TAMA POWER
Sundance 7 Project
June 2014
CANADIAN ENVIRONMENTAL ASSESSMENT AGENCY PROJECT DESCRIPTION

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List of Abbreviations

AAAQOs	Alberta Ambient Air Quality Objectives
ACIMS	Alberta Conservation Information Management System
ACO	Aboriginal Consultation Office
AIES	Alberta Interconnected Electrical System
AltaLink	AltaLink Management Ltd.
AUC	Alberta Utilities Commission
CEAA	Canadian Environmental Assessment Act
CEA Agency	Canadian Environmental Assessment Agency
CO	carbon monoxide
COSEWIC	Committee on the Status of Endangered Wildlife in Canada
CTGs	combustion turbine generators
CWS	circulating water system
e.g.	for example
ECN	Enoch Cree Nation
EPEA	Environmental Protection and Enhancement Act
ESRD	Alberta Environment and Sustainable Resource Development
FWMIS	Fish and Wildlife Management Information System
HRSGs	heat recovery steam generators
i.e.	that is
NH_3	ammonia
No.	number
NO_2	nitrogen dioxide
NO_x	oxides of nitrogen
NSR	North Saskatchewan River
NW	northwest
pers. comm.	personal communication
PFN	Paul First Nation
PM	particulate matter
$PM_{2.5}$	particulate matter with a mean aerodynamic diameter of 2.5 microns (µm) or less
SCR	selective catalytic reduction
SO_2	sulphur dioxide
spp.	multiple species
STG	steam turbine generator
SW	southwest

TAMA Power	TransAlta MidAmerican Partnership
the Project	the Sundance 7 Project
TransAlta	TransAlta Corporation
VOCs	volatile organic compounds
W5M	West of the Fifth Meridian
WCAS	West Central Airshed Society
WDS	Water Data System

List of Measurement Units

%	percent
µg/m^3	micrograms per cubic metre
cm	centimetre
ha	hectare
km	kilometre
km^2	square kilometres
kV	kilovolt
m	metre
m^3	cubic metre
m^3/hr	cubic metres per hour
m^3/s	cubic metres per second
m^3/year	cubic metres per year
m bgs	metres below ground surface
mm	millimetres
MW	megawatt

1.0 GENERAL INFORMATION AND CONTACT(S)

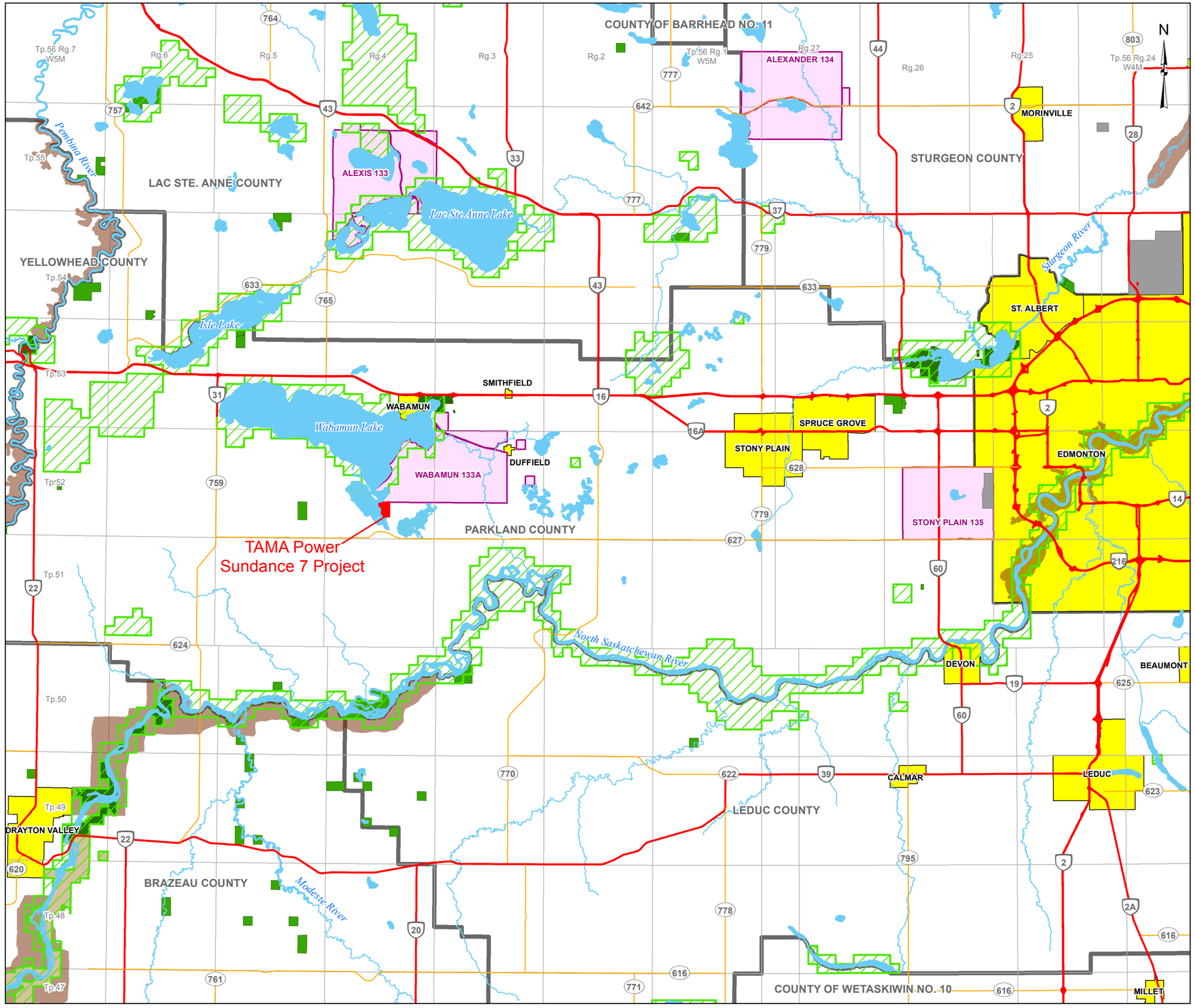
TransAlta MidAmerican Partnership (TAMA Power) is pleased to provide this Project Description for the proposed Sundance 7 Project. TAMA Power is a partnership formed in October, 2012 between TransAlta Corporation (TransAlta) and MidAmerican Energy Holdings Company.

This Project Description has been prepared in accordance with the *Prescribed Information for the Description of a Designated Project Regulations* (SOR/2012-148) and the *Guide to Preparing a Description of a Designated Project under the Canadian Environmental Assessment Act, 2012* (the Guide; Government of Canada 2012). This Project Description has been organized to follow the topic headings as described in the Guide.

1.1 Nature and Proposed Location of Project

Describe the nature of the designated project, and proposed location (2–3 paragraphs; note that additional location details are to be provided in section 3).

TAMA Power is proposing to construct and operate a natural gas-fired generation facility near the existing TransAlta coal-fired power generation facilities in central Alberta. The Sundance 7 Project (the Project) is planned to be a combined-cycle natural gas-fired generation plant in a 2 x 1 configuration with a gross nominal generation capacity of 856 megawatts (MW) at the yearly average ambient condition. The Project is located in a green field site in northwest (NW) and southwest (SW) 10-52-04 West of the Fifth Meridian (W5M), approximately 7 kilometres (km) southwest of the Village of Wabamun, Alberta (Figure 1.1.1). It is anticipated the Project will be in-service in late 2018 before the eventual retirement of coal-fired assets in Alberta.



LEGEND

- PROJECT SITE

BASE FEATURES

- PRIMARY HIGHWAY
- SECONDARY HIGHWAY
- WATERCOURSE
- CITY / TOWN
- ENVIRONMENTALLY SIGNIFICANT AREA
- FEDERAL MILITARY LAND
- INDIAN RESERVE
- KEY WILDLIFE AND BIODIVERSITY ZONE
- MUNICIPAL BOUNDARY
- WATERBODY

PARK / PROTECTED AREA

- NATURAL AREA (NA)
- PROVINCIAL PARK (PP)
- PROVINCIAL RECREATION AREA (PRA)

REFERENCE

MUNICIPAL BOUNDARIES OBTAINED FROM ALTALIS © GOVERNMENT OF ALBERTA 2014. ALL RIGHTS RESERVED. NATIONAL ROAD NETWORK OBTAINED FROM GEOBASE®. HYDROLOGY, INDIAN RESERVE AND POPULATED PLACES OBTAINED FROM IHS ENERGY INC. PARKS AND PROTECTED AREAS OBTAINED FROM ALBERTA TOURISM, PARKS AND RECREATION, GOVERNMENT OF ALBERTA. ENVIRONMENTALLY SIGNIFICANT AREA OBTAINED FROM ALBERTA TOURISM, PARKS AND RECREATION, PREPARED BY FIERA BIOLOGICAL CONSULTING, 2009. KEY WILDLIFE AND BIODIVERSITY ZONES © GOVERNMENT OF ALBERTA, FISH AND WILDLIFE DIVISION 2013.
DATUM: NAD 83 PROJECTION: 3TM 114

10 0 10
SCALE 1:350,000 KILOMETRES

PROJECT
TAMA POWER
SUNDANCE 7 PROJECT

TITLE
REGIONAL AREA

Golder Associates

PROJECT		13-1334-0051	FILE No.		
DESIGN	CS	04 Mar. 2014	SCALE AS SHOWN	REV.	0
GIS	TN	28 Mar. 2014			
CHECK	CS	09 Apr. 2014			
REVIEW	RR	09 Apr. 2014			

FIGURE: 1.1.1

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1.2 Proponent Contact Information

a) ***Name of the designated project:*** Sundance 7 Project

b) ***Name of the proponent:*** TransAlta MidAmerican Partnership

c) ***Address of the proponent:***
TransAlta MidAmerican Partnership
110 - 12 Avenue SW
Calgary, AB
T2P 2M1

d) ***Chief Executive Officer***:
Dean Luciuk
Vice President - Business Development
TransAlta MidAmerican Partnership
Calgary, Alberta

e) ***Principal contact person:***
Lois Miller
Environmental Specialist
TransAlta Corporation
Telephone: 780-731-6000 Ext 6849
Facsimile: 780-731-6075
Email: Lois_Miller@transalta.com

1.3 List of Jurisdictions and Other Parties Consulted

Provide a list of any jurisdictions and other parties including Aboriginal groups and the public that were consulted during the preparation of the project description. (A description of the result of any consultations undertaken is to be provided in Sections 6 and 7).

The jurisdictions and other parties, including Aboriginal groups and members of the public, that TAMA Power consulted regarding the Project are listed in Table 1.3.1.

Table 1.3.1 Jurisdictions and Other Parties (including Aboriginal Groups and the Public) that were Consulted Regarding the Sundance 7 Project

Federal Government	Canadian Environmental Assessment Agency (CEA Agency) Navigation Canada (NAV Canada)
Provincial Government	Alberta Environment and Sustainable Resource Development (ESRD) Alberta Utilities Commission (AUC)
Municipal Government	Village of Wabamun Parkland County City of Spruce Grove Town of Stony Plain Summer Village of Seba Beach Summer Village of Betula Beach Summer Village of Point Alison Summer Village of Kapasiwin Summer Village of Lakeview
Local Landowners (consultation per AUC Rule 007)	All landowners, residents and occupants within 2 km of the Project site boundary All residents that fall within postal code T0E 0N0
Local and Regional Non-Government Organizations	Committee on Keephills Environment (COKE) Mewassin Community Action Council Wabamun Watershed Management Council North Saskatchewan Watershed Alliance Clean Air Strategic Alliance
Other Interested Stakeholders	Parkland School Division Keephills School
Aboriginal Groups Identified by the Alberta Aboriginal Consultation Office	Paul First Nation Enoch Cree Nation
Aboriginal Groups Identified by the CEA Agency for Notification	First Nations: • Alexander First Nation • Alexis Nakota Sioux Nation • Ermineskin Cree Nation • Louis Bull Tribe • Montana First Nation • O'Chiese First Nation • Samson Cree Nation • Sunchild First Nation • Stoney Nakoda First Nation • Tsuu T'ina Nation • Whitefish (Goodfish) Lake First Nation. Métis • Métis Nation of Alberta Region 4 • Gunn Métis Local 55

1.4 Environmental Assessment and Regulatory Requirements of Other Jurisdictions

Provide information on whether the designated project is subject to the environmental assessment and/or regulatory requirements of another jurisdiction(s).

The environmental assessment requirements and regulatory review process for the Project are primarily under the jurisdiction of Alberta Environment and Sustainable Resource Development (ESRD) and the Alberta Utilities Commission (AUC). Applications have been submitted to both provincial agencies for approval to construct and operate the Project. The Project is also subject to secondary legislation administered by other municipal, provincial and federal agencies.

Alberta *Environmental Protection and Enhancement Act*

The Project will require an approval from ESRD under the Alberta *Environmental Protection and Enhancement Act* (RSA 2000, c.E-12) (EPEA). On March 25, 2014, ESRD determined that an Environmental Impact Assessment report is not required for the Project under EPEA (Appendix B). Therefore, the primary application to ESRD under EPEA is the Industrial Approval Application which was submitted to ESRD on April 14, 2014. The Industrial Approval Application was developed according to the *Guide to Content for Industrial Approval Applications* (Government of Alberta 2013a).

Alberta *Hydro and Electric Energy Act*

Under Part 2, Section 11 of the Alberta *Hydro and Electric Energy Act* (RSA 2000, c.H-16), TAMA Power is required to file an application for the Project to the AUC for the construction and operation of a power plant. This application was submitted to the AUC on April 22, 2014 and was prepared in accordance with AUC *Rule 007: Applications for Power Plants, Substations, Transmission Lines, Industrial System Designations and Hydro Developments* (AUC 2014).

Water Act

Raw water for the Project will be supplied from the existing Sundance Industrial Cooling Pond currently being used for an equivalent purpose for the existing Sundance Thermal Electric Power Plant. Makeup water to maintain water quality in the cooling pond is drawn from the North Saskatchewan River (NSR) via an existing raw water intake structure. The Project will require additional raw water from the NSR due to additional evaporative loss and to maintain water quality in the cooling pond. However, the additional water diverted from the NSR for the Project will be within the current Licence to Divert Water under the Alberta *Water Act* for the existing Sundance Thermal Electric Power Plant.

TAMA Power will submit an application to ESRD under the *Water Act* (RSA 2000, c.W-3) for approval to remove one wetland within the Project site. This application will be submitted in the fall of 2014 following an additional wetland inventory field program.

TAMA Power currently plans to source potable water from two groundwater wells within the Project site. TAMA Power will submit an application to ESRD under the *Water Act* in 2015 requesting approval for groundwater diversion associated with the two groundwater wells.

Historical Resources Act

TAMA Power received clearance under the *Historical Resources Act* (RSA 2000, c.H-9) for the Project on May 16, 2014.

NAV CANADA

NAV CANADA owns and operates Canada's civil air navigation system and is responsible for aviation safety in Canada. TAMA Power submitted a Land Use Proposal to NAV CANADA for evaluation. On May 21, 2014, NAV CANADA indicated it had no objections to the Project.

Parkland County – Development Permit

TAMA Power filed a Development Permit Application with Parkland County on February 12, 2014 and Parkland County provided TAMA Power with a letter of support for the Project. TAMA Power is continuing to work with the County to ensure that the Development Permit Application is processed in a manner that meets the needs of TAMA Power and the County.

Parkland County – Private Sewage Disposal Permit Application

TAMA Power plans to treat sanitary sewage onsite using a soil-based treatment system. Since this system will not receive more than 25 cubic metres (m^3) of sewage per day and will serve a single property, it will fall under the jurisdiction of Municipal Affairs according to the Private Sewage Disposal Systems Regulation (Alberta Regulation 229/1997) under the Alberta *Safety Codes Act*.

TAMA Power will submit a Private Sewage Disposal Permit Application to Parkland County requesting approval for the soil-based treatment system in 2015.

1.5 Regional Environmental Studies

Provide information on whether the designated project will be taking place in a region that has been the subject of an environmental study. Proponents are advised to contact the Agency during the preparation of the project description for information regarding any regional environmental studies that may be relevant.

The Project site is not in a region that has been the subject of a regional environmental study as defined by the Canadian Environmental Assessment Agency (CEA Agency).

However, the Project is located in an area of existing industrial activity including TransAlta's existing coal mining and power generation facilities that have been subject to multiple environmental studies. Recent and applicable environmental studies for the Project include the following:

- Highvale Mine – Application for a Mine Licence to begin surface mining in Pit 09 (TransAlta 2013);
- ongoing regional biomonitoring program that monitors for environmental effects associated with the existing coal-fired power plants in the area;
- Keephills 3 Project (TransAlta Energy Corporation 2006) screening environmental assessment; and
- TransAlta Centennial Project (TransAlta Utilities Corporation 2001) application and comprehensive environmental impact assessment.

2.0 PROJECT INFORMATION

2.1 General Description of the Project

Provide a general description of the project, including the context and objectives of the project. Indicate whether the designated project is a component of a larger project that is not listed in the Regulations Designating Physical Activities.

TAMA Power is proposing to construct and operate a combined-cycle natural gas power generating facility with a gross nominal generation capacity of 856 MW at the yearly average ambient condition. The plant design will be a 2 x 1 configuration, with two natural gas combustion turbine generators (CTGs), two heat recovery steam generators (HRSGs), and one steam turbine generator (STG).

The objectives of the Project are to provide safe reliable power that is economical and environmentally responsible.

The Project is not a component of a larger project that is not listed in the *Regulations Designating Physical Activities*.

2.2 Provisions in the Regulations Designating Physical Activities

Indicate the provisions in the schedule to the Regulations Designating Physical Activities that describe the designated physical activities that are proposed to be carried out as part of the designated project.

The *Canadian Environmental Assessment Act (CEAA) Regulations Designating Physical Activities* includes in Schedule 1, Section 2a the following provision that describes the Project as a designated activity:

> *The construction, operation, decommissioning and abandonment of a new fossil fuel-fired electrical generating facility with a production capacity of 200 MW or more* (CEAA 2012, amended October, 2013).

2.3 Components and Activities

2.3.1 Physical Works Associated with the Designated Project

The physical works associated with the designated project (e.g., large buildings, other structures, such as bridges, culverts, dams, marine transport facilities, mines, pipelines, power plants, railways, roads, and transmission lines) including their purpose, approximate dimensions, and capacity. Include existing structures or related activities that will form part of or are required to accommodate or support the designated project.

The Project is a high-efficiency combined-cycle natural gas-fired power generating facility. A scaled diagram of the Project site layout and the plant general arrangement are provided in Figure 2.1.1 and Figure 2.1.2. An artist rendering of the Project is provided in Figure 2.1.3. Two natural gas CTGs, two HRSGs, and one STG will be housed within the generation building. The generation building will be approximately 107 metre (m) by 91 m in size and the approximate roof height will be 30 m. The power plant will also have several auxiliary systems including the cooling water system, raw water and wastewater management systems, fuel gas system, and standby power system.

Facility administration offices and the plant control room will be located in the administration building north of the generation building.

The cooling system will include a multi-cell mechanical draft cooling tower and pumped circulating water system (CWS). The cooling tower will include 14 cells and will be approximately 154 by 23 m in size. The CWS will use a series of underground pipes to provide cooling water to various systems throughout the facility.

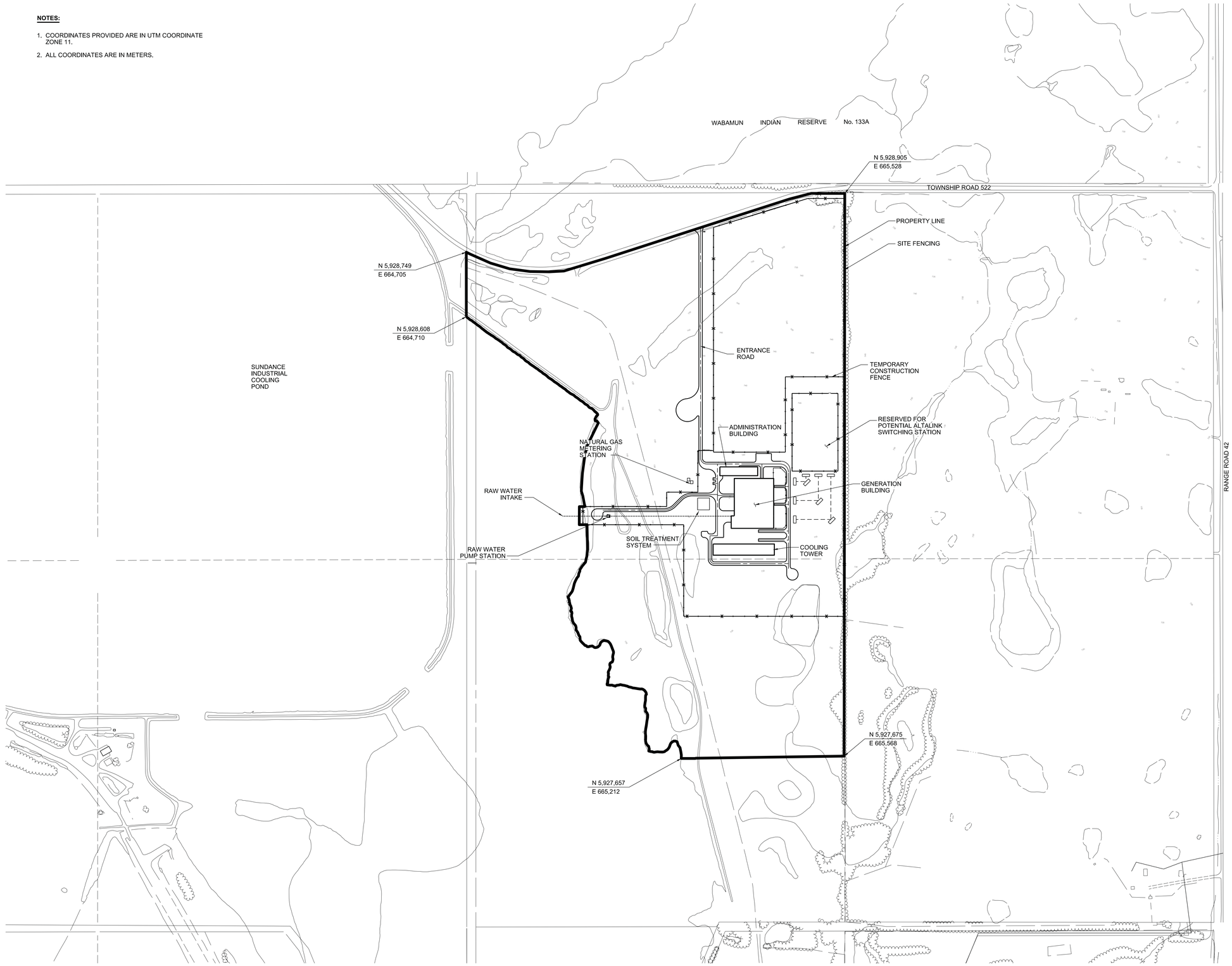
Raw water for the Project will be supplied from the Sundance Industrial Cooling Pond, west of the Project site. A new intake structure will be installed in the Sundance Industrial Cooling Pond, and a pipeline will be used to supply the raw water to the plant. Process-related wastewater from the Project will be discharged to the Sundance Industrial Cooling Pond for treatment. The Sundance Industrial Cooling Pond is an existing man-made structure with a surface area of approximately 6,277,694 square metres (m^2). The cooling pond was built in the mid-1970s to supply cooling water, raw water supply and wastewater treatment capacity to the coal-fired Sundance Thermal Electric Power Plant. The Cooling Pond is currently licensed for this purpose under EPEA Approval No. 9830-02-00. TAMA Power plans to make use of the existing cooling pond for a similar purpose for the Project. Water balance in the Sundance Industrial Cooling Pond is currently achieved through periodic blowdown (discharge) and makeup (withdrawal) to and from the North Saskatchewan River (NSR). The incremental change in blowdown and makeup for the Project will occur through the existing infrastructure that serves the Sundance Thermal Electric Power Plant. No changes will be made to the existing blowdown or intake infrastructure, including at the NSR intake and outlet structures.

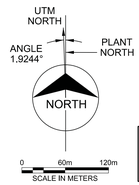
Stormwater runoff from the plant site and the area surrounding the intake and wastewater outfall structures will be conveyed to the Sundance Industrial Cooling Pond. Stormwater runoff from the undeveloped areas within the Project site will generally follow existing topography, and runoff will be discharged to the natural environment, as occurs under pre-development conditions.

The Project site, which includes the total area to be disturbed during construction of the power plant facility, is approximately 69.1 hectares (ha) in size. The Project footprint, which is the area that will be occupied by permanent facilities after construction is completed, is approximately 9.8 ha in size.

NOTES:

1. COORDINATES PROVIDED ARE IN UTM COORDINATE ZONE 11.
2. ALL COORDINATES ARE IN METERS.





PRELIMINARY - NOT FOR CONSTRUCTION

no.	date	by	ckd	description
A	04/09/14	DGK	JRD	ISSUED FOR PERMITTING

Burns & McDonnell SINCE 1898

date	detailed
FEB 26, 2014	S. NICHOLS
designed	checked
D. KROGER	J. DOWELL

TAMA POWER

SUNDANCE UNIT 7 NATURAL GAS COMBINED CYCLE

COMBINED CYCLE POWER STATION
SITE LAYOUT

project	contract
77129	

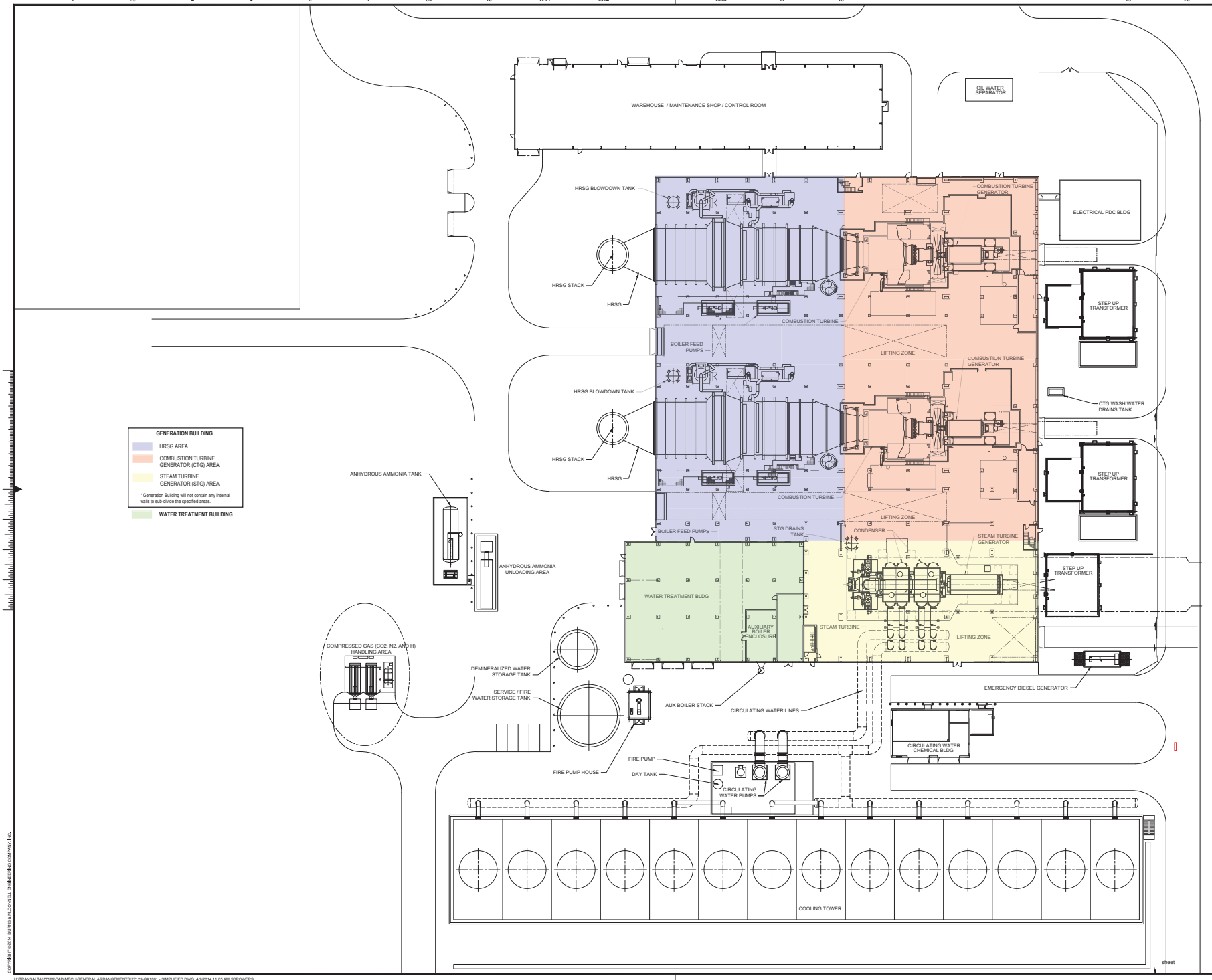
drawing Figure 2.1.1 rev.

sheet of sheets

file 77129-SK001P.DGN

4/11/2014

Millimeters
Scale For Microfilming
Inches



no.	date	by	ckd	description
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PRELIMINARY - NOT FOR CONSTRUCTION

date	detailed
APRIL 4, 2014	S. POWERS
designed	checked
S. KAPHINGST	

TAMA POWER

TRANSALTA SUNDANCE 7
COMBINED CYCLE POWER STATION
PLANT GENERAL ARRANGEMENT

project	contract
77129	

drawing rev
Figure 2.1.2

sheets 1 of 1
file 77129 - GA1001.dwg

sheet A

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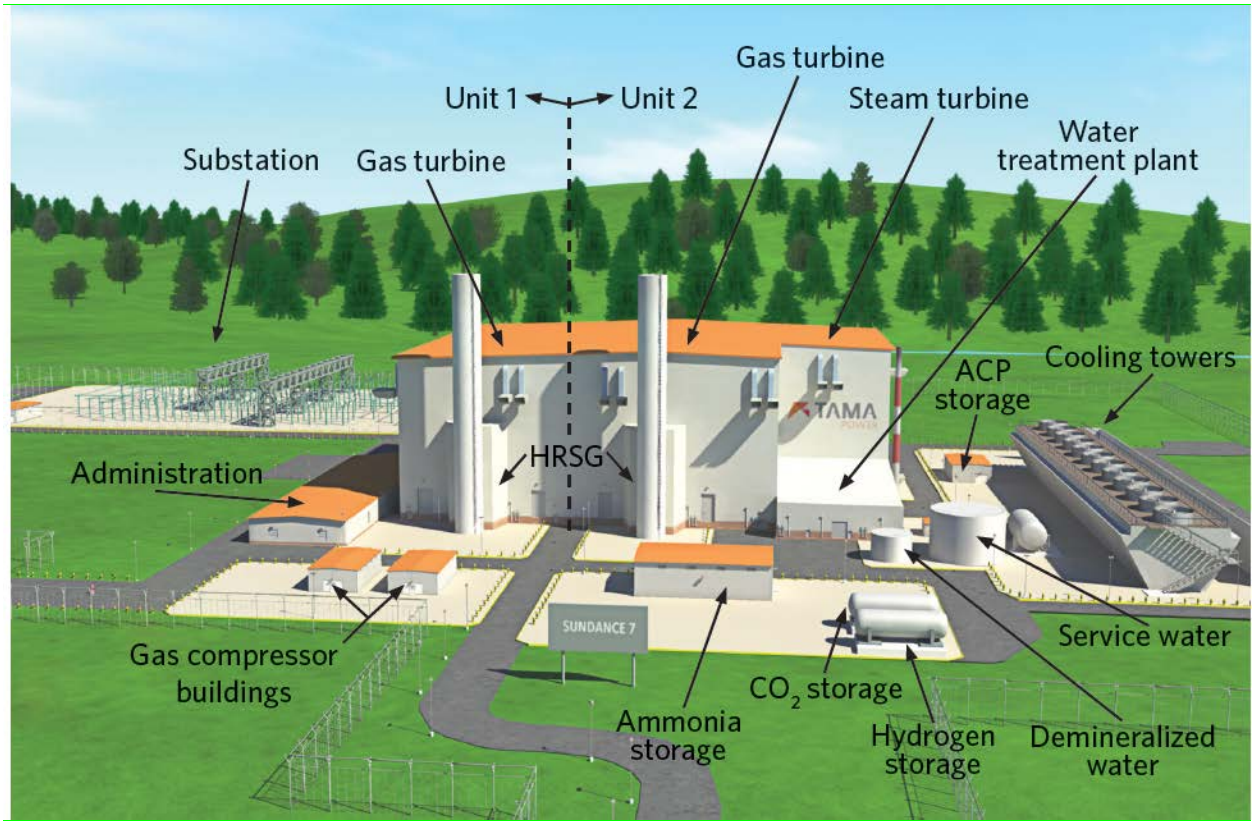
Figure 2.1.3 Artist Rendering of the Sundance 7 Project



2.3.2 Anticipated Size or Production Capacity with Reference to Thresholds set out in the *Regulations Designating Physical Activities*

Anticipated size or production capacity of the designated project, with reference to thresholds set out in the Regulations Designating Physical Activities, including a description of the production processes to be used, the associated infrastructure, and any permanent or temporary structures. The production capacity does not refer to the planned production capacity but the maximum production capacity based on the project's design and operating conditions.

The Project is planned to have a maximum gross generation capacity of 943 MW at the expected coldest day of the year, which is above the 200 MW threshold for new thermal power projects as defined in the *Regulations Designating Physical Activities* (CEAA 2012, amended October, 2013).

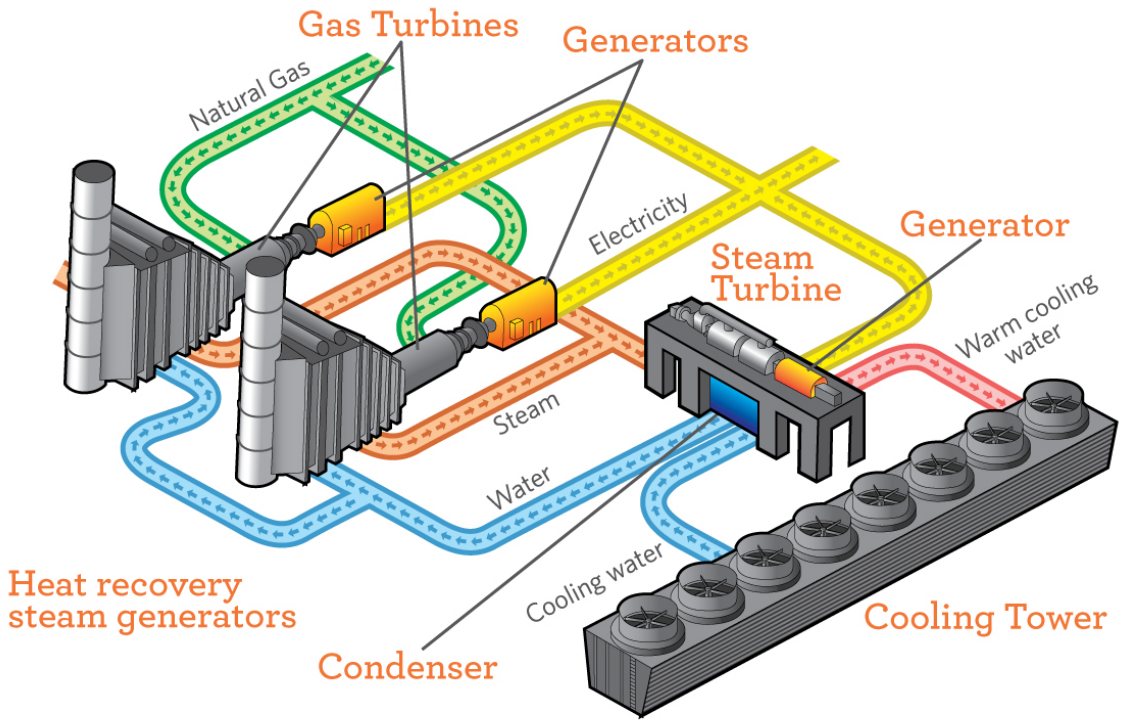
The plant design will be a 2 x 1 configuration including two natural gas CTGs, two HRSGs, and one STG. A simplified schematic for the major Project systems is provided in Figure 2.1.4 and a detailed process flow diagram for the Project is provided in Figure 2.1.5. A general description of the power generation process is provided below.

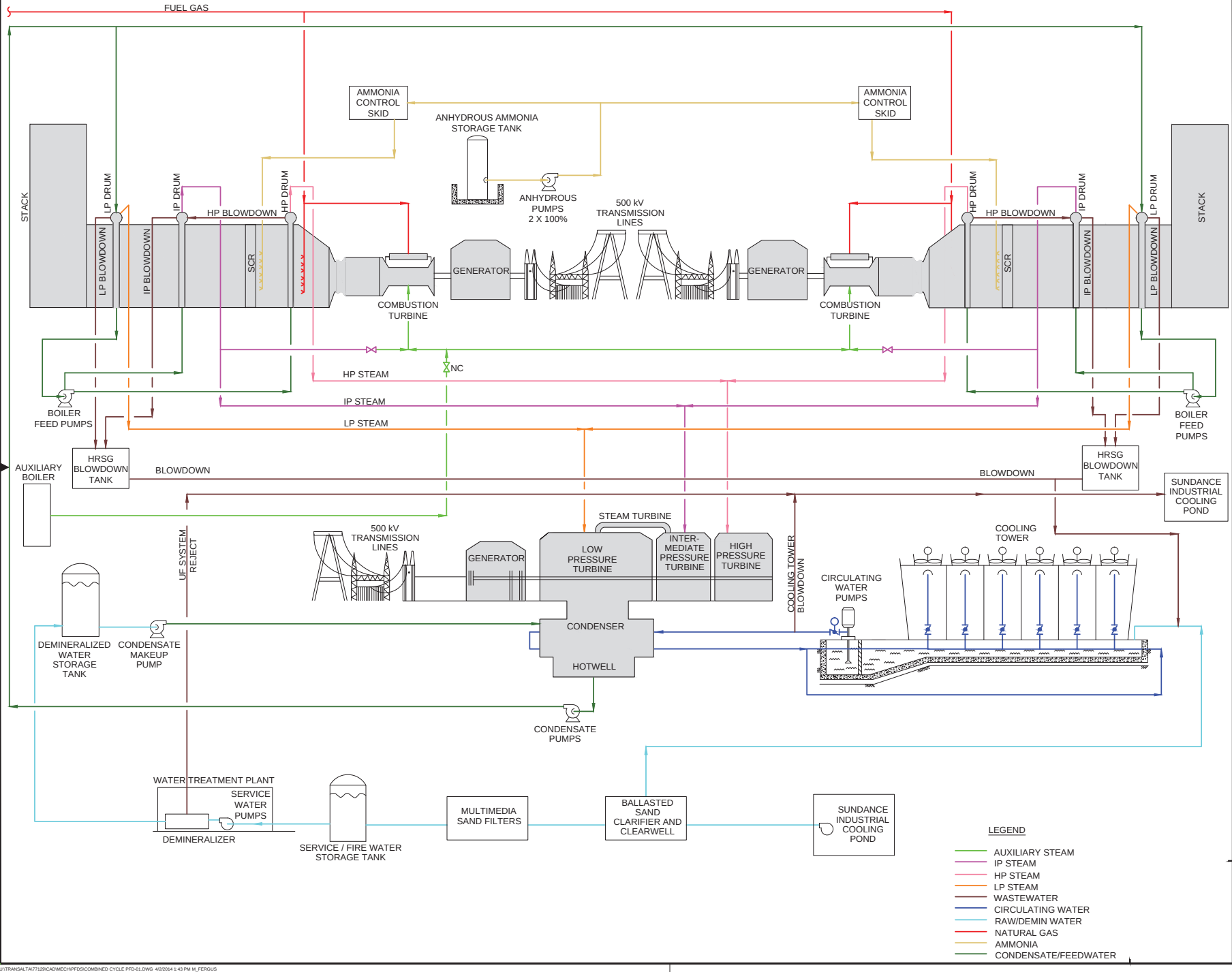
The two CTGs will compress filtered ambient air, combine the compressed air with natural gas in a combustion chamber, and then ignite the mixture. The high-temperature gases will expand and be forced past the turbine blades. This will rotate the turbine shaft to create mechanical energy. A generator connected to each turbine will convert the mechanical energy to electrical energy.

The hot exhaust gases from each CTG will be captured by the HRSGs. The heat energy will then be used in the HRSGs to convert water to steam. The steam will then be expanded through the STG. A generator connected to the STG will convert the mechanical energy to electrical energy. The cooled exhaust gases will exit the last section of each HRSG and enter the atmosphere via two 55-m-tall stacks.

Duct burners fuelled by natural gas will be installed in the HRSGs to increase the efficiency of electrical output of the plant. The duct burners will increase the temperature of the CTG exhaust gases that will be moving through the HRSGs, allowing the HRSGs to produce more steam and subsequently additional electricity in the STG.

Figure 2.1.4 Simplified Schematic





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A	4-1-14	MLF	SSK	ISSUED FOR REVIEW

[redacted]

date	detailed
APRIL 1, 2014	M. FERGUSON
designed	checked
S. KAPHINGST	D. HENDRY

TAMA POWER

SIMPLIFIED COMBINED CYCLE
PROCESS FLOW DIAGRAM

project	contract
77129	
drawing	rev.

Figure 2.1.5

sheet 1 of 1 sheets

file COMBINED CYCLE PFD-01.DWG

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2.3.3 Percentage Increase in Capacity

If the designated project or one component of the designated project is an expansion, describe the size and nature of the expansion with reference to the thresholds set out in the Regulations Designating Physical Activities.

The Project and all of its components will be new; therefore this section is not applicable.

2.3.4 Description of Incidental Project Activities

A description of the physical activities that are incidental to the designated project. In determining such activities, the following criteria shall be taken into account:

- ***nature of the proposed activities and whether they are subordinate or complementary to the designated project;***
- ***whether the activity is within the care and control of the proponent;***
- ***if the activity is to be undertaken by a third party, the nature of the relationship between the proponent and the third party and whether the proponent has the ability to "direct or influence" the carrying out of the activity;***
- ***whether the activity is solely for the benefit of the proponent or is available for other proponents as well; and,***
- ***the federal and/or provincial requirements for the activity.***

Should an EA be required for the designated project, the Agency will take these criteria into consideration in determining the activities that are incidental to the designated project

The Project will require two third-party interconnections; one to connect the Project to existing natural gas supply infrastructure, the second to connect the Project to the existing Alberta Interconnected Electrical System (AIES).

The natural gas provider, which has not been finalized, will deliver natural gas via pipeline from existing natural gas supply infrastructure to a gas metering station located within the Project site. TAMA Power's input into the routing of the natural gas line serving the Project will be limited to specifying a connection point within the Project site, and to reviewing routing options proposed by the natural gas provider to ensure there are no conflicts with existing or planned infrastructure and that the proposed options meet the needs of TAMA Power with respect to cost-effectiveness and other criteria. The natural gas provider will be responsible for permitting, constructing and operating the required facilities in accordance with the applicable federal, provincial and municipal regulations. TAMA Power has no business relationship with any of the natural gas providers being considered, beyond the commercial agreement to supply natural gas to the Project.

The Project will be interconnected to the AIES at 500 kilovolts (kV) by AltaLink L.P. (AltaLink). AltaLink is investigating several connection options, which will include a switchyard and supporting transmission facilities. Similar to the natural gas line, TAMA Power's input into the routing of the transmission interconnection will be limited to specifying a connection point within the Project site, and to reviewing routing options proposed by AltaLink to ensure there are no conflicts with existing or planned infrastructure and that the options proposed meet the Project's needs.

TAMA Power is a partnership, formed in October 2012, between TransAlta and MidAmerican Energy Holdings Company. TAMA Power and AltaLink have no business relationship with respect to the Project beyond the arrangement for AltaLink to provide transmission interconnection infrastructure. However, TAMA Power and AltaLink may in the future have a degree of indirect common ownership. MidAmerican Energy Holdings Company is a wholly owned subsidiary of Berkshire Hathaway Energy Company, and is therefore indirectly, through a wholly owned subsidiary, TransAlta's partner in TAMA Power. Earlier this year, Berkshire Hathaway Energy Company announced its intent to purchase AltaLink through a separate subsidiary. At the time of filing this Project Description, the purchase had not been completed, but it is expected the transaction will be completed prior to the end of 2014.

AltaLink will be responsible for permitting, constructing and operating the transmission interconnection in accordance with the applicable federal, provincial and municipal regulations. Pursuant to the regulatory requirements in the Province of Alberta governing transmission providers, and as a transmission facility operator (TFO), AltaLink is bound by its inter-affiliate code of conduct to conduct its operations completely separate from those of TAMA Power. In addition, TAMA Power cannot engage in common operations with a transmission provider, due to the potential for a breach of Alberta's Fair, Efficient and Open Competition Regulation (159/2009). Therefore, any activities conducted by TAMA Power with respect to the Project and by AltaLink with respect to its interconnection of the Project to the AIES are completely separate and at arm's length.

2.4 Emissions, Discharges and Wastes

Provide a description of any solid, liquid, gaseous or hazardous wastes likely to be generated during any phase of the designated project and of plans to manage those wastes.

2.4.1 Atmospheric Emissions

Sources of atmospheric contaminant emissions during the designated project phases (focusing on criteria air contaminants and greenhouse gases, or other non-criteria contaminants that are of potential concern) and location of emissions.

The Project has been designed to incorporate some of the cleanest fuel sources and technologies currently available to generate electricity from fossil fuels. The Project is being designed to meet the Clean Air Strategic Alliance air emission performance standards for the Alberta electricity sector (CASA 2003) and the Canadian Council of Ministers of the Environment (CCME) emission guidelines for stationary combustion turbines (CCME 1992) and industrial heaters and boilers (CCME 1998).

Substances that are considered criteria air contaminants that will be directly or indirectly released to the air in a typical operating day include combustion products such as oxides of nitrogen (NO_x), particulate matter (PM), and carbon monoxide (CO). These substances will be released as a result of natural gas combustion in the CTGs, HRSGs, auxiliary boiler and heaters.

The HRSGs and auxiliary boiler will be fitted with low emissions burners, to reduce emissions of NO_x. A selective catalytic reduction (SCR) system, including an ammonia (NH_3) injection skid, will be installed on the HRSGs to further reduce NO_x emissions. The HRSG emissions will therefore also include trace amounts of NH_3.

Natural gas combustion will also result in greenhouse gas emissions including carbon dioxide (CO_2), methane (CH_4) and nitrous oxide (N_2O).

Additional details regarding air emissions are provided in Table 2.4.1.

Table 2.4.1 Gas Turbine/Heat Recovery Steam Generator and Auxiliary Boiler Emissions

Source Description	Gas Turbine/Heat Recovery Steam Generator[(a)]	Auxiliary Boiler
NO_x Emission Rate (t/d)	0.984	0.051
CO Emission Rate (t/d)	0.991	0.086
$PM_{2.5}$ Emission Rate (t/d)	1.102	0.008
NH_3 Emission Rate (t/d)	0.254	0.000

(a) Emission rates are based on a single gas turbine and HRSG unit. The Project will include two gas turbine and HRSG units.

2.4.2 Liquid Discharges

Sources and location of liquid discharges.

The largest volume of wastewater will be cooling water blowdown from the CWS, which will be discharged to the Sundance Industrial Cooling Pond. Reject water from the raw water distribution system and the demineralized water system will also be discharged to the Sundance Industrial Cooling Pond.

There will be some concentration of dissolved solids in the blowdown water as a result of evaporative loss. In addition, there will be small amounts of additives to the cooling water to prevent scaling and fouling, including: calcium carbonate, sulphuric acid, sodium hypochlorite and ferric chloride. None of the constituents in the cooling water discharged to the Sundance Industrial Cooling Pond would be considered hazardous or detrimental to the environment, given the low volumes of additives relative to the large volume of water in the Sundance Industrial Cooling Pond and that the additives will degrade to their ionic constituents (e.g., sulphate, chloride, sodium) within the cooling pond.

Service water from area wash-downs for plant maintenance and upkeep will pass through an oil/water/grit separator. Separated oil and grit will be collected and disposed of off-site at an approved disposal facility. The separated service water will be discharged to the Sundance Industrial Cooling Pond.

The Sundance Industrial Cooling Pond is currently being used for an equivalent purpose by the existing Sundance Thermal Electric Power Plant (operating under EPEA Industrial Approval No. 9830-02-00, as amended). Blowdown water from the Sundance Industrial Cooling Pond is periodically discharged to the NSR to maintain water quality within the cooling pond for operational purposes. Blowdown water from the cooling pond, which will include the additional wastewater generated by the Project, will be discharged to the NSR in accordance with the parameter limits (e.g., pH, total iron) and monitoring and reporting requirements detailed in EPEA Approval No. 9830-02-00. The assessment of potential adverse environmental effects on the NSR of Project-related discharge from the Sundance Industrial Cooling Pond is presented in Section 5.1.6.

The Project will also generate sanitary sewage that will be treated onsite using a soil-based treatment system. This system will comply with the Province of Alberta *Safety Codes Act - Private Sewage Disposal Systems Regulation* (Alberta Regulation 229/1997), and as amended by AR 264/2009 - adopting the *Alberta Private Sewage Systems Standard of Practice 2009* published by the Safety Codes Council (2009).

2.4.3 Solid Wastes

Types of wastes and plans for their disposal (e.g., landfill, licensed waste management facility, marine waters, or tailings containment facility).

The Project will generate sludge as part of the sewage treatment system and from treatment of used service water. The sludge will be collected and disposed of off site, at an approved disposal facility. The Project will also generate recyclable and non-recyclable waste during operation. Additional details regarding the sludge and solid wastes generated by the Project are provided in Table 2.2.1.

Table 2.2.1 Sludge and Solid Wastes Generated by the Sundance 7 Project

Waste Stream	Description	Containment	Disposal Method	Potential Effects on the Environment
Sanitary waste	Sludge from the treatment of administration building sanitary waste	Underground tank	Sludge from the sewage treatment system will be stored in a tank and trucked off site as required	None
Oil and grit from oil/water separator (with grit chamber)	Separated and collected oil from plant maintenance wash-downs	Oil/water separator (with grit chamber)	Oil will be vacuum trucked off site to be disposed of through a qualified carrier	None
Powdered resin	Condensate polisher exhausted ion exchange resin	Condensate polisher	Municipal landfill	None
Non-hazardous metal and other recyclables (cardboard, air filters)	Metal and recyclables such as cardboard and paper from plant	Containers	Will be transported by a carrier to qualified recycling facilities	None
Non-recyclable, non-hazardous solid waste	Solid waste such as non-recyclable paper, plastics and metal (i.e., garbage)	Containers	Municipal landfill	None

2.5 Construction, Operation, and Decommissioning and Abandonment Phases and Scheduling

Provide a description of the timeframe in which the development is to occur and the key project phases, including the following:

2.5.1 Project Schedule

Anticipated scheduling, duration and staging of key project phases, including preparation of the site, construction, operation, and decommissioning and abandonment.

The proposed Project schedule is provided in Table 2.3.1.

Table 2.3.1 Sundance 7 Preliminary Project Schedule

Construction Activity	Schedule
Detailed Engineering and Design	January 2015 to September 2016
Construction:	-
Site preparation (e.g., clearing, grading)	August 2015 to December 2015
Foundation excavation/construction	December 2015 to July 2016
Building erection	July 2016 to August 2017
Equipment installation	August 2017 to October 2018
Commissioning	April 2018 to December 2018
Operation	December 2018 to December 2048
Decommissioning	December 2048

Note – dates provided are for the start of activity.

2.5.2 Description of Project Activities

Main activities in each phase of the designated project that are expected to be required to carry out the proposed development (e.g., activities during site preparation or construction might include, but are not limited to, land clearing, excavating, grading, de-watering, directional drilling, dredging and disposal of dredged sediments, infilling, and installing structures).

The three main phases of the Project will be construction, operation and decommissioning. Construction of the Project is planned to start in August 2015 and will include site preparation, civil works, installation of equipment, and equipment commissioning.

The Project site will first be levelled and graded based on the final grading plan that will be determined during detailed engineering and design. Topsoil will be salvaged in areas used for construction. In areas to be occupied by permanent facilities (i.e., the Project footprint), TAMA Power will salvage the topsoil and subsoil and store each separately in stockpiles located in the northwest and southeast corners of the Project site. Following construction, topsoil will be replaced in areas not occupied by permanent facilities. Topsoil will not be used for construction. Topsoil salvaged within the Project footprint will be stored for the life of the Project.

The Project site will be fenced and construction areas for laydown and storage will be designated. Subsurface infrastructure (e.g., piping for natural gas and water, electrical cables) and foundations for buildings and large equipment will then be installed. Structural steel components will be installed on the foundations for the generation building, administration building, and cooling tower. The major equipment will be installed before or after the buildings are enclosed depending on equipment delivery and the EPC construction strategy.

Commissioning of the Project will start in April 2018 and will take approximately 9 months. The Project will be ready for operation after the commissioning phase, and is expected to operate for 30 years. The Project has been designed to be operated as a base load power plant, which means it can be operated at full design capacity for sustained periods. Full design generation capacity will be reached with both combustion turbines operating at full capacity and supplemental duct firing of the HRSGs. Actual day-to-day operations will vary depending on fluctuations in market conditions, so in practise the Project is expected to cycle between full load, idling and full shut-down. As the staged retirement of existing coal-fired generating units in Alberta progresses over time, it is expected that the Project will be operated as a base load facility for longer periods.

At the end of the Project's life, the major equipment and subsurface infrastructure will be removed. The final land use and the degree of reclamation required for the Project site will be based on the regulatory requirements and stakeholder feedback at the time of reclamation.

3.0 PROJECT LOCATION

3.1 Description of Project Location

3.1.1 Project Coordinates

Coordinates (i.e. longitude/latitude using international standard representation in degrees, minutes, seconds) for the centre of the facility or, for a linear project, provide the beginning and end points.

The latitude and longitude of the Project site are 53° 28’ 39.60” N and 114° 30’ 36.20” W.

3.1.2 Site Plan

Site map/plan(s) depicting location of the designated project components and activities. The map/plan(s) should be at an appropriate scale to help determine the relative size of the proposed components and activities.

A site plan of the Project is provided in Figure 2.1.1.

3.1.3 Reference Maps

Map (s) at an appropriate scale showing the location of the designated project components and activities relative to existing features, including but not limited to:

- ***watercourses and waterbodies with names where they are known;***
- ***linear and other transportation components (e.g., airports, ports, railways, roads, electrical power transmission lines and pipelines);***
- ***other features of existing or past land use (e.g., archaeological sites, commercial development, houses, industrial facilities, residential areas and any waterborne structures);***
- ***location of Aboriginal groups, settlement land (under a land claim agreement) and, if available, traditional territory;***
- ***federal lands including, but not limited to National parks, National historic sites, and reserve lands;***
- ***nearby communities;***
- ***permanent, seasonal or temporary residences;***
- ***fisheries and fishing areas (i.e., Aboriginal, commercial and recreational);***
- ***environmentally sensitive areas (e.g., wetlands, an protected areas, including migratory bird sanctuary reserves, marine protected areas and National Wildlife areas): and***

- *provincial and international boundaries.*

Maps of the designated Project components and existing features are provided in Figure 3.0.1, Figure 3.0.2, Figure 3.0.3, Figure 3.0.4 and Figure 3.0.5.

3.1.4 Photographs of the Project Site

Photographs of work locations to the extent possible.

Photographs of the Project site are provided in Photos 1 through 6.

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100000 200000 300000 400000

6100000 6000000 5900000 5800000 5700000

N

STURGEON LAKE 154B, 154, 154A
JEAN BAPTISTE GAMBLER 183
HEART LAKE 167A
BEAVER LAKE 131
ALEXANDER 134A
ALEXIS WHITECOURT 232
ALEXANDER 134B
WHITE FISH LAKE 128
ALEXANDER 134
SADDLE LAKE 125
ALEXIS 133
STONY PLAIN 135A
ST. ALBERT
SPRUCE GROVE
TAMA Power
Sundance 7 Project
WABAMUN 133A, 133B
STONY PLAIN 135
EDMONTON
LEDUC
ALEXIS CARDINAL 234
ALEXIS ELK RIVER 233
PIGEON LAKE 138A
CAMROSE
BUCK LAKE 133C
WETASKIWIN
LOUIS BULL 138B
ERMINESKIN 138
O'CHIESE 203
SAMSON 137, 137A
MONTANA 139
SUNCHILD 202
LACOMBE
BIG HORN 144A
RED DEER
O'CHIESE CEMETERY 203A
BRITISH COLUMBIA
ALBERTA
STONEY 142B
STONEY 142, 143, 144
AIRDRIE
CALGARY
TSUU T'INA NATION 145
SIKSIKA 146

100000 200000 300000 400000

LEGEND

- PROJECT LOCATION
- NATIONAL PARK (NP)
- WATERBODY

BASE FEATURES

- PRIMARY HIGHWAY
- SECONDARY HIGHWAY
- PROVINCIAL BOUNDARY
- WATERCOURSE
- CITY / TOWN
- INDIAN RESERVE

50 0 50

SCALE 1:1,500,000 KILOMETRES

REFERENCE

NATIONAL ROAD NETWORK OBTAINED FROM GEOBASE®. INDIAN RESERVE, MÉTIS SETTLEMENT AND POPULATED PLACES OBTAINED FROM IHS ENERGY INC. NATIONAL PARKS OBTAINED FROM FROM ALBERTA TOURISM, PARKS AND RECREATION, GOVERNMENT OF ALBERTA. HYDROLOGY OBTAINED FROM GEOGRATIS, © DEPARTMENT OF NATURAL RESOURCES CANADA. ALL RIGHTS RESERVED.
DATUM: NAD 83 PROJECTION: UTM ZONE 12

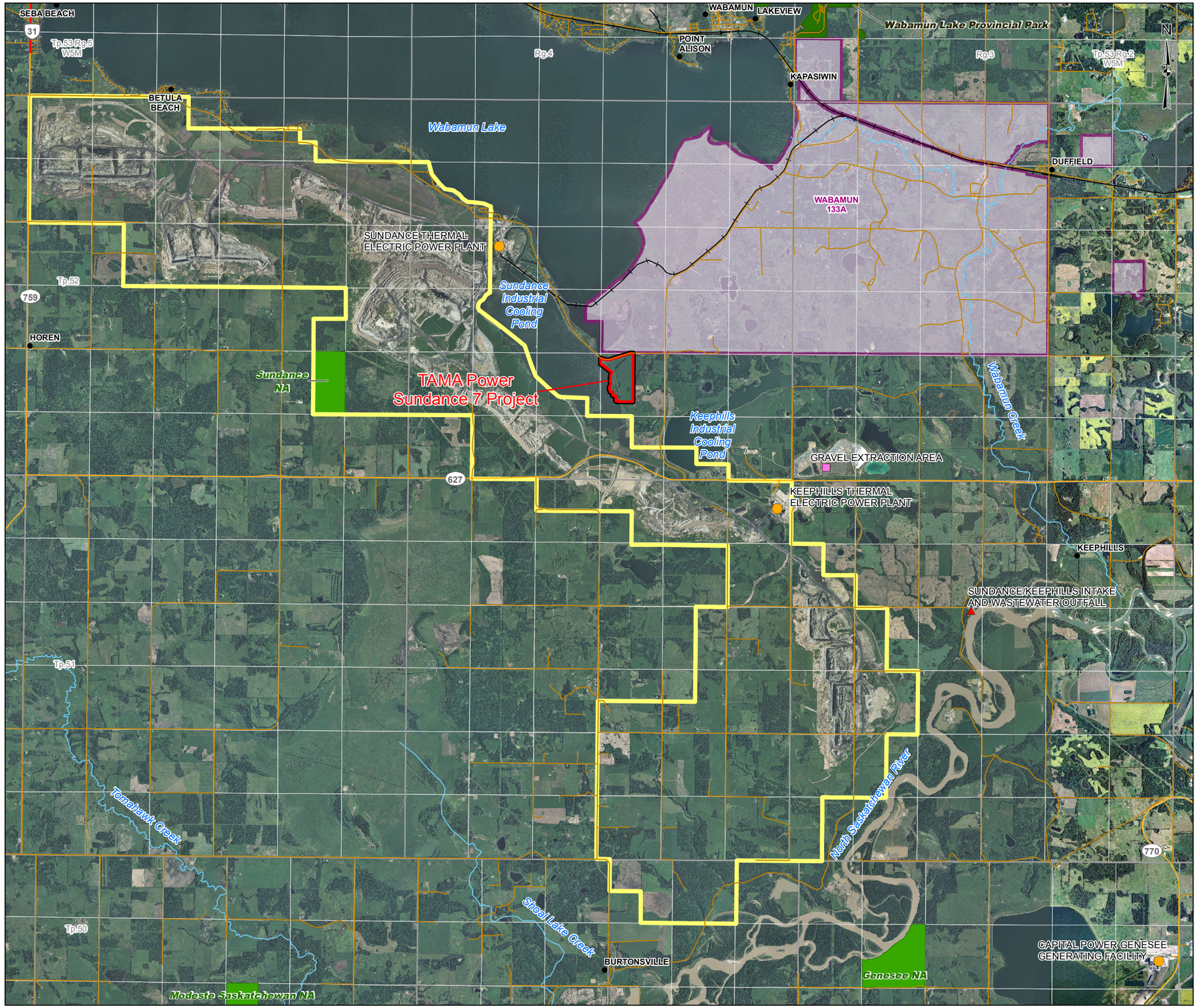
PROJECT: TAMA POWER — SUNDANCE 7 PROJECT

TITLE: **ABORIGINAL COMMUNITIES**

Golder Associates

PROJECT	13-1334-0051		FILE No.	
DESIGN	CS	06 May. 2014	SCALE AS SHOWN	REV. 0
GIS	UW	19 Jun. 2014		
CHECK	CS	19 Jun. 2014		
REVIEW	RR	19 Jun. 2014		

FIGURE: 3.0.1



LEGEND

- PROJECT SITE

BASE FEATURES

- COMMUNITY
- GENERATING FACILITY
- GRAVEL EXTRACTION AREA
- INTAKE AND OUTFALL STRUCTURES
- PRIMARY HIGHWAY
- SECONDARY HIGHWAY
- LOCAL ROAD
- RAILWAY
- WATERCOURSE
- INDIAN RESERVE
- HIGHVALE MINE PERMIT BOUNDARY

PARK / PROTECTED AREA

- NATURAL AREA (NA)
- PROVINCIAL PARK (PP)

REFERENCE

COMMUNITIES, WATERCOURSES AND INDIAN RESERVES OBTAINED IHS ENERGY INC. PARKS AND PROTECTED AREAS OBTAINED FROM ALBERTA TOURISM, PARKS AND RECREATION, GOVERNMENT OF ALBERTA. SECONDARY HIGHWAYS AND LOCAL ROADS OBTAINED FROM GEOBASE®. RAILWAYS OBTAINED FROM CANVEC © DEPARTMENT OF NATURAL RESOURCES CANADA. ALL RIGHTS RESERVED. 0.4 M IMAGERY, CAPTURED IN 2013, OBTAINED FROM VALTUS IMAGERY SERVICES. 2M RESOLUTION IMAGERY CAPTURED IN 2009 OBTAINED FROM THE CLIENT.
DATUM: NAD 83 PROJECTION: 3TM 114

3 0 3
SCALE 1:100,000 KILOMETRES

PROJECT
TAMA POWER
SUNDANCE 7 PROJECT

TITLE
INDUSTRIAL FACILITIES AND NEARBY COMMUNITIES

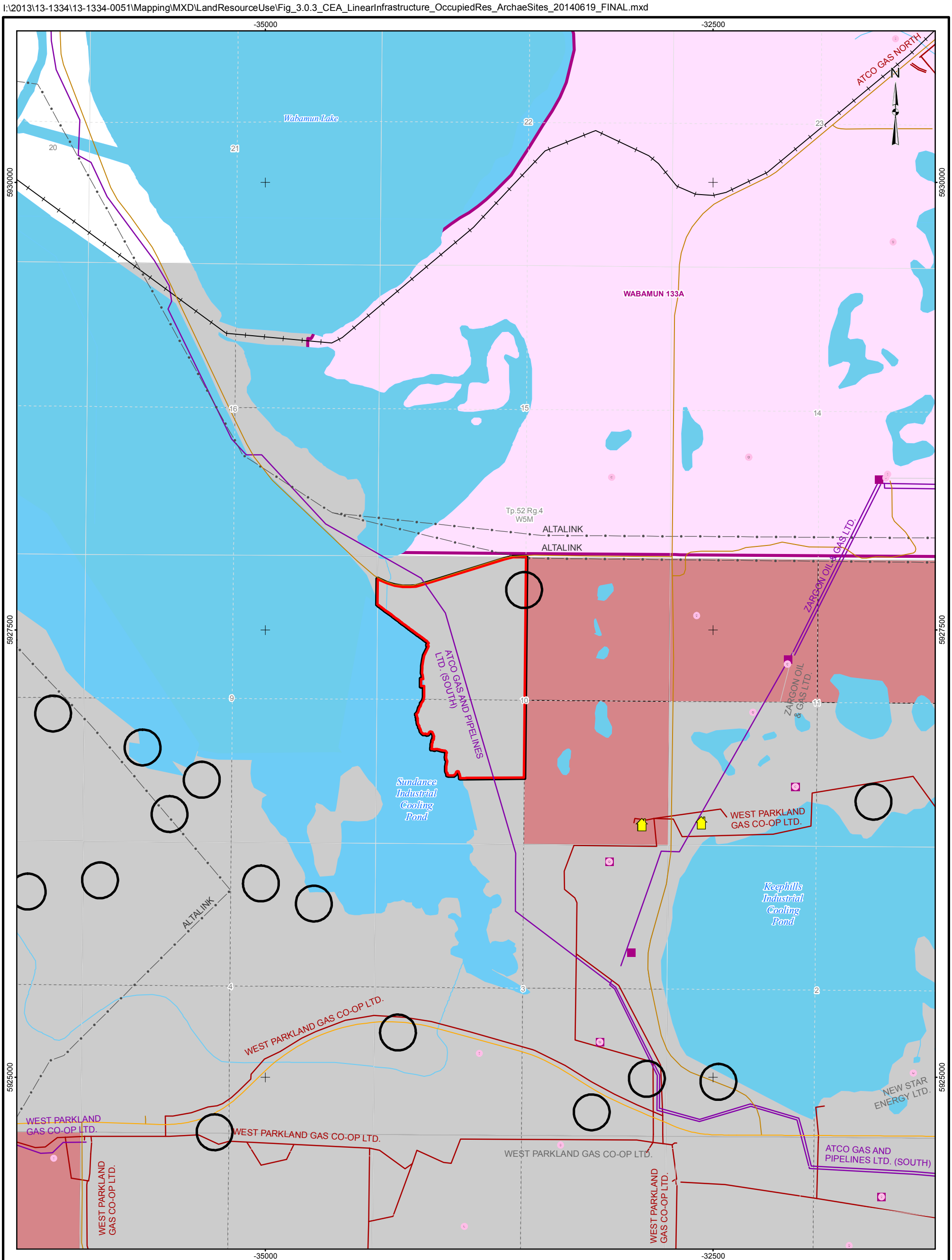
Golder Associates

PROJECT		13-1334-0051	FILE No.	
DESIGN	CS	06 May. 2014	SCALE AS SHOWN	REV. 0
GIS	UW	19 Jun. 2014		
CHECK	CS	19 Jun. 2014		
REVIEW	RR	19 Jun. 2014		

FIGURE: 3.0.2

I:\2013\13-1334\13-1334-0051\Mapping\MXD\General\Fig_3.0.2_CEA_IndustrialFacilities_NearbyCommunities_20140619_FINAL.mxd

I:\2013\13-1334\13-1334-0051\Mapping\MXD\LandResourceUse\Fig_3.0.3_CEA_LinearInfrastructure_OccupiedRes_ArchaeSites_20140619_FINAL.mxd



LEGEND

- PROJECT SITE (69.1 ha)

LANDOWNERSHIP

- PRIVATE LAND
- TRANSALTA UTILITIES
- PREVIOUSLY RECORDED ARCHAEOLOGICAL SITE

BASE FEATURES

- COMMUNITY
- OCCUPIED RESIDENCE WITHIN 2,000 m OF FENCELINE
- OIL AND GAS FACILITY
- SURFACE WELL
- SECONDARY HIGHWAY
- LOCAL ROAD
- RAILROAD
- TRANSMISSION LINE
- ACTIVE HIGH PRESSURE PIPELINE
- INACTIVE HIGH PRESSURE PIPELINE
- LOW PRESSURE PIPELINE
- WATERCOURSE
- INDIAN RESERVE
- WATERBODY

500 0 500

SCALE 1:20,000 METRES

REFERENCE

COMMUNITIES, SURFACE WELLS, PIPELINES, OIL AND GAS FACILITIES, RAILWAYS AND INDIAN RESERVES OBTAINED FROM IHS ENERGY INC. NATIONAL ROAD NETWORK OBTAINED FROM GEOBASE ®. HYDROGRAPHY AND TRANSMISSION LINES OBTAINED FROM CANVEC © DEPARTMENT OF NATURAL RESOURCES CANADA. ALL RIGHTS RESERVED. PREVIOUSLY RECORDED HISTORIC RESOURCE SITES OBTAINED FROM ALBERTA-CULTURE 2014-03-18. TRANSMISSION LINES DIGITIZED FROM AERIAL IMAGERY. LAND OWNERSHIP MAP DATED SEPTEMBER 2013 OBTAINED FROM SUNHILLS MINING.
DATUM: NAD 83 PROJECTION: 3TM 114

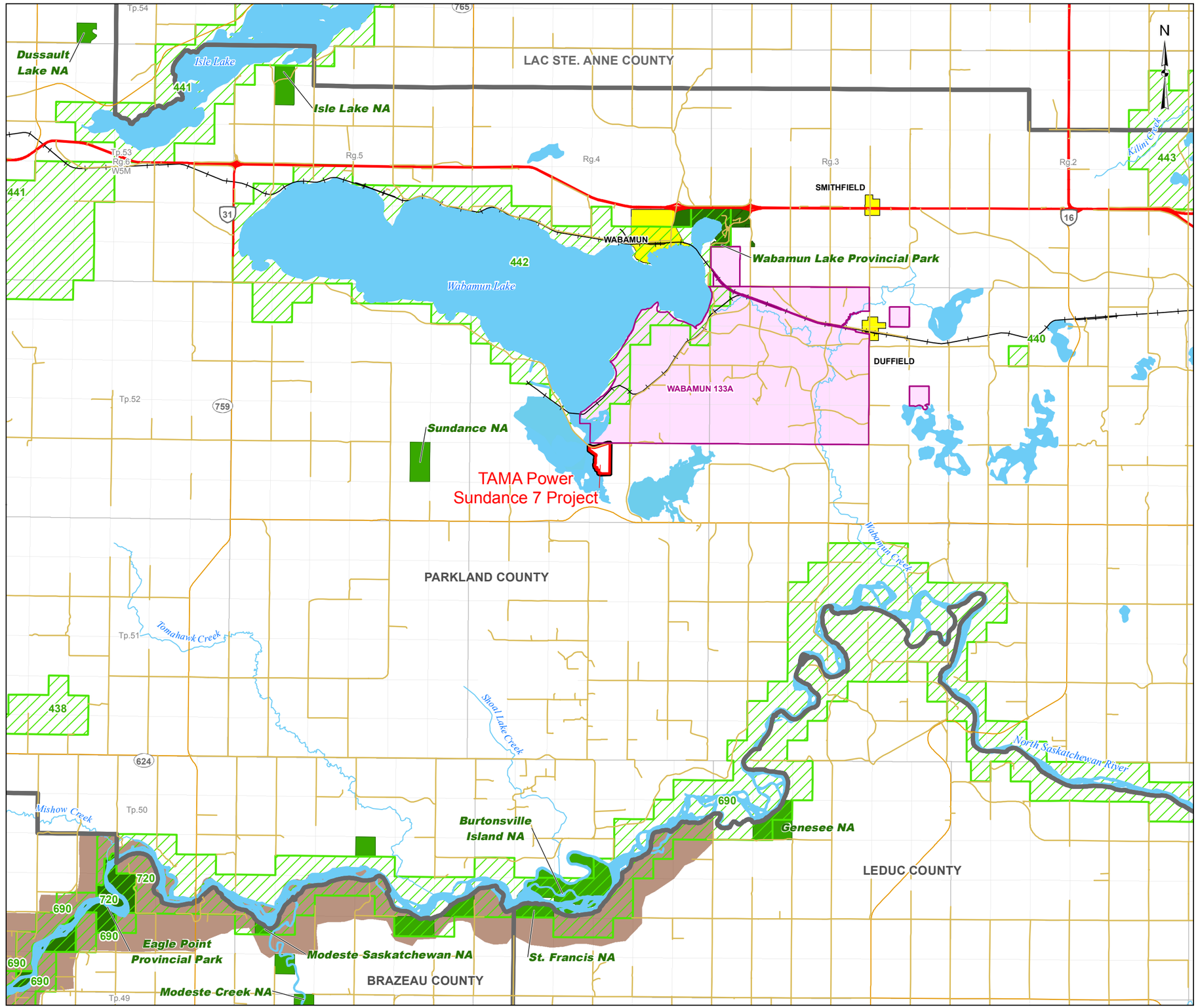
PROJECT
TAMA POWER
SUNDANCE 7 PROJECT

TITLE
LINEAR INFRASTRUCTURE, OCCUPIED RESIDENCES AND ARCHAEOLOGICAL SITES

Golder Associates

PROJECT		13-1334-0051	FILE No.	
DESIGN	GD	24 Mar. 2014	SCALE AS SHOWN	REV. 0
GIS	UW	19 Jun. 2014		
CHECK	CS	19 Jun. 2014		
REVIEW	RR	19 Jun. 2014		

FIGURE: 3.0.3



LEGEND

- PROJECT SITE

BASE FEATURES

- LOCAL ROAD
- PRIMARY HIGHWAY
- SECONDARY HIGHWAY
- RAILROAD
- WATERCOURSE
- ENVIRONMENTALLY SIGNIFICANT AREA
- INDIAN RESERVE
- KEY WILDLIFE AND BIODIVERSITY ZONE
- MUNICIPAL BOUNDARY
- WATERBODY

PARK / PROTECTED AREA

- NATURAL AREA (NA)
- PROVINCIAL PARK (PP)

REFERENCE

MUNICIPAL BOUNDARIES OBTAINED FROM ALTALIS © GOVERNMENT OF ALBERTA 2014. ALL RIGHTS RESERVED. NATIONAL ROAD NETWORK OBTAINED FROM GEOBASE®. HYDROLOGY, INDIAN RESERVE, POPULATED PLACES AND RAILROAD DATA OBTAINED FROM IHS ENERGY INC. PARKS AND PROTECTED AREAS OBTAINED FROM ALBERTA TOURISM, PARKS AND RECREATION, GOVERNMENT OF ALBERTA. ENVIRONMENTALLY SIGNIFICANT AREA OBTAINED FROM ALBERTA TOURISM, PARKS AND RECREATION, PREPARED BY FIERA BIOLOGICAL CONSULTING, 2009. KEY WILDLIFE AND BIODIVERSITY ZONES © GOVERNMENT OF ALBERTA, FISH AND WILDLIFE DIVISION 2013.
DATUM: NAD 83 PROJECTION: 3TM 114

5 0 5
SCALE 1:160,000 KILOMETRES

PROJECT
TAMA POWER
SUNDANCE 7 PROJECT

TITLE
ENVIRONMENTALLY SENSITIVE AREAS

Golder Associates

PROJECT		13-1334-0051	FILE No.	
DESIGN	CS	06 May. 2014	SCALE AS SHOWN	REV. 0
GIS	UW	19 Jun. 2014	**FIGURE: 3.0.4**	
CHECK	CS	19 Jun. 2014		
REVIEW	RR	19 Jun. 2014		

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LEGEND

- PROJECT FOOTPRINT (9.8 ha)
- PROJECT SITE (69.1 ha)
- WETLAND CLASS II*

250 0 250

SCALE 1:8,500 METRES

PROJECT

TAMA POWER

SUNDANCE 7 PROJECT

TITLE

PROJECT SITE

NOTE

*STEWART AND KANTRUD (1971) WETLAND CLASSIFICATION SYSTEM

REFERENCE

0.4 M IMAGERY, CAPTURED IN 2013, OBTAINED FROM VALTUS IMAGERY SERVICES.
DATUM: NAD 83 PROJECTION: 3TM 114

Golder Associates

PROJECT		13-1334-0051	FILE No.	
DESIGN	CS	06 May. 2014	SCALE AS SHOWN	REV. 0
GIS	UW	08 May. 2014		
CHECK	CS	09 Apr. 2014		
REVIEW	RR	09 Apr. 2014		

FIGURE: 3.0.5

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Photo 1: Alfalfa (*Medicago sativa*) planted in northwest section of the Project Site, looking south at two small woodlots composed of mature aspen (*Populus tremuloides*), interspersed with the occasional paper birch (*Betula papyrifera*).

Photo 2: View across an interceptor ditch that runs north-south through the Project site. Both sides adjacent to the interceptor ditch were seeded with alfalfa (*Medicago sativa*).

Photo 3: South portion of an interceptor ditch that runs north-south through the Project site, facing south. Vegetation is mostly dominated by grasses and shrubs with occasional patches of regenerating aspen and balsam poplar.

Photo 4: Shoreline along the Sundance Industrial Cooling Pond within the Project site, facing north.

Photo 5: Sundance Industrial Cooling Pond facing northwest towards the Sundance Thermal Electric Power Plant and existing transmission facilities.

Photo 6: Class II wetland located along the southern edge of NW 10-52-4 W4M. This wetland occurs as a small depression surrounded by an agricultural field and did not contain standing water at the time of the survey.

3.1.5 Proximity to Nearby Receptors

Proximity of the designated project to:

- ***Any permanent, seasonal or temporary residences:***
- ***Traditional territories, settlement land (under a land claim agreement) as well as lands and resource currently used for traditional proposed by Aboriginal peoples: and***
- ***And federal lands.***
- ***any permanent, seasonal or temporary residences;***
- ***traditional territories, settlement land (under a land claim agreement) as well as lands and resources currently used for traditional purposes by Aboriginal peoples; and***
- ***any federal lands.***

There are two occupied permanent residences within 1.5 kilometres (km) of the Project site (Figure 3.0.3).

The Government of Alberta Aboriginal Consultation Office (ACO) identified two First Nations that must be notified of the Project: Paul First Nation and Enoch Cree Nation. The Paul First Nation is located less than 1 km north of the Project, and the Enoch Cree Nation is located approximately 46 km east of the Project.

The two quarter-sections that will be used for the Project site have been owned by TransAlta since the 1970s and are not currently used for traditional purposes by Aboriginal peoples.

The Wabamun 133A and 133B Indian Reserves are immediately north of the Project site. The closest national park is Elk Island National Park approximately 103 km east of the Project.

3.2 Land and Water Use

To the extent that is known at this time, describe the ownership and zoning of land and water that may be affected by the project:

3.2.1 Zoning Designations

The Project site is located within the Highvale End Land Use Direct Control District and is zoned as “Resource Extraction” as specified by the Parkland County Land Use Bylaw (Parkland County 2013). Power generation is

defined as a discretionary use for Resource Extraction areas and the Project is consistent with this land use designation.

3.2.2 Legal Description

Legal description of land to be used (including information on sub-surface rights) for the designated project, including the title, deed or document and any authorization relating to a water lot.

The Project site is located in the NW and SW ¼ sections of 10-52-4 W5M. Both quarter sections are owned by TransAlta and a copy of the legal title is provided in Appendix A.

3.2.3 Regional Management Plants

Any applicable land use, water use (including ground water), resource management or conservation plans applicable to or near the project site. Include information on whether such plans were subject to public consultation.

The Project site lies within an area that is the subject of three regional land use plans, these are discussed below. A Water Management Framework was developed by ESRD for the Devon to Pakan reach of the NSR. However, this reach is located downstream of the Project and not applicable.

Capital Region Land Use Plan

The Project is located in the Alberta Capital Region which is a conglomeration of municipalities around Edmonton, including Parkland County. The Capital Region Land Use Plan was developed by the Capital Region Board in 2009 to provide an integrated approach to managing the region's footprint and land use, while ensuring sustainable economic growth and environmental health (Capital Region Board 2009). An important component of this plan is the establishment of a Land Use Committee, which consists of 12 Mayors from the Capital Region. The Land Use Committee, with advice from leading academics and professionals, assisted in the development of this plan and will contribute to future work in the Region. The following core principles form the basis of the plan's guidelines:

- protect the environment and resources;
- minimize regional footprint;
- strengthen communities;
- increase transportation choices;
- ensure efficient provision of services; and
- support regional economic development.

Each of these principles consists of numerous policies that must be considered during project development in the Capital Region. The Capital Region Land Use Plan will be enforced through a collaborative effort between the Capital Region Board, various Capital Region municipalities, and the Government of Alberta. The design of Project also incorporates low emission technology and elements to minimize the plant water usage to limit potential adverse environmental effects.

Parkland County Management Plans

The Project site is located within the Highvale End Land Use Direct Control District and is currently zoned as "Resource Extraction" as specified by the Parkland County Land Use Bylaw (Parkland County 2013). Power generation is defined as a discretionary use for Resource Extraction areas and the Project is consistent with this land use designation.

Parkland County prepared a Municipal Development Plan according to the legislative framework in the *Municipal Government Act* (RSA 2000,c.M-26). The Municipal Development Plan provides a long-term plan for future growth with a focus on environmental, fiscal and social sustainability. The Municipal Development Plan includes specific policies to protect water quality and quantity and Environmentally Significant Areas within Parkland County (Parkland County 2010). TAMA Power has met with Parkland County on multiple occasions to discuss the Project. Parkland County supports the Project and has stated that the Project aligns with their strategic priorities to advance industry while protecting the environment.

3.2.4 Lands Used for Traditional Purposes by Aboriginal Peoples

Describe whether the designated project is going to require access to, use or occupation of, or the exploration, development and production of lands and resources currently used for traditional purposes by Aboriginal peoples.

The Project site is predominantly composed of cultivated agricultural lands (i.e., hayfield) and has been owned by TransAlta since the 1970s with restricted access. The public, including Aboriginal groups, are not permitted to access the lands without prior approval from TransAlta and the leaseholder. No traditional land use activity is currently permitted on the lands proposed for the Project.

4.0 FEDERAL INVOLVEMENT

4.1 Federal Financial Support

Describe if there is any proposed or anticipated federal financial support that federal authorities are, or may be, providing to support the carrying out of the designated project.

The Project does not include any proposed or anticipated federal financial support.

4.2 Federal Lands

Describe any federal lands that may be used for the purpose of carrying out the designated project. This is to include any information on any granting of interest in federal land (i.e., easement, right of way, or transfer of ownership).

The Project will not require the granting of any interest in federal land, including reserve land.

4.3 Federal Legislative or Regulatory Requirements

Provide a list of any federal permits, licenses or other authorizations that may be required to carry out the designated project.

NAV CANADA owns and operates Canada's civil air navigation system and is responsible for aviation safety in Canada. TAMA Power submitted a Land Use Proposal to NAV CANADA for evaluation and on May 21, 2014, NAV CANADA indicated it had no objections to the Project.

5.0 ENVIRONMENTAL EFFECTS

The information to be provided in this section is meant to be a brief assessment of the environmental interactions of the project. A detailed examination of the potential environmental effects of the project does not need to be included in the project description. If the proponent is of the opinion that the designated project is not likely to cause adverse environmental effects, if must provide evidence to support its view.

Using existing knowledge and available information provide an overview of the following:

This section assesses the potential interactions between the Project and the environment. It summarizes available information on the existing physical, biological and human environment, and changes that might occur as a result of Project activities or infrastructure.

5.1 Physical and Biological Components that may be Adversely Affected by the Project

A description of the physical and biological setting, including the physical and biological components in the area that may be adversely affected by the project (e.g., air, fish, terrain, vegetation, water, wildlife, including migratory birds, and known habitat use).

5.1.1 Soils and Terrain

Soils information for the Project site was obtained from a desktop assessment and a soils field survey conducted in June 2010. During the field survey, two soil map units were identified within the Project site: Highvale (HGV19) and Manatokan (MNTaa1). The Highvale map unit is composed of a silty clay loam and occupies the majority of the Project site (68.5 ha, or 99 percent [%] of the Project site). The Highvale soil series generally occurs on rolling landforms with 6% to 15% slopes and no surface stoniness. The Highvale map unit also contains significant areas (10% to 30% each) of Chernozems and Gleysols. Topsoil depths measured throughout the Project site for the Highvale soil series ranged from 13 to 37 centimetres (cm) with poor colour change from topsoil to subsoil.

The Manatokan map unit includes only a small area (0.6 ha, 1% of the Project site), and is located in an interceptor ditch that runs north-south through the Project site. The Manatokan soil series is mainly a Terric Fibrisol, with 0% to 0.5% slopes. One soil inspection point was taken during the field survey within the Manatokan series, which revealed 110 cm of peat.

Wind and water erosion risk primarily applies to disturbed or exposed soils because vegetated soils are not generally at risk of erosion. The majority of the Project site is rated as having a low risk of wind erosion and moderate risk of water erosion due to fine-textured or peaty surface horizons.

Generally, coarse-textured soils (e.g., sandy loam, loamy sand) have low compaction risk, and medium- to fine-textured soils (e.g., loam, silty loam, clay loam, clay) have high compaction sensitivity in wet conditions. As a result, the majority of the soils within the Project site have a low sensitivity to compaction under dry conditions but are sensitive when wet. The Manatokan soil series is sensitive to compaction under all moisture conditions.

To preserve the reclamation suitability of the soils and to prevent soil erosion and compaction during construction, TAMA Power will salvage all topsoil in areas used for construction. In areas to be occupied by permanent facilities (i.e., Project footprint), TAMA Power will salvage the topsoil and subsoil and store each separately in stockpiles located in the northwest and southeast corners of the Project site. Following construction, topsoil will be replaced in any areas not occupied by permanent facilities. No topsoil will be used for construction purposes, and topsoil salvaged within the Project footprint will be stored for the life of the Project.

TAMA Power will follow standard construction practices to limit adverse environmental effects during soil salvage activities. Soil salvage operations will be monitored by a soil scientist qualified to monitor soil salvage activities during construction and registered with the Alberta Institute of Agrologists. Soil stockpiles will be constructed to be geotechnically stable and will be managed for wind and water erosion by monitoring for natural regrowth and if necessary, seeding with an approved native grass seed mix or annual cereal crop, installation of jute matting, silt fencing, erosion control logs (also known as silt-worms), geo-ridge and/or strategic placement of coarse woody debris. As a result, the Project is not expected to result in any adverse environmental effects on soils following site reclamation.

5.1.2 Vegetation and Wetlands

A desktop review was carried out using orthoimagery to identify major plant communities and potential survey sites. A wetlands inventory, listed plant species survey, and vegetation communities survey were conducted on June 10, 2010.

The Project is located within the Dry Mixedwood Subregion (NRC 2006) which is predominantly composed of level to undulating plains of aspen forests interspersed with white spruce and numerous wetlands. The Project site is predominantly agricultural land (i.e., hayfields or pasture), interspersed with remnant native woodlots of aspen with minor components of white birch or balsam poplar.

One small, Class II (Stewart and Kantrud 1971) mineral wetland, approximately 0.22 ha in size (less than 1% of the Project site) was identified and mapped. This wetland occurs as a small depression surrounded by an agricultural field and did not contain any standing water at the time of the survey. TAMA Power will conduct a

supplemental wetlands field survey in June 2014 to reconfirm the wetland class and determine if there are any additional wetlands located within the Project site. TAMA Power will submit an application under the *Water Act* requesting approval to remove wetlands within the Project site to accommodate the Project facilities. TAMA Power will also develop a wetland compensation program according to ESRD requirements for any wetlands removed within the Project site.

A search of the Alberta Conservation Information Management System (ACIMS) database (ACIMS 2010, 2014) revealed no provincially listed plant species or communities on or within 1 km of the Project site. In addition, no federally (SARA 2014) or provincially listed plant species (ACIMS 2014) or noxious weeds (Government of Alberta 2010a) were identified within the Project site during the survey. While no noxious weeds were identified during the vegetation survey, TAMA Power will implement standard construction practices to limit the potential for introduction of weeds. These practices include the following:

- All construction equipment will enter the construction area in a clean condition, free of mud, vegetation and seeds.
- Following Project construction, areas not containing permanent facilities will be reclaimed.
- Only certified weed-free seed mixes, selected in consultation with Parkland County, will be used.

With the implementation of the mitigation measures described above and the lack of listed plant species on the Project site, the Project is not anticipated to have an adverse environmental effect on listed plant species and communities.

5.1.3 Wildlife and Wildlife Habitat

A desktop review of existing information was carried out to characterize the wildlife community composition, available wildlife habitat and occurrences of any listed species within the Project site. This review included an online query of the Fish and Wildlife Management Information System (FWMIS) conducted in May 2010 and on April 8, 2014. In addition, species occurrences documented in previous reports for the wildlife study area were cross-referenced with provincial (ESRD 2010) and federal (COSEWIC 2013) status lists to determine if listed species have been observed within the wildlife study area. Species confirmed to be present within the wildlife study area, based on this desktop review, which are listed either provincially and/or federally, are listed in Table 5.1.1.

Table 5.1.1 Provincial and Federally Listed Vertebrate Species of Concern in the Wildlife Study Area

Common Name	Scientific Name	Provincial Status[a]	Federal Status[b]
Birds			
American green-winged teal	*Anas crecca*	Sensitive	–
bald eagle	*Haliaeetus leucocephalus*	Sensitive	Not at Risk
Baltimore oriole	*Icterus galbula*	Sensitive	–
barn swallow	*Hirundo rustica*	Sensitive	Threatened
barred owl	*Strix varia*	Sensitive	–
common yellowthroat	*Geothlypis trichas*	Sensitive	–
eastern phoebe	*Sayornis phoebe*	Sensitive	–
golden eagle	*Aquila chrysaetos*	Sensitive	Not at Risk
horned grebe	*Podiceps auritus*	Sensitive	Special Concern
least flycatcher	*Empidonax minimus*	Sensitive	–
lesser scaup	*Aythya affinis*	Sensitive	–
northern harrier	*Circus cyaneus*	Sensitive	Not at Risk
northern pintail	*Anas acuta*	Sensitive	–
pied-billed grebe	*Podilymbus podiceps*	Sensitive	–
peregrine falcon	*Falco peregrinus*	At Risk	Special Concern
pileated woodpecker	*Dryocopus pileatus*	Sensitive	–
sora	*Porzana carolina*	Sensitive	–
Swainson's hawk	*Buteo swainsoni*	Sensitive	–
western grebe	*Aechmophorus occidentalis*	Sensitive	–
western tanager	*Piranga ludoviciana*	Sensitive	–
Amphibians			
western toad	*Anaxyrus boreas*	Sensitive	Special Concern
Mammals			
American badger	*Taxidea taxus*	Sensitive	Special Concern

[a] ASRD 2010.
[b] COSEWIC 2013.
– = Not Listed.

Three wildlife field surveys were conducted on two visits (May 27 and June 10, 2010) to confirm the absence or presence of listed species within the Project site. These surveys included a visual scan survey for waterfowl, a nocturnal breeding call survey for amphibians, and a marshbird survey. Native habitat areas were not large enough to warrant a 50-m radius breeding bird point count. However, in time-based surveys that were part of the marshbird survey, all birds heard within a five-minute survey period were recorded. Birds that were heard while traversing the Project site were also recorded.

The objective of the waterfowl survey was to identify waterfowl and waterbird species using the Sundance Industrial Cooling Pond and associated shoreline. Four waterfowl scan surveys were completed along the shoreline of the Project site and the Sundance Industrial Cooling Pond during the mornings of May 27 and June 10, 2010. Scan survey protocols followed those outlined in Bibby et al. (2000) and Gilbert et al. (1998). Very few waterfowl were observed during these surveys, likely due to the lack of high-quality breeding habitat along the shoreline of the Sundance Industrial Cooling Pond (i.e., very little emergent and submergent vegetation along the shoreline and very little littoral zone development).

Only one listed species was identified during the waterfowl survey. American white pelicans (*Pelecanus erythrorhynchos*) were observed rafting on the Sundance Industrial Cooling Pond and flying towards Wabamun Lake. American white pelican is listed as 'Sensitive' provincially (ASRD 2010) and as 'not at risk' federally (COSEWIC 2013).

Bird species recorded during the waterfowl scan survey are listed in Table 5.2.1. A small number of individuals of several bird species were observed on and within the vicinity of the Sundance Industrial Cooling, indicating the Pond is used to a limited extent by birds. As discussed in Section 5.1.6, the predicted water quality changes due to the Project are minor and would not be expected to cause an adverse environmental effect on birds using the cooling pond.

Table 5.2.1 Species Observed During the Waterfowl Scan Survey

Common Name	Scientific Name	Number	Provincial Status[(a)]	Federal Status[(b)]
American wigeon	*Anas americana*	2 (pair)	Secure	–
American white pelican	*Pelecanus erythrorhynchos*	~24	Sensitive	Not at Risk
Canada goose	*Branta canadensis*	6 (3 pairs)	Secure	–
common loon	*Gavia immer*	1	Secure	Not at Risk
mallard	*Anas platyrhynchos*	2 (pair)	Secure	–
red-winged blackbird	*Agelaius phoeniceus*	2	Secure	–
ring-billed gull	*Larus delawarensis*	~12	Secure	–
sandpiper spp.	*Calidris spp.*	2	Secure	–

(a) ASRD 2010.
(b) COSEWIC 2013.
– = Not Listed; ~ = approximately.

The nocturnal breeding call survey for amphibians and the marshbird survey were completed concurrently on May 27 and June 10, 2010 to determine the presence and distribution of amphibians and marshbirds within the Project site. The auditory amphibian survey followed the North American Amphibian Monitoring Program (PWRC 2005) and the Alberta Volunteer Amphibian Monitoring Program (ACA and ASRD 2006). The marshbird survey followed the protocol outlined in Priestley (2002). The amphibian and marsh bird auditory surveys began 30 minutes after sunset and consisted of a 5-minute listening period. Individual species of amphibians and marsh birds were identified by their distinctive calls. Three survey plots were completed within or near the Project site.

Two species of frogs (wood frog [*Lithobates sylvaticus*] and boreal chorus frog [*Pseudacris maculata*]), and one marshbird (sora [*Porzana carolina*]) were heard during the amphibian and marsh bird surveys. The frog species were heard calling from the Class II wetland and from the interceptor ditch within the Project site. It could not be determined where the sora was calling from. Wood frog and boreal chorus frog individuals were recorded during both rounds of the amphibian survey, but a full chorus was never recorded. The sora was the only marsh bird species recorded during the survey and was recorded during the second survey only. These species are listed as 'Secure" in Alberta (ASRD 2010) and are not listed federally (COSEWIC 2013).

As described in Section 5.1.2, the majority of the Project site consists of agricultural lands, with small areas composed of early disturbance type vegetation (i.e., regenerating aspen and disturbed shrub vegetation communities). Consequently, the capability of the terrestrial and wetland habitat found within the Project site to support wildlife communities is low. In addition, the areas of native vegetation (i.e., aspen and swamp) within the Project site are not unique in the Wabamun Lake area. Potential wildlife issues that may arise during construction and operation of the Project include the following:

- loss and alteration of habitat, from site clearing and reclamation; and
- increased traffic and vehicle-wildlife collisions.

Given the high amount of agricultural land use in the wildlife study area and the general scarcity of native habitat within the Project site, the Project is expected to have limited effects on wildlife and wildlife habitat. However, the following mitigation will be implemented by TAMA Power:

- If possible, any vegetation clearing will occur outside of the Restricted Activity Period of the *Migratory Birds Convention Act,* which is between mid-April and the end of August (Environment Canada 2014). If any vegetation clearing activities are required during this period, a pre-construction survey for active nests will be completed by an avian biologist prior to any disturbance.
- One small Class II wetland will be removed to accommodate the Project. TAMA Power will submit an application under the *Water Act* requesting approval to remove this wetland and will work with ESRD to ensure it is compensated through a wetland compensation program.
- Wildlife-vehicle collisions have been monitored in the wildlife study area by TransAlta since 2005, and collisions have generally been steadily declining. TransAlta promotes wildlife collision awareness for its personnel, which includes techniques to scan for and avoid wildlife while driving. TransAlta also sponsors local initiatives to establish wildlife warning reflector corridors.

Given the paucity of habitat on the Project site, the design of the Project and with the implementation of the above mitigation measures, effects of the Project on wildlife (including migratory birds) and wildlife habitat are expected to be negligible.

5.1.4 Groundwater

The regional hydrogeology of the Wabamun area is influenced by pre-glacial, glacial and post glacial events. The predominant surficial material on the Project site is interpreted to be a low permeability glacial till stratum underlain by shale bedrock. Glaciolacustrine clay and silt with minor sand units are found to the southeast of the Project site, while fine-textured lacustrine deposits are found on the adjacent shores of Wabamun Lake (TransAlta 2010). An ESRD water well drilling record from the Project site identifies clay material (likely glacial till) overlying shale bedrock approximately 25 metres below the ground surface (m bgs).

Discontinuous coarse sand and gravel lenses of variable thickness are common within the glacial till. The till surrounding these lenses often has low hydraulic conductivity. The thickness of the sand and gravel deposits is varied and often proportional to the overall thickness of the surficial sediments, with the static water level of these upper surficial aquifers representing a subdued form of the topographic surface. If upper sand and gravel aquifers are present around the Project site, they most likely occur as small isolated pockets of permeable material and are not laterally extensive.

The presence of buried valley deposits may represent significant surficial aquifers. The Buried Beverly Valley for example, which trends northeast to southwest, is located approximately one township (10 km) east of the Project site (Hydrogeological Consultants 1999). The Project site is not likely underlain by regional surficial sand and gravel aquifers or pre-glacial buried channels.

The Project may affect groundwater quality only as a result of accidental spills or leaks during construction and operations. Mitigation such as proper materials storage, the use of aboveground storage tanks with secondary containment for liquids, and implementation of an emergency response plan will reduce the potential for adverse environmental effects of the Project on groundwater quality. TAMA Power intends to ensure hazardous materials are disposed of off-site and contamination is prevented.

Groundwater monitoring programs are currently in effect at TransAlta-owned facilities at the Highvale Mine and the Sundance Thermal Electric Power Plant. Given the existing coverage from these monitoring programs and the low risk to groundwater quality from the Project, it is not expected that a separate groundwater monitoring program for the Project will be required by ESRD.

5.1.5 Surface Hydrology

The Project site is within the North Saskatchewan River (NSR) watershed, one of the largest watersheds in Alberta. The NSR is a glacier-fed river that flows east from the Canadian Rockies to central Saskatchewan. The NSR has a gross drainage area of 28,000 square kilometres (km^2) at the Environment Canada hydrometric station 05DF001 (NSR at Edmonton).

The NSR flow is regulated by two upstream dams: Bighorn Dam on the NSR, and Brazeau Dam on the Brazeau River. These dams reduce peak flows and increase low flows from the hydrological regime that existed before the dams were constructed. Based on the post-dam period (1973 to 2011), the NSR has a 100-year maximum instantaneous flood discharge of 4,870 cubic metres per second (m^3/s), and a 2-year maximum instantaneous flood discharge of 848 m^3/s (Environment Canada 2013). The mean annual discharge for the NSR at Edmonton for the period of 1973 to 2011 is 194 m^3/s (Environment Canada 2013). Monthly flows in the NSR typically peak in June and July due to snowmelt and storm events that prevail in the early summer season, and the lowest flows typically occur in winter under ice-covered conditions. Based on the post-dam construction period, the 10-year low-flow discharge is 43.7 m^3/s and the 100-year low-flow discharge is 26.3 m^3/s (Environment Canada 2013).

The Project site is located approximately 10 km northwest of the NSR and less than 1 km southeast of Wabamun Lake. Currently, runoff within the Project site generally flows from the higher elevations near the centre of the site toward the southwest and toward the north. The existing drainage conveys runoff from the south area to an interceptor ditch along the east side of the Sundance Industrial Cooling Pond and into Wabamun Lake. This interceptor ditch was originally created to divert clean water from the undeveloped mining areas south of Highway 627 to Wabamun Lake, and does not currently serve any operational purpose. Runoff from the northern area of the Project site currently drains into Wabamun Lake via roadside ditches.

During winter months (November through March) the Project flows to and from the Sundance Industrial Cooling Pond are estimated at 567.3 cubic metres per hour (m^3/h) (demand) and 128 m^3/h (outflow). During summer months (April to October), the Project flows are estimated at 741.1 m^3/h (demand) and 166.9 m^3/h (outflow). These flows result in an annual water demand of 5,875,684 m^3 and an annual evaporative loss of 4,551,542 m^3 caused by the Project. In addition to cooling water flows, surface runoff from the Project site will drain to the cooling pond. The runoff volume for a 1:10 year storm of 24-hour duration is approximately 3,900 m^3.

With the addition of the new plant, blowdown rates to the NSR will be increased by approximately 30% to maintain water quality within the Sundance Industrial Cooling Pond. The addition of the new Project will change the cooling pond inflows through increased runoff volumes, makeup and blowdown volumes. The resulting change in blowdown is an increase from 7.7 to 10 million m^3 per year, as shown in Table 5.3.1.

Table 5.3.1 Annual Flow Balance for the Sundance Industrial Cooling Pond

Pumped Volume (m^3)	Current Cooling Pond water volumes (m^3)				Cooling Pond with Sundance 7 volumes (m^3)				Change in Annual Total (m^3)
	Daily Minimum	Daily Maximum	Daily Average	Annual Total	Daily Minimum	Daily Maximum	Daily Average	Annual Total	
Makeup	0	109,460	50,333	18,421,856	0	109,230	68,685	25,138,565	6,716,709
Blowdown	0	44,099	20,925	7,658,402	0	57,328	27,202	9,955,931	2,297,529

m^3 = cubic metre.

The predicted increase in water withdrawal from the NSR resulting from the Project is 6,716,709 cubic metres per year (m^3/year) (0.213 m^3/s on average), and the anticipated increase in blowdown of treated process water to the NSR is 2,297,529 m^3/year (0.073 m^3/s on average), which means that the net withdrawal from the NSR will be 4,419,180 m^3/year (0.140 m^3/s on average). The NSR mean annual flow is 194 m^3/s and the 7Q10 low flow[1] is 59.2 m^3/s, based on the post-dam operation baseline values. Analysis shows that the net change in flow due to the Project is 0.07% of the mean annual flow and 0.24% of the 7Q10 low flow. Typical changes in water level in the NSR due to the net river water withdrawal for the Project will be 0.4 millimetres (mm) for the mean annual flow and 0.8 mm for the 7Q10 flow.

[1] 7Q10 low flow is defined as the period of lowest river flow during a seven-day interval that is expected to occur once every 10 years.

The additional water diverted from the NSR for the Project will be within the current Licence to Divert Water under the Alberta *Water Act* for the existing Sundance Thermal Electric Power Plant. The Project is not anticipated to result in a change in flow in the NSR that would result in adverse environmental effects on aquatic resources because the volume of water that will be withdrawn for the Project is very small relative to the flow in the NSR.

5.1.6 Surface Water Quality

Wastewater from the Project will be discharged to the existing Sundance Industrial Cooling Pond. The Sundance Industrial Cooling Pond is considered an industrial pond and is managed according to EPEA Approval No. 9830-02-00. Blowdown from the Sundance Industrial Cooling Pond is discharged to the NSR via pipeline to an existing wastewater outfall. Therefore, the primary receiving environment for wastewater originating from the Project is considered to be the NSR. There is also the potential for lakes in the surrounding region to be affected by air emissions from the Project, through atmospheric deposition. Therefore, the discussion of baseline water quality conditions and potential adverse environmental effects by the Project on water quality is focused on the NSR and other regional lakes.

Baseline water quality data are available for the NSR in the Devon to Pakan reach, and for several surrounding lakes. Data for the NSR and surrounding lakes were obtained from the Water Data System (WDS) maintained by ESRD. Additional data for surrounding lakes were obtained from Mitchell and Prepas (1990), Monenco (1979, 1980), and baseline studies completed for the Centennial Project EIA (TAU 2001).

Baseline water quality data for the NSR from 1953 to 2013 were summarized by season and compared to water quality guidelines. Data with high detection limits were removed from the assessment, so that concentrations were not overestimated based on older data with higher detection limits. Between 1953 and 2013, the NSR was well oxygenated, with hard, alkaline water. Turbidity ranged from clear to turbid, and varied by season. The dominant ions were bicarbonate, calcium and sulphate, and fluoride was above the chronic guideline for the protection of aquatic life. Concentrations of major ions were greater at Devon relative to the most upstream station at Rocky Mountain House. Concentrations of the nutrients nitrogen and phosphorus ranged from low to moderate, and were similar at Rocky Mountain House and Devon.

Total metal concentrations in the Devon to Pakan reach of the NSR from 1953 to 2013 were variable and aluminum, chromium and iron were often above the chronic aquatic guidelines. Arsenic, cadmium, chromium, copper, iron, lead, mercury, nickel, selenium, thallium and zinc concentrations were occasionally above the chronic aquatic life guidelines. Occasional exceedances of human health guidelines also occurred for arsenic, beryllium, cadmium, chromium, lead, mercury and thallium and wildlife health guidelines were exceeded by aluminum and chromium. Most water quality guideline exceedances occurred during high flows during the open-water season, and reflect elevated suspended sediment concentrations, with the exception of aluminum, which was consistently above the guideline in this reach. Total phenolics exceeded chronic aquatic life and wildlife water quality guidelines at all assessed stations in the NSR.

Seasonal variation was observed in the concentrations of total suspended solids, total phosphorus and metals. Total phosphorus and metals were higher in the open-water season compared to winter, reflecting high flows from surface runoff and associated elevated suspended sediment concentrations.

Baseline water quality in lakes within 30 km of the Project site were evaluated for sensitivity to acid deposition. In summary, concentrations of major ions, total dissolved solids, and nutrients were variable in these lakes, and were in the moderate to high ranges. Total alkalinity values indicate that these lakes are well buffered against acidification and can be classified as being "least sensitive" to acid deposition, using the classification system developed for Alberta lakes by Saffran and Trew (1996).

The potential effects of wastewater releases and acidifying air emissions from the Project were evaluated using conservative quantitative and qualitative methods. Potential changes in water quality in the Sundance Industrial Cooling Pond as a result of the Project were evaluated by constructing a cooling pond water quality model. This model was used to predict the potential incremental changes in cooling pond blowdown chemistry caused by the Project, and subsequently the potential effects of the Project on the NSR. The potential for acidification of surrounding waterbodies as a result of air emissions from the Project was also evaluated. Potential aquatic effects of stormwater management, and spills and leaks were considered negligible based on the method of stormwater management, and spill response and cleanup procedures that will be in place at the Project site.

Potential water quality changes in the NSR from the Project wastewater discharge were assessed using the screening approach described in the *Water Quality Based Effluent Limits Procedures Manual* (AEP 1995). The mixing zone boundary selected for the Sundance Industrial Cooling Pond discharge corresponded to a downstream distance of ten times the river width (1,200 m), which is consistent with the mixing zone recommended by ESRD (AEP 1995). The results at the end of the mixing zone boundary were compared to water quality guidelines for the protection of aquatic life. Water quality parameters included in the assessment were conventional parameters (e.g., total dissolved solids and major ions), nutrients and metals. Potential effects were assessed under average and maximum wastewater concentrations and flow, low receiving water flow, and average concentrations in the receiving water.

Release of the treated wastewater from the Project to the NSR was found to result in non-measurable to small changes in concentration of water quality parameters for all assessed scenarios, with no change in baseline exceedances of aquatic life guidelines. The predicted effect of the treated wastewater discharge on water quality can be characterized as low, because changes in some parameters may be measurable under worst-case conditions. However, the effects of the Project on aquatic life in the NSR are expected to be negligible because there is no change in baseline exceedances of aquatic life guidelines and the change in concentrations of parameters with guidelines are predicted to be non-measurable to small under all assessed scenarios. In addition, the contribution of the Project to existing cumulative effects is expected to be negligible.

Potential acidification of 26 waterbodies in the area surrounding the Project was assessed based on an evaluation of sensitivity to acid deposition, and the relative difference between baseline and Project-related acid

deposition rates. Based on measured alkalinity, none of these lakes are sensitive to acid deposition. The predicted changes in acid deposition resulting from the Project were less than 1% for all of the lakes. Based on the lack of sensitivity to acidification and the small predicted change in potential acid input to surrounding lakes, the Project is not expected to cause acidification in surrounding waterbodies.

5.1.7 Fish and Fish Habitat

There are no fish-bearing watercourses on the Project site. There is one wetland within the Project site that will be removed to accommodate the Project facilities, but this wetland was dry at the time of the field survey and did not contain any fish habitat. The interceptor ditch that runs through the Project site contains some discontinuous, stagnant wetted areas and would not be considered fish habitat. Therefore, there is no fish habitat on the Project site.

As described in Section 5.1.6, all process-generated wastewater will be discharged to the Sundance Industrial Cooling Pond for treatment before it is discharged to the NSR. There will be no untreated wastewater discharges directly to other off-site fish-bearing waterbodies including Wabamun Lake. Therefore, the discussion of baseline fish and fish habitat conditions, and potential adverse environmental effects by the Project on fish and fish habitat is focused on the NSR.

Information describing aquatic communities in the NSR near the Project is available from the provincial FWMIS database and through field investigations completed by Golder Associates Ltd. (2009, 2010). The NSR contains important regional fish communities and fish habitat. In total, 30 species of fish have been identified in the NSR near the Sundance Thermal Electric Power Plant (Table 5.4; Golder 2001, 2007 and 2008; ESRD 2014a), several of which are of management importance because they are targeted by anglers (e.g., Goldeye [*Hiodon alosoides*], Northern Pike [*Esox lucius*], Walleye [*Sander vitreus*], and Mountain Whitefish [*Prosopium williamsoni*]). Several of these species are also potentially available for subsistence (i.e., First Nations) fisheries. There are also several species of conservation concern including Bull Trout (*Salvelinus confluentus*), Lake Sturgeon (*Acipenser fulvescens*), Sauger (*Sander canadensis*), Northern Redbelly Dace (*Phoxinus eos*) and Spoonhead Sculpin (Table 5.4). The Lake Sturgeon in the NSR has also been nominated for listing under the federal Species at Risk Act (SARA). None of the other species are listed under SARA.

The NSR is classified as a Class C waterbody with a Restricted Activity Period from September 16 to July 31 (Government of Alberta 2013b) in the vicinity of the water intake and blowdown structure for the Sundance Industrial Cooling Pond. The Class C designation indicates that aquatic habitat in the NSR is of moderate sensitivity to development activities, and that it has broadly distributed habitats supporting local fish species. Downstream from the intake and blowdown structures, the NSR is designated a Class A waterbody due to the presence of Lake Sturgeon habitat.

The habitat of the NSR in the vicinity of the Sundance Industrial Cooling Pond outfall was characterized as a meandering, relatively uniform channel, with a mean width of 120 m and frequently occurring confined channels with islands and bars (Golder 2001). This segment of river consists of long, moderately deep runs and some riffle habitat, consequently, habitat complexity is limited. There is likely spawning habitat available for most of the fish species present (Table 5.4.1).

Table 5.4.1: Fish Species Recorded in the North Saskatchewan River near the Project and Their Conservation Status

Common Name	Scientific Name	Status			
		Alberta Wildlife Act[a]	Status of Alberta Wild Species[b]	ACIMS Provincial Rank[c]	Species at Risk Public Registry[d]
Sport Fish[e]					
Bull Trout	*Salvelinus confluentus*	Species of Concern	Sensitive	S3	Special Concern
Burbot	*Lota lota*	-	Secure	S5	-
Brown Trout	*Salmo trutta*	-	Exotic/alien	SNA	-
Goldeye	*Hiodon alosoides*	-	Secure	S5	-
Lake Sturgeon	*Acipenser fulvescens*	Threatened	Undetermined	SU	Endangered[f]
Lake Whitefish	*Coregonus clupeaformis*	-	Secure	S5	-
Mooneye	*Hiodon tergisus*	-	Secure	S4	-
Mountain Whitefish	*Prosopium williamsoni*	-	Secure	S5	-
Northern Pike	*Esox lucius*	-	Secure	S5	-
Sauger	*Sander canadensis*	-	Sensitive	S3	-
Walleye	*Sander vitreus*	-	Secure	S4	-
Yellow Perch	*Perca flavescens*	-	Secure	S5	-
Sucker					
Longnose Sucker	*Catostomus catostomus*	-	Secure	S5	-
Mountain Sucker	*Catostomus platyrhynchus*	-	Secure	S4	Threatened[g]
Quillback	*Carpiodes cyprinus*	-	Undetermined	SU	-
White Sucker	*Catostomus commersonii*	-	Secure	S5	-
Shorthead Redhorse	*Moxostoma macrolepidotum*	-	Secure		-
Silver Redhorse	*Moxostoma anisurum*	-	Undetermined	SU	-
Forage					
Brook Stickleback	*Culaea inconstans*	-	Secure	S5	-
Emerald Shiner	*Notropis atherinoides*	-	Secure	S4	-
Fathead Minnow	*Pimephales promelas*	-	Secure	S5	-
Iowa Darter	*Etheostoma exile*	-	Secure	S5	-
Lake Chub	*Couesius plumbeus*	-	Secure	S5	-
Longnose Dace	*Rhinichthys cataractae*	-	Secure	S5	-
Northern Redbelly Dace	*Phoxinus eos*	-	Sensitive	S3	-
River Shiner	*Notropis blennius*	-	Undetermined	SU	-
Silver Redhorse	*Moxostoma anisurum*	-	Undetermined	SU	-
Slimy Sculpin	*Cottus cognatus*	-	Secure	S4	-
Spottail Shiner	*Notropis hudsonius*	-	Secure	S5	-
Spoonhead Sculpin	*Cottus ricei*	-	May be at risk	S3	Not at Risk
Trout-perch	*Percopsis omiscomaycus*	-	Secure	S5	-

[a] Government of Alberta 2010b.

[b] ESRD 2010.

[c] Government of Alberta 2012. Alberta Conservation Information Management System (ACIMS) ranking system: S5 (secure), S4 (apparently secure), S3 (known from 100 or fewer occurrences, or somewhat vulnerable due to other factors, such as restricted ranges, relatively small population sizes or other factors), S2 (vulnerable to extirpation because of other factor(s) or known from 20 or fewer occurrences), S1 (especially vulnerable to extirpation because of some other factor(s) or known from five or fewer occurrences), SU (taxon is currently unrankable due to lack of information or substantially conflicting information), and SNA (not applicable).

[d] Species at Risk Public Registry (2014).

[e] According to ESRD 2014b (Angling regulations).

[f] Saskatchewan River populations.

[g] Milk River populations.

The sections below assess the potential for adverse environmental effects to occur on fish and fish habitat in the NSR as a result of the construction and operation of the Project.

Treated wastewater from the Project will be conveyed through the Sundance Industrial Cooling Pond to the NSR by existing infrastructure that services the Sundance Thermal Electric Power Plant. No changes will be made to the existing blowdown infrastructure from the cooling pond outlet to the NSR. The Project will use the existing intake infrastructure in the NSR, and no changes to this infrastructure will be required as a result of the Project. Therefore, there will be no construction-related adverse environmental effects on fish or fish habitat in the NSR.

As described in Section 5.1.6, the predicted net change in flow in the NSR due to the Project is 0.07% of the mean annual flow, and 0.24% of the 7Q10 low flow. These changes are too small to be measureable, and therefore can be considered negligible. Withdrawal for the Project will not result in a change in the instantaneous withdrawal rate from the NSR. Therefore, the withdrawal for the Project from the NSR is not expected to result in adverse effects on fish or fish habitat.

The cooling water system for the Project has been designed to minimize thermal loading to the Sundance Industrial Cooling Pond. Changes in water temperature in the cooling pond and subsequently the NSR are expected to be negligible (i.e., no measureable change); and therefore, are unlikely to affect fish and/or fish habitat in the NSR (Golder 2012a).

The water quality modelling completed for the Project predicts that there will be measureable changes in some water quality parameters (i.e., chloride, sodium, sulphate, nitrate, nitrite, boron, and molybdenum) in the blowdown discharge to the NSR under worst-case conditions (Section 5.1.6). However, these changes are predicted to remain well below guidelines in the maximum Project discharge scenarios and are not expected to degrade water quality in the NSR compared to existing conditions. Therefore, effects of the Project on aquatic life in the NSR (including fish) due to changes in water quality are expected to be negligible.

As described in Section 5.1.7, none of the lakes within 30 km of the Project are sensitive to acid deposition and the predicted changes in acid deposition resulting from the Project were less than 1%. Based on the lack of sensitivity to acidification and the small predicted change in potential acid input to surrounding lakes, the Project is not expected to cause acidification in surrounding waterbodies; and therefore, the Project is not anticipated to results in adverse environmental effects to aquatic communities due to acidification of nearby waterbodies.

In summary, there are no adverse environmental effects on fish or fish habitat predicted on the Project site or in local natural watercourses or waterbodies. In addition, the Project is not expected to have adverse environmental effects on fish and fish habitat in the NSR.

5.1.8 Air Quality

The Project is located within the boundaries of Parkland County, which is part of the Capital Region Airshed Zone and the West Central Airshed Society (WCAS). Areas to the west and south of the Project include existing open-pit mining operations that support several operating power generation facilities.

Air quality within the Capital Region is monitored by several organizations, including ESRD, the Fort Air Partnership, Strathcona Industrial Association, the Alberta Capital Airshed Alliance, and the WCAS. The Project lies within the WCAS Airshed Zone, which collects air quality data through a combination of 13 continuous and 14 passive monitoring stations. Data from the WCAS can be evaluated to determine compliance with the Alberta Ambient Air Quality Objectives (AAAQOs) (ESRD 2013).

Seven continuous monitoring stations are located within approximately 50 km of the Project: Breton, Drayton Valley, Genesee, Meadows, Powers, Tomahawk and Wagner. These stations were considered to be representative of the air quality near the Project.

Emissions of nitrogen dioxide (NO_2) within the WCAS are primarily from combustion, including fuel combustion in vehicles and coal, oil and natural gas combustion within industrial facilities. The maximum 1-hour NO_2 concentrations between 2008 and 2012 exceeded the AAAQOs once at the Powers monitoring station (WCAS 2011). However, according to a WCAS spokesperson this unusually high recorded 1-hour concentration can be disregarded as a result of "likely irregular instrument behaviour" (Anderson 2014, pers. comm.). The 1-hour and annual NO_2 concentrations at all other monitoring stations within the WCAS network were below the AAAQOs (WCAS 2011).

Particulate matter ($PM_{2.5}$) within the WCAS is either emitted directly or formed in the atmosphere from precursors such as oxides of nitrogen (NO_x), sulphur dioxide (SO_2), ammonia (NH_3), and volatile organic compounds (VOCs). The highest 24-hour $PM_{2.5}$ concentration between 2008 and 2012 was observed at the Genesee monitoring station (WCAS 2011). All the monitoring stations exceeded the AAAQO at some point between 2008 and 2012. These high $PM_{2.5}$ events are typically attributed to forest fires (AHS 2012; WCAS 2010, 2011).

Ambient carbon monoxide (CO) concentrations are only measured at the Steeper monitoring station starting in September 2012. Because the CO data is insufficient and the Steeper monitoring station is located more than 50 km from the Project, CO concentrations from Steeper were not considered.

Substances that will be directly or indirectly released to the air by the Project in a typical operating day include combustion products such as NO_x, particulate matter (PM), and CO. These substances are released as a result of natural gas combustion in the CTGs, HRSGs, auxiliary boiler, and heaters.

The HRSGs and auxiliary boiler will be fitted with low emissions burners to reduce emissions of NO_x. The CTGs and auxiliary boiler will meet the CCME emission guidelines for stationary combustion turbines (CCME 1992) and industrial heaters and boilers (CCME 1998). A selective catalytic reduction (SCR) system, including an NH_3 injection skid, will be installed on the HRSGs to further reduce NOx emissions. The HRSG emissions will therefore also include trace amounts of NH_3.

An air quality assessment was completed for the Project according to the requirements of ESRD, and was submitted as an appendix to the Industrial Approval Application filed with ESRD on April 14, 2014. In that assessment, the CALPUFF dispersion model was used to model air emissions. Air quality effects associated with two cases were considered: the Baseline Case and the Application Case. The Application Case assesses predicted changes to air quality associated with existing and approved industrial and community emission sources within the air quality study area (i.e., the Baseline Case) in combination with the Project emissions under maximum normal operating conditions (i.e., full load).

The dispersion modelling results demonstrate that the predicted concentrations of NO_2, CO, and NH_3 within the 40 km by 40 km air quality study area are below respective AAAQOs for normal operations. In addition, the incremental increase in the NO_2, CO, and $PM_{2.5}$ concentration due to the Project is minimal (i.e., less than 1%). The dispersion modelling results demonstrate that the Baseline Case predicted concentrations of $PM_{2.5}$ exceed the 24-hour AAAQO for two days of the year (i.e., 0.55% of the time). The maximum $PM_{2.5}$ concentrations are primarily attributed to other industrial activity in the area. The $PM_{2.5}$ exceedance occurs due to the conservative nature of the assessment, which assumes all particulate emissions in the region are $PM_{2.5}$. With the addition of the Project, the frequency and location of the maximum 24-hour $PM_{2.5}$ predicted concentration remains unchanged from the Baseline Case.

Potential adverse changes to the air quality from the Project are therefore expected to be minimal, and no air treatment and control beyond the design considerations described in Section 2.1.2 are needed.

5.1.9 Historical Resources

TransAlta received clearance under the *Historical Resources Act* on May 16, 2014 for the Project site. One previously recorded historic resource site, an isolated find site, is reported to occur along the northeastern margin of the Project Site (Figure 3.0.3). However, Alberta Culture has denoted this archaeological site with a Historic Resource Value (HRV) rating of 0, indicating that this site has no interpretive significance regarding the prehistory of the province. The Project is not anticipated to adversely affect historic resources of a paleontological, archaeological or cultural nature.

5.2 Changes that may be Caused by the Project to Fish and Fish Habitat, Listed Aquatic Species and Migratory Birds

A description of any changes that may be caused as a result of carrying out the designated project to:

a. fish and fish habitat, as defined in the Fisheries Act;

b. aquatic species, as defined in the Species at Risk Act; and,

c. migratory birds, as defined in the Migratory Birds Convention Act, 1994.

5.2.1 Fish and Fish Habitat, as Defined in the *Fisheries Act*

The Project is unlikely to cause adverse environmental effects on fish and fish habitat either on or off the Project site, for the following reasons:

- No fish-bearing waters; and therefore, no fish habitat, are located on the Project site.
- Untreated wastewater will not be discharged directly to off-site fish-bearing waterbodies. Process-generated wastewater will be discharged to the Sundance Industrial Cooling Pond for treatment before it is discharged to the NSR. Although measureable changes are predicted in some water quality parameters in the blowdown discharge to the NSR under worst-case conditions (Section 5.1.6), these changes are not expected to degrade water quality in the NSR compared to existing conditions. Therefore, effects of the Project on aquatic life in the NSR (including fish) due to changes in water quality are expected to be negligible.
- Treated wastewater from the Project will be discharged through the Sundance Industrial Cooling Pond and to the NSR by existing infrastructure that services the Sundance Thermal Electric Power Plant. No changes will be made to the existing blowdown infrastructure from the cooling pond outlet to the NSR, including at the NSR outlet structure.
- Water withdrawal for the Project from the NSR will be through existing infrastructure, including the intake structure at the river and the makeup water pipeline to the Sundance Industrial Cooling Pond. No changes will be made to the existing intake infrastructure.
- Water withdrawal for the Project from the NSR is not expected to result in changes in water quantity in the NSR that might cause an effect on fish or fish habitat. The predicted net change in flow in the NSR due to the Project is 0.07% of the mean annual flow and 0.24% of the 7Q10 low flow. Typical changes in water level in the NSR due to the net river water withdrawal for the Project will be 0.4 mm for the mean annual flow and 0.8 mm for the 7Q10 flow.
- The additional water diverted from the NSR for the Project will be within the current Licence to Divert Water under the Alberta *Water Act* for the existing Sundance Thermal Electric Power Plant. Water withdrawal for the Project will not result in a change in the instantaneous withdrawal rate from the NSR.

- Potential aquatic effects of stormwater management are considered negligible based on the method of stormwater management. Clean runoff from the undeveloped north portion of the Project site will be routed through existing drainage courses to Wabamun Lake similar to pre-development conditions. Runoff from the developed areas of the Project site will be routed to the Sundance Industrial Cooling Pond.

5.2.2 Aquatic Species, as Defined in the *Species at Risk Act*

No aquatic species, as defined under the *Species at Risk Act,* were observed on the Project site.

As described in Section 5.1.7, 30 species of fish have been identified in the NSR near the Sundance Thermal Electric Power Plant (Table 5.4; Golder 2001, 2007 and 2008; ESRD 2011a) that are species of conservation concern under the *Species at Risk Act*. However, as described in Section 5.1.5 and 5.1.6, the Project will not result in significant changes to water quality or water quantity in the NSR. Therefore, the Project is not anticipated to result in adverse environmental effects to aquatic species, including listed species, in the NSR.

5.2.3 Migratory Birds, as Defined in the *Migratory Birds Convention Act*

The majority of the Project site consists of agricultural lands and is considered lower quality habitat for most wildlife communities. In addition, the areas of native vegetation (i.e., aspen and swamp) within the Project site are not unique in the Wabamun Lake area.

One small Class II wetland will be removed to accommodate the Project. TAMA Power will submit an application under the *Water Act* requesting approval to remove this wetland and will develop a wetlands compensation program according to ESRD requirements.

If possible, vegetation clearing will occur outside of the Restricted Activity Period of the *Migratory Birds Convention Act,* which is between mid-April and the end of August (Environment Canada 2014). If vegetation clearing activities are required during this period, a pre-construction survey for active nests will be completed by an avian biologist prior to any disturbance.

Given the low habitat quality and mitigation described above, the Project is not expected to adversely affect migratory birds within the Project site.

A small number of individuals of several migratory bird species were observed on and within the vicinity of the Sundance Industrial Cooling Pond, indicating the cooling pond is used to a limited extent by birds. As discussed in Section 5.1.6, the predicted incremental changes due to the Project in the quality of the water in the cooling pond are minor and would not be expected to cause an adverse environmental effect on birds using the cooling pond.

5.3 Changes that may be Caused by the Project to Federal Lands or Lands Outside of Alberta

A description of any changes to the environment that may occur, as a result of carrying out the designated project, on federal lands, in a province other than the province in which the project is proposed to be carried out, or outside of Canada.

The closest federal lands to the Project are the Wabamun 133A and 133B Indian Reserves immediately north of the Project site. Potential environmental effects on Aboriginal peoples are discussed in detail in Section 5.4.

The closest national park is Elk Island National Park approximately 103 km east of the Project. The Project is not expected to result in adverse environmental effects on Elk Island National Park due to its distance from the Project.

5.4 Changes that may be Caused by the Project to Aboriginal Peoples Resulting from Changes to the Environment

A description of the effects on Aboriginal peoples of any changes to the environment that may be caused as a result of carrying out the designated project, including effects on health and socio-economic conditions, physical and cultural heritage, the current use of lands and resources for traditional purposes, or any structure, site or thing that is of historical, archaeological, paleontological or architectural significance.

The Project is not expected to adversely affect Aboriginal peoples from changes to the environment for the following reasons:

- In general, the Project is a highly efficient combined cycle natural gas-fired power plant and TAMA Power has incorporated low emission technology into the design of the Project to limit potential adverse environmental effects.
- The two quarter-sections that will be used for the Project have been privately owned by TransAlta since the 1970s. The Project site has restricted access with a fence preventing entry from the adjacent roadway and it is not currently used for traditional purposes by Aboriginal peoples.
- TAMA Power received clearance for the Project under the *Historical Resources Act* on May 16, 2014. It is not anticipated that the Project will adversely affect historic resources of a paleontological, archaeological or cultural nature.
- As discussed in Sections 5.1.2 and 5.1.3, the Project site is predominantly agricultural land (i.e., hayfields or pasture) with minimal wildlife habitat. Consequently, the Project is unlikely to cause adverse environmental effects on the use of wildlife species by Aboriginal peoples.

- As described in Section 5.2.1, the Project is unlikely to cause adverse environmental effects on fish and fish habitat on the Project site, in nearby waterbodies or within the NSR.
- As discussed in Section 5.1.8, potential adverse changes to air quality from the Project are expected to be minimal and are not anticipated to adversely affect nearby Aboriginal communities or lands used by Aboriginal peoples.

6.0 PROPONENT ENGAGEMENT AND CONSULTATION WITH ABORIGINAL GROUPS

Experience has shown that engagement by proponents with Aboriginal groups early in the planning and design phases of a proposed project can benefit all concerned. By learning about Aboriginal interests and concerns and identifying ways to avoid or mitigate potential impacts, proponents can build these considerations into their project design, thereby improving project design and reducing the potential for future project delays and increased costs.

Provide the following information to the extent that it is available or applicable:

6.1 List of Potentially Affected and Interested Aboriginal Groups

A list of Aboriginal groups that may be interested in, or potentially affected by, the designated project.

The Aboriginal Consultation Office (ACO) has conducted a preliminary assessment to determine whether the Project requires consultation, which First Nations to notify, what level of consultation is required, and whether or not to delegate procedural aspects of consultation to the Project proponents. In November 2013, the ACO determined that the Project was at the lower end of the consultation spectrum because the Project is proposed on privately owned, cultivated land that is currently used for agricultural purposes. The ACO instructed TAMA Power to provide Paul First Nation (PFN) and Enoch Cree Nation (ECN) a notification letter including a plain language summary, to share public notices and to conduct full consultation if there is a request for more information and it is determined that there is a potential to adversely impact Treaty Rights and Traditional Uses. Contact information for PFN and ECN is provided in Table 6.1.1.

The CEA Agency advised TAMA Power in January 2014 that they would notify 13 additional First Nation and Métis groups during their review of the CEAA Project Description. These additional Aboriginal groups are listed in Table 6.1.2 and shown in Figure 3.0.1. TAMA Power has met with the CEA Agency to discuss the project and Aboriginal Engagement. TAMA Power has provided updates on Aboriginal engagement activities and the feedback/responses we have received from the communities. We will continue to share information with CEA Agency throughout the project development.

Table 6.1.1 First Nations Identified by the Alberta Aboriginal Consultation Office for Notification

Aboriginal Group	Contact Information
Paul First Nation	PO Box 89, Duffield, Alberta T0E 0N0 Contact: Dennis Paul, Consultation Coordinator Phone: (780) 892-2691 Chief Casey Bird, Councilors: Carl Bird, Faron Bull, Rod Burnstick, Myrna Rabbit-Bearhead, Brenda Rain
Enoch Cree Nation	PO Box 539, Enoch, Alberta T7X 3Y3 Contact: Leigh Ann Ward, Consultation Coordinator Phone: 780-470-4505 Chief Ronald Morin, Councilors: William Morin, Kelly Morin, Lorna Morin, Lorne Morin, Lyle Luke (Gee Joe), Ronald Morin (Sr.), Shane Morin, Wayne Morin (Chubby), John Thomas Jr., Nola Wanuch

Table 6.1.2 Aboriginal Groups Identified by the Canadian Environmental Assessment Agency for Notification

Aboriginal Group	Contact Information
Alexander First Nation	PO Box 3419, Morinville, Alberta T8R 1S3 Contact: Ken Arcand, Executive Director; Chief and Council Phone: 780-939-4757
Alexis Nakota Sioux Nation	PO Box 7, Glenevis, Alberta T0E 0X0 Contact: Duane Kootenay, Consultation Coordinator; Chief and Council Phone: 780-967-3573 ext 5
Ermineskin Cree Nation	PO Box 219, Maskwacis, Alberta T0C 1N0 Contact: Carol M. Wildcat, Consultation Coordinator; Chief and Council Phone: 780-362-2241
Louis Bull Tribe	PO Box 130, Maskwacis, Alberta T0C 1N0 Contact: Lorraine White, Consultation Coordinator; Chief and Council Phone: 780-585-3978
Montana First Nation	PO Box 70, Maskwacis, Alberta T0C 1N0 Contact: Suzanne Life, Consultation Coordinator; Chief and Council Phone: 780-938-8551
O'Chiese First Nation	PO Box 2127, Rocky Mountain House, Alberta T4T 1B6 Contact: Andrew Scott, Consultation & Lands Manager; Chief and Council Phone: 780-614-0167
Samson Cree Nation	PO Box 159, Maskwacis, Alberta T0C 1N0 Contact: Norine Saddleback, Consultation Coordinator; Chief and Council Phone: 780-335-3235
Sunchild First Nation	Box 747, Rocky Mountain House, Alberta, T4T 1A5 Contact: Byron Daychief, Consultation & Economic Dev. Officer; Chief and Council Phone: 403-846-2084

Table 6.1.2 Aboriginal Groups Identified by the Canadian Environmental Assessment Agency for Notification (continued)

Aboriginal Group	Contact Information
Stoney Fist Nation (Bearspaw, Chiniki, Wesley)	PO Box 340, Morley, Alberta T0L1N0 Contact: William Snow Chief and Council Phone: 587-580-6212
Tsuu T'ina Nation	9911 Chiila Blvd., Tsuu T'ina, Alberta T2W 6H6 Contact: Vanessa Crane Chief and Council Phone: 403-281-4455
Whitefish (Goodfish) Lake First Nation.	Box 271, Goodfish Lake, Alberta T0A 1R0 Contact: Darryl Steinhauer, Consultation Coordinator Phone: 780-636-7000
Métis Nation of Alberta Region 4	11724 – 95 Street, Edmonton, Alberta T5G 1L9 Contact: Cecil Bellrose, President James Atkinson, Vice-President Phone: 780-944-9288
Gunn Métis Local 55	PO Box 2057, Stony Plain, Alberta T7Z 1J9 Contact: Tracy Friedel Phone: 780-668-7898

6.2 Description Engagement or Consultation Activities Carried Out to Date with Aboriginal Groups

A description of the engagement or consultation activities carried out to date with Aboriginal groups, including:

a. names of Aboriginal groups engaged or consulted to date with regard to the designated project;

b. date(s) each Aboriginal group was engaged or consulted; and

c. means of engagement or consultation (e.g., community meetings, mail or telephone).

TransAlta, on behalf of the TAMA Power partnership, has been undertaking a comprehensive public consultation and stakeholder engagement program (consultation program) for the Project. The consultation program was designed to meet the requirements of a Participant Involvement Program ("PIP") in accordance with Section 3 and Appendix A of *AUC Rule 007: Applications for Power Plants, Substations, Transmission Lines and Industrial System Designations (*AUC 2014). Consultation with Aboriginal groups was planned according to direction provided through discussions with the Alberta ACO and the federal CEA Agency. First Nations consultation followed the principles of the *Government of Alberta's First Nations Consultation Policy on Land Management and Resource Development, 2005* and *Alberta's First Nations Consultation Guidelines on Land Management and Resource Development, 2007*.

Bi-monthly consultation logs for PFN and ECN are being maintained and have been submitted to the ACO. Before the consultation logs were submitted they were shared with the PFN and ECN consultation coordinators for review and comment. In general the consultation activities conducted to date have included mail, telephone, email, face-to-face meetings, Elders meetings, site visits, and a community open house. These activities are described in more detail below and a summary is provided in Table 6.2.1.

Paul First Nation's Chief and Council and the PFN consultation coordinator were sent a notification package on January 2, 2014, via registered mail. The package included a Project notification letter, an invitation to the public open house, the Project Information Booklet, and the AUC brochure *Public Involvement in Needs and Facilities Applications*. To date, no response has been received from the consultation coordinator. TAMA Power received a letter February 5, 2104, from the PFN Chief requesting an open house. The open house was held April 2, 2014, and summaries were sent to the PFN households in the Duffield postal code. TAMA Power is awaiting response from the PFN consultation coordinator or Band Manager as to what, if any, additional follow-up they request. As of June 16, 2014, TAMA Power has not received an indication that PFN would like to meet to further discuss the Project.

Enoch Cree Nation's Chief and Council and the ECN consultation coordinator were sent a notification package on January 2, 2014 via registered mail. The package included a Project notification letter, an invitation to the public open house, the Project Information Booklet, and the AUC brochure *Public Involvement in Needs and Facilities Applications*. The ECN responded to the Project notification package on January 23, 2014, and requested further consultation. An introductory meeting was held with the ECN consultation coordinator on January 27, 2014. ECN provided a scope of work that included Elders meetings, interviews and mapping sessions. The scope of work is anticipated to be completed by the end of July. TAMA Power completed an Elders meeting and site visits to the Project site and to a natural-gas co-generation facility near Fort Saskatchewan on April 16 and 17, 2014. Meeting notes have been prepared and shared with the consultation coordinator. A second Elders meeting and mapping session is scheduled for June 24. A project review meeting will be held by the end of July.

Table 6.2.1 Consultation Activities Carried Out with Paul First Nation and Enoch Cree Nation

Aboriginal Group	Key Consultation Activities (for more detail refer to the bi-monthly consultation report)	
	Date	**Description**
Paul First Nation	Oct 21, 2013 Jan 2, 2014 Jan 6, 2014 Jan 20, 2014 Feb 5, 2014 March 4, 2014 April 2, 2014 April 29, 2014 May 1, 2014 May 5,2014 May 7, 2014	• Initial contact email • Notification package mailed via registered mail to consultation coordinator and each member of Chief and Council • Notification package emailed to the consultation coordinator • Advertisement of public open house emailed to consultation coordinator • Letter from PFN Chief Casey Bird requesting open house • Bi-monthly consultation report sent to consultation coordinator for review • PFN Open House held in the community • Summary of PFN Open House sent to consultation coordinator • Copies of the PFN Open House summary mailed to PFN members in the Duffield postal code and distributed around the community • AUC application and environmental studies sent to consultation coordinator • Bi-monthly consultation report sent to consultation coordinator for review
Enoch Cree Nation	Dec 16, 2013 Jan 2, 2014 Jan 6, 2014 Jan 20, 2014 Jan 23, 2014 Jan 27,2014 Jan 31, 2014 March 5, 2014 April 16 & 17, 2014 April 30, 2014 May 7, 2014	• Initial contact email • Notification package mailed via registered mail to consultation coordinator and each member of Chief and Council • Notification package emailed to the consultation coordinator • Advertisement of public open house emailed to consultation coordinator • Letter from ECN requesting consultation • Introductory meeting with consultation coordinator • Scope of work provided by consultation coordinator • Bi-monthly consultation report sent to consultation coordinator for review • Elders meeting & site tours • AUC application and environmental studies sent to consultation coordinator • Bi-monthly consultation report sent to consultation coordinator for review

As identified in Section 6.1, the CEA Agency indicated it would notify 13 additional Aboriginal groups during its review of this Project Description. At TAMA Power we believe in early engagement and decided to provide an information package to these additional Aboriginal groups at the same time as the public and other stakeholders. Notifications were sent on January 7, 2014, via registered mail to the Aboriginal groups listed in Table 6.1.2 (one letter to Chief and Council and one letter to the consultation coordinator for the First Nations; one letter to the Métis President and Vice President for Region 4 and Gunn Metis Local 55).

The engagement activities conducted to date with these additional Aboriginal groups are described in Table 6.2.2. In general, engagement has involved the mailing of Project information packages followed up with explanatory e-mails. TAMA Power has responded to requests for one-on-one meetings to discuss the project further.

As of May 26, 2014, no response has been received from the Alexander First Nation, Louis Bull Tribe, Sunchild First Nation, Whitefish (Goodfish) Lake First Nation, nor Métis Nation of Alberta Region 4.

Table 6.2.2 Engagement Activities Carried Out with Aboriginal Groups Identified by the Canadian Environmental Assessment Agency

Aboriginal Group	Key Consultation Activities (for more detail refer to the bi-monthly consultation report)	
	Date	**Description**
Alexis Nakota Sioux Nation	Dec 16, 2014 Jan 2, 2014 Jan 16,2014 Jan 20, 2014 March 10, 2014	• Initial contact email • Notification package mailed via registered mail to consultation coordinator and to the Chief and Council • Notification package emailed to the consultation coordinator • Advertisement of public open house emailed to consultation coordinator • Project meeting held
Ermineskin Cree Nation	Jan 7, 2014 Jan 17,2014 Jan 17, 2014 March 5, 2014	• Notification package mailed via registered mail to consultation coordinator and to the Chief and Council • Notification package emailed to the consultation coordinator • Response from consultation coordinator requesting meeting • Project meeting held
Montana First Nation	Jan 7, 2014 Jan 17,2014 Feb 4, 2014 March 11, 2014	• Notification package mailed via registered mail to consultation coordinator and to the Chief and Council • Notification package emailed to the consultation coordinator • Response from consultation coordinator requesting meeting • Project meeting held
O'Chiese First Nation	Jan 7, 2014 Jan 17,2014 Jan 13, 2014 May 22, 2014	• Notification package mailed via registered mail to consultation coordinator and to the Chief and Council • Notification package emailed to the consultation coordinator • Response from consultation coordinator requesting meeting • Project meeting held
Samson Cree Nation	Jan 7, 2014 Jan 17,2014 Jan 17, 2014 Jan 22, 2014 April 7, 2014	• Notification package mailed via registered mail to consultation coordinator and to the Chief and Council • Notification package emailed to the consultation coordinator • Response from consultation coordinator requesting meeting • Project meeting held • Consultation coordinator sent follow-up email requesting to discuss next steps
Stoney First Nation (Bearspaw, Chiniki, Weasley)	Jan 7, 2014 Jan 17,2014 Jan 20, 2014 March 12, 2014 May 14, 2014	• Notification package mailed via registered mail to consultation coordinator and to the Chief and Council • Notification package emailed to the consultation coordinator • Project meeting held • 2 project meeting held • Stoney Information Letter summarizing project information sent to consultation coordinator
Tsuu T'ina	Jan 7, 2014 Jan 17,2014 Jan 28, 2014 Jan 30, 2014	• Notification package mailed via registered mail to consultation coordinator and to the Chief and Council • Notification package emailed to the consultation coordinator • Response from consultation coordinator requesting additional information • Email response to request for additional information • As of May 26, 2014, no additional engagement has been requested
Gunn Metis Local 55	Jan 7, 2014 Jan 17,2014 Feb 24, 2014 March 17, 2014	• Notification package mailed via registered mail to consultation coordinator and to the Chief and Council • Notification package emailed to the consultation coordinator • Response from Gunn Metis requesting to meet • Meeting held but not about the Project, at the request of Gunn Metis

6.3 Key Comments and Concerns of Aboriginal Groups

An overview of key comments and concerns expressed by Aboriginal groups identified or engaged to date, including any responses provided to these groups.

TransAlta, on behalf of TAMA Power, has been undertaking a comprehensive public, Aboriginal and stakeholder engagement program for the Project. Aboriginal groups, as well as other stakeholders, have expressed an interest in knowing more about the Project, the potential environmental impacts, as well as the local benefits (e.g., employment and procurement opportunities). Throughout the Aboriginal engagement program, TAMA Power has answered questions, documented concerns and followed up on outstanding concerns with the goal of addressing these concerns. TAMA Power is committed to ongoing engagement throughout the life of the Project and to maintaining and documenting the engagement process.

Questions have been raised about water use and discharge, air quality, potential impacts to regional waterfowl, fish and waterbodies, noise during construction, and local traffic. TAMA Power technical experts have been available to answer the questions that have been raised by Aboriginal groups. In general, Aboriginal groups are pleased to know that TAMA Power will operate within the existing Sundance water licence and will not withdraw or discharge into the Lake Wabamun. They have also supported the transition from coal to natural gas fired power generation.

To date, no Project-specific concerns have been raised by the ACO or CEA Agency-identified Aboriginal groups. TAMA Power is working with PFN and ECN, as required by the ACO, to discuss and resolve any concerns they may have regarding the potential for adverse impacts on Treaty Rights and Traditional Uses. The concerns that have been raised thus far are general in nature regarding environmental impacts, cumulative effects, and traditional land use.

The PFN and ECN and five of the CEA Agency-identified First Nations have expressed concern that the Project may impact their Treaty Right to hunt, fish and trap on unoccupied Crown land or lands where they have right of access. The land proposed for the Project has been owned by TransAlta since the 1970s and has restricted access (it is fenced and leased to a local landowner for cultivation). TransAlta received clearance under the *Historical Resources Act* for the Project site on May 16, 2014.

As described in Section 6.2, TAMA Power has provided information regarding the potential environmental effects of the Project through direct mail-outs, meetings, public open houses, and visits to the Project site. TAMA Power is committed to ongoing engagement throughout the life of the Project with all affected Aboriginal communities. TAMA Power has incorporated low emission technology into the design of the Project to limit potential environmental effects. The Project team has been taking these issues into account during the preliminary engineering phase of the Project. As described in Section 5.4, the Project is not expected to adversely affect Aboriginal peoples from changes to the environment.

6.4 Aboriginal Consultation and Information Gathering Plan

A consultation and information-gathering plan that outlines the ongoing and proposed Aboriginal engagement or consultation activities, the general schedule for these activities and the type of information to be collected (or, alternatively, an indication of why such engagement or consultation is not required).

TAMA Power developed an Aboriginal engagement plan which aligned with the direction provided by the ACO in November 2013 and the CEA Agency in January 2014. TAMA Power has been actively implementing that plan as described in Section 6.2.

TAMA Power is awaiting a response from the PFN consultation coordinator and/or Band Manager as to what, if any, additional follow-up they request (e.g., meeting with consultation coordinator and/or Chief and Council). As of May 26, 2014, TAMA Power has not received an indication that PFN would like to meet to further discuss the Project.

Based on the initial scope of work proposed by the ECN, TAMA Power anticipates the next steps will include Elder interviews and a follow-up meeting to answer questions and discuss any concerns.

TAMA Power will also continue to send Project updates produced for the public consultation program to the PFN and ECN.

Should the Project advance to a federal review, TAMA Power is prepared to share the regulatory applications and associated environmental studies filed for the Project with the Aboriginal groups identified by the CEA Agency (Table 6.1.2) and that have expressed an interested in the Project. TAMA Power is also exploring the opportunity for a Project site visit with representatives from interested Aboriginal groups after spring and at a time that minimizes potential impacts to the existing hay field.

7.0 CONSULTATION WITH THE PUBLIC AND OTHER PARTIES (OTHER THAN ABORIGINAL CONSULTATION INCLUDED ABOVE)

Provide the following information to the extent that it is available or applicable:

7.1 Key Comments and Concerns by Stakeholders

An overview of key comments and concerns expressed to date by stakeholders and any responses that have been provided.

TransAlta on behalf of TAMA Power has taken a proactive approach to public consultation/stakeholder engagement for the Project since November 2013. The scope of the engagement program has included preparation and distribution of information about the Project to local landowners, residents and occupants within 2,000 m of the Project site boundary, and other interested parties.

The environmental concerns expressed to the Project team relate to potential effects on air quality, noise, water quality and quantity, aquatic resources, and cumulative effects. The Project team has been taking these issues into account during the preliminary engineering phase of the Project. Concerns specific to Project construction are also being taken into account.

Throughout the consultation program, TAMA Power has answered questions, documented concerns and followed up on outstanding concerns. TAMA Power is committed to ongoing engagement throughout the life of the Project and to maintaining and documenting the public consultation/stakeholder engagement process.

7.2 Overview of Any Ongoing or Proposed Stakeholder Consultation Activities

An overview of any ongoing or proposed stakeholder consultation activities.

TAMA Power is committed to sharing information about the Project as it becomes available and this information will be published on the Project website and provided in future mailouts, newsletters, e-mails and meetings. TAMA Power will continue to consult with landowners, residents and occupants within 2,000 metres of the Project and respond to information requests, address concerns and seek to find reasonable solutions to concerns.

TAMA Power will continue to provide the Project toll-free telephone number and e-mail as an avenue for the public to ask questions and seek further information. TAMA Power is committed to maintaining a record of all stakeholder interactions and activities in its stakeholder database as described in 7.1.2.

7.3 Consultations with Other Jurisdictions

A description of any consultations that have occurred with other jurisdictions that have environmental assessment or regulatory decisions to make with respect to the project.

TAMA Power has discussed the Project with a number of regulators and government representatives. The three primary regulators that will make environmental assessment or regulatory decisions about the Project are the ESRD, the AUC and Parkland County.

TAMA Power has consulted with ESRD on multiple occasions. An introductory meeting was held on March 6, 2014, to introduce TAMA Power and the Project. The Project team also provided an overview of the potential environmental effects of the Project and how TAMA Power plans to mitigate these effects. On March 25, 2014, ESRD determined that an Environmental Impact Assessment report is not required for the Project under EPEA. Therefore, the primary application to ESRD under EPEA is the Industrial Approval Application which was submitted to ESRD on April 14, 2014.

TAMA Power met with the AUC on February 21, 2014, to introduce TAMA Power and the Project. TAMA Power submitted an application under the *Hydro and Electric Energy Act* to the AUC on April 22, 2014.

TAMA Power has met with Parkland County on multiple occasions. TAMA Power filed a Development Permit Application with Parkland County on February 12, 2014. Parkland County supports the Project and has stated that the Project aligns with their strategic priorities to advance industry while protecting the environment.

8.0 REFERENCES

8.1 Literature Cited

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APPENDIX A

LEGAL LAND TITLE FOR NW AND SW 10 52 04 W5M

LAND TITLE CERTIFICATE

S

LINC	SHORT LEGAL	TITLE NUMBER
0028 449 692	5;4;52;10;NW	002 191 761 +9

LEGAL DESCRIPTION

MERIDIAN 5 RANGE 4 TOWNSHIP 52
SECTION 10
ALL THAT PORTION OF THE NORTH WEST QUARTER
NOT COVERED BY ANY OF THF WATERS OF LAKE WABAMUN AS SHOWN ON PLAN OF
SURVEY OF THE SAID TOWNSHIP DATED ON THE 5TH DAY OF MAY A.D. 1906
CONTAINING 63.2 HECTARES (156.30 ACRES) MORE OR LESS
EXCEPTING THEREOUT: HECTARES (ACRES) MORE OR LESS
A) PLAN 0022616 ROAD 2.22 5.49
EXCEPTING THEREOUT ALL MINES AND MINERALS

ESTATE: FEE SIMPLE

MUNICIPALITY: PARKLAND COUNTY

REFERENCE NUMBER: 752 090 122

REGISTERED OWNER(S)

REGISTRATION	DATE(DMY)	DOCUMENT TYPE	VALUE	CONSIDERATION
002 191 761	10/07/2000	ROAD PLAN		

OWNERS

TRANSALTA CORPORATION.
OF P.O. BOX 1900, STATION M
110-12 AVENUE SW
CALGARY
ALBERTA T2P 2M1
(DATA UPDATED BY: CHANGE OF NAME 092181212)

ENCUMBRANCES, LIENS & INTERESTS

REGISTRATION NUMBER	DATE (D/M/Y)	PARTICULARS
812 115 317	20/05/1981	UTILITY RIGHT OF WAY GRANTEE - ATCO GAS AND PIPELINES LTD. (DATA UPDATED BY: TRANSFER OF UTILITY RIGHT

(CONTINUED)

REGISTRATION
NUMBER DATE (D/M/Y) PARTICULARS

OF WAY 012029652)

102 240 993 12/07/2010 CAVEAT
RE : RIGHT OF FIRST REFUSAL
CAVEATOR - DAVID CYMBALUK
CAVEATOR - PHILIP CYMBALUK
BOTH OF:
102, 5300-50 STREET
STONY PLAIN
ALBERTA T7Z1T8

TOTAL INSTRUMENTS: 002

THE REGISTRAR OF TITLES CERTIFIES THIS TO BE AN ACCURATE REPRODUCTION OF THE CERTIFICATE OF TITLE REPRESENTED HEREIN THIS 26 DAY OF MAY, 2014 AT 02:19 P.M.

ORDER NUMBER: 26040663

CUSTOMER FILE NUMBER:

END OF CERTIFICATE

LAND TITLE CERTIFICATE

S

LINC	SHORT LEGAL	TITLE NUMBER
0022 690 770	5;4;52;10;SW	752 096 004

LEGAL DESCRIPTION

MERIDIAN 5 RANGE 4 TOWNSHIP 52
SECTION 10
QUARTER SOUTH WEST
CONTAINING 65.2 HECTARES (161 ACRES) MORE OR LESS
EXCEPTING THEREOUT: 0.68 OF AN ACRE, MORE OR LESS
AS SHOWN ON ROAD PLAN 1381AG
EXCEPTING THEREOUT ALL MINES AND MINERALS

ESTATE: FEE SIMPLE

MUNICIPALITY: PARKLAND COUNTY

REGISTERED OWNER(S)

REGISTRATION	DATE(DMY)	DOCUMENT TYPE	VALUE	CONSIDERATION
752 096 004	31/07/1975		$64,000	

OWNERS

TRANSALTA CORPORATION.
OF BOX 1900, STN "M"
110-12 AVE SW
CALGARY
ALBERTA T2P 2M1
(DATA UPDATED BY: CHANGE OF NAME 092213014)

ENCUMBRANCES, LIENS & INTERESTS

REGISTRATION NUMBER	DATE (D/M/Y)	PARTICULARS
812 115 705	20/05/1981	UTILITY RIGHT OF WAY GRANTEE - ATCO GAS AND PIPELINES LTD. AS TO PORTION OR PLAN:8120780 (DATA UPDATED BY: TRANSFER OF UTILITY RIGHT OF WAY 012029654)
102 240 993	12/07/2010	CAVEAT

(CONTINUED)

REGISTRATION
NUMBER DATE (D/M/Y) PARTICULARS

RE : RIGHT OF FIRST REFUSAL
CAVEATOR - DAVID CYMBALUK
CAVEATOR - PHILIP CYMBALUK
BOTH OF:
102, 5300-50 STREET
STONY PLAIN
ALBERTA T7Z1T8

TOTAL INSTRUMENTS: 002

THE REGISTRAR OF TITLES CERTIFIES THIS TO BE AN ACCURATE REPRODUCTION OF THE CERTIFICATE OF TITLE REPRESENTED HEREIN THIS 26 DAY OF MAY, 2014 AT 02:18 P.M.

ORDER NUMBER: 26040652

CUSTOMER FILE NUMBER:

END OF CERTIFICATE

APPENDIX B

ENVIRONMENTAL IMPACT ASSESSMENT DECISION LETTER FROM ALBERTA ENVIRONMENT AND SUSTAINABLE RESOURCE DEVELOPMENT

Environment and Sustainable Resource Development

Operations
Provincial Programs
111 Twin Atria Building
4999 - 98 Avenue
Edmonton, Alberta T6B 2X3
Canada
Telephone: 780-427-5828
Fax: 780-427-9102
www.environment.alberta.ca

March 25, 2014

Brian Novak
Manager, EH&S
Transalta
Via Email: Brian.Novak@transalta.com

Dear Mr. Novak:

Further to your email of February 13, 2014, I wish to advise you that pursuant to Section 44 of the *Environmental Protection and Enhancement Act* (EPEA), I have considered the application of the environmental assessment process to your proposed TAMA Sundance 7 Project. This activity is not a mandatory activity for the purposes of environmental assessment. Having regard to the consideration set out in Section 44(3) of EPEA, I have decided that further assessment of the activity is not required. Therefore, a screening report will not be prepared and an environmental impact assessment report is not required.

Please note that this decision is based on the current information about the project and that I reserve the ability to review this decision should different and/or new information come to light. Section 47 of EPEA gives the Minister of Environment and Sustainable Resources Development the authority to order the preparation of an environmental impact assessment report under appropriate circumstances, notwithstanding a director's decision to not require an environmental impact assessment report.

Although an environmental impact assessment report is not required for this project, Alberta Environment and Sustainable Resource Development may have other regulatory requirements under EPEA and/or the *Water Act* and/or the *Public Lands Act*. For more information about regulatory requirements under EPEA and/or the *Water Act*, please contact Guangyu Yan at (780) 960-8626. If you have questions about the regulatory requirements under the *Public Lands Act* please email the Major Industrial Applications Unit directly at srd.majorindustrialapplications@gov.ab.ca.

TransAlta should also note that Alberta Environment and Sustainable Resource Development's section (Part III) of the *Government of Alberta's First Nations Consultation Guidelines on Land Management and Resource Development* may apply to this project. For more information about the First Nations consultation process, please contact Donna Hovsepian at (403) 340-7750.

At this time, I recommend that TransAlta contact Mark Kavanagh (mark.kavanagh@auc.ab.ca or 403-592-4446) with the Alberta Utilities Commission (AUC) to discuss any potential application requirements under AUC Rule 7 for Electrical Facilities.

TransAlta should also contact Shauna Sigurdson (780-495-2236) with the Canadian Environmental Assessment Agency to discuss the potential submission of a federal project description and any federal environmental assessment requirements under the *Canadian Environmental Assessment Act, 2012*.

If you have any questions or need further information please contact me at 780-427-9116.

Sincerely,

Corinne Kristensen
Acting Environmental Assessment Team Leader
Provincial Programs
(Designated Director, *Environmental Protection and Enhancement Act*)

cc: M. Kavanagh (AUC)
S. Sigurdson (CEAA)
N. Hollands (ESRD)
G. Yan (ESRD)
W. Dehod (ESRD)
D. Hovsepian (ESRD)
M. Daneluk (ESRD)
Srd.majorindustrailapplications@gov.ab.ca