

1.0 INTRODUCTION

Suncor Energy Inc. (Suncor) is applying to the Alberta Energy Regulator (AER) for approvals to construct, operate and reclaim a single phase 40,000 barrel per day (bpd) steam-assisted gravity drainage (SAGD) in situ oil sands development known as Meadow Creek West (the Project). The Project has been designed to include cogeneration (85 MW) in order to improve energy and greenhouse gas (GHG) efficiency. This is the second project applied for utilizing Suncor's in situ replication design strategy, which consists of replicated high-efficiency 40,000 bpd central processing facilities (CPFs), the first being Suncor's approved Meadow Creek East Project facilities.

This application and supporting Environmental Impact Assessment (EIA) address the requirements of the Meadow Creek West EIA Terms of Reference, AER's Draft Directive 023, the Guide to Content for Energy Project Applications and requirements under the *Water Act*. Concordance tables demonstrating that these requirements have been met have been included in Appendix 1.

1.1 APPLICANT INFORMATION

1.1.1 Proponent Overview

Suncor is an established operator in the oil sands region, having a presence in the region since 1967. Since then, Suncor has grown to become a globally competitive integrated energy company with a balanced portfolio of high-quality assets, a strong balance sheet and significant growth prospects. Suncor's experience at operating the Firebag and MacKay River SAGD in situ recovery facilities provides Suncor with industry leading experience and positions Suncor to successfully develop the Meadow Creek West resource. This experience, together with Suncor's continued commitment to sustainable development will ensure the Meadow Creek West Project is developed responsibly, safely and reliably.

Suncor's operations include oil sands development and upgrading, conventional and offshore oil and gas production, petroleum refining, and product marketing under the Petro-Canada brand. A member of Dow Jones Sustainability indexes, FTSE4Good and CDP, Suncor responsibly develops petroleum resources while also growing a renewable energy portfolio. Suncor is listed on the UN Global Compact 100 stock index and the Corporate Knights' Global 100. Suncor's common shares (symbol: SU) are listed on the Toronto and New York stock exchanges.

1.1.2 Sustainable Development

To Suncor, being a sustainable energy company means managing its business in a way that enhances social and economic impacts to society, while striving to minimize the environmental impacts associated with resource development. Suncor brings focus to delivering on this triple bottom line sustainability through its mission, vision and values:

- Mission: To be trusted stewards of valuable natural resources. Guided by our values, we will lead the way to deliver economic prosperity, improved social well-being and a healthy environment for today and tomorrow.
- Vision: We create energy for a better world.
- Values:
 - Safety above all else – Do it safely or don't do it.
 - Respect – Being our best. Giving our best. Showing we care.
 - Do the right thing – The right way, with integrity.
 - Raise the bar – Pursue with passion. Always add value.
 - Commitments matter – We are all connected and part of something bigger.

Sustainable development is fundamental to Suncor's long-term strategy because Suncor believes supplying energy in a manner that meets the social, environmental and economic expectations of stakeholders – shareholders, customers, communities, governments, employees and advocacy groups – creates a solid foundation for increasing shareholder value. Every year Suncor publishes a Report on Sustainability which outlines progress toward achieving its sustainability goals, and providing data (which is independently audited) related to social, environmental and economic performance. For more information, visit sustainability.suncor.com.

Suncor is the first energy company in North America to receive the Global Reporting Index (GRI) Content Index Service check, which certifies Suncor has met the internationally recognized GRI G4 reporting guidelines. GRI provides the world's most widely used standards for sustainability reporting and disclosure. Suncor is also the first oil and gas company in Canada to produce a GRI G4-report.

1.1.3 Environmental and Social Performance

Suncor recognizes that energy development has an impact. As such, Suncor works to responsibly develop energy projects while considering environmental issues including air quality, water use, greenhouse gas emissions and land reclamation. Suncor works to address environmental issues at both the global and local level. Suncor has made improvements in:

- reducing and reusing water at our operations
- improving overall energy efficiency
- reclaiming disturbed lands to restore natural landscapes.

Suncor also is collaborating with other industry peers to improve regional environmental performance through Canadian Oil Sands Innovation Alliance (COSIA), which is an alliance of oil sands producers focused on accelerating the pace of improvement in environmental performance in Canada's oil sands through collaborative action and innovation. Through COSIA, participating companies capture, develop and share the most innovative approaches and best thinking to improve environmental performance in the oil sands, focusing on four Environmental Priority Areas (EPAs) – tailings, water, land and greenhouse gases. The aspiration of COSIA EPA members, including Suncor is to:

- produce oil with lower greenhouse gas emissions than other sources of oil
- be world leaders in land management, restoring the land and preserving biodiversity of plants and animals
- transform tailings from waste into a resource that accelerates land and water reclamation
- be world leaders in water management, producing Canadian energy with no adverse impact on water.

To date, COSIA member companies have shared 936 distinct technologies and innovations that cost over \$1.33 billion to develop. These numbers are increasing as the alliance matures and expands. Through this sharing of innovation and application of new technologies, members can accelerate the pace of environmental performance improvements.

COSIA takes innovation and environmental performance in the oil sands to the next level through a continued focus on collaboration and transparent exchange. Through collaboration, knowledge sharing of successes and challenges, and joint technology development, we will improve the design and operation and accelerate the pace of new technology deployment in our new projects.

1.1.3.1 Suncor's Sustainability Goals

Suncor set an industry precedent in 2009 by adopting a series of strategic environmental performance goals on water consumption, reclamation of disturbed lands, energy efficiency and air emissions. These goals, which had a baseline year of 2007, matured at the end of 2015.

We are excited to say that we met environmental performance goals on reducing water use and air emissions, increasing reclamation and came very close to meeting our goal on energy efficiency. To ensure we continue to improve on our sustainability performance, we've set two new goals: one focused on climate change and, for the first time, a social goal focused on strengthening our relationships with Canada's Aboriginal Peoples. We are working towards setting a new long-term goal to extend our commitment to water conservation.

Suncor has developed new sustainability goals to respond to these needs and acknowledge that we need to continue to evolve and manage our business for the long term by continually improving our environmental, social and economic performance. They focus on strengthening our relationships with the Aboriginal Peoples of Canada, reducing our greenhouse gas emissions intensity, and conserving water.

Suncor's new GHG goal will harness technology and innovation to reduce our emissions intensity 30 per cent by 2030. It reflects the fact that we share in the global challenge to tackle climate change head on by reducing emissions while providing energy the world needs. To meet this goal, we'll focus on efforts in these areas:

- continue to drive energy efficiency at all our facilities, and where opportunities exist, switch to lower-carbon fuels such as natural gas
- develop and pilot technology to fundamentally change how we extract bitumen and optimize downstream processing
- participate in greening the electricity grid towards a lower-carbon future by investing in cogeneration at our facilities and renewable energy.

Suncor's new social goal is a declaration of our intent to do things differently – to choose a new path that focuses on strengthening relationships with Aboriginal Peoples. For us, that path is about working together and creating more opportunities for greater involvement in the energy industry, so that the social and economic benefits from Canada's resources are shared more fully. Suncor's aspiration is: We will have mutual trust and respect with Aboriginal Peoples of Canada. We will change the way we think and act to increase the participation of Aboriginal Peoples in energy development.

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We know Aboriginal Peoples of Canada want to play a larger role in how energy is developed – from project proposal right through to land reclamation. Our long-term social goal recognizes this, and focuses on four performance areas where we can work together to advance greater involvement:

- strengthen relationships among Aboriginal and all Canadians, starting with Suncor
- partner with Aboriginal youth to develop their leadership potential
- significantly improve Aboriginal workforce development through hiring, retention and advancement of Aboriginal employees across our business
- increase revenue to Aboriginal businesses and communities.

In 2016, Suncor entered into equity partnerships with Fort McKay First Nation¹ (FMFN) and Mikisew Cree First Nation² (MCFN) at the East Tank Farm Development. These partnerships provide direct benefits to FMFN and MCFN and demonstrate a positive evolution in Suncor's long-term relationships with local First Nations.

Responsible energy development means balancing our environmental impact with our growth strategy. Based on what we learned from our 2015 water goal and building on the success of our water management strategy, we will be developing a new long term water goal. This goal will reflect our water requirements with the need to maintain a clean, safe and plentiful supply of this important natural resource for current and future generations.

1.1.4 Risk Management

Risk management is fundamental in allowing Suncor to balance the demands of risk and opportunity in a structured and systematic way in order to achieve business goals. Risk management at Suncor is driven through its Operational Excellence Management System (OEMS), which defines the framework Suncor uses to assess and systematically eliminate root causes of risks that affect reputation, performance in safety, reliability, environment and cost while also allowing Suncor to identify opportunities for continuous improvement in all of these areas. The OEMS framework uses a continual improvement cycle (plan-do-check-act) approach through a number of systems elements including risk management, legal requirements and commitments, maintenance and operations processes, emergency management, communication and stakeholder relations, incident management, and corrective actions, among others (Table 1-1).

¹ Suncor Energy and Fort McKay First Nation announce agreement for equity partnership in East Tank Farm Developments. September 6, 2016. www.suncor.com/newsroom/news-releases/2084011

² Suncor and MCFN announce agreement for equity partnership in East Tank Farm Development. October 17, 2016. www.suncor.com/newsroom/news-releases/2095551

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OEMS enables Suncor to consistently and effectively:

- manage risk
- operate safely and reliably
- drive operational discipline
- mitigate environmental impacts
- develop and share best practices
- support continuous improvement.

The Meadow Creek West Project will be developed, operated and managed in a manner that is consistent with Suncor's OEMS and its approach to risk management.

Table 1-1 Suncor's Operational Excellence Management System Elements

1	Leadership	help leaders implement, drive and govern OEMS.
2	Risk Management	identify, assess and mitigate operational risk.
3	Legal Requirements & Commitments	identify, interpret and execute legal requirements and commitments.
4	Goals, Targets & Planning	set and evaluate goals, targets and business plans.
5	Management of Change	manage changes to people, processes and equipment.
6	Structure, Accountability & Authority	develop, document and communicate organizational structure, accountabilities and authorities.
7	Learning & Competence	identify, assess and maintain employee competence.
8	Asset Development & Project Execution	develop and execute physical asset projects from initial opportunity to safe operation.
9	Maintenance and Operations Processes	implement, apply and monitor engineering and administrative controls.
10	Contractor Management	evaluate, select and manage contractors that supply goods or services.
11	Information Management	identify, control and manage critical information.
12	Emergency Management	plan and respond to emergencies.
13	Communications and Stakeholder Relations	manage internal/external communications and stakeholder relations.
14	Business Process Management	manage development of critical business processes.
15	Incident Management	report, investigate and manage incidents.
16	Audits and Assessments	conduct both OEMS audits and assessments.
17	Corrective Actions	develop, manage and steward corrective actions.
18	Management Review	conduct an annual, documented review of the OEMS.

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1.1.5 Oil Sands

Suncor's oil sands operations are located within the Regional Municipality of Wood Buffalo (RMWB) and include:

- in situ recovery operations at the Firebag, MacKay River and Dover projects
- mining and extraction processes
- bitumen upgrading to crude oil and diesel fuel, blended to provide a variety of refinery-ready feedstocks.

Suncor holds an AER Business Associate code and is an eligible AER approval holder in accordance with Directive 067.

1.2 PROJECT OVERVIEW

The Meadow Creek West Project is located in northeast Alberta about 40 kilometres (km) south of the City of Fort McMurray and approximately 35 km southwest of the town of Anzac, in Townships 84 and 85, Ranges 9, 10, 11 and 12, W4M (Figure 1-1). The CPF will be centred at NE-14-85-11 W4 (Latitude: 56°22'20" N, Longitude: 111°37'5" W). The Project is a subset of the Meadow Creek oil sands leases, which are held jointly by Suncor (75%) and Nexen Energy ULC (25%), with Suncor as operator. The Project area covers approximately 15,000 ha (Figure 1-2). The Project is classified as a Schedule 1 activity, an enhanced recovery in situ oil sands facility, under the *Environmental Protection and Enhancement Act (EPEA) Activities Designation Regulation*.



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**MEADOW CREEK WEST PROJECT
VOLUME 1 PROJECT APPLICATION**

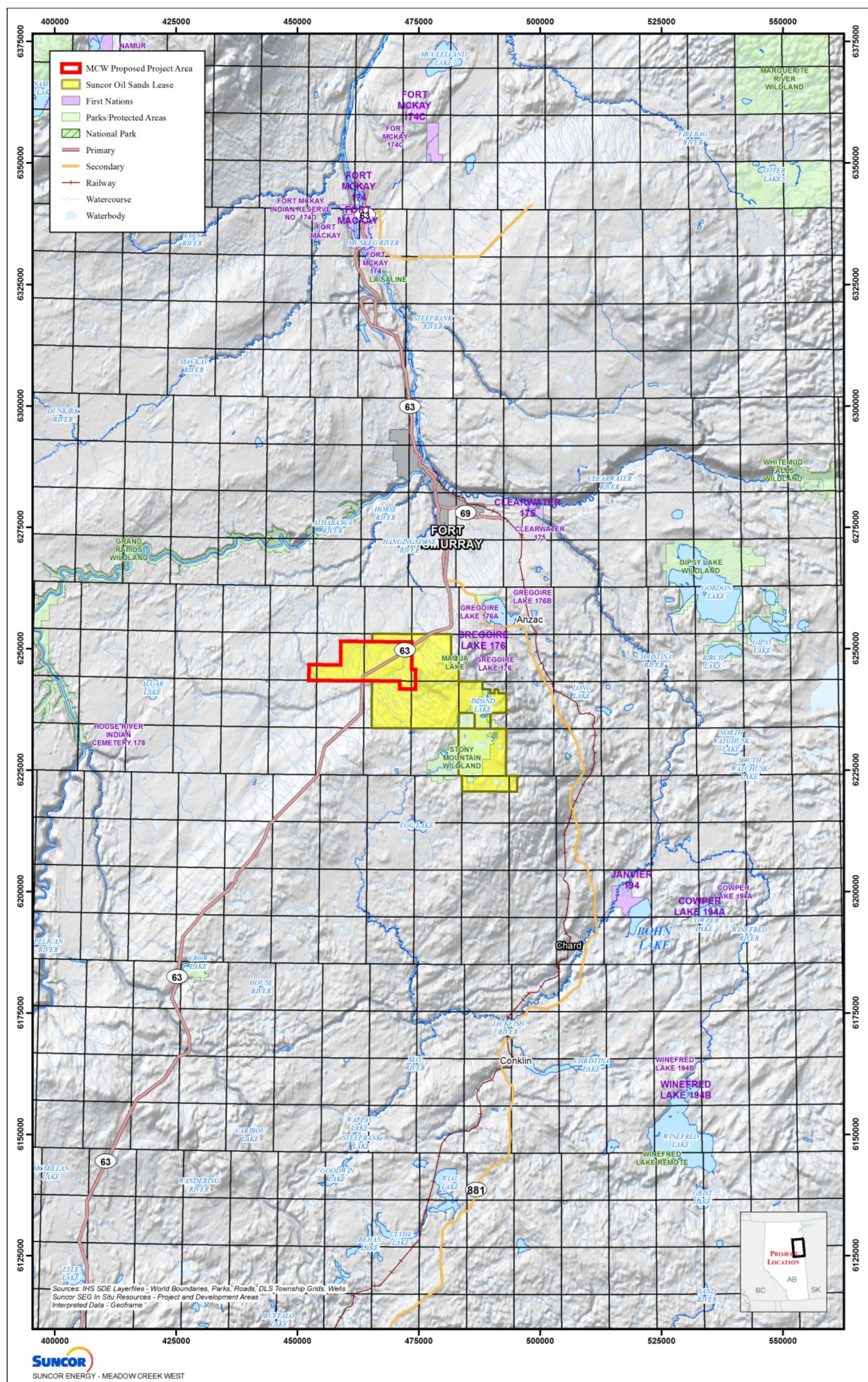


Figure 1-1 Meadow Creek West Project Location Map

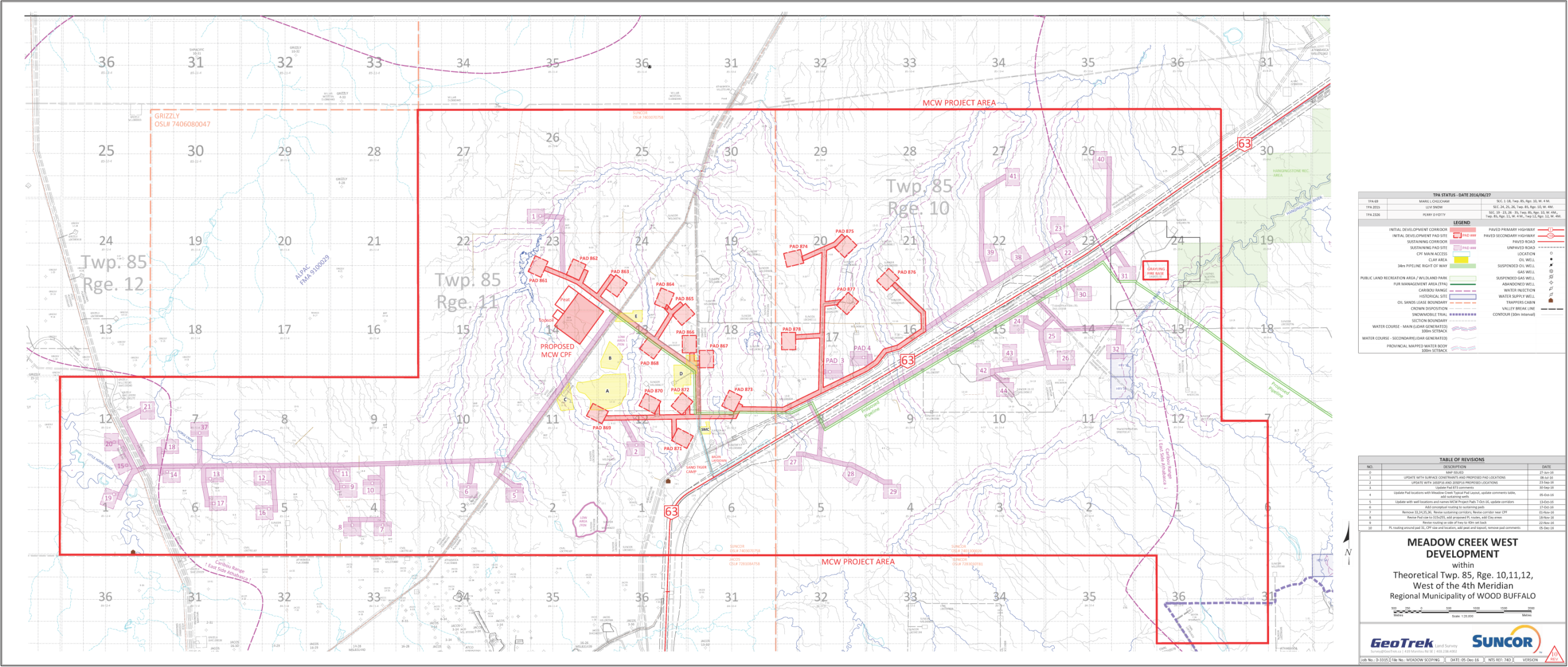


Figure 1-2 Development Plan for the Meadow Creek West Project

1.2.1 Development Plan

The Project will include facilities and infrastructure including, but not limited to: central processing facilities, cogeneration of electricity, well pads, water source and waste water disposal wells, local gathering pipelines (water, fuel gas, produced oil, steam injection), electrical power distribution lines, storage tanks, and access roads (Figure 1-2). Borrow pits will also be constructed as part of the Project. Access to the Project will be primarily from Highway 63. A local access road will provide direct access to the project site. Diluent and product pipelines for the Project may be owned and operated by third parties or Suncor and are described as part of this application.

The development plan for the Project has been designed with considerations of the following factors as determined by the current state of knowledge of the Project Area:

- identified historical resources and culturally significant sites
- environmental conditions
- local topography
- project economics
- technological limitations
- drilling and construction practices
- reservoir characteristics
- regulatory requirements, including air emissions limits
- Lower Athabasca Regional Plan and its associated management frameworks
- current use of the land by local users.

More specifically, locating and routing the various project components within the development plan include, but are not limited to, the following considerations:

- avoidance or mitigation of identified historical resource sites
- identification and avoidance of culturally significant sites
- locating surface development outside of setbacks from water bodies, with the exception of water body crossings and limiting disturbance of wetlands

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- locating well pads, SAGD well pairs and infill wells in order to maximize subsurface resource access
- maintaining a 100 m setback from adjacent oil sands leases for SAGD wells
- locating surface development to utilize existing disturbances, where practical
- locating surface development in suitable topographic, biophysical and hydrological boundaries.

This approach facilitates the development of a footprint that optimizes resource recovery and limits environmental impacts.

Pending regulatory approval (anticipated by the end of 2018) and market conditions, early works construction activities are planned to commence in 2022, which would include tree clearing, access road development, rough grading activities and SAGD well drilling. Construction of the CPF, initial 18 well pads, and supporting infrastructure is anticipated to begin in 2023. Commencement of operations is expected in 2025-2026. Construction of an additional 40 well pads and associated infrastructure is planned in order to sustain production at 40,000 bpd and extend the operational life of the Project up to 25 to 40 years. It is anticipated that reclamation of the Project will be complete by 2066. The development schedule presented in this application may be advanced or delayed by Suncor depending on internal Project sanctioning decisions and economic factors.

Make-up water requirements for the Project will be sourced from the Grand Rapids 'C' and the Quaternary Formations. The water sources for the Project were selected through a water alternatives assessment and environmental net effects analysis (Appendix 2). Peak make-up water requirements are expected to be approximately 2,800 m³/d with a steady state requirement of 1,980 m³/d. Additional information on make-up water source and requirements is located in Section 3.5.

Exploration activities, including oil sands evaluation (OSE) wells, seismic exploration and construction of associated temporary access roads, are expected to extend throughout the operational life of the Project. Exploration activities will follow the Code of Practice for Exploration Activities and are not included as part of this application.

Additional information on wells and field facilities for Meadow Creek West is located in Section 3.2.

1.2.2 Central Processing Facility

This is the second project applied for utilizing Suncor's in situ replication design strategy, which consists of replicated high-efficiency 40,000 bpd central processing facilities (CPFs), the first being Suncor's approved Meadow Creek East Project facilities.

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The CPF for the Meadow Creek West Project will include one production facility with a capacity of 40,000 bpd. The CPF will include the following major processes:

- primary separation and oil treating
- produced water de-oiling
- water treatment
- steam generation
- cogeneration.

The CPF site will include space for processing facilities, tankage, stormwater management facilities, soil storage, laydown, non-process buildings and a cogeneration facility. The CPF will be connected to well pads via above-ground pipelines that will transport:

- steam from the CPF to well pads for reservoir injection as part of the SAGD recovery process
- fuel gas to the well pads
- produced bitumen-water emulsion from the well pads to the CPF
- gas produced from the well pads to the CPF.

Further details on updated production facilities for the Project are included in Section 3.1.

1.2.3 Non-Production Facilities and Infrastructure

Non-production facilities that will be constructed and operated as part of the Project to support production activities include:

- a main access road from Hwy 63 to the CPF
- multi-use corridors that include local access roads, above-ground gathering lines, local electrical transmission lines to connect well pads to the CPF, and a project access road
- surface water management facilities including stormwater ponds at the CPF and well pads to control and manage surface run-off
- non-process buildings
- borrow pits for source materials required for construction of surface facilities.

Planned connections to off-site facilities, which are not part of this application, include:

- a connection to the electrical grid
- a pipeline connection to supply the Project with natural gas
- a pipeline connection to supply source water
- a pipeline connection for disposal water
- a pipeline connection to supply diluent for blending with produced bitumen
- a connection to a product pipeline to transport product to sales markets.

Further details on updated non-production facilities for the Project are included in Section 3.3 and Section 3.4.

1.2.4 Planned Project Technology and Alternatives

The criteria used to select project technology for the Meadow Creek West Project include:

- the requirement to use commercially proven technology
- limiting air emissions
- limiting greenhouse gas emissions
- reducing water use
- the requirement for Project economics to be viable.

In consideration of these criteria, Suncor is planning to develop the oil sands resource at Meadow Creek West using SAGD technology. The SAGD in situ recovery process will involve what is commonly referred to as "dual horizontal well" SAGD, which involves sequentially drilling horizontal well pairs to meet facility production capacity. The horizontal well pairs include an injection well located approximately 5 m directly above a production well, which is targeted to be close to the base of the bitumen pay section. Hot saturated steam is continuously introduced into the reservoir through the injection wells to create steam chambers, which heat the formation. Mobilized bitumen and water (which is primarily condensed steam) then drains under the influence of gravity to the lower production wells and is produced to surface. SAGD is a continuous process that reduces thermal stress on the well bores due to a minimal number of heating and cooling cycles. The process operates at pressures that avoid fracturing the reservoir caprock.

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Suncor continues to research and pilot alternative bitumen extraction technologies to improve extraction and GHG efficiency, and reduce environmental impacts, targeting greenhouse gas emissions, air emissions and water use. These include injection of hydrocarbons, surfactant injection, ammonia injection, non-condensable gas injection, electromagnetically assisted extraction and direct contact steam generation, among others (see sustainability.suncor.com for more information on alternative in situ technology). If these alternative technologies provide the right blend of triple bottom line sustainability factors (e.g., safe and economically feasible with low environmental consequence), Suncor may pursue implementing them at Meadow Creek West, subject to potential future regulatory applications, and approval requirements and conditions.

The Meadow Creek West CPF follows Suncor's 40,000 bpd, high-efficiency replicated design that incorporates a number of improvements over historical SAGD facility designs that will result in improved environmental performance:

- high-performance boilers will meet or exceed federal BLIERS requirements for air emissions limits and will exceed current provincial requirements
- use of evaporators will reduce water requirements for steam production
- optimized process configuration at the CPF with fewer pieces of equipment, tanks, piping and valves resulting in:
 - reduced fugitive emissions
 - reduced potential for emergency upset condition venting from low pressure tanks
 - less waste from equipment cleaning
 - fewer pumps and energy use
 - smaller footprint
- cogeneration and export of relatively low-carbon electricity.

Collectively, the process technology selected, Suncor's replicated high-efficiency SAGD CPF design, provides a balance between limiting potential environmental impacts and providing a project that may be economically viable.

1.3 PROJECT NEED

1.3.1 Project Benefits

The Project is expected to provide economic benefits to Aboriginal communities and the municipal, provincial and regional economies by:

- providing commercial opportunities for local Aboriginal communities
- paying wages and salaries that will be used to purchase goods and services in the RMWB and elsewhere in Alberta
- engaging the services of engineering, environmental and other professionals
- purchasing basic materials, modules and equipment from Alberta suppliers, where practical (Volume 2, Section 17).

Commercial opportunities for local Aboriginal communities have already been realized as a result of the Project. Suncor contracted work to a construction company owned by a local First Nation to support oil sand exploration work and the EIA supporting this application was completed by a CRE-Stantec, a partnership majority owned by a local First Nation. Completion of the EIA included involvement of community members in on-site environmental baseline data collection.

An estimated total of 1,640 person-years of onsite and offsite direct labour force and engineering requirements for Project construction will generate employment among suppliers (indirect employment) and through the spending of workers employed by the Project and its suppliers in the general economy (Volume 2, Section 17). During construction, total direct, indirect and induced employment is estimated at 3,240 person-years, most of which is expected to accrue to Alberta.

Economic activity generated by the Project's operations will also generate employment for suppliers to the Project (indirect employment) and the general economy (induced employment). Total direct, indirect and induced employment in Alberta related to Project operations (facilities and field) is estimated at about 215 person-years annually (Volume 2, Section 17).

The Project will generate an estimated \$1.2 billion in positive contribution towards provincial GDP and \$700 million in household income based on construction activities. Once fully operational, the Project will generate expenditures of about \$159 million for facilities and \$65 million for field activities on an average annual basis. Locally, the Project is expected to have several economic and employment benefits for residents of the RMWB. Approximately \$16 million of total construction spending, and \$43 to \$46 million annually in operation spending (including ongoing drilling), is expected to accrue to workers and contractors in the region (Volume 2, Section 17).

From a government fiscal perspective, the Project is expected to contribute over \$7 billion in provincial royalties and taxes, as well as \$1.4 billion in federal corporate income taxes. The Project will pay in the order of \$12 million annually in municipal property taxes, assuming current mill rates (Volume 2, Section 17). Current estimates project the carbon levy paid due to emissions from the Project at approximately \$2.2 billion.

1.3.2 Implications of a Project Delay

The Meadow Creek West Project is an important component of Suncor's growth strategy. Approval of the Project in a timely manner will allow Suncor to leverage procurement activities planned for the Meadow Creek East Project in order to reduce project cost. As well, the slowdown in industrial activity in the RMWB since 2014 has resulted in business conditions that may result in lower capital costs. A delay in the Project may not allow Suncor to realize these benefits.

A delay to, or not proceeding with, the Meadow Creek West Project could result in additional negative impacts of:

- a delay or loss of economic benefits to local communities, the RMWB, the province of Alberta and Canada
- a delay or loss in potential employment for local communities and suppliers
- a delay or loss of electricity production exported to the provincial grid to offset electricity production losses from coal fired generation.

1.4 REGULATORY CONTEXT

1.4.1 Surface Rights

The Meadow Creek West property is located on provincial Crown land and falls administratively within the northeast region of AER's Authorization Region. The AER regulates activities under their jurisdiction on Crown land. For land use activities managed by Alberta Environment and Parks (AEP), the Project is within the Fort McMurray Fisheries Management Area and the Fort McMurray Wildlife Management Area. The Project area also falls within the Alberta Ministry of Agriculture and Forestry, Forest Management Unit A14.

There are no privately held lands within the Project area. There is one Forest Management Agreement (FMA 9100029) which is held by Alberta-Pacific Forest Industries Inc. that grants rights to deciduous and part of the coniferous volume within Forest Management Unit A14. Surface right holders within the Project Area include Inter Pipeline (Corridor) Inc., ATCO Electric Ltd, Athabasca Oil Corporation, and Suncor, among others. There are also three Registered Fur Management Areas within the Project area. Additional details on surface rights holders in the Project area are included in Land Use baseline report (Volume 2, Section 14).

1.4.2 Mineral Rights

Suncor is the operator of oil sands leases (OSLs) that comprise the Meadow Creek West property. Mineral rights for the Wabiskaw-McMurray zones, or from the top of the Viking to the base of the Woodbend, in the OSLs within the Project Area are held by Suncor (75%) in conjunction with Nexen (25%) (Table 1-2; Figure 1-3). Petroleum and natural gas (PNG) tenure holders at Meadow Creek include Connacher Oil and Gas Limited, Chair Resources Inc., Canadian Natural Resources Limited and Firenze Energy Ltd. (Figure 1-4). In addition, White Swan Environmental Ltd. and 877384 Alberta Ltd. hold Metallic and Industrial Minerals permits in the Project area while Pure Environmental Waste Management Inc. holds Special Mineral Lease in the Project area.

Table 1-2 Current Status of Meadow Creek Oil Sands Leases

Oil Sands Lease	Land Description: Rights and Formations	Expiry Date
7403070758	Twp 85 Rge 10 W4M: Sections 6,7,18,19,30; Twp 85 Rge 11 W4M: Sections 1-15,22-27; Twp 85 Rge 12 W4M: Sections 1,12; OIL SANDS from TOP OF VIKING to BASE OF WOODBEND	2021/07/08
7401100020	Twp 85 Rge 9 W4M: Sections 19,20,29-32; Twp 85 Rge 10 W4M: Sections 3-5,8-10,15-17,20-29,32-36; OIL SANDS from TOP OF VIKING to BASE OF WOODBEND	2019/10/18
7283010T81	Twp 84 Rge 8 W4M: 30, W31 Twp 84 Rge 9 W4M: 19-36 Twp 84 Rge 10 W4M: 20-29, 32-36 Twp 85 Rge 9 W4M: 2-11, 14-18, 21-23, 26-28, 33-35 Twp 85 Rge 10 W4M: 1, 2, 11-14 Oilsands in Wabiskaw-McMurray	Oil Sands Tenure Regulations, 2010, Section 13 Continuation

Figure 1-3 Meadow Creek and Surrounding Oil Sands Leases

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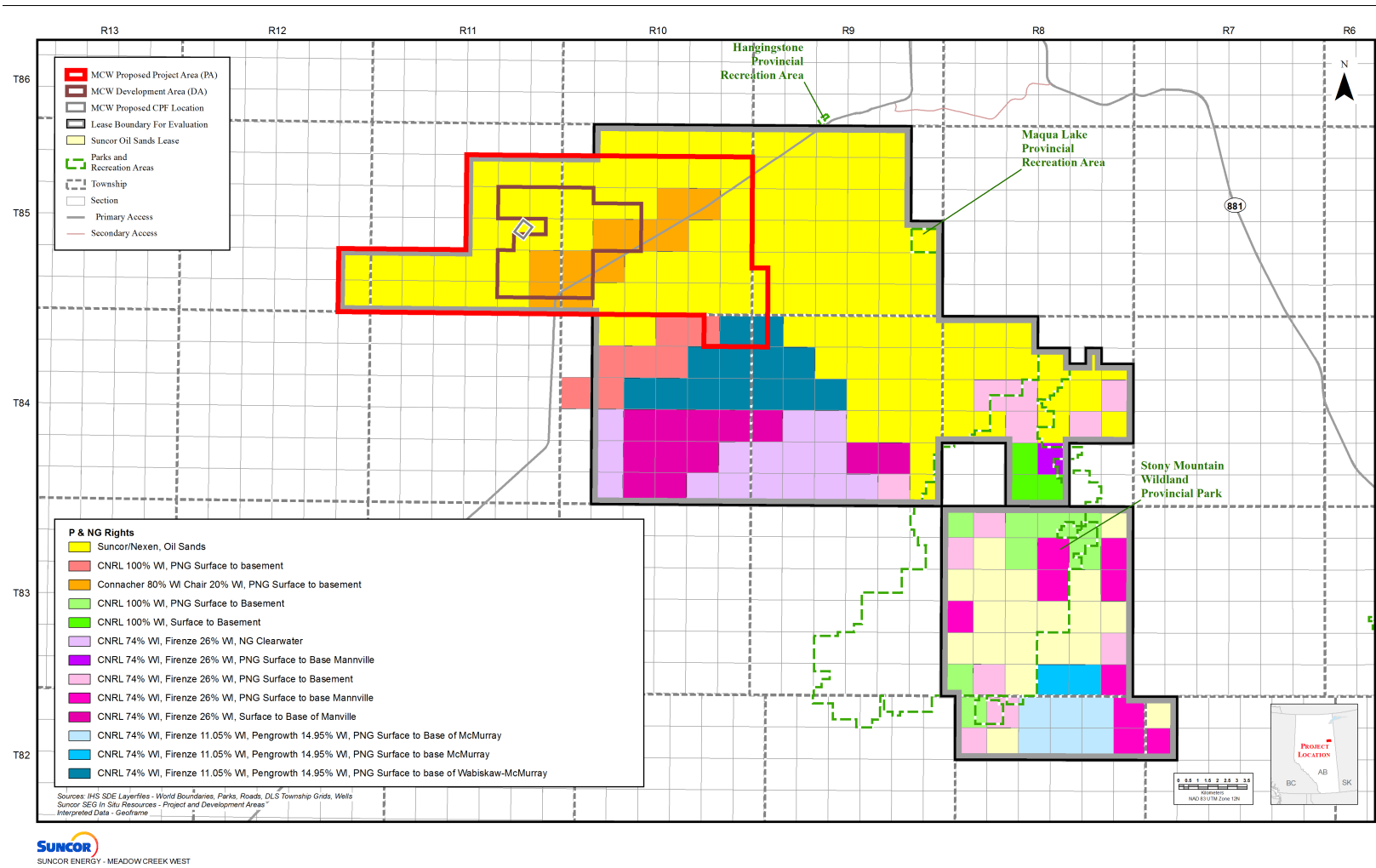


Figure 1-4 Meadow Creek Mineral Leases and Petroleum and Natural Gas Mineral Rights

1.5 APPLICATION ORGANIZATION AND CONTENT REQUIREMENTS

The Meadow Creek West application and supporting EIA address the requirements of the Meadow Creek West EIA Terms of Reference, AER's Draft Directive 023, the *EPEA* Guide to Content for Energy Project Applications and requirements under the *Water Act*. Concordance tables demonstrating that these requirements have been met have been included in Appendix 1. The Meadow Creek West application is organized in a manner consistent with an outcomes-based approach to managing project impacts and risks. Subsequent application sections include:

- Volume 1: Project Description and Application
 - Section 2 - Project Context: describes the current sub-surface, environmental and social context in which the Project will operate. The project context provides information on existing sensitivities, limitations and constraints that inform the assessment of Project risks. The project context is also considered in the Project design in order to limit project risks and adverse impacts.
 - Section 3 - Project Activities: describes the activities that will be undertaken by the Project. The project activities, considered against existing sensitivities, limitations and constraints identified in the project context, inform the assessment of project risks. This section also provides an overview of how Suncor will manage key environmental issues, including air, water, waste and other environmental matters.
 - Section 4 - Risk Management and Compliance: provides an assessment of Project risks, risk treatment plans, information on how Suncor will comply with existing directives, regulations and legislation, and provides a long-term reporting plan for informing the AER on Project development, activities and risk management. This section also provides a clearly defined list of commitments Suncor is making to the AER and stakeholders as part of this application to provide assurance that the Project will be operated and constructed in a safe manner with limited impact to the environment.
 - Section 5 - Stakeholder Engagement: describes the Project's stakeholder engagement to date, Suncor's approach to stakeholder engagement and details a long-term stakeholder engagement program.
 - Section 6 – Conservation and Reclamation: provides conceptual level information on Suncor's conservation and reclamation plan for the Project.
- Volume 2: Environmental Impact Assessment
 - Provides an assessment of potential environmental impacts of the project that meet the requirements of the EIA Terms of Reference for the Meadow Creek West Project issued by the AER.

1.6 REQUESTED APPROVALS

Suncor is seeking the required regulatory approvals for the following activities in accordance with the *Oil and Gas Conservation Act*, *Pipeline Act*, *Environmental Protection and Enhancement Act*, *Water Act*, *Public Lands Act*, *Oil Sands Conservation Act* and related Regulations and Rules. Information supporting the requested conditional well, facility and pipeline licences are provided in Appendix 3. Information supporting the requested *Public Lands Act* approvals is provided in Appendix 4.

Project Activity	Approvals Requested	Legislation, Regulation or Rule
Construction, operation and reclamation of central processing facilities with a total production capacity of 40,000 bpd (6,360 m ³ /d)	<ul style="list-style-type: none"> Environmental Protection and Enhancement Act approval Commercial In Situ Oil Sands scheme approval Conditional facility licence for the Project central processing facilities Miscellaneous Lease (MLL) for lands contained within the boundary of the central processing facility site. 	<ul style="list-style-type: none"> <i>Environmental Protection and Enhancement Act</i> <i>Public Lands Act</i> <i>Oil Sands Conservation Act</i> <i>Oil and Gas Conservation Regulations</i> Directive 056: Energy Development Applications and Schedules
Construction, operation and reclamation of the Project, multiuse corridors and the Project access road	<ul style="list-style-type: none"> <i>Environmental Protection and Enhancement Act</i> approval Commercial In Situ Oil Sands scheme approval pursuant to Section 10 of the <i>Oil Sands Conservation Act</i> Conditional Mineral Surface Leases (MSLs) for lands required for 58 well pads, the associated multi-use corridors, and the project access road with allowance for site location variance (Figure 1-2). 	<ul style="list-style-type: none"> <i>Environmental Protection and Enhancement Act</i> <i>Oil Sands Conservation Act</i> <i>Public Lands Act</i>.
Drilling, construction and operation of 398 SAGD steam injection wells, 398 SAGD producer wells and 398 SAGD infill wells	<ul style="list-style-type: none"> <i>Environmental Protection and Enhancement Act</i> approval Commercial In Situ Oil Sands scheme approval Conditional well licences for 398 SAGD steam injection wells Conditional well licences for 398 SAGD producer wells Conditional well licences for 398 SAGD infill producer wells Conditional approval to inject steam into the McMurray Formation at 398 SAGD steam injection wells 	<ul style="list-style-type: none"> <i>Environmental Protection and Enhancement Act</i> <i>Oil Sands Conservation Act</i> Directive 056: Energy Development Applications and Schedules Directive 051: Injection and Disposal Wells – Well Classifications, Completions, Logging, and Testing Requirements

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Project Activity	Approvals Requested	Legislation, Regulation or Rule
Diversion of non-saline groundwater from water source wells for oil field injection	<ul style="list-style-type: none"> • <i>Water Act</i> licence to divert 135,780 m³/y of non-saline water from the Empress formation at well 102/05-04-085-09W4/00 • Conversion of one well licence at well 102/05-04-085-09W4/00 from a water observation well to a water production well • One MLL for land required for one water production well at well at well 102/05-04-085-09W4/00. 	<ul style="list-style-type: none"> • <i>Environmental Protection and Enhancement Act</i> • <i>Water Act</i> • <i>Public Lands Act</i> • <i>Oil and Gas Conservation Regulations</i> • Directive 056: Energy Development Applications and Schedules
Diversion of surface water from the CPF site and 18 well pads for industrial purposes	<ul style="list-style-type: none"> • <i>Environmental Protection and Enhancement Act</i> approval • <i>Water Act</i> licence to divert up to 100,000 m³/y of surface water run-off from the stormwater ponds at the CPF and well pads for oil field injection, industrial and utility purposes 	<ul style="list-style-type: none"> • <i>Environmental Protection and Enhancement Act</i> • <i>Water Act</i>
Construction and operation of local steam, fuel gas, produced gas and emulsion pipelines	<ul style="list-style-type: none"> • Four conditional pipeline licences for steam, fuel gas, produced gas and produced emulsion pipelines running between the CPF and well pads. 	<ul style="list-style-type: none"> • <i>Environmental Protection and Enhancement Act</i> • <i>Pipeline Act</i> • Directive 056: Energy Development Applications and Schedules