



**Keystone
Environmental**
Knowledge-Driven Results



***Canadian Environmental Assessment Agency
Project Description
Rail Terminal Development Project***

**1310 Kootenay Way
Kamloops, BC**

Prepared for: North Thompson Rail Terminals Inc.

**Project No. 14230
November 2018**

Environmental Consulting • Engineering Solutions • Environmental Planning

Suite 320
4400 Dominion Street
Burnaby, British Columbia
Canada V5G 4G3

Telephone: 604 430 0671
Facsimile: 604 430 0672
info@keystoneenvironmental.ca

EXECUTIVE SUMMARY

North Thompson Rail Terminals Inc. (NTRT) is proposing to construct and operate a permanent, multi-commodity transloading rail yard, with the overarching objective of facilitating increased efficiencies in the transfer of commodities throughout British Columbia. Pursuant to Section 25(b) of the Regulations Designating Physical Activities, the construction, operation, decommissioning and abandonment of a new railway yard with seven sidings or more or a total track length of 20 km or more is listed as a Designated Project.

The objective of this report is to provide the information required for the Canadian Environmental Assessment Agency (“the Agency”) to review the nature and extent of the proposed work in order to determine if an environmental assessment is required. The Agency requires a project description report in order to determine if the North Thompson Rail Terminals Inc. Development Project (“the Project”) requires an environmental assessment as defined under the *Canadian Environmental Assessment Act*.

The Project is located on a 27 ha parcel of land within the Tk'emlups te Secwepemc Indian Reserve (Kamloops Indian Band) in the general vicinity of Kamloops BC (“the Site”). The new transloading rail yard includes the construction of 41 tracks, totalling 14.6 km of track, including 14 transloading tracks, two repair tracks, balance storage, staging, and leads for ingress/egress; 36,600 m² of laydown areas for commodity loading/off-loading; a 4,600 m² administration building; a site access road; stormwater management system; and, areas for future expansions and client sub-leasing. Construction is anticipated to start March 1, 2019, with divisions of the development projected to be operational by mid-2019. The Site is located in a rural setting dedicated for agricultural and industrial use. Existing land uses include a remnant agricultural field dominated by invasive and agronomic species, a single family residential home, and a debris pile.

The Site is located on a parcel of land currently held through a 99-year prepaid lease between NTRT and the Government of Canada. Environmental provisions outlined in the lease include the removal and remediation of debris piles from the Site. At this time, there is no proposed or anticipated federal financial support that federal authorities are, or may be, providing to support the carrying out of the Project.

The existing conditions and impact of the proposed development on the following biophysical environmental features were evaluated in preparing the enclosed Project Description: climate, air quality, noise, surface watercourses and drainage, soil and terrain, vegetation, wildlife and habitat use, and fish and fish habitat.

The Site has been previously used for agricultural activities, which have influenced the existing conditions and values of the landscape. Due to the degree of previous disturbance, limited abundance of wildlife habitat, lack of aquatic features for fish and fish habitat, and proximity of anthropogenic disturbances from neighbouring industrial sites, impacts to the environment are anticipated to be minimal and mitigatable through implementation of best management practices and adherence to applicable environmental legislation.

Engagement and consultation with the Kamloops Indian Band has been ongoing and is expected to continue throughout the construction and operational phases of the proposed work. The Kamloops Indian Band was involved in the inception and signing of the lease agreement, which includes the operation of a rail terminal as a permissible use of the land. It is anticipated that the proposed development will result in the creation of 20+ jobs during construction and regular operations. The North Thompson Rail Terminals Inc. will continue to engage with the KIB and identify opportunities to build skills and provide employment within the First Nations Community.

This Executive Summary is subject to the same general limitations as contained in the report and must be read in conjunction with the entire report.

TABLE OF CONTENTS

	Page
EXECUTIVE SUMMARY	i
TABLE OF CONTENTS	iii
List of In-Text Tables.....	v
List of Appended Figures	v
List of Appendices.....	v
LIST OF ACRONYMS.....	vi
1. GENERAL INFORMATION AND CONTACTS	1
1.1 Nature of the Project	1
1.2 Contact Information	2
1.3 Existing Environmental Assessments	3
2. PROJECT INFORMATION	4
2.1 Project Context and Objectives	4
2.2 Regulatory Requirements.....	4
2.2.1 Canadian Environmental Assessment Act	4
2.2.2 Regulatory Framework	4
2.3 Consultation Processes.....	8
3. PROJECT LOCATION	10
3.1 Land and Water Use	12
3.1.1 Legal Description of the Land	12
3.1.2 Water Use Licences	12
3.1.3 Land Use Plans	12
3.2 Physical Works and Activities.....	13
3.3 Production Capacity	17
3.4 Emissions, Discharges and Waste.....	17
3.4.1 Air Emissions.....	17
3.4.2 Solid Waste	18
3.4.3 Liquid Waste.....	18
3.5 Project Scheduling and Main Activities	19
3.5.1 Consultation and Engagement	19

TABLE OF CONTENTS (CONT'D)

	Page
3.5.2 Pre-Construction Preparation	19
3.5.3 Site Preparation	19
3.5.4 Construction (Phases 1 through 3)	20
3.5.5 Operational	20
3.5.6 Decommissioning/Site Restoration	20
4. FEDERAL INVOLVEMENT	22
5. ENVIRONMENTAL IMPACTS	23
5.1 Existing Conditions	23
5.2 Climate	24
5.2.1 Potential Impacts	24
5.3 Air Quality	24
5.3.1 Potential Impacts	25
5.4 Noise	25
5.4.1 Potential Impacts	26
5.5 Surface Watercourses and Drainage	26
5.5.1 Potential Impacts	27
5.6 Soil and Terrain	27
5.6.1 Potential Impacts	27
5.7 Vegetation	27
5.7.1 Potential Impact	28
5.8 Wildlife and Habitat Use	28
5.9 Fish and Fish Habitat	31
5.9.1 Potential Impacts	31
6. ENGAGEMENT AND CONSULTATION WITH ABORIGINAL GROUPS AND OTHER STAKEHOLDERS	32
6.1 First Nations	32
6.1.1 Current Use of Lands and Resources for Traditional Purposes	33
6.1.2 Health and Socioeconomic Conditions of Indigenous Peoples	33
6.1.3 Physical and Cultural Heritage of Indigenous Peoples	34

TABLE OF CONTENTS (CONT'D)

	Page
6.1.4 Historical, Archaeological, Palaeontological, Architectural Significance	34
6.2 Additional Stakeholder Consultations.....	34
7. LIMITATIONS.....	35
8. REFERENCES.....	36

LIST OF IN-TEXT TABLES

Table 1	Summary of Regulatory Framework.....	5
Table 2	Distances between Site and Indian Reserves within 50 km	10
Table 3	Distances to Nearby Federal Sites on Figure 3.....	11
Table 4	Project Components	13
Table 5	Approximate Track Lengths	14
Table 6	Retention Pond Dimensions	16
Table 7	Ditches in Stormwater Management System	16
Table 8	Estimated CO ² Equivalent Emissions.....	18
Table 9	Proposed Track Lengths by Phase	19
Table 10	Neighbouring Potential Sources of Noise.....	25
Table 11	Potential for SARA- or Provincially-Listed Species to Occur on Site.....	29
Table 12	Kamloops Indian Band Consultations Conducted to Date.....	32

LIST OF APPENDED FIGURES

Figure 1	Site Map
Figure 2	First Nations Map
Figure 3	Federal Sites Map
Figure 4	Kamloops Map

Drawing No. E01	Site Plan and Drainage
Drawing No. C03	Overall Site Plan with Project Phasing

LIST OF APPENDICES

Appendix 1	Selected Site Photographs
Appendix 2	Figures

LIST OF ACRONYMS

AANDC	Aboriginal Affairs and Northern Development Canada
ATRIS	Aboriginal and Treaty Rights Information System
CEAA	<i>Canadian Environmental Assessment Act</i>
CN	Canadian National Railway Company
KIB	Kamloops Indian Band
KLRMP	Kamloops Land and Resource Management Plan
NTRT	North Thompson Rail Terminals Inc.

1. GENERAL INFORMATION AND CONTACTS

North Thompson Rail Terminals Inc. (NTRT) is proposing to construct a new transloading rail terminal (the Project) at 1310 Kootenay Way, Kamloops, BC (the Site). Keystone Environmental Ltd. (Keystone Environmental) was retained by the NTRT to complete this Project Description for review by the Canadian Environmental Assessment Agency (the Agency). This Project Description has been prepared in accordance with the Prescribed Information for the Description of a Designated Project (Ministry of Justice, 2018a), as the Project is considered a 'Designated Project' under the *Canadian Environmental Assessment Act* (Ministry of Justice, 2012b). The objective of this report is to provide the information required for the Canadian Environmental Assessment Agency to review the nature and extent of the proposed work in order to determine if an environmental assessment is required.

This Project Description has been prepared as a desktop and field study to identify existing ecological and biophysical conditions at the Site. A review was conducted of information available through online databases and background reports regarding existing habitat values, potential ecological sensitivities, species at risk and archaeological concerns within the railyard development alignment. A Site survey was conducted to ground-truth background information and collect additional data to evaluate the potential effects of the Project on ecological sensitivities, vegetation and wildlife.

The Project is currently in the planning stages. As such, decisions on the placement of Project infrastructure, materials, and timelines have not been finalized. This report therefore seeks to outline the general scope of work and various options under consideration for each Project component. It is expected that as the Project design advances, these details will be refined. This report aims to provide the information required to evaluate the nature and extent of proposed work for three planned phases of construction, regular operations of the rail terminal, and future decommissioning/abandonment.

1.1 Nature of the Project

The Project is a proposal to build and operate a permanent, multi-commodity transloading rail yard within Kamloops, BC, with the overarching goal of facilitating increased efficiencies in the transfer of commodities throughout British Columbia. The Project will be connected to the existing Canadian National Railway Company (CN) mainline located on the eastern shore of the North Thompson River, Kamloops, British Columbia (Figure 1). The facility is anticipated to provide railcar storage, switching, trans-loading and intermodal and container stuffing for a variety of prospective clients, and will be operated under an adaptive management framework that aims to accommodate commodities such as dry and liquid bulk products, refined and unrefined petro-chemical products, forest products, metals and materials, grain and specialty crops, and automotive materials. The railyard will be independently owned and operated by NTRT.

Components of the proposed Project will include:

- The construction of a new rail yard and ancillary facilities, with designated areas for railcar transloading, switching, storage, and repair;
- The installation of tie-in's to an existing CN rail line;
- The installation of electric power infrastructure upgrades;
- The development of a storm water management system, including ditches to convey storm water, contaminate containment, and a retention pond; and
- The construction of commodity laydown areas and access roads.

The Project will be bounded within approximately 27 hectares of land held through a 99-year lease between the CRT and the federal Government of Canada (Figure 1). The Site has historically been used for agricultural purposes, and a large remnant cultivated field dominated by invasive and agronomic species encompasses the majority of the property (Photograph 1). A single-family residential home (Photograph 2), temporary site office (trailer) and barn are located within the property, and a material debris piles has been established along the eastern Site perimeter (Photograph 3 and 4).

The general Site and a conceptual layout of the proposed facility are provided in Drawing No. E01, Sheet No. 01 of 02, and Drawing No. C03, Sheet No. 03 of 43, respectively (Appendix 2). Project activities and components are further discussed in Section 3.5.

1.2 Contact Information

Project Name

Rail Terminal Development Project

Proponent Name and Address

North Thompson Rail Terminals Inc.
1310 Kootenay Way, Kamloops, BC V2H 1K3

Proponent Contact

Mr. Corey Bitz
President
North Thompson Rail Terminals Inc.
1310 Kootenay Way, Kamloops, BC V2H 1K3
Direct: 587-337-1829
Corey.bitz@ntrt.ca

Qualified Environmental Professional Contact

Mr. Warren Appleton, BSc, R.P.Bio., QEP
Senior Biologist
Keystone Environmental Ltd.
320 – 4400 Dominion Street, Burnaby, BC V5G 4G3
Direct: 604-430-0671; Fax: 604.736.8550
wappleton@keystoneenvironmental.ca

1.3 Existing Environmental Assessments

To the best of our knowledge, there have been no Regional Environment Studies as defined under the *Canadian Environmental Assessment Act*, 2012, Section 73 that apply to the Site.

It is understood that NTRT has engaged with KIB regarding areas of potential environmental concern located at the debris pile and residential home footprint, and has committed to the excavation and disposal of the debris piles, as well as other measures required to effectively manage impacted soils.

2. PROJECT INFORMATION

2.1 Project Context and Objectives

North Thompson Rail Terminals Inc. is proposing to build a permanent, multi-commodity transloading rail yard that is connected to the existing CN mainline, as illustrated in Figure 2. The overarching objective of the Project is to provide an adaptive management framework that optimizes utility of the railyard based on client requirements, while supporting increased CN rail traffic proficiencies.

This Project has been driven by a predicted increase in demand for the movement of commodities including grain, wood, refined and unrefined petro-chemical products, and other products. The proposed facility is anticipated to support increased efficiencies in transloading shipping containers, which will result in increased carloads.

2.2 Regulatory Requirements

2.2.1 *Canadian Environmental Assessment Act*

Pursuant to Section 25(b) of the Regulations Designating Physical Activities (Minister of Justice, 2018c) of the *Canadian Environmental Assessment Act* (2012), the Project is a Designated Project through “the construction, decommission and abandonment of a new railway yard, with seven or more yard tracks or a total track length of 20 km or more.” Therefore, a Project Description must be submitted to the Canadian Environmental Assessment Agency in order to determine if a federal environmental assessment is required under *CEAA* 2012.

2.2.2 *Regulatory Framework*

Table 1 outlines legislation that was considered in preparation of this Project Description. A brief outline of the legislation is included thereafter. It is understood from Technical Safety BC that they have Provincial jurisdiction of the facility (i.e. Canadian Transportation Agency is not the regulator). NTRT will continue to engage with the appropriate legislative bodies to identify permits and authorizations required to proceed with the proposed development.

NTRT is in possession of a 99 year prepaid land lease from AANDC, which permits the NTRT to construct and operate a rail terminal for the purposes of commodity storage and trans load, including hazardous materials. In addition, the KIB council has agreed to the proposed land use provided applicable federal regulations are met.

Table 1 Summary of Regulatory Framework

Title	Applicable?	Comment
Federal		
<i>Fisheries Act, 2013</i>	No	Aquatic features are not present on Site and impacts to the North Thompson River are not anticipated.
<i>Migratory Birds Convention Act, 1994</i>	Yes	Vegetation clearing and site grubbing will be required to comply with the Migratory Birds Convention Act.
<i>Railway Safety Act, 1985</i>	Yes	Engineering specifications and operations will be required to meet the regulations in the Act.
<i>Transportation of Dangerous Goods Act, 1996</i>	Yes	If dangerous goods as defined by the Act are transported through the Site, the Act will apply.
<i>Species at Risk Act, 2002</i>	No	Species at Risk are not anticipated to occur on Site. If Species at Risk are found on Site, the Act will apply.
Canadian Labour Code, 1985	Yes	Provisions of the Act will apply to the proposed development.
Canadian Council of Ministers of the Environment (CCME) guidelines	Yes	CCME guidelines are anticipated to apply.
Provincial		
<i>Environmental Assessment Act, 2002</i>	No	The proposed work does not meet threshold criteria under the Act.
<i>Railway Safety Act, 1996</i>	Yes	The rail terminal will operate within provincial borders and will be subject to the Act.
<i>Carbon Tax Act, 2008</i>	Yes	If the project will transport fuel for use in a ship, rail-transported vehicle, or aircraft, the Act will apply.
<i>Heritage Conservation Act, 1996</i>	No	The project is located on federal land, outside of the jurisdiction of the Act. Off-Site impacts to heritage resources are not anticipated.
<i>Riparian Areas Regulation, 2004</i>	No	The project is located on federal land outside of the jurisdiction of the Act. Off-Site impacts to riparian areas are not anticipated.
<i>Water Sustainability Act, 2016</i>	No	The project is located on federal land outside of the jurisdiction of the Act. Off-Site impacts to streams as defined in the Act are not anticipated.
<i>Wildlife Act, 1996</i>	No	The project is located on federal land outside of the jurisdiction of the Act. Off-Site impacts to wildlife as defined in the Act are not anticipated.

Title	Applicable?	Comment
Municipal		
Earthwork Control Bylaw No. 4-19	No	The project is located on federal land outside the jurisdiction of City bylaws. If earth material is transported onto City land, the bylaw will apply.
Solid Waste and Recyclables Bylaw No. 40-59	No	The project is located on federal land outside the jurisdiction of City bylaws. If waste and recyclables are transported onto City land, the bylaw will apply.
Transportation of Dangerous Goods Bylaw No. 23-49	No	The project is located on federal land outside the jurisdiction of City bylaws. If dangerous goods are transported onto City land, the bylaw will apply.
KIB By-laws		
Controlled Substance Property, Construction, Alteration, Repair, Moving and Demolition of Buildings, Fire Prevention, Heritage Conservation, Noise, Sanitary Sewer, Solid Waste & Recycle, Trespassing.	Yes	These bylaws apply on KIB reserve land.

- Federal Fisheries Act, 2013:** Sections 35-37 prohibit the pollution of watercourses with substances deleterious to fish and fish habitat, and of any works that result in 'serious harm to fish' unless authorized by the Department of Fisheries and Oceans (DFO). The *Fisheries Act* is not considered to apply to the proposed development, due to an absence of aquatic features on Site, and the proximity of off-Site watercourses. The North Thompson River is located approximately 300 m from the Site. Off-Site discharge will not occur, avoiding potential disturbances to the North Thompson River and other off-Site features; impacts to the North Thompson River are not anticipated, and can be mitigated through adherence to a storm water management plan. Therefore, serious harm to fish, as defined in the *Fisheries Act*, is not expected.
- Migratory Birds Convention Act, 1994:** prohibits harm to bird species listed as migratory under the Act, including destruction of eggs, nests, and young. The proposed work will result in the removal of vegetation, including several large mature trees and shrubs. Therefore, the *Migratory Bird Act* will apply. Potential impacts to migratory birds, as well as provisions for complying with the *Migratory Bird Act*, are included in Section 5.8 of this report.
- Railway Safety Act, 1985:** Places responsibility for operational safety on railway companies while retaining power to protect people, property, and the environment with federal government. The Act also outlines engineering standards and operational procedures. The proposed development will be required to comply with the *Rail Safety Act*.

- **Transportation of Dangerous Goods Act, 1996:** Specifies requirements for handling and transporting dangerous goods, including those transported by rail. Provisions of the Act provide spill and incident response procedures and a framework for emergency preparedness. If dangerous goods as defined by the Act are transported through the railyard, the Act will apply.
- **Species at Risk Act, 2002:** Protects the individual and critical habitat, as defined in the recovery strategy, of species listed as Threatened, Endangered, or Extirpated under Schedule 1 of the Act, where they occur on federal land. Habitat for Species at Risk was not identified during the Site visit, and the *Species at Risk Act* is not anticipated to apply to the proposed development. Further information on the probability of Species at Risk occurring on Site is included in Section 5.8 of this report.
- **Canadian Labour Code, 1985:** Provides provisions for the occupational health and safety of all employees on a work Site.
- **Canadian Council of Ministers of the Environment (CCME) guidelines:** Provides guidelines for the protection of environmental and human health, aquatic life, and agricultural water uses.

Provincial

The Site is located on federally-administered land; therefore, it is understood that most provincial regulatory requirements will not apply. The following provincial acts, regulations, and legislations have been considered in preparing this Project Description:

- **Environmental Assessment Act, 2002:** Threshold criteria for reviewable projects under the *Environmental Assessment Act* of British Columbia Reviewable Projects Regulation (2016) include the development of a continuous track 20 km or greater, or a rail line designed to accommodate high-speed trains with a design speed of 200 km/hour or greater. The current design details for the Project include 14.6 km of discontinuous track and is therefore not anticipated to trigger a review under the *Environmental Assessment Act* of British Columbia.
- **Railway Safety Act, 1996:** Railways that operate within the provincial boundaries are governed under provincial legislation. The Act harmonizes safety legislation with that of the federal government by adopting the technical requirements, rules, and standards of the federal legislation.
- **Carbon Tax Act, 2008:** Invokes a tax on greenhouse gas emissions to promote sustainable choices. Section 9(1) imposes a tax on the transfer of fuel in British Columbia, for use in a ship, rail-transported vehicle, or aircraft, which may apply to the proposed work.
- **Heritage Conservation Act, 1996:** Protects heritage and cultural resources in BC, including archaeological sites. The Site is believed to have low archaeological potential and permits under the Act are not anticipated to be required. In the case that and the Heritage Conservation Act will not apply. In the event that heritage sites and heritage objects as defined in the Act are found on Site, the appropriate provincial and First Nations bodies will be contacted.

- **Riparian Areas Regulation, 2004:** Calls on local governments to protect riparian areas during residential, commercial, and industrial development by implementing a science-based assessment by a Qualified Environmental Professional (QEP). Provides protection to all watercourses and wetlands, whether typically containing water or not, that provide fish habitat or are connected by surface flow to a fish bearing watercourse or wetland. Riparian areas are not located on or near the Site. The Act is therefore not anticipated to apply.
- **Water Sustainability Act, 2016:** Provides protection to all aquatic habitat defined as a stream under the Act (i.e., natural watercourses and sources of water supply, including ponds, wetlands, and channelized watercourses, whether typically containing water or not). Changes in and about a stream must be authorized under Section 11 of the WSA, except authorized changes as defined by Section 39 of the WSA regulation. Waterbodies as defined in the Act are not located on or near the Site. The Act is therefore not anticipated to apply.
- **Wildlife Act, 1996:** Protects most vertebrate species from harm and harassment and provides additional protection to some raptor nests. The Act will not apply to the Site; however, contraventions to the Act are not anticipated.

Municipal

The Site is located on federally-administered land; therefore, it is understood that municipal permits are not required and most municipal bylaws will not apply, unless material is transported off-Site and onto City land, in which case the following bylaws may apply:

- **Earthwork Control Bylaw No. 4-19:** Regulates the removal, movement, and deposition of earth materials. If soil, sand, gravel or rock is deposited on land within the City of Kamloops, the Act will apply. It is understood that material will be maintained on-Site and within the KIB reserve; the Bylaw is not anticipated to apply.
- **Solid Waste and Recyclables Bylaw No. 40-59:** Regulates the disposal of waste within the City of Kamloops. All waste removed from Site and disposed of within the City limits will be subject to the provisions of this bylaw.
- **Transportation of Dangerous Goods Bylaw No. 23-49:** Provides stipulations for the transportation of dangerous goods within the City of Kamloops. If dangerous goods are transported through City limits during construction or regular operations, the bylaw will apply.

2.3 Consultation Processes

Consultation has been on-going since the commencement of this project and is anticipated to continue throughout the construction and operational phases of the proposed work. The following groups, First Nations, and departments have been consulted prior to the time of writing:

- **Kamloops Indian Band:** Consultation with the KIB has been on-going since April 2018. A record of meetings, attendance, and discussion topics, is included in Section 6 of this report. The KIB was involved in the inception of the 99-year lease agreement for the proposed work, which was signed by several council members, demonstrating the KIB's support of the proposed work.

- **Members of the General Public:** A billboard has been established at the southeast Site corner to inform the general public on proposed works (Photograph 5). The sign has been placed to facilitate high visibility from Halston Road. In addition, an email address (info [at] ntrt.ca) has been created to facilitate feedback from the general public. It is understood that no inquiries have been made by the public as of August, 2018.
- **City of Kamloops:** Consultation with the City has taken place through Venture Kamloops, the economic development organization for the City. It is understood that the City has no jurisdiction over the NTRT property.
- **Canadian National Railway Company:** As the project will be connected to an existing CN rail line, consultation has been on-going with the CN Railway Company. Based on discussions conducted to date, it is understood that permits will not be required.
- **Canadian Transportation Agency (CTA):** Discussions with the CTA were initiated in September 2018. NTRT has been advised that a CTA officer will correspond to review licenses and permits applicable to the proposed development; however, the CTA is not the regulator as Technical Safety BC has confirmed Provincial jurisdiction of the facility.
- **Technical Safety BC (formally BC Safety Authority):** An independent organization that oversees the safe installation and operation of technical systems across British Columbia. The Railway Safety Program at Technical Safety BC regulates railways that operate exclusively within British Columbia on provincial land. Consultation has begun with Technical Safety BC to explore opportunities to improve safety and to review off-site considerations for the proposed project. Technical Safety BC has confirmed Provincial jurisdiction of the facility.

Consultation with the following groups, First Nations Communities, and departments are forthcoming:

- **Other First Nations Communities:** As the Site is located on KIB reserve land, impacts of the project on cultural resources are anticipated to influence the KIB more than other First Nations groups located in the general proximity of the Site (See Section 6 for First Nations near the Site). For this reason, consultation with First Nations Communities to date has focused on the KIB. If impacts to other First Nations groups are foreseen, those groups will be consulted.
- **WorkSafeBC:** A partnership with WorkSafeBC will be initiated throughout the construction and operational phases of work to identify strategies to reduce work-related injuries on Site.
- **BC Ministry of Transportation and Infrastructure:** Consultations with the Ministry of Transportation and Infrastructure will be initiated to discuss how the project may impact off-Site infrastructure and transportation networks.

Consultation with groups not identified above has not been conducted.

3. PROJECT LOCATION

The Project is located on a 27 ha parcel of land within the Tk'emlups te Secwepemc Indian Reserve (Kamloops Indian Band) in the general vicinity of Kamloops BC, and is composed of two land parcels (1306 and 1310 Kootenay Way; Figure 1). The Site is located in a rural setting dedicated for agricultural and industrial use. It is bordered by CN rail line towards the west, Halston Avenue to the south, Kootenay Way to the east, and a residential home to the North. The nearest residential area is located approximately 1 km from the Site. The North Thompson River is more than 300 m east of the property, and is buffered by the CN rail line located between the Site and the river.

The centre of the Site is located at latitude 50° 42' 56.80" N and longitude 120° 20' 33.23" W.

First Nations communities located within the general vicinity of the Project (defined as 20 km from the Site for the purposes of this report) included the Kamloops No. 1 Indian Reserve, which overlapped the Site. Other Reserves located within 50 km of the project included: Kamloops No. 2, Kamloops No. 3, Kamloops No. 4, Kamloops No. 5, Neskonlith No. 1, Neskonlith No. 2, Pipeaul No. 3, Quaaout No. 1, Sahhalkum No. 4, Skeetchestn, and Whispering Pines No. 4. The Site is shown in relation to Tribal Council / First Nation Agreements from the Aboriginal and Treaty Rights Information System (ATRIS) in Figure 2 (Appendix 2). Consultation has only been with the local Kamloops Indian Band as no impacts to other Bands are anticipated. Publicly available sources on if other First Nations historically used this area was not available.

Distances between the Project and the Indian Reserves located within 50 km of the Site are provided in Table 2.

Table 2 Distances between Site and Indian Reserves within 50 km

Reserve	Distance
Kamloops No. 1	0 km
Kamloops No. 2	26 km
Kamloops No. 3	28 km
Kamloops No. 4	35 km
Kamloops No. 5	23 km
Neskonlith No. 1	38 km
Neskonlith No. 2	41 km
Pipseul No. 3	43 km
Quaaout No. 1	50 km
Sahhalkum No. 4	44 km
Skeetchestn	45 km
Whispering Pines No. 4	30 km

Other federal lands located near the proposed development are understood to be limited to an Agricultural Experimental Sub-station (Property Number 18578: Kamloops Range Research Ranch) under the Agricultural and Agri-Food Canada custodianship (approx. 5 km from the Site). The site is shown in relation to existing federal lands in Figure 3 (Appendix 2).

Distances between the Project and federal sites are provided below in Table 3 and nearby federal sites are identified in Figure 3.

Table 3 Distances to Nearby Federal Sites on Figure 3

Site Name	Distance from Project
Kamloops Research Station, 3015 Ord Road, Kamloops, BC (Property 111048)	6 km
Kamloops Airport	6 km
Kamloops River Pump House (Property 23615)	6 km
Kamloops Regional Correction Centre, 2250 Trans-Canada Hwy, Kamloops BC (Property 126576)	7 km
Dufferin Hill <ul style="list-style-type: none"> • Military Structures (Property 126663) • PSPC Land (Property 10146) 	6 km
RCMP Kamloops District Office Garage (Property 137326)	7 km
McGill Road <ul style="list-style-type: none"> • Canada Post Delivery Centre (Property 61173) • Canada Post Mechanized Processing Plant (Property 62825) 	6 km
Downtown Federal Buildings: <ul style="list-style-type: none"> • BD Bank of Canada (Property 152646) • First Bank (Property 47031) • Canada Post (Property 10801) • PSPC GC Building (Property 18601) • PSPC Building (Property 21492) • RCMP (Property 36871) 	4 km
RCMP (Property 9350)	5 km
DFO Warehouse – Domestic Marine Trailer Storage at 461A Dene Drive, Kamloops 1, BC (Property 84982*)	2.5 km

*http://www.tbs-sct.gc.ca/dfrp-rbif/query_question/summary-sommaire-eng.aspx?qid=24125282

3.1 Land and Water Use

3.1.1 Legal Description of the Land

The Site is located on the following three parcels of land:

- Lot 11-1 Block 6 Plan 91125 CLSR
- Lot 11-2 Block 6 Plan 91125 CLSR
- Lot 12 Block 6 Plan 78676 CLSR

All components of the project are located fully on federal land. These lots are currently held through two 99-year prepaid leases between NTRT and the Government of Canada. The leases, identified as #6088527 and #6088554, and both dated March 1, 2015, expires on the last day of February 2114. Environmental provisions included in the lease include the removal and remediation of debris piles and other contaminates from the Site.

On May 27, 2016, Section 4 – use of land, and Section 15.6 Representations and Warranties, were modified to include provisions for Railways construction/operations and for Dangerous Goods Transload and storage. These provisions were approved by Kamloops Indian Band council on May 27, 2016.

3.1.2 Water Use Licences

A water well is located on Site, with the tag number 3376. The use of this well is unknown.

3.1.3 Land Use Plans

The Site is located within a General Resource Management Zone, as defined by the Kamloops Land and Resource Management Plan (KLRMP) produced by the Government of British Columbia (1995). The overarching objective of the KLRMP is to promote the sustainable use of lands and resources across 2.2 million hectares of south-central British Columbia, through consideration of the biological and physical limitations of the land base. The plan was developed over a two-year decision making process that involved a team of approximately 40 representatives from government, industry, public interest groups, and resource stakeholders. The KLRMP is intended to serve as a high-level working document that can be implemented through local level plans, resource development permits, and land dispositions, and includes:

- An outline the socioeconomic and environmental aspects of the Kamloops Land and Resource Management Area,
- An overview of the planning process,
- The zones and objectives for each land and resource management area, and,
- Management direction for implementation, monitoring, and amendment of the plan.

Some of the specific objectives and strategies outlined for the General Resource Management Zone, which overlaps the Site, include: maintaining soil productivity, ensuring sufficient quality and quantity of water to support ecological processes, maintaining streamside riparian vegetation, maintaining viable populations of wildlife with sufficient habitat and habitat connectivity, preserving intact grassland ecosystems, and providing opportunities for agricultural and range land. The Project will reflect the objectives and strategies of the KLRMP as follows:

- Efforts will be made to minimize soil productivity losses and off-Site impacts due to soil disturbances by limiting areas of exposed soils, salvaging topsoil for later use, implementing an erosion and sediment control plan during construction and operational phases of the proposed work, and implementing and monitoring a planting plan after construction work is complete.
- Water quality and quantity will be maintained through all phases of the proposed Project through implementation of a Water Management Plan. Surface water will accumulate within a retention pond, where it will be permitted to settle and evaporate. Off-Site discharge will not occur, avoiding potential disturbances to the North Thompson River and other off-Site features.
- The value of grassland habitat within the region will be enhanced by controlling invasive and noxious weeds across the Site. Where opportunities for revegetation are permitted within the Project design, native grassland species appropriate for the Site will be planted.
- Where feasible, roads and laydown areas will remain unpaved to reduce ecological edges and maintain wildlife linkages with the surrounding habitat.

3.2 Physical Works and Activities

The Project will involve the conversion of rural-agricultural land to an industrial transloading rail yard facility (Table 4). The project is currently in conceptual design stages; it is expected that as the Project advances, design details will be refined. The conceptual design includes:

Table 4 Project Components

Phase	Quantity	Comment
I	1 track	Mainline Entry/Exit Lead off of the CN Lead track. A switch point derail is proposed south of Halston Avenue
I	12 tracks	Transload and storage
III	2 tracks	Repair tracks designated for railcar repair, located at the western site perimeter adjacent to the CN Yard. The western most repair track is connected to the CN Lead. One of the repair tracks will run through the proposed building
I	1 track	A crossover track connecting tracks 6 and 7
II	13 tracks	Transload and storage tracks 13 to 25
I	2 pond areas	Retention pond area for evaporation and a feeder ditch with a culvert and gate that comes from the roadways in and out adjacent the dangerous goods tracks
I II	1,372m	15m wide roadways of which 5m adjacent to tracks will be asphalt

Phase	Quantity	Comment
III III I	36,600 m ²	Laydown areas for commodity loading/off-loading, two dangerous goods tracks
III		Potentially areas for future expansions and client sub-leasing
III	4,600 m ²	Potentially an administration and rail car repair building
III	12 tracks	Storage and transload tracks 26 through 37

The length in metres of each proposed yard track is provided in Table 5. The total proposed 41 tracks result in an approximate length of 14.6 km. The proposed railyard consists of the following track groups (Drawing No. E01, Appendix 2):

Table 5 Approximate Track Lengths

Track Group	Track Name	Length (m)	Notes
Repair	R1	901.02	Connects to CN Lead
	R2	338.44	
	R3	437.82	
Group 1	1	459.19	
	2	386.86	
	3	351.44	
	4	292.05	
	5	256.68	
	6	431.01	
Crossover	Crossover	204.93	
Group 2	7	391.50	
	8	255.48	
	9	302.72	
	10	349.99	
	11	735.54	Dangerous Goods
	12	378.67	Dangerous Goods
Group 3	13	394.53	
	14	261.20	
	15	309.26	
	16	355.25	
	17	533.75	
	18	313.43	
	19	264.00	
	20	214.57	
	21	348.46	

Track Group	Track Name	Length (m)	Notes
Group 4	22	273.92	
	23	491.77	
	24	256.69	
	25	298.62	
Group 5	26	379.70	
	27	334.60	
	28	422.89	
	29	345.37	
	30	388.33	
	31	361.78	
Transload Area	32	189.60	
	33	300.23	
	34	212.45	
	35	321.43	
	36	229.00	
	37	339.40	
	Total*	14,613.57	

*Estimate only. Not for construction.

A proposed building will provide administrative office areas, an employee lunch room, locker room, and a locomotive maintenance area. Repair track three will run through the proposed building, to provide an enclosed area for servicing and maintenance of railcars and other equipment. The repair shop will be equipped with standard locomotive maintenance supplies and chemicals. A chemical storage area will be constructed within the repair shop and will include a flammable materials storage container and secondary containment if required for the safe storage of on-site materials. A temporary Site office (i.e., trailer) will be used during the construction and early operational phases of the proposed work.

There will be one site access road, connecting from the southwest corner, and running up the western side of the site as shown in Appendix 2. The total length of roadways will be 1,372 m, however only areas within 5m of the track will be paved. Vehicle access to the proposed facility will be provided from Kootenay Way at the northeast site corner, utilizing an existing access point to Kootenay Way (Photograph 6). One access road will be established over an existing access road along the north and west Site perimeters. A designated parking area will be established near the proposed building at the eastern edge of the property. Additional access routes will service laydown areas to permit loading/off-loading of commodities. Road surfaces will be comprised of compacted gravel and may be paved with asphalt or concrete to meet the requirements of individual clients. During the construction phase of work, an existing access road located near the centre of the property will be utilized (Photograph 7).

Two laydown areas (15,000 m² and 21,000 m² in area) designated for on-site storage of non-hazardous commodities will be constructed between the track groups. The laydown areas will be graded to facilitate equipment access and material laydown while maintaining Site drainage. Laydown areas will be comprised of compacted gravel and may be paved to satisfy the needs of particular clients.

A permanent drainage water retention system has been designed to collect and retain stormwater run-off on Site and maintain adequate drainage away from track structures (Appendix 2). Key features of the system include one integrated stormwater ditch and retention ponds. The ditch and retention pond will be connected by gated culverts that can be manually opened and closed as required to effectively control storm water runoff and provide containment in case of an accidental spill. The culvert will be constructed from a galvanized corrugated steel pipe. Under the track, a containment barrier will be installed between Track 11 and 12 in the unlikely event of a spill. The Site topography will be graded to direct storm water runoff towards the water treatment system, and once in the retention pond, the water will be left to evaporate. The system has been designed with capacity to handle normal weather conditions for the City of Kamloops, which is typically dry with minimal precipitation. In the event of an atypical precipitation event that overburdens the storm water management system, excess water will be tested for compliance with applicable water quality guidelines and discharged over a permeable gravel/vegetated area if the water meets applicable water quality guidelines, or vacuum pumped out of the pond and removed from site by a licensed disposal contractor. For the construction phases of work, an Erosion and Sediment Control Plan will be prepared and implemented prior to commencing work. The plan will include provisions for the control of surface water and migration of sediment-laden water, as well as the maintenance of slope and embankment integrity. The size of the retention ponds and ditches are provided in Tables 6 and 7.

Table 6 Retention Pond Dimensions

Retention Pond	Length (m)	Width (m)	Depth (m)	Capacity (m ³)
West	280	40	1.2	13,000
East	240	30	0.5	3,500

Table 7 Ditches in Stormwater Management System

Retention Pond	Length (m)
Containment Area Ditch	220
Culvert with Gate	50
Culvert with Backflow	20

Power will be provided to the main building/Site trailer from the existing overhead power lines. Railyard/roadway lights will require higher voltage than what is currently available on Site and will therefore necessitate the installation of new lines to service divisions of the Site. A 25 kV generator will be available to maintain power in case of outage events. Domestic water will be

provided through the existing City water system and will service the washroom facility and repair shop. Potable water will be trucked in as needed. An above-ground septic system will be installed with two portable toilets located adjacent to the Site office/trailer. Sanitary waste will be trucked out for disposal at an approved facility. Additional utility lines are not anticipated to be required. Additional information regarding electric power infrastructure upgrades is not available. The site is not expected to require significant amounts of power.

During regular operations, products will arrive at the NTRT site for transload by rail car and truck, dependent on the commodity type. Weekly rail car volumes are expected to be 35–100 cars. The size of rail cars is currently unknown. The number and size of trucks arriving at the facility on a daily or weekly basis is currently unknown. A traffic study will be undertaken at the request of the KIB to identify the impact of the railyard operations on rail/truck movements across regional railways/highways into Kamloops. It is anticipated that vehicular traffic will decrease as the Site becomes operational.

3.3 Production Capacity

At full capacity, phase I of the Project is anticipated to accommodate 2,000 to 7,000 rail cars per year, and support the distribution of commodities including dry and liquid bulk products, refined and unrefined petro-chemical products, forest products, metals and materials, grain and specialty crops, and automotive materials. The facility has been designed to accommodate a maximum car length of 89'. Facility expansion into phases II and III will be dictated by new business that will require increased capacity.

3.4 Emissions, Discharges and Waste

The type and quantity of each material will be based on supply and demand. Materials that will be in-bound or outbound may include a variety of products including propane, diesel, crude oil, calcium carbonate, copper concentrate, pulp paper, fruit, beer, grain, lumber etc. The facility will be constructed with capacity to handle hazardous products in compliance with applicable regulations. As a minimum, the Site will be equipped with: hazardous waste bins for rags/gloves, oil filters, small volumes of contaminated soil, and used engine oil.

3.4.1 Air Emissions

Throughout the life of the proposed Project, the production of emissions including greenhouse gases, common air contaminants, and suspended particulates are anticipated.

During regular operations, greenhouse gas emissions, including hydrocarbons, nitrogen oxides, sulphur dioxide, and carbon monoxide, may be generated as exhaust from vehicles, generators and locomotives. Suspended particulate contaminants will primarily be generated as fugitive dust from vehicle and equipment movement across dirt roads and laydown areas. Additional sources of particulate emissions may include dust generated from the transfer of commodities from vehicles to railcars, such as grain and pulp. Dust control measures will be implemented to mitigate the generation of particulate emissions (e.g., spraying down gravel roads during hot weather, loading dry commodities directly off the transport truck and into a railcar).

During construction, equipment exhaust (e.g., excavators, bulldozers, cranes) will result in the release of air emissions. On site personnel will seek to limit equipment emissions by turning equipment off when not in use. Other air contaminants related to construction activities will primarily be produced as dust from earthwork activities (e.g., scrapping and removing soil, re-grading the Site) and vehicle access on Site. The Erosion and Sediment Control Plan will include provisions for limiting sources of dust (e.g., by covering exposed soils) and controlling the generation of dust (e.g., spraying gravel access roads with water or calcium chloride).

Estimated greenhouse gas emissions per phase are provided below in Table 8 in CO₂ equivalent units.

Table 8 Estimated CO₂ Equivalent Emissions

Phase	CO ₂ e Emissions (tonnes / year)
Preparation	500
Construction	1,500
Operational	100
Decommissioning	500

3.4.2 Solid Waste

The proposed work is anticipated to generate recyclable and non-recyclable solid waste which may include, but may not be limited to, structural steel, pre-cast and cast-in-place concrete, low- and high-density polyethylene plastics, timber, asphalt, glass, and domestic waste. Non-hazardous and non-toxic garbage and recycling, such as paper, paper products, wood, plastic, glass and discharged food items, shall be stored in closed, leak-proof storage bins that are secure against nuisance wildlife. Materials that can be recycled will be sorted and removed from Site to an appropriate facility. Non-recyclable waste will be collected and transported to a sanitary landfill. In the event that hazardous wastes are produced, the waste will be treated and/or disposed of in authorized / permitted facilities. All applicable regulations and standards will be adhered to for the transport of waste.

3.4.3 Liquid Waste

Liquid waste is expected to be limited to surface water runoff, which will be contained and managed on Site within the storm water management system. If the capacity of the stormwater management system is exceeded, water will be removed from site by a licensed disposal contractor and appropriately discharged at a pre-approved location. This is considered unlikely, as the Site receives minimal precipitation and the use of water for operational purposes (e.g., washing equipment) is anticipated to be limited. Potential water constituents (e.g., diesel fuel, oil, solvents) will be contained within the integration ditch, where they will be permitted to settle and will be appropriately cleaned as required.

Other liquid waste that may be generated on Site includes used oil and other solvents, which will be contained in barrels and removed by a qualified carrier for disposal at an approved facility on an as-needed basis, and domestic sewage, which will be contained within a septic system for off-site removal.

3.5 Project Scheduling and Main Activities

The proposed railyard facility will be constructed under a phased approach, permitting divisions of the yard to become operational while construction is undertaken elsewhere. The length and number of tracks proposed for each phase is identified below in Table 9. The estimated start date and length of construction is also provided. The proposed track layout is provided in Appendix 2. The track layout may be revised depending on supply and demand during the project.

Table 9 Proposed Track Lengths by Phase

Phase	Number of Tracks	Length of Tracks (m)	Construction Duration (Months)	Estimated Start Date
I	15	6,094.67	4–6	March 2019
II	13	4,395.50	4–6	March 2024
III	13	4,123.40	4–6	March 2028
Total	41	14,613.57	12–18	

3.5.1 Consultation and Engagement

Details on the consultation process have been provided in Section 6.

3.5.2 Pre-Construction Preparation

Pre-work, such as preparing the bidding package, engineering review, and permitting, is anticipated to take approximately 6 weeks, and is expected to commence in fall of 2018.

3.5.3 Site Preparation

Preliminary site work will include equipment and personnel mobilization, and the removal of existing vegetation. Vegetation within the development footprint (see Section 5.7 for existing vegetation conditions) will be removed and disposed of off-Site at a pre-approved location able to receive invasive plant species. To the extent feasible, large trees and patches of native shrubs will be retained and incorporated into the final Project design. Site preparation is anticipated to take six weeks.

Standard heavy construction equipment including excavators, loaders, graders, cranes, and pavers are anticipated to be required during construction. Equipment and materials will be mobilized on-Site and stored in designated laydown areas.

3.5.4 Construction (Phases 1 through 3)

The top soil will be stripped, salvaged, and stockpiled for later placement on the embankment and/or removed off-Site to an undetermined location within the KIB lands with KIB approval. Site graded works will include contouring the Site to facilitate adequate water drainage away from track structures and towards the water treatment system. The drainage trenches and track slopes ballasts will be excavated with earth moving equipment (e.g., dozers), compacted, and filled with an appropriate cohesive material (e.g., coarse fragments) as specified in the engineered drawings.

After the subgrade has been constructed, work will include laying the ties and steel rails; constructing buildings, access roads, and on-Site utilities; and connecting the railyard tracks to the existing CN rail main line. All railwork will be done in accordance with CN engineering specifications for industrial tracks.

Measures will be taken to mitigate the spread of invasive species and generation of sediment laden water (e.g., by limiting the extent of exposed soils, covering stockpiles, using clean equipment on Site free of plant matter). After construction is complete, seed and fertilizer mixture will be applied for erosion control and slope protection on disturbed or exposed surfaces.

Construction is anticipated to take approximately 6 months per phase (for a total of 1.5 years of construction across all phases), which will include 6 weeks of preparation work (i.e., engineering review, permitting, preparing bidding packages), 6 weeks of earthworks (i.e., stripping, excavating, grading, etc.), 5 weeks of tracking building, and 7 weeks of post construction work (i.e., setting up the safety management system, preparing the emergency response plan, complying with all applicable regulations, hiring employees, and training employees). Phases will not be completed in succession; therefore, the 1.5 years of construction will take place across a period of approximately 10 years.

3.5.5 Operational

Because Site construction will be completed in phases, it is anticipated that phase 1 will be operational prior to the start of construction on phases 2 and 3. Operations on-Site will be mixed industrial, with uses including commodity distribution, and storage. On-Site equipment is anticipated to include forklifts, portable generators, liquid trans load gantries and loaders, and vehicles. Management of invasive species is expected to be on-going throughout the life time of the proposed facility.

3.5.6 Decommissioning/Site Restoration

The Site will remain operational provided it remains economically viable to do so. Site decommissioning is anticipated to take 6 months and will include:

- Pre-decommissioning preparation (12 weeks): Define the goal of decommissioning and identify the objectives of the KIB and other stakeholders (i.e., neighbours, Indigenous Canada) with the property.

- Remove buildings (4 weeks): Removal of workshop, office, and crew trailer
- Life tracks (3 weeks): remove and dispose of track materials (rail, ties, spikes, etc.)
- Remove and dispose of track ballasts (5 weeks)
- Establish environmental exit baseline (1 week): return land to owner, after compliance with all federal environmental tolerances has been met.

It is understood that under the lease requirements of the land, the existing debris dumping site will need to be removed and restored. It is understood that the debris pile will be cleaned as phases II and III of the development progress.

4. FEDERAL INVOLVEMENT

Options for federal funding are being explored, however, it is not known if grants are available. At this time, there is no proposed or anticipated federal financial support that federal authorities are, or may be, providing to support the carrying out of the Project.

The Site is located on a parcel of land currently held through two 99-year leases between NTRT and the Government of Canada. The leases, identified as #6088527 and #6088554, and both dated March 1, 2015, expires on the last day of February 2114. Environmental provisions included in the lease include the removal and remediation of debris piles and other impacted soils from the Site.

5. ENVIRONMENTAL IMPACTS

The following information was reviewed to outline the existing biophysical conditions of the Site:

- Environment Canada Species at Risk Act Public Registry
- The Committee on the Status of Endangered Wildlife in Canada
- BC Ministry of Forests Lands and Natural Resource Operations, Species and Ecosystem Explorer and Conservation Data Centre
- Fisheries Inventory Data Queries
- Kamloops Airshed Management Plan
- BC Cross Linked Information Resource

A field visit was conducted by a biologist from Keystone Environmental on July 17, 2018. The objective of the Site visit was to collect pertinent biophysical information of the Site and verify information gathered during the background review.

5.1 Existing Conditions

Agricultural activities have historically dominated the Site, and have influenced the existing conditions and values of the landscape. The Site is characterized by anthropogenic disturbance and is encompassed by a large remnant agricultural field dominated by invasive and agronomic species. Several structures remain in place at the Site, including a single family residential home, a temporary site office (trailer) and barn. The single family home is currently occupied by a single NTRT employee for the purpose of site security. The dwelling is expected to be demolished during the phase II expansion. Additionally, two open material debris pits are located along the northwest site perimeter and near the northwest corner. The horizontal and vertical extent of the debris areas are currently unknown and may reach past the visible boundary of each pit (pers. comm. W.M. Wolf, NTRT, 2018). The project proponent is not aware of impacts to the environment that may occur outside of British Columbia as a result of implementing the designated project. A rail traffic study will be implemented to explore potential impacts to rail traffic outside of BC.

The Site is situated within the Very Dry Hot Thompson Bunchgrass biogeoclimatic subzone (BGxh2; BC Ministry of Forests, 1991). The Bunchgrass zone occurs in low to middle elevations on rolling and valley terrain. Native vegetation associated with the Bunchgrass zone includes sparse shrubs with interspersed bunchgrasses and a well-established cryptogenic crust. Bluebunch wheatgrass (*Pseudoroegneria spicata*) is the characteristic dominate vegetation present on most sites within the BG zone, and other common species can include Sandberg's bluegrass (*Poa secunda*), yarrow (*Achillea millefolium*), needle-and-thread grass (*Hesperostipa comata*), and sand dropseed (*Sporobolus cryptandrus*). This biogeoclimatic zone can support a diversity of wildlife, including provincial and national species of significance, and is known for high agricultural capability.

5.2 Climate

Zonal climate of the Site is characterized by warm to very hot, dry summers and moderate winters with minimal precipitation. Hydrometeorological values for the Site were retrieved from the Environment Canada Kamloops A Weather Station (Government of Canada, 2018), located 7.2 km from the Site. The annual daily average air temperature varies between -2.8°C in January, to 21.5°C in July, with a mean annual temperature of 9.3°C. The mean annual precipitation is estimated to be 278 mm, with peak periods of precipitation occurring in May through July, and November through January. The average length of the frost-free period is 169 days.

5.2.1 Potential Impacts

The project is not anticipated to have a measurable effect on the regional climate.

5.3 Air Quality

Assessments of air quality were not undertaken as part of this assessment. The existing Project setting is considered to be rural and sources of air contaminants are anticipated to be limited to the generation of dust and emissions from equipment use.

The Site is located within the City of Kamloops Airshed Management Plan region (City of Kamloops, 2013). The primary objectives of the Airshed Management Plan are to: protect and improve air quality within Kamloops, raise public awareness about air quality issues, support the British Columbia Ministry of Environment in emission monitoring efforts, and to ensure there is no upward trend in air contaminant parameters. Main pollutants within the Kamloops air shed include particulate matter PM₁₀ and PM_{2.5} (generated from road dust, construction, and forest fires), ground level ozone (from burning fuels), sulphur gases (from the pulp and paper industry, sewage treatment plants, and extracting fuels), nitrogen dioxide, sulphur dioxide, and volatile organic compounds (from combustion, industrial processes, and common chemical products). The provincial ambient air quality objectives for PM_{2.5}, PM₁₀, NO₂, and SO₂ are as follows:

- **PM_{2.5}:** 25 ug/m³¹ over 24 hours or 8 ug/m³ annually (planning goal = 6 ug/m³; Government of British Columbia, 2009)
- **PM₁₀:** 50 ug/m³ over 24 hours (Government of British Columbia, No Date Available)
- **NO₂:** 100 ppb over 1 hour², or 32 ppb annually³ (BC Ministry of Environment, 2017)
- **SO₂ (current standard):** 172 ppb over 1 hour, and 10 ppb annually (BC Ministry of Environment, 2017)
- **SO₂ (2020 standard):** 70 ppb over 1 hour, and 5 ppb annually (BC Ministry of Environment, 2017)
- **SO₂ (2025 standard):** 65 ppb over 1 hour, and 4 ppb annually (BC Ministry of Environment, 2017)

¹ Based on annual 98th percentile value

² Annual 98th percentile of daily 1-hour maximum, over one year.

³ Annual mean concentration

The Kamloops Federal Building air quality station is located 6 km from the Site, and provides historic air quality data for the aforementioned provincial ambient air quality compounds.

5.3.1 Potential Impacts

Potential impacts to air quality from the construction and operational phases of the Project include the production of airborne emissions, including greenhouse gases from equipment and vehicle use and particulate matter from dust. Reasonable mitigation measures will be implemented to limit impacts to air quality, including:

- High-efficiency low emission equipment will be used whenever possible,
- Idled equipment will be turned off when not in use (the municipal bylaw restricts motor vehicle idle to 3 consecutive minutes),
- Equipment movement (e.g., rail car shuffling) will be limited to only what is necessary,
- Fugitive dust from gravel roadways will be suppressed (e.g., by applying water or calcium carbonate to the roadway) and equipment will adhere to posted speed limits to control dust generation,
- Hazardous materials and dry materials with the potential to release fugitive dust will be off-loaded from transport trucks and directly loaded into railcars.

Through adherence to proposed mitigation strategies, it is anticipated that facility emissions will meet applicable air quality criteria for contaminants of potential concern. Residual impacts include the release of greenhouse gas emissions. Air quality will not be affected in a province other than BC, or outside of Canada.

5.4 Noise

The existing soundscape was not assessed as part of this Project Description. The Site is considered to be rural and noise generated on Site is limited to vehicle access. Ambient noise sources include traffic along Highway 5 and locomotive noise from the neighbouring CN rail mainline, such as from CN yard switching operations, locomotives, heavy truck/vehicular traffic, and transloading. Other neighbouring sources of noise are summarized in Table 10 and shown in Figure 1.

Table 10 Neighbouring Potential Sources of Noise

Site Name	Description of Activities	Distance to Site
Offsite 1	Heavy equipment observed on Site, appears to be used for gravel storage (Photographs 11–12).	Approx. 100 m
Offsite 2	Heavy equipment observed on offsite location 4 (e.g., dump truck, dozer). Appears to be used for gravel excavation operations (Photograph 13).	Approx. 10 m
Offsite 3	Heavy equipment observed on offsite location 4 (e.g., dump truck, dozer). Appears to be used for gravel excavation operations (Photograph 14).	Approx. 300 m
Offsite 4	Appears to be used for tire storage. Noise may be caused by vehicle access and equipment mobilization (Photograph 15).	Approx. 400 m

5.4.1 *Potential Impacts*

Increased noise levels are anticipated during the construction and operational phases of the Project. During construction, noise will be generated through the operation of equipment (e.g., bulldozers, dump trucks, excavators), and from increased personnel on Site. During regular operations of the railyard, anticipated impacts to noise levels include the movement of rail cars, operation of generators, increased motor vehicles on Site, and increased personnel on Site. Reasonable measures to reduce noise will be implemented during construction and regular operations, which may include but may not be limited to:

- Employ equipment with noise control features, such as mufflers and enclosures on diesel- or gas-powered equipment or exhaust silencers on air tools,
- Adherence to the municipal bylaws, restricting construction activities to between the hours of 7:00 am and 10:00 pm, and
- Operate equipment at the minimum engine speeds that still provide effective operations.

Noise related to construction activities is anticipated to be of short duration and will not have foreseeable long-term impacts to the regional soundscape. Noise will not be affected in a province other than BC, or outside of Canada.

5.5 **Surface Watercourses and Drainage**

Although hydrological Site conditions were considered in developing the Project Description presented herein, a hydrology assessment was not conducted by a Professional Engineer.

The Site topography is generally flat. Defined channels, watercourses, wetlands, and ditches, were not identified in available on-line mapping or during the 2018 field assessment.

The Project is located adjacent to the North Thompson River within the Fraser River Basin. The Thompson River is a major tributary of the Fraser River, contributing approximately 25% of the annual flows of the Fraser (Shaw & Tuominen, 1999). The North Thompson River originates from the Thompson Glacier, located west of Valemount, and follows a generally southern trajectory towards the main stem of the Thompson River in Kamloops, BC, and subsequently joins the Fraser River near Lytton, BC. The Thompson River is considered critical habitat for a diversity of important fish, such as salmon and trout, and is used extensively for recreation, drinking, irrigation, and industrial use. Operations that influence water quality within the Thompson River include expanding urban areas (e.g., Sun Peaks Resorts) and forestry (Shaw & Tuominen, 1999). Surficial water connectivity from the Site towards the North Thompson River was not observed during the 2018 Site visit.

Because the Site does not contain surface water, water quality sampling was not performed during the Site visit.

5.5.1 Potential Impacts

Based on the relatively flat Site topography and low potential for high rainfall events, impacts to surface water and drainage are anticipated to be limited to Site grading. Following completion of work, the storm surface water drainage regime around the Site is expected to direct surficial water towards the water treatment system. Measures to mitigate for impacts to surface water and drainage will include: minimizing vegetation disturbance to promote ground absorption, minimizing impermeable surface areas, and monitoring potential effects of stormwater discharges during heavy rain periods. Adverse effects on storm and surface water drainage are not anticipated as a result of the proposed work. Water will not be affected in a province other than BC, or outside of Canada.

5.6 Soil and Terrain

The topography within the Site is generally flat with a gradual slope towards the southwest Site perimeter. Surficial soils were formed through fluvial depositions, and are characterized as sandy loam to silt loam and well-draining.

5.6.1 Potential Impacts

Impacts to soil and terrain are anticipated to be restricted to top soil removal and Site grading. Top soil will be salvaged and used on-Site or removed to an undetermined location within KIB land. Soil will not be affected in a province other than BC, or outside of Canada.

5.7 Vegetation

During the Site visit, identified plant communities were dominated by fast-growing species typical to disturbed agricultural areas, including alfalfa (*Medicago sativa*), Diffuse knapweed (*Centaurea diffusa*), cheatgrass, (*Bromus tectorum*), tumble mustard (*Sisymbrium altissimum*), Crested wheatgrass (*Agropyron cristatum*), and burdock (*Arctium* sp.). Areas with native vegetation were limited to the Site perimeter and small interspersed patches throughout the property. The following native species were found on or adjacent to the Site: black cottonwood (*Populus balsamifera* ssp. *trichocarpa*), willow (*Salix* sp.), choke cherry (*Prunus virginiana*), big sagebrush (*Artemisia tridentata*), rabbit brush (*Ericameria nauseosa*), and giant wildrye (*Leymus condensatus*). Sections of established, cryptogenic crust-forming lichens and mosses dominated by *Selaginella* and *Cladonia* sp. were also observed throughout the property. Three small stands of mature trees were observed within the Site: a black cottonwood stand and a willow stand located on the northeast side of the property, and a small cluster of ornamental trees near the residential buildings (Photographs 8–10).

The BC Conservation Data Centre (CDC) rare element occurrence webpage was accessed to obtain records of provincially and federally listed rare plants or ecosystems on or adjacent to Site (i.e. within a 5 km radius). There were no occurrence records within the Site. Occurrences for plants at risk within a 5 km radius of the Site included: tiny tassle (*Crossidium seriatum*), Columbian carpet moss (*Bryoerythrophyllum columbianum*), alkaline wing-nerved moss (*Pterygoneurum kozlovii*), Englemann's spike-rush (*Eleocharis engelmannii*), toothcup (*Rotala ramosior*), and Western low hawksbeard (*Crepis modocensis* ssp. *rostrata*).

The footprint of the Site has been disturbed by historical agricultural activities. Rare plants and communities, as defined by the British Columbia Conservation Data Centre and SARA, are not expected to occur within the development footprint and were not identified during the Site visit.

5.7.1 Potential Impact

Although loss of vegetation will occur as a result of the Project, the area is highly disturbed with limited native species. Significant adverse impacts to vegetation are therefore not anticipated as a result of the Project. Probable impacts include the permanent removal/alteration of existing vegetation, including three small clusters of trees and shrubs located near the existing buildings, and along the northeast side of the Site, and increased opportunities for the distribution and establishment of invasive plant species.

Mitigation measures will focus on minimizing the removal of native vegetation where possible. Final design consideration will, to the extent feasible, maximize retention of veteran trees and native vegetation. Construction areas, including laydown and staging areas, will be limited to previously cleared areas when possible. The limits of construction will be clearly defined and marked in the field (i.e., erection of orange snow-fencing or flagging as a visual reminder) prior to the start of any construction in order to prevent intrusion and unnecessary impacts to vegetation communities outside of the footprint, and for protection of veteran trees. Vegetation will not be affected in a province other than BC, or outside of Canada.

5.8 Wildlife and Habitat Use

During the Site visit, the Site was characterized as disturbed, and minimal habitat for wildlife was identified within the proposed construction footprint. Indications of wildlife usage (e.g., wildlife sightings, tracks, droppings, signs of foraging, wildlife dens) were not observed during the Site visit. The agricultural field and treed areas may provide habitat for a diversity of small and large mammals; however, it was reported that domesticated dogs have previously lived within the Site, reducing the likelihood of wildlife occurring on Site.

During the field survey, two birds were observed within the study area: the morning dove (*Zenaida macroura*) and black-billed magpie (*Pica hudsonia*). Nests were not observed within the Site during the Site visit. Although birds observed during the field surveys were limited, the stands of existing mature trees within the Site are anticipated to provide nesting habitat for a larger complement of song birds and raptor species. Additionally, the agricultural field may be utilized by ground nesters and may provide foraging habitat for a diversity of species. Wetlands and other aquatic features were not observed on Site; the Site is therefore not anticipated to provide significant habitat for amphibian species.

A desktop review of the BC Conservation Data Centre (CDC) rare element occurrence webpage was conducted to identify SARA- and provincially-listed species with potential to occur on Site (Table 11). Based on presence of suitable habitat, Three species were identified as having a moderate probability of occurring on Site: the flammulated owl (*Psiloscops flammeolus*), Lewis's Woodpecker (*Melanerpes lewis*), and American Badger (*Taxidea taxus*). An American badger population unit was identified overlapping with the Site (BC Conservation Data Centre, 2014).

Information on this occurrence record is limited, however, there are an estimated 35-50 adults within the Thompson badger population unit, and the most recent citing was in 2012. The potential for badgers to occur on Site was assessed during the Site visit conducted on July 17, 2018. Badger dens were not observed, and the Site was considered to provide limited suitable habitat for badgers, due to a lack of prey (e.g., small mammals), intensive previous disturbances to the Site, and the presence of higher quality habitat nearby. The Site is not considered to provide high quality habitat for the flammulated owl or Lewis's woodpecker species, due to an absence of features required for life requisites (e.g., wetlands and ditches for the great basin spadefoot to breed; cavity trees for the flammulated owl and Lewis's woodpecker).

Table 11 Potential for SARA- or Provincially-Listed Species to Occur on Site

Species	Scientific Name	Listing		Comment	Probability
		Provincial	SARA ¹		
Avifauna					
Short-eared owl	<i>Asio flammeus</i>	Blue	SC	Habitat found on Site	Low
Swainson's Hawk	<i>Buteo swainsoni</i>	Red	---	Habitat found on Site	Low
Common Nighthawk	<i>Chordeiles minor</i>	Yellow	---	Habitat found on Site	Low
Bobolink	<i>Dolichonyx oryzivorus</i>	Blue	T	Habitat found on Site	Low
Horned Lark, merrilli subspecies	<i>Eremophila alpestris merrilli</i>	Blue	---	Habitat found on Site	Low
Barn Swallow	<i>Hirundo rustica</i>	Blue	T	Habitat found on Site	Low
Flammulated owl	<i>Psiloscops flammeolus</i>	B	SC	Habitat found on Site, occurrence record within 5 km of Site	Moderate
Sharp-tailed grouse, columbianus subspecies	<i>Tympanuchus phasianellus columbianus</i>	Blue	-	Habitat found on Site	Low
Lewis's Woodpecker	<i>Melanerpes lewis</i>	Blue	T	Habitat found on Site, occurrence record within 5 km of Site	Moderate
Insects					
Monarch	<i>Danaus plexippus</i>	Blue	SC	Habitat found on Site	Low
Common sootywing	<i>Pholisora Catullus</i>	Blue	-	Habitat present on Site	Low
Mammals					
Townsend's Big-eared Bat	<i>Corynorhinus townsendii</i>	Blue	-	May roost in buildings on Site	Low
Spotted bat	<i>Euderma maculatum</i>	Blue	SC	May roost in buildings	Low
Western small-footed myotis	<i>Myotis ciliolabrum</i>	Blue		May roost in buildings	Low

Species	Scientific Name	Listing		Comment	Probability
		Provincial	SARA ¹		
Little Brown myotis	<i>Myotis lucifugus</i>	Yellow	E	May roost in buildings	Low
Fringed Myotis	<i>Myotis thysanodes</i>	Blue	SC	May roost in buildings	Low
American Badger	<i>Taxidea taxus</i>	Red	E	Habitat found on Site, occurrence record within 5 km of Site	Moderate
Reptiles					
Western rattlesnake	<i>Crotalus oreganus</i>	Blue	E	Habitat found on Site	Low
Gopher Snake	<i>Pituophis catenifer, deserticola</i>	B	T	Habitat found on Site	Low
Amphibians					
Great Basin Spadefoot	<i>Spea intermontana</i>	Blue	T	Occurrence record within 5 km of Site, habitat not found on Site	Low

¹E = endangered, T = threatened, and SC = special concern under Schedule 1 of the *Species at Risk Act*.

Three wildlife species of management concern were identified within a 5 km buffer of the Site: great basin spadefoot (*Spea intermontana*), Lewis's woodpecker (*Melanerpes lewis*), and flammulated owl (*Psiloscops flammeolus*). Potential Impacts

Potential impacts to wildlife may result from immediate habitat loss within the construction footprint (e.g., the established treed areas), mortality and injury (e.g., as a result of vehicle/wildlife collision, ingestion of hazardous materials), adverse physiological or behavioural effects (e.g., sensory disturbances from landscape and noisescape changes), and the destruction of small mammal dens and bird nests. Additional indirect effects may include the establishment of movement barriers during construction and operational phases of the Project (e.g., fencing, utility trenching, increased human activity), and increased animal attraction to the Site if garbage is not appropriately disposed of.

Migratory birds may be impacted by removal of vegetation, which can disrupt breeding and nesting behaviour. It is recommended that vegetation removal be conducted outside of the bird nesting window (March–August). If clearing within the bird nesting window is required, a pre-clearing bird nest survey should be conducted by a Qualified Environmental Professional to mitigate impacts to migratory birds.

Due to the low abundance of habitat, the Site is not anticipated to support species of conservation concern. Available habitat, specifically suitable ground and tree nesting habitat, is present for breeding and foraging off-Site outside of the Project footprint. It is therefore anticipated that resident species and breeding birds will relocate to adjacent comparable habitats. The magnitude of potential impacts is, therefore, considered to be low with limited spatial extent. The overall impact is expected to be local. Impacts to regional populations are not expected to occur.

Wildlife will not be affected in a province other than BC, or outside of Canada.

5.9 Fish and Fish Habitat

Aquatic features, including watercourses, lakes, wetlands, and ditches, were not observed during the Site visit conducted on July 17, 2018. The Thompson River is located more than 300 m from the Project area, which provides habitat for a diversity of fish and other aquatic species. A review of the data from the Fisheries Data Inventory Query (Government of British Columbia, 2018) included the following species: the prickly sculpin (*Cottus asper*), American shad (*Alosa sapidissima*), sockeye and kokanee salmon (*Oncorhynchus nerka*), rainbow and steelhead trout (*O. mykiss*), chinook salmon (*O. tshawytscha*), coho salmon (*O. kisutch*), pink salmon (*O. gorbuscha*), bull trout (*Salvelinus confluentus*), lake trout (*S. namaycush*), dolly varden (*S. malma*), burbot (*Lota lota*), mountain whitefish (*Prosopium williamsoni*), largescale sucker (*Catostomus macrocheilus*), Northern pikeminnow (*Ptychocheilus oregonensis*), lamprey (*Lampetra* spp.), longnose dace (*Rhinichthys cataractae*), redbelt shiner (*Richardsonius balteatus*), and Western pearlshell mussel (*Margaritifera falcata*). The existing rail mainline as well as a grassland and riparian area are located between the Thompson River and the Site.

5.9.1 Potential Impacts

Potential impacts associated with the Project on fish and fish habitat are not anticipated. Run-off will be contained on Site within a stormwater management system and sediment migration or accidental releases of deleterious substances to watercourses are therefore not anticipated. Impacts to off-Site watercourses are not anticipated during Project works provided that appropriate mitigation measures are in place during construction and the operational phases of works. Mitigation measures that are to be implemented during work include:

- Preparation of an Erosion and Sediment Control Plan, outlining measures required to be implemented to help prevent sediment migration to aquatic areas.
- Hydrocarbon spill kits, stocked with absorbent pads, booms, and heavy duty polyethylene bags, should be stored at each construction area.

Fish and fish habitat will not be affected in a province other than BC, or outside of Canada.

6. ENGAGEMENT AND CONSULTATION WITH ABORIGINAL GROUPS AND OTHER STAKEHOLDERS

6.1 First Nations

It is anticipated that consultation with First Nation groups will be ongoing throughout the project design process, as well as during construction and operational phases of the Project. First Nations communities located within the general vicinity of the Project (defined as 20 km from the Site for the purposes of this report) included the Kamloops No. 1 Indian Reserve, which overlapped the Site.

At the time of submission, NTRT has engaged in four informal consultations with the Kamloops Indian Band (KIB) to discuss the proposed scope of work. Meeting attendance and discussion topics are highlighted in Table 12.

Table 12 Kamloops Indian Band Consultations Conducted to Date

Date	Attendance	Discussion Topics
April 26, 2018	KIB, NTRT	KIB development approval board meeting presentation.
May 17, 2018	KIB, NTRT	An initial introductory meeting to introduce the Project team and key stakeholders.
May 23, 2018	KIB, NTRT	Site visit
June 12, 2018	KIB, NTRT	Discussion of benefits of the Project to KIB, road maintenance, traffic study, and KIB's development plans for the local area.
June 21, 2018	KIB consultant, Real Estate Manager, NTRT	Project description, benefits to the community, road use, upgrades, safety, environmental conditions, CEAA application, and development permits
July 27, 2018	KIB Real Estate Manager, NTRT	Conditions of the sub-lease, transload of commodities, and use of land identified in the master lease.
Sept. 5	Real Estate Manager	
Oct 10	Sr. Managers Engineering, Economic Officer	

Regarding Indigenous groups potential or established Aboriginal or Treaty rights and potential impacts on these rights, the KIB 99 year lease and consultation between the project team and the KIB has not resulted in the identification of residual adverse environmental effects. The KIB requested that a traffic impact study is commissioned with the Ministry of Transportation and Infrastructure, and that the existing debris piles are cleaned during the tenure of the lease. The NTRT has committed to completing these requirements in conjunction with the KIB during and after site construction. No further concerns were raised during the First Nations consultation process. The NTRT will continue to engage with the KIB throughout the proposed project.

The KIB was involved in the inception of the 99 year lease, which was signed by several council members, demonstrating the KIB's support of the proposed work. Provisions of the lease agreement include the operation of a rail terminal as a permissible use of the land. Further, it is anticipated that the proposed development will result in the creation of 20+ jobs during construction and regular operations. NTRT will continue to engage with the KIB and identify opportunities to build skills and provide employment within the KIB community.

Other Reserves located within 50 km of the project included: Kamloops No. 2, Kamloops No. 3, Kamloops No. 4, Kamloops No. 5, Neskonlith No. 1, Neskonlith No. 2, Pipecul No. 3, Quaaout No. 1, Sahhalkum No. 4, Skeetchestn, and Whispering Pines No. 4 (Figure 2, ATRIS; Indigenous and Northern Affairs Canada, 2018). While this information is presented, we understand that Indigenous groups may assert rights and title on and adjacent to the Project area.

The project is not anticipated to impact the rights of Indigenous groups. The project team has been in consultation with the KIB because they would most likely be affected compared to other groups, as the works are located within their lease. Consultation with other groups located further from the project has not been initiated by the proponent. If impacts to First Nations groups outside of the KIB are identified, consultation will be initiated.

6.1.1 Current Use of Lands and Resources for Traditional Purposes

Impacts to the current or historic use of the land for traditional purposes were not identified during First Nations consultations, and publically available sources documenting traditional use of the land were not available. Based on a review of the current Site conditions and the Site's proximity to other natural features (e.g., North Thompson River), historic uses of the land are believed to be limited to gathering (roots and berries) and hunting. The Site is located a considerable distance from aquatic resources (300 m from the North Thompson River) and is therefore not considered to have historically supported a significant aboriginal fishery. Currently, the land is understood to be used exclusively for agricultural purposes. Future engagements with the Kamloops Indian Band will seek to better understand the historic and current uses of the lands and resources for traditional purposes. At this time, impacts to potential or established Aboriginal or Treaty rights are not anticipated.

6.1.2 Health and Socioeconomic Conditions of Indigenous Peoples

Section 5(1)(c) of the Canadian Environmental Assessment Act, 2012 requires that an assessment be conducted on the following potential project-related environmental effects:

“with respect to aboriginal peoples, an effect occurring in Canada of any change that may be caused to the environment on (i) health and socio-economic conditions;(ii) physical and cultural heritage; (iii) the current use of lands and resources for traditional purposes, or (iv) any structure, site or thing that is of historical, archaeological, paleontological or architectural significance.”

No health or socioeconomic issues are known at the Site. The proponent has been in discussions with the KIB and no adverse effects to health or socioeconomic conditions were raised. Impacts to the health and socioeconomic conditions of indigenous peoples are anticipated to be positive, as the proposed works will result in the creation of an estimated 20 jobs.

6.1.3 Physical and Cultural Heritage of Indigenous Peoples

No physical or cultural heritage issues are known at the Site. The project is expected to result in a reduction in air pollution due to reduced transport vehicles on public roadways. The project is not perceived to have a positive or negative impact on the cultural heritage of Indigenous peoples.

6.1.4 Historical, Archaeological, Palaeontological, Architectural Significance

- No historical issues are known at the Site.
- No archaeologically significant issues as known on site.
- No palaeontological significant issues are known at the Site.
- No architectural significant issues are known at the Site.

Through discussions between the proponent and the KIB, no historical, archaeological, palaeontological or architectural issues are anticipated.

6.2 Additional Stakeholder Consultations

Discussions with the Canadian Transportation Agency were initiated in September 2018. NTRT has been advised that a CTA officer will correspond to review licenses and permits applicable to the proposed development. Project stakeholders in government and industry will be contacted prior to the start of the Project. The following have been identified as stakeholders:

- WorkSafeBC
- British Columbia Ministry of Transportation and Infrastructure
- City of Kamloops
- Technical Safety BC
- Canadian National Railway Company

NTRT has engaged in communications with the Canadian National Railway Company and the City of Kamloops. It is anticipated that engagement with stakeholders will continue throughout the project design, construction, and operational phases.

7. LIMITATIONS

Findings presented in this report are based upon (i) reviews of available documentation, and (ii) observations of the Site and surrounding lands. The conclusions and recommendations documented in this report have been prepared in a manner consistent with that level of care and skill normally exercised by other members of the environmental science profession, practicing under similar circumstances in the area at the time of the performance of the work.

This report has been prepared solely for the internal use of North Thompson Rail Terminals Inc. and the Canadian Environmental Assessment Agency pursuant to the agreement between Keystone Environmental Ltd. and North Thompson Rail Terminals Inc. By using this report North Thompson Rail Terminals Inc. and the Canadian Environmental Assessment Agency agree that they will review and use the report in its entirety. Any use which other parties make of this report, or any reliance on or decisions made based on it, are the responsibilities of such parties. Keystone Environmental Ltd. accepts no responsibilities for damages, if any, suffered by other parties as a result of decisions made or actions based on this report.

Prepared by:

<Original Signed By>

Corrie Allen, M.Sc., B.I.T.
Biologist

Reviewed by:

<Original Signed By>

Warren Appleton, R.P.Bio.
Senior Biologist

8. REFERENCES

- BC Conservation Data Centre. 2014. Occurrence Report Summary, Shape ID: 86238, American Badger. B.C. Ministry of Environment. Available: <http://a100.gov.bc.ca/pub/eswp/>. Accessed on July 24, 2018.
- BC Ministry of Environment. 2017. Guidance on application of provincial air quality objectives for NO₂. Available: https://www2.gov.bc.ca/assets/gov/environment/air-land-water/air/reports-pub/no2_aqo-implementation_guide.pdf. Accessed on July 24, 2018.
- BC Ministry of Environment. 2017. Guidance on application of provincial air quality objectives for SO₂. Available: https://www2.gov.bc.ca/assets/gov/environment/air-land-water/air/reports-pub/no2_aqo-implementation_guide.pdf. Accessed on July 24, 2018.
- BC Ministry of Environment and Climate Change Strategy. 2018. British Columbia Approved Water quality guidelines: aquatic life, wildlife and agriculture summary report. Prepared by the Water Protection and Sustainability Branch. Available: https://www2.gov.bc.ca/assets/gov/environment/air-land-water/water/waterquality/wqgs-wqos/approved-wqgs/wqg_summary_aquaticlife_wildlife_agri.pdf. Accessed on July 24, 2018.
- BC Ministry of Forests. 1991. Special Report Series 6: Ecosystems of British Columbia. Available: <http://www.for.gov.bc.ca/hfd/pub/docs/srs/srs06.pdf>. Accessed on: July 18, 2018.
- City of Kamloops, 2013. Airshed Management Plan. Available: <https://www.kamloops.ca/sites/default/files/docs/13-05-airshedmanagementplan.pdf>. Accessed July 29, 2018.
- Government of British Columbia. 2018. Fisheries Inventory Data Queries. Available: <https://www2.gov.bc.ca/gov/content/environment/plants-animals-ecosystems/fish/fish-and-fish-habitat-data-information/search-fish-fish-habitat-data-information/fisheries-inventory-data-queries>. Accessed July 29, 2018.
- Government of British Columbia. 2009. Provincial Air Quality Objective for PM_{2.5}. Available: <https://www2.gov.bc.ca/gov/content/environment/air-land-water/air/air-quality-management/regulatory-framework/objectives-standards/pm2-5>. Accessed July 29, 2018.
- Government of British Columbia. Undated. Provincial air quality objective for PM₁₀. Available: <https://www2.gov.bc.ca/gov/content/environment/air-land-water/air/air-quality-management/regulatory-framework/objectives-standards/pm10>. Accessed July 29, 2018.
- Government of British Columbia. 1995. Kamloops Land and Resource Management Plan. Available: https://www2.gov.bc.ca/assets/gov/farming-natural-resources-and-industry/natural-resource-use/land-water-use/crown-land/land-use-plans-and-objectives/thompsonokanagan-region/kamloops-lrmp/kamloops_lrmp.pdf. Accessed July 29, 2018.
- Government of Canada, 2018. Canadian Climate Normals 1981 – 2010 Station Data. Available: http://climate.weather.gc.ca/climate_normals/results_1981_2010_e.html?stnID=1275&autofwd=1. Accessed July 29, 2018.

Indigenous and Northern Affairs Canada, 2018. Aboriginal and Treaty Rights Information System.

Minister of Justice, 2018a. Prescribed Information for the Description of a Designated Project Regulations. SOR/2012-148 *Canadian Environmental Assessment Act, 2012*. Available: <http://laws-lois.justice.gc.ca/PDF/SOR-2012-148.pdf>. Accessed July 29, 2018.

Minister of Justice, 2018a. *Canadian Environmental Assessment Act, 2012*. Available at: <http://laws-lois.justice.gc.ca/PDF/C-15.21.pdf>. Accessed: July 12, 2018.

Minister of Justice, 2018c. Regulations Designating Physical Activities (2012) SOR/2012-147. Available: <http://laws-lois.justice.gc.ca/PDF/SOR-2012-147.pdf>. Accessed: July 12, 2018.

Shaw & Tuominen, 1999. Water Quality in the Fraser River Basin. Aquatic and Atmospheric Sciences Division Environment Canada, Vancouver B.C.

APPENDIX 1

SELECTED SITE PHOTOGRAPHS



Photograph 1: Remnant cultivated field dominated by agronomic and invasive species. Photo taken July 17, 2018 facing northeast.



Photograph 2: Existing single-family home, located in the centre of the property. Photo taken facing North, July 17, 2018.



Photograph 3: Existing material debris pile, located along the eastern Site perimeter.
Photo taken facing southeast, July 17, 2018.



Photograph 4: Existing material debris pile, located along the northeastern Site perimeter.
Photo taken facing northeast, July 17, 2018.



Photograph 5: Billboard located on Site. Photo taken facing north.



Photograph 6: Approximate location of the proposed access road. The road will run parallel to the existing fence. Photo taken facing east, July 17, 2018.



Photograph 7: Existing access road. Photo taken facing west, July 17, 2018.



Photograph 8: Existing patch of mature deciduous trees. Photo taken facing northwest on July 17, 2018.



Photograph 9: Existing patch of mature deciduous trees. Photo taken facing west on July 17, 2018.



Photograph 10: Existing patch of mature deciduous trees. Photo taken facing east on July 17, 2018.



Photograph 11: Sources of noise from offsite location 1.



Photograph 12: Sources of noise from offsite location 1.



Photograph 13: Sources of noise from offsite location 2.



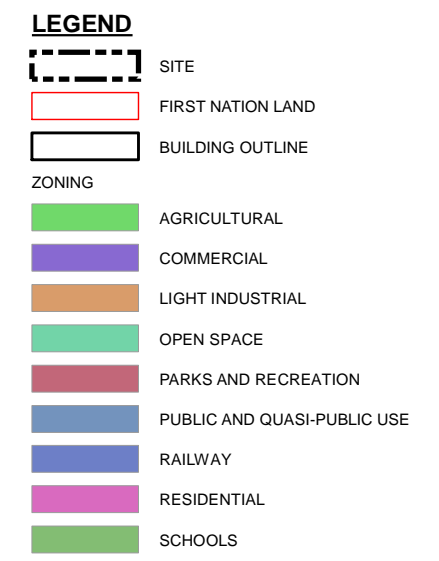
Photograph 14: Sources of noise from offsite location 3.



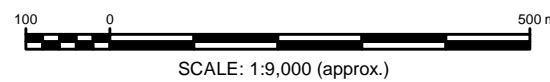
Photograph 15: Sources of noise from offsite location 4.

APPENDIX 2

FIGURES



NOTES:
 1. THIS DRAWING IS FOR GENERAL INFORMATION ONLY.
 LOT BOUNDARIES AND FEATURES ARE APPROXIMATE.
 2. DATE OF ORTHO PHOTO IS 2016.



1306 & 1310 Kootenay Way
 Kamloops, B C
 North Thompson Rail Terminal

REVISION No.	DATE	PROJECT No.
00	Aug. 2018	14230-100

Figure 1
 Site Location Plan



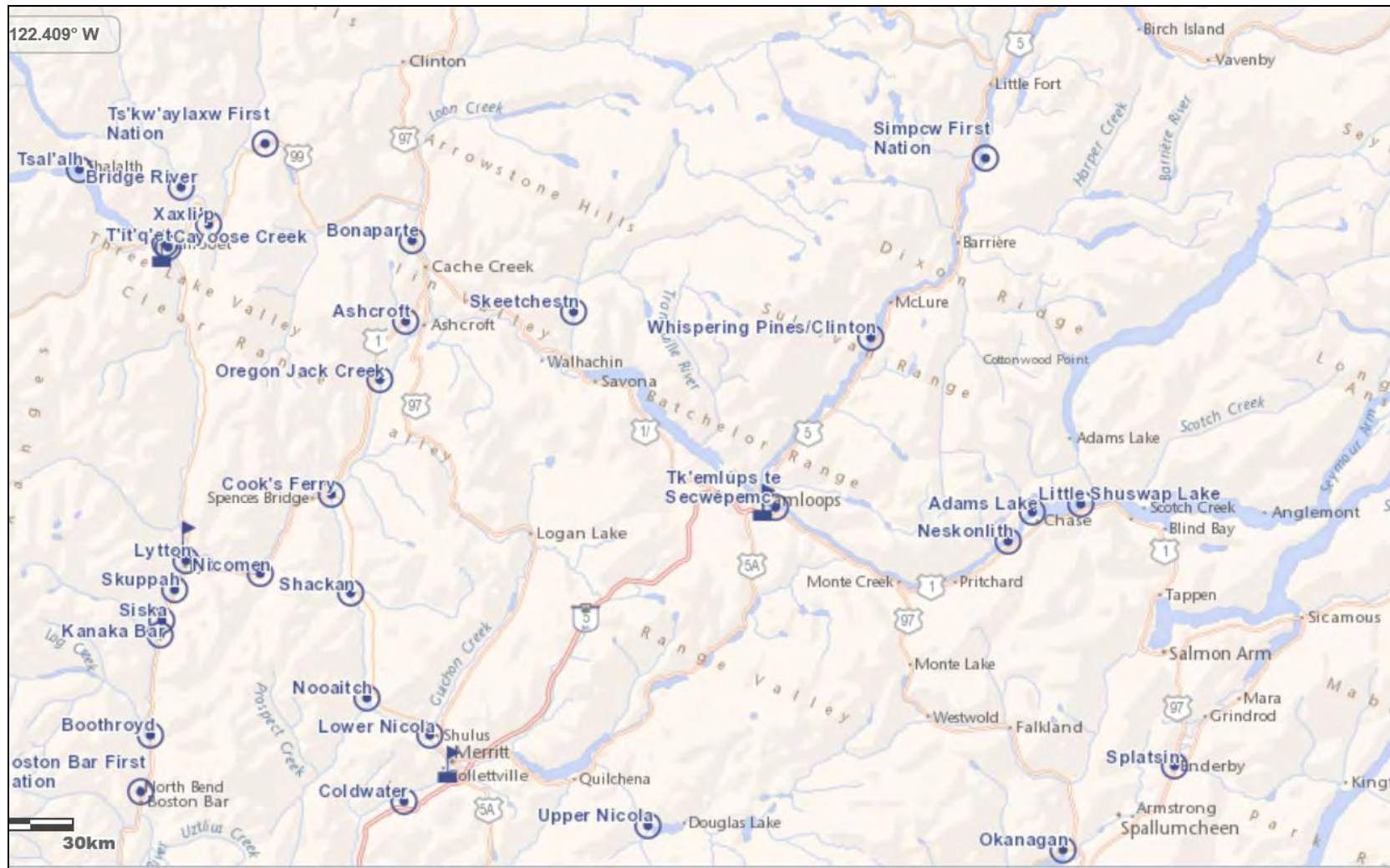


Figure 2 Tribal Council / First Nation Agreements located within 240 km of the Site, located in Kamloops, BC¹

¹ http://sidait-atris.aadnc-aandc.gc.ca/atris_online/Content/Search.aspx

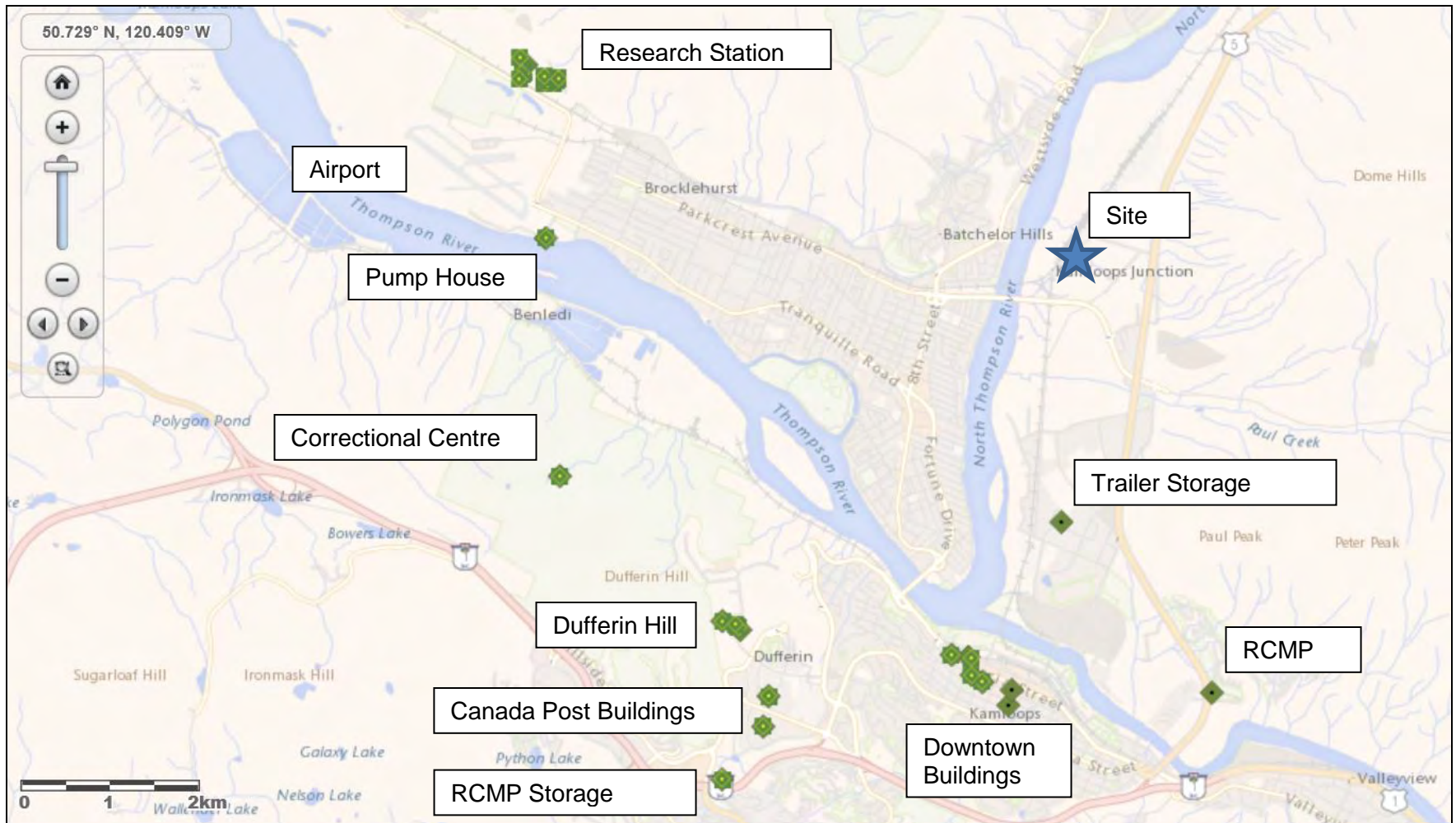


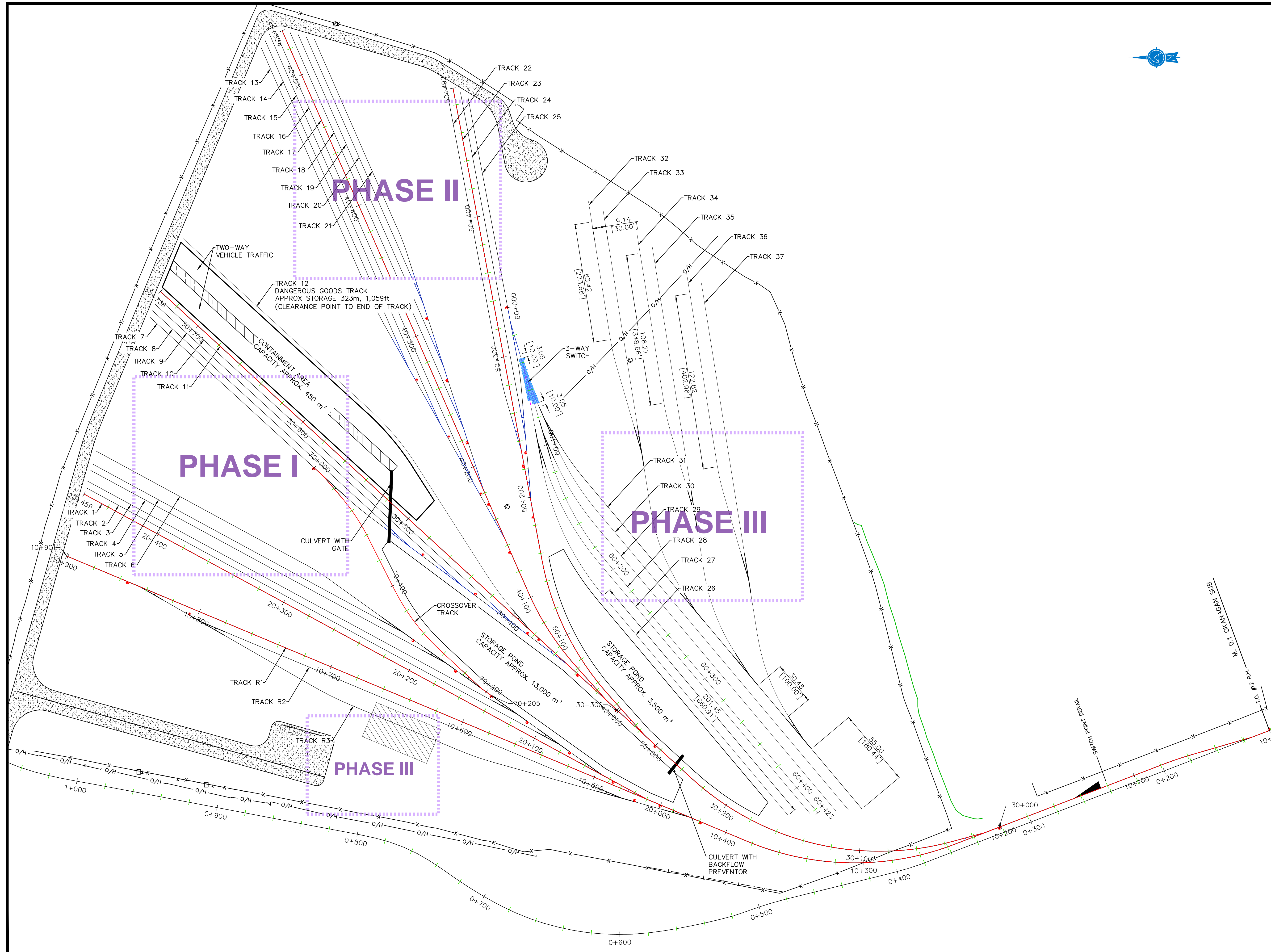
Figure 3 Federal sites near the Site, located in Kamloops, BC¹

¹ <https://map-carte.tbs-sct.gc.ca/map-carte/dfrp-rbif/map-carte.aspx?Language=EN&backto=https://www.tbs-sct.gc.ca/dfrp-rbif/home-accueil-eng.aspx>



Figure 4 Location of Site in Kamloops, BC¹

¹<https://www.google.com/maps/@50.7124971,-120.3579845,9119m/data=!3m1!1e3!5m1!1e4>



LEGEND

- EXISTING FENCE
- EXISTING ON TRACK
- PROPOSED TRACK (INBOUND/OUTBOUND)
- PROPOSED TRACK (YARD)
- PROPOSED BUILDING
- NO. 8 TURNOUT
- NO. 10 TURNOUT
- PROPOSED POINT OF SWITCH
- PROPOSED SWITCH POINT DERAIL
- DRAINAGE PATH
- LOW POINT

CONSTRUCTION NOTES:

1. DESIGN ASSUMES THAT EXISTING BUILDINGS AND UTILITIES HAVE BEEN REMOVED FROM PROPERTY PRIOR TO CONSTRUCTION.
2. CONTRACTOR RESPONSIBLE FOR VERIFICATION OF EXISTING UTILITIES.
3. DESIGN IS PENDING COMPLETION OF GEOTECHNICAL REPORT. DESIGN TO BE REVIEWED AND REVISED FOLLOWING GEOTECHNICAL INVESTIGATION TO ENSURE COMPLIANCE WITH REPORT FINDINGS.

NOTE:
ALL EXISTING LINENWORK HAS BEEN BASED OFF OF SURVEY PROVIDED BY ROCA SURVEY LTD. EXACT LOCATION OF EXISTING TURNOUTS HAS NOT BEEN DETERMINED AND MAY RESULT IN CHANGES TO THE PROPOSED TRACK LINENWORK.

DRAWING REVISIONS

REV	DESCRIPTION	BY	DATE
01	ISSUED FOR REVIEW	SS	2018-11-02

ISSUED FOR
INFORMATION
ONLY

ENGINEER			
CLIENT			
NORTH THOMPSON RAIL TERMINAL			
PROJECT			
NORTH THOMPSON RAIL TERMINAL KAMLOOPS BRITISH COLUMBIA			
TITLE			
PROPOSED TRACK CONCEPT ALIGNMENT OPTION 11			
DESIGNED	SS	SCALE	1:1250
DATE		DATE	2018-11-02
DRAWN	SS	PROJECT NO.	CG3021
DWG NO.			E01
REVIEWED	SC	FILE NO.	CG3021 - CONCEPT OPTION 11
SHEET NO.			01 OF 01

Z:\Barracuda\Projects\CG3021\North Thompson Rail Terminal\CG3021 - North Thompson Rail Terminal - Option 11 - Concept Option 11.dwg, 18/11/2018 12:28:38 PM