaining water or fluid wastes.

7 SOCIO-ECONOMIC ASSESSMENT

[A] Describe the socio-economic effects of construction and operation of the Project, including:

a) impacts related to:
    i) employment, and
    ii) regional and provincial economic benefits;
b) estimated total Project cost, including a breakdown for engineering and project management, equipment and materials, and labour for both construction and operation stages. Indicate the percentage of expenditures expected to occur in the region, Alberta, Canada outside of Alberta, and outside of Canada;
c) the impact on local and regional infrastructure and community services, including consideration of municipal "hard services", education/training services, social services, urban and regional recreation services, law enforcement and emergency services.

[B] Describe anticipated changes to traffic (e.g., type, volume) on highways during the life of the Project. Consider other existing and planned uses of the same highways. Identify needs to upgrade existing roads and intersections or construct new roads.

[C] Identify components of the Project that have the potential to increase noise levels and discuss the implications. Present the results of a noise assessment. Include:

a) potentially-affected people and wildlife;
b) an estimate of the potential for increased noise resulting from the development; and
c) the implications of any increased noise levels.

[D] Discuss options for mitigating impacts including:

a) Syncrude's policies and programs regarding the use of regional and Alberta goods and services;
b) plans to work with First Nations and Métis communities and groups and other local residents and businesses regarding employment, training needs, and other economic development opportunities arising from the Project;
c) the potential to avoid overlap with other Projects that are reasonably anticipated during the life of the Project; and
d) strategies to mitigate socio-economic concerns raised by the local municipality and other stakeholders in the region.

[E] Describe the residual effects of the Project on socio-economic conditions and Syncrude's plans to manage those effects.

[F] Discuss monitoring plans proposed to measure the success of mitigation activities.