

# **EAC Amendment Application for Construction and Operation of Increased Condensate Storage**

November 26, 2024

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Prepared By:  
Stantec Consulting Ltd.

Prepared For:  
Woodfibre LNG General Partner Inc



**WOODFIBRE LNG PROJECT:  
EAC AMENDMENT APPLICATION FOR CONSTRUCTION AND  
OPERATION OF INCREASED CONDENSATE STORAGE**

## Preamble

The Woodfibre Liquefied Natural Gas Project (the Project) is a liquefied natural gas export facility being constructed on the former Woodfibre Pulp and Paper Mill site (the Project) in Átl'ka7tsem (Howe Sound), approximately seven kilometres south of Skwxwú7mesh (Squamish). The Project is on the historical location of a Skwxwú7mesh Úxwumixw (Squamish Nation) village known as Swiyát. Swiyát and Átl'ka7tsem (Howe Sound) are tied to the cultural well-being of Skwxwú7mesh Úxwumixw (Squamish Nation) members, their ancestors, and their descendants, and to other Indigenous groups as defined in the Project's Environmental Assessment Certificates. Woodfibre LNG General Partner Inc. recognizes the importance of these areas to the Skwxwú7mesh stélmexw (Squamish People), and other Indigenous groups. Woodfibre LNG General Partner Inc. seeks to construct and operate the Project in a manner that is respectful of Indigenous values.

Temíxwiyíkw chet wa naantem chet ti temíxw Swiyát  
Chet wa sméñhemswit kwis ns7éyxnitás chet ti temíxw  
We7ú chet kwis t'íchimwit iy íwas chet ek' I tti.

Our ancient ancestors named this place Swiyát  
We, as their descendants safeguard these lands  
We will continue to swim and fish in these clear waters.

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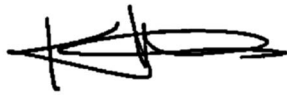
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The conclusions in the Report titled EAC Amendment Application for Construction and Operation of Increased Condensate Storage are Stantec's professional opinion, as of the time of the Report, and concerning the scope described in the Report. The opinions in the document are based on conditions and information existing at the time the scope of work was conducted and do not take into account any subsequent changes. The Report relates solely to the specific project for which Stantec was retained and the stated purpose for which the Report was prepared. The Report is not to be used or relied on for any variation or extension of the project, or for any other project or purpose, and any unauthorized use or reliance is at the recipient's own risk.

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Prepared by:



Signature

Kara Hewgill, B.Sc., EP

Senior Principal, Environmental Services

Approved by:

Signature

Adriana MacLeod, B.Sc.

Project Manager

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## Abbreviations

BC	British Columbia
CPD	Certified Project Description
EAC	Environmental Assessment Certificate
EAA	<i>Environmental Assessment Act</i>
km	kilometre
LNG	liquefied natural gas
m <sup>3</sup>	cubic metres

## 1.0 INTRODUCTION

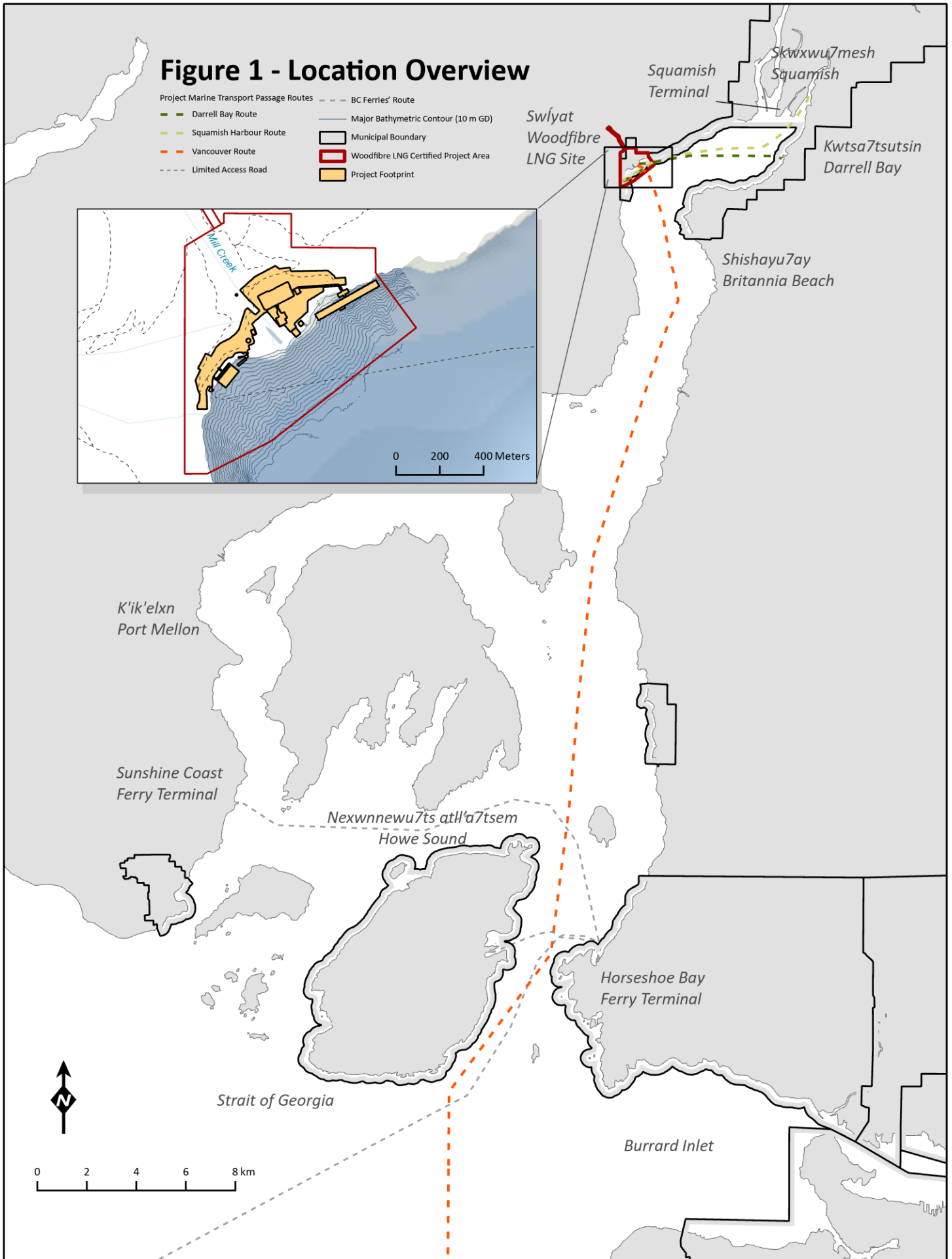
Woodfibre LNG General Partner Inc., as General Partner on behalf of the Woodfibre LNG Limited Partnership (Woodfibre LNG) will construct and operate the Woodfibre Liquefied Natural Gas Project (the Project), which is located on the former Woodfibre Pulp Mill site approximately seven kilometres (km) southwest of Skw̓wú7mesh (Squamish), British Columbia (BC) (Figure 1).

As holders of Environmental Assessment Certificate (EAC) #15-02, Woodfibre LNG is requesting an EAC amendment for “construction and operation of increased condensate storage”. Specifically, the request is to change Schedule A of the Certified Project Description (CPD) under section 32 of the British Columbia (BC) *Environmental Assessment Act* (EAA) to increase the volume of the condensate storage container (hereafter called tank) from 300 cubic metres (m<sup>3</sup>) to 1,500 m<sup>3</sup> (1,000 m<sup>3</sup> operating volume) to align with current industry practices and reduce the frequency that condensate needs to be removed from the Project site. The proposed larger tank will be located fully within the Certified LNG Facility Area within the Certified Project Area (CPA) (Figure 2). No other changes to the CPD are requested at this time.

The amendment application includes:

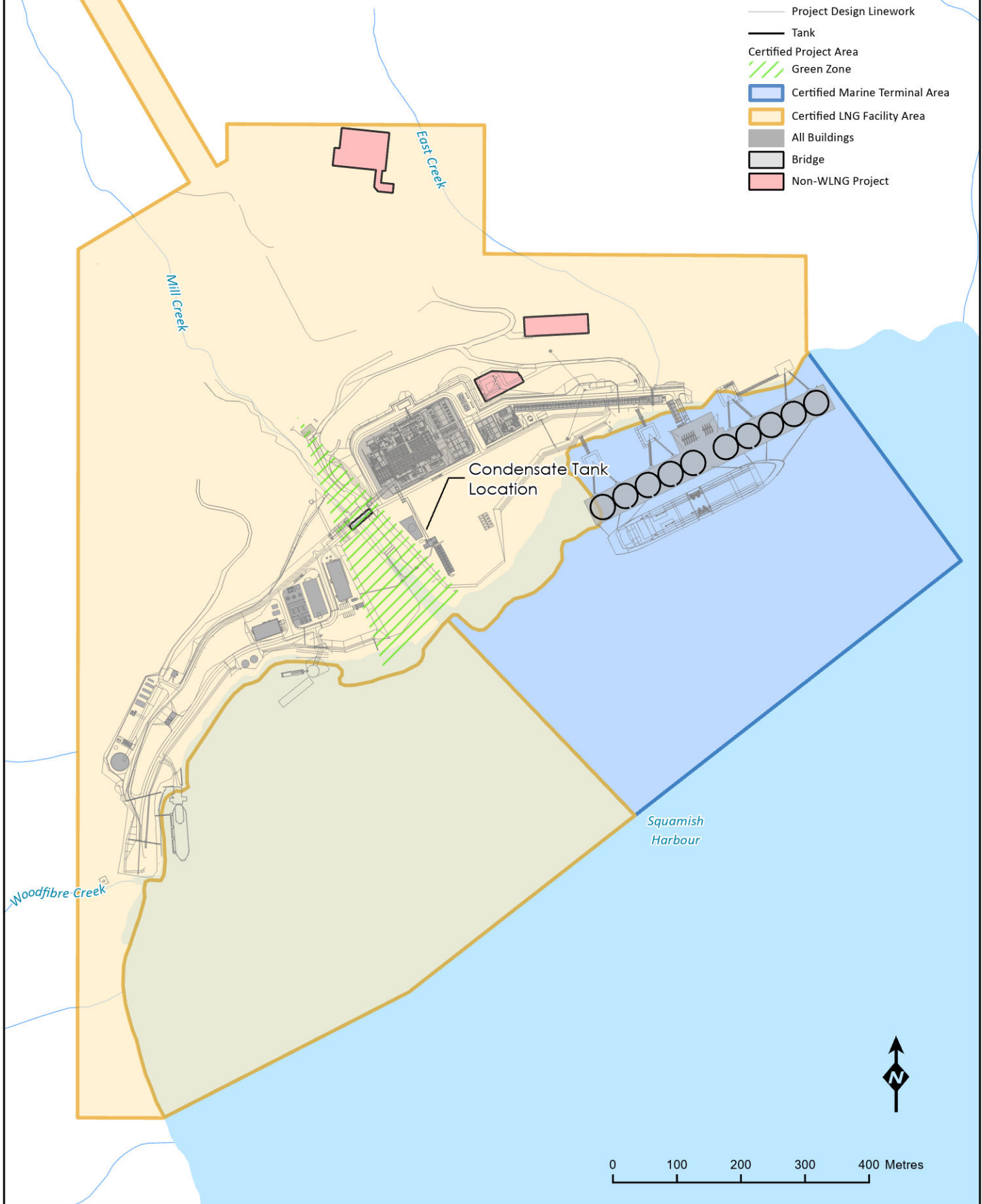
- Project overview and summary of EAC amendments
- Proposed Project changes and rationale for the changes
- Applicable permits and approvals
- Potential interactions on section 25 assessment matters
- Potential interactions of proposed changes on valued components
- Assessment of potential effects associated with the proposed changes
- Changes to Indigenous interests’ assessment Summary of engagement on the amendment application
- Conclusions regarding whether the evaluation provided in the EAO’s Assessment Report (2015) has changed as a result of the proposed changes

# Figure 1 - Location Overview





**Figure 2 - Proposed EAC Amendment Application Changes  
Proposed 1000 m<sup>3</sup> Condensate Tank Location**



## 2.0 PROJECT OVERVIEW

The Project will have capacity to liquefy up to 2.1 million tonnes per year of natural gas, have capacity to store 250,000 m<sup>3</sup> of liquefied natural gas (LNG), and export the LNG via tankers. Key Project components include:

- land-based natural gas processing and liquefaction facilities
- a floating storage and offloading unit
- construction worker accommodation (Floatel)
- supporting infrastructure

The supporting infrastructure includes buildings (e.g., administration offices, control rooms, maintenance, warehouse for dry storage and chemical storage, emergency response building, first aid, safety and guardhouse), site fencing, material storage and laydown areas, utility and loading lines, Roll-on Roll-off barge ramp, passenger dock, material offloading facility, offloading platform, and boil off gas vapour lines.

Most of the Project site is on fee simple, industrially zoned, brownfield lands with more than 100 years of industrial use. There is no road access to the CPA, and all personnel, equipment, and supplies for the Project will be brought in by vessel via Átl'ka7tsem (Howe Sound). The Project will use electrical power sourced from BC Hydro, and Fortis BC will supply gas to the facility.

The Project underwent a comprehensive environmental assessment process from 2013 to 2015 and Woodfibre LNG received:

- EAC #E15-02 for the CPA under the EAA in 2015
- an environmental assessment approval from Skwxwú7mesh Úxwumixw (Squamish Nation) through the Squamish Nation Environmental Assessment Agreement (SNEAA) in 2015
- a positive federal Decision Statement under the *Canadian Environmental Assessment Act*, 2012 (CEAA 2012) in 2016

The provincial, Skwxwú7mesh Úxwumixw (Squamish Nation), and federal environmental assessment processes have each yielded conditions of approval that Woodfibre LNG must address prior to construction of the Project.

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## 2.1 SUMMARY OF EAC AMENDMENTS

Three EAC amendments have been issued for the Project to date:

- EAC amendment (#1) — issued by the EAO on July 12, 2017, for changes to the Project, including changes to the process cooling technology from seawater cooling to air cooling, use of the existing Mill Creek water intake, and withdrawal of water from Woodfibre Creek for short-term needs during construction
- EAC amendment (#2) — issued by the EAO on July 19, 2019, to clarify the definition of construction in the Schedule B (Table of Conditions) removing the phase of the Project during which physical activities in connection with site, preparation, building or installation of any component of the Project occurs
- EAC amendment (#3) — issued by the EAO on November 9, 2023, to allow for a temporary floating worker accommodation, or “Floatel”, as well as its associated mooring, access infrastructure, and onshore drinking-water treatment facility

## 3.0 PROPOSED PROJECT CHANGES AND RATIONALE

### 3.1 CONDENSATE STORAGE TANK AMENDMENT

Woodfibre LNG is requesting to change the following sentence from Section 2.0 of Schedule A of the CPD: “*The components related to LNG processing are: A condensate storage container with a volume of up to 300 m<sup>3</sup>*” to “*The components related to LNG processing are: A condensate storage container with a volume of up to 1500 m<sup>3</sup>*”

Woodfibre LNG’s original Application for an EAC (the EAC Application) (Woodfibre LNG 2015) included a 250 m<sup>3</sup> condensate storage tank (the EAO CPD rounded the storage tank volume to 300 m<sup>3</sup>). Woodfibre LNG requests to change the volume of the condensate storage tank described in the CPD from 300 m<sup>3</sup> to 1,500 m<sup>3</sup>. There will be no change to the quantity of condensate produced by the facility. Condensate transportation is anticipated to be one vessel per month; this is a reduction from approximately every two weeks as described in the EAC Application. The planned volume of condensate per shipment is expected to be approximately 600 to 700 m<sup>3</sup>. The condensate shipping method is still to be decided based on the final condensate purchaser but may include transferring the condensate to tanker trucks that will use a transport barge or transferring the condensate to a tanker barge (it is anticipated that this vessel would range from approximately 2,000 to 3,000 gross tonnage).

The marine transport assessment (Woodfibre LNG 2015) included fuel delivery barges and flat-top barges. The shipping of condensate was considered as part of the transportation of personnel and materials in the EAC Application. As there is no reference to condensate shipping in the Certified Project Description or the EAC conditions, no request is being made to make changes related to the shipping. However, it is recognized that Squamish Nation is interested in condensate loading and shipping, so it is expected that engagement related to this topic will continue.

Woodfibre LNG will retain a suitably qualified contractor to ship condensate using barges that meet Transport Canada’s guideline standards for the construction, inspection and operation of barges carrying oil or dangerous chemicals in bulk<sup>1</sup>. The final buyer of the condensate is yet to be confirmed as negotiations are ongoing; however, it is expected that the buyer will be located within the Lower Mainland. Barges will transit established shipping routes from Howe Sound to a final location in the Lower Mainland.

The proposed natural gas liquefaction process will result in the production of condensate, including pentane, hexane, and heptane. As part of the process condensate will be stored in a storage tank and will be sold and transported from the Project site. The proposed tank with an operating volume of 1,000 m<sup>3</sup> will be installed above-ground and will be approximately 11 m in diameter x 15 m in height (Figure 3).

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<sup>1</sup> Further details of this guidance is available at: <https://tc.canada.ca/en/marine-transportation/marine-safety/standards-construction-inspection-operation-barges-carrying-oil-dangerous-chemicals-bulk#5-pollution-prevention-requirements>

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The operating volume is defined as the volume of condensate between low-level alarm to high level alarms. The actual physical volume of the tank is approximately 1500 m<sup>3</sup>.

The tank will be located within the CPA and the Certified LNG Facility Area. The tank will be constructed on hard standing concrete and be appropriately bunded (secondary containment will be 110% of the total physical volume of the tank in line with the BC Energy Regulator (BCER) Drilling and Production Regulation); any spills will be contained and managed within the bunded area. The bund will include an impermeable barrier. Loading manifold and hoses will be bunded and an oily water sump will be provided to contain any accidental spill or contact water. Spilled condensate or contact water collected in the sump will be transferred to an oily water treatment package via a vacuum truck. The storage tank will have fire monitors to cool the tank in the event of a pool fire (see Section 7.0). Due to the smaller flow rate and size of the barges versus the previously planned loading process, hoses will be used for loading rather than loading arms. Use of hoses is common practice for this service and hydrocarbon transport barges are equipped for hose manifold connections. A manually operated emergency shutdown valve will be installed at the condensate loading manifold with quick connect and disconnect coupling for the hose. During loading, condensate will be loaded onto tanker/barges using a condensate transfer pump. The proposed change to the storage tank volume will not result in changes to flaring requirements at the facility.

## 3.2 SUMMARY OF PHYSICAL WORKS AND ACTIVITIES

The design of the condensate tank is ongoing and is subject to change pending further review and approval through the BCER. There is no change to the physical works or activities as presented in the CPD.

The proposed physical works are expected to include:

- Ground preparation works
- Installation of reinforced concrete tank slab foundations to support loads from a tank with a total capacity of approximately 1500 m<sup>3</sup>
- Installation of the tank; the tank is expected to be prefabricated off-site and lifted into place
- Associated connection to the LNG facility and supporting ancillary infrastructure

## 4.0 APPLICABLE PERMIT AMENDMENT

The Project is subject to an LNG Facility Permit (facility permit) and falls under the requirements of the *Energy Resources Activities Act* (previously the *Oil and Gas Activities Act*) and Liquefied Natural Gas Facility Regulation (LNGFR). Woodfibre LNG was issued an LNG facility permit (Application Determination Number 100105360) on July 2, 2019, by the British Columbia Oil and Gas Commission (now the BCER). Woodfibre LNG received an amendment to this permit on May 11, 2023.

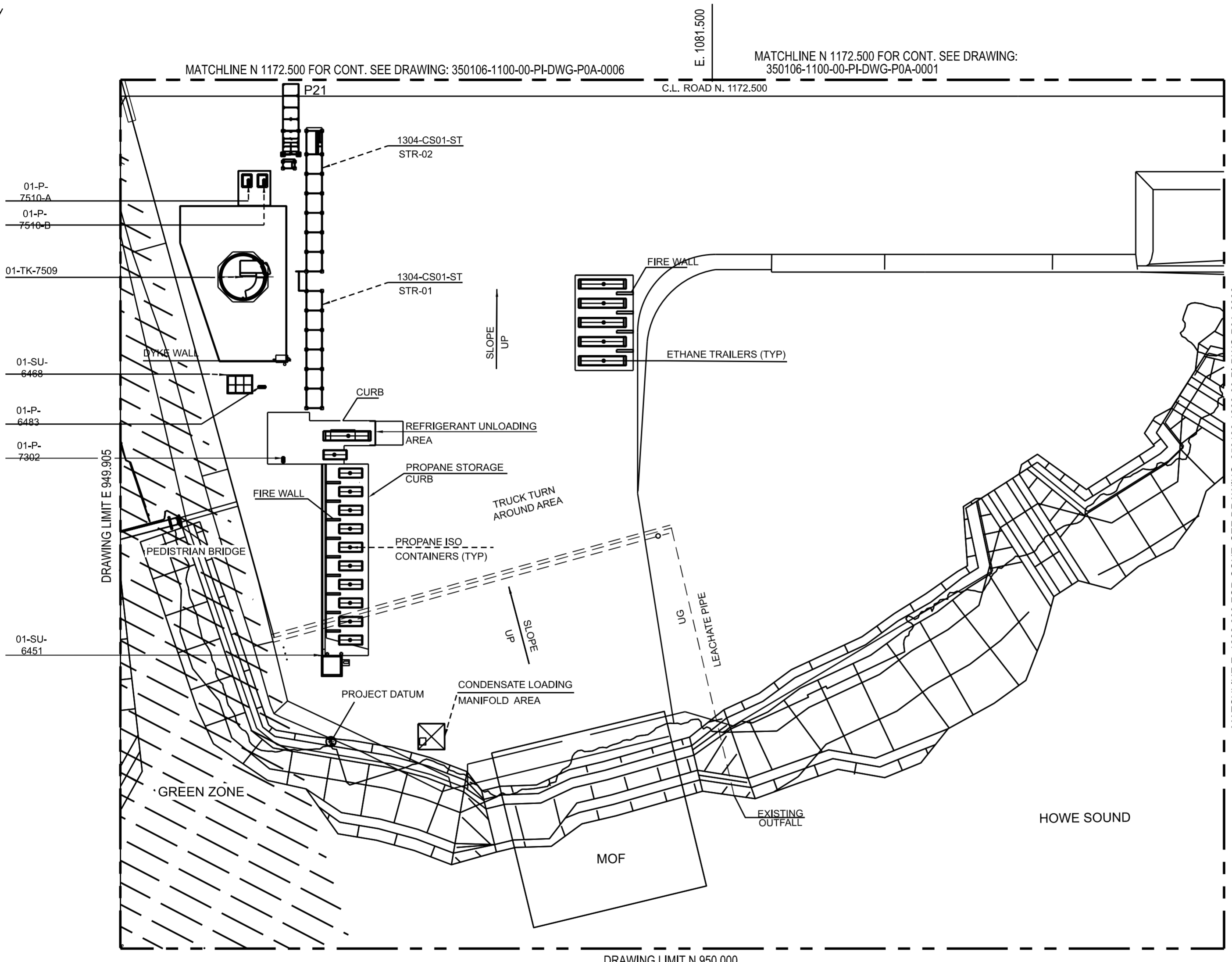
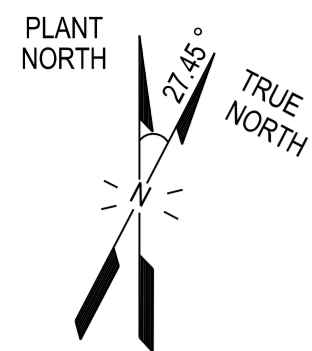
Woodfibre LNG has made additional design changes and will be requesting a second amendment to the LNG facility permit (through the BCER) to account for the change to the condensate storage tank. It is not anticipated that the proposed EAC amendment changes will require any additional permits or approvals beyond the BCER LNG facility permit and EAC amendments.

Additionally, under Condition 17 of the EAC:

*The Holder must develop, in consultation with TC, CCG, Pacific Pilotage Authority, DFO and Aboriginal Groups, a marine transport management and monitoring plan for Operations. The plan must identify at a minimum:*

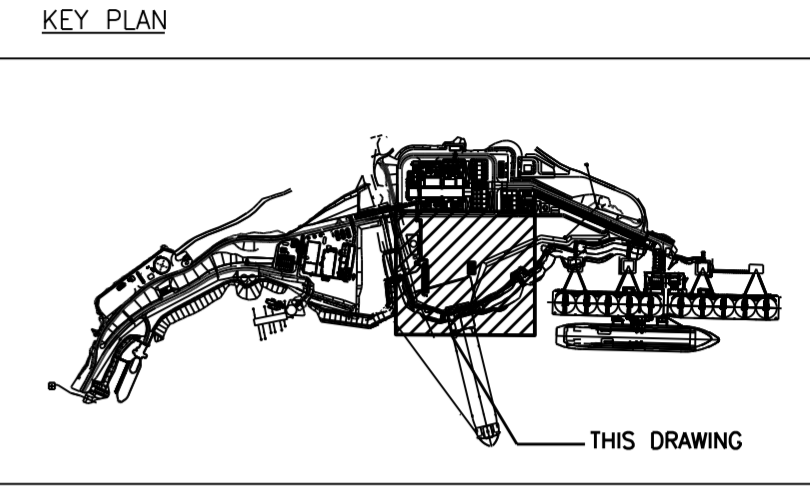
- *The means by which the marine transportation mitigation measures related to Operations in the Application Table 22-1 under the heading “marine transportation & use” (section 7.3, M5.19-3, M6.3-1, M7.3-1 – M7.3-17) will be implemented;*
- *Operations activities that have the potential to interfere with marine navigation;*
- *Existing and traditional navigational routes, fishing areas, habitat areas, harvesting areas, commercial shipping use, recreational and tourism use, Aboriginal Groups’ use, and any associated timing windows;*
- *Methods to inform affected stakeholders and Aboriginal Groups of potential interference with marine navigation as a result of Operations activities;*
- *Mitigation measures to reduce disruption of marine navigation in Howe Sound as a result of Operations activities; and*
- *Practices to reduce disruption and collision risk with marine mammals along the shipping route in Howe Sound;*
- *Methods to inform the public, commercial marine user groups, and Aboriginal Groups about the results of the Technical Review Process of Marine Terminal Systems and Transshipment Sites (TERMPOL) process respecting the Project; and,*
- *Methods to monitor the effects of the Holder’s shipping activities during Operations.*

*The Holder must provide the plan to EAO no less than 60 days prior to the Holder’s planned date to commence Operations. The Holder must also provide the final plan to TC, CCG, Pacific Pilotage Authority, DFO, the DOS, BC Ferries, Squamish Terminals and Aboriginal Groups. The Holder must implement the plan to the satisfaction of EAO. Woodfibre will consult with the parties identified in this condition to develop this required plan, including for condensate transportation.*

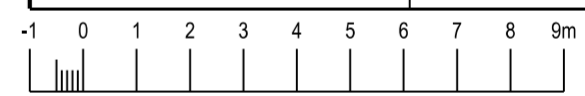


- NOTES:**
1. ALL DIMENSIONS ARE IN MILLIMETERS, COORDINATES AND ELEVATIONS ARE IN METERS
  2. GRADE ELEVATION 0 IS EQUAL TO PROJECT ELEVATION 100m
  3. FOR PROJECT DATUM COORDINATES REFER OVERALL PLOT PLAN
  4. WIND ROSE IS SHOWN IN THE BASIS OF DESIGN. DOC 350106-0000-00-EM-GEN-PDB-0001.

- HOLDS:**
1. EQUIPMENT SIZES AND LOCATION ARE BASED ON PRELIMINARY DATA.



350106-000-00-CV-DWG-C21-0002	FOUNDATION LOCATION KEY PLAN
350106-1300-00-PI-DWG-P0A-0001	REFRIGERANT STORAGE AREA & MOF
350106-4100-00-CV-DWG-K11-0017	CIVIL - ROUGH GRADING - KEY PLAN
350106-0000-00-PI-DWG-P0A-0002	OVERALL PLOT PLAN
350106-0000-00-PI-DWG-P0B-0001	PLOT PLAN KEY PLAN
REFERENCE DRAWING NO.	TITLE



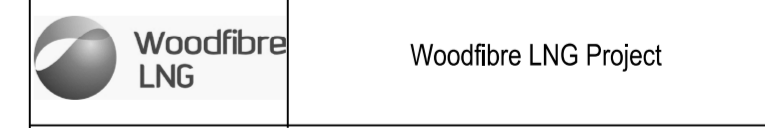
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NO.	REVISION	DRWN	CK'D	APPD	DATE



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SK	25 JAN 2024	JS	25 JAN 2024	HN	25 JAN 2024	SEE SCALE BAR



CLIENT DWG NO:

**UNIT PLOT PLAN**  
REFRIGERANT STORAGE & MOF AREA  
GRADE & ABOVE

FOR: Woodfibre LNG Limited

PROJ. NO:	DWG NO:	REV:
350106	350106-1300-00-PI-DWG-P0A-0001	0A

**EQUIPMENT LIST**

EQUIPMENT NO.	DESCRIPTION	MODULE
01-P-6483	STABILIZED CONDENSATE STORAGE TANK AREA PUMP	NA
01-P-7302	PROPANE UNLOADING PUMP	NA
01-P-7510A/B	STABILIZED CONDENSATE PRODUCT PUMP	NA
01-SU-6451	REFRIGERANT STORAGE AREA IMPOUNDMENT SUMP	NA
01-SU-6468	STABILIZED CONDENSATE STORAGE TANK AREA SUMP	NA
01-TK-7509	STABILIZED CONDENSATE STORAGE TANK	NA

## 5.0 INTERACTIONS WITH SECTION 25 ASSESSMENT MATTERS

Table 1 lists the consideration of matters detailed in Section 25(2) for this amendment application.

**Table 1: Evaluation of Section 25(2) Matters in the Amendment Application**

Section 25(2) Matters	Interaction Identified	Consideration in Amendment Application
(a) positive and negative direct and indirect effects of the reviewable project, including environmental, economic, social, cultural and health effects and adverse cumulative effects	No	The evaluation presented in Table 2 has not identified any valued components (VCs) previously assessed in the EAC Application to be carried forward in this amendment application. As described in Table 2 the proposed larger volume condensate tank and its associated transport will result in a reduction in vessel trips (tanker truck transport barge or tanker barges) transiting to and from the Woodfibre LNG facility to remove condensate and will lead to an overall reduction in condensate-related marine traffic during Project operations. This change is considered negligible, and the evaluation provided in the Assessment Report will not change.
(b) risks and uncertainties associated with those effects, including the results of any interaction between effects	No	As described above, the evaluation presented in Table 2 has not identified any VCs previously assessed in the EAC Application to be carried forward in this amendment application. No new risks and uncertainties have been identified regarding the VCs assessed in the EAC Application.
(c) risks of malfunctions or accidents	Yes	The proposed larger volume condensate tank as it relates to malfunctions or accidents previously assessed is considered in Section 7.0 and Section 7.0. Accidents related to condensate were assessed in the EAC Application, as were marine vessel events. The number of condensate barge movements is expected to be reduced with the proposed change; therefore, the change is considered to be negligible.
(d) disproportionate effects on distinct human populations, including populations identified by gender	No	The proposed changes are not anticipated to have disproportionate effects on distinct human populations, including populations identified by gender.
(e) effects on biophysical factors that support ecosystem function	No	Effects on biophysical factors that support ecosystem function was assessed under terrestrial wildlife and marine/ freshwater VCs in the EAC Application. The evaluation presented in Table 2 has not identified any VCs previously assessed in the EAC Application to be carried forward in this amendment application. Shipping of condensate was assessed in the EAC Application. The number of condensate barge movements is expected to be reduced with the proposed change; therefore, the change is considered to be negligible.



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Section 25(2) Matters	Interaction Identified	Consideration in Amendment Application
(f) effects on current and future generations	No	The proposed changes are not anticipated to have effects on current and future generations given that the proposed change to a larger volume condensate tank and its associated transport are a minor Project component in comparison to the development of the LNG facility overall.
(g) consistency with any land-use plan of the government or an Indigenous nation if the plan is relevant to the assessment and to any assessment conducted under section 35 or 73	No	The Project is located within the municipal boundary of the District of Squamish as shown in the Official Community Plan (adopted in 2018) and the Project site is zoned for Intensive Industrial Development. The amendment application assessment is not being conducted under section 35 (regional assessments) or Section 73 (strategic assessments).
(h) greenhouse gas emissions, including the potential effects on the province being able to meet its targets under the Greenhouse Gas Reduction Targets Act	No	As described in Table 2 the change to construction GHG emissions due to installing a larger volume condensate tank is considered negligible and will not result in a change to the conclusions of the Assessment Report. The number of condensate barge movements is expected to be reduced with the proposed change.
(i) alternative means of carrying out the project that are technically and economically feasible, including through the use of the best available technologies, and the potential effects, risks and uncertainties of those alternatives	No	Alternative means of carrying out the Project was included in the EAC application and evaluated in the Assessment Report. The alternative means of carrying out the Project have not changed since the EAC application.
(j) potential changes to the reviewable project that may be caused by the environment;	No	Potential changes to the Project that may be caused by the environment was assessed in the EAC application. The environment is not expected to interact with the proposed changes in any way not already considered in the EAC application. No change to the effects of the environment on the Project are anticipated as a result of the proposed change.
(k) other prescribed matters	No	No other prescribed matters have been identified as part of the EAC amendment application.

## 5.1 INDIGENOUS KNOWLEDGE

No Indigenous knowledge specific to the amendment application has been provided by Squamish Nation, Tsleil-Waututh Nation or Musqueam Indian Band (see also Section 9.1). During initial consultation on the proposed changes, Indigenous Nations provided limited feedback. Since providing the original materials to the EAO and with subsequent consultation (see Section 9.1), Squamish Nation has indicated concerns about loading and shipping of condensate in particular. It is anticipated that through continued engagement with Squamish Nation that Indigenous knowledge may be provided for incorporation into the final assessment. Similarly, consultation will continue to be offered to Tsleil-Waututh Nation and Musqueam Indian Band, where additional information may be provided that can be incorporated into the assessment.

## 6.0 POTENTIAL INTERACTIONS OF PROPOSED CHANGES ON VALUED COMPONENTS

As part of this amendment application the changes described in Section 3.0 have been screened for potential interactions with the VCs and Intermediate Components (ICs) previously assessed in the EAC Application (Table 2). Potential interactions have been rated using the following criteria:

- 0 = No effect expected, excluded from further consideration, and not carried forward in the amendment assessment.
- 1= Negligible change relative to the potential effects previously assessed in the EAC Application. Potential effects can be appropriately managed via existing mitigation measures and commitments.
- 2 = Potential for change to the previously assessed effects or requires implementation of new mitigation measures. Warrants further consideration and carried forward in the amendment application.
- + = Potential positive effects identified

For each VC, rationale for inclusion/exclusion for further assessment is provided. Where an identified interaction could result in a material change to an adverse residual effect then the VC is carried forward in the effects assessment. Material change is defined as a change to the characterization of residual effects on a VC as presented in the Assessment Report (EAO 2015) (the Assessment Report). Potential interactions with VCs have been identified based on the proposed change of constructing and operating a larger volume condensate tank within the CPA for the Project.

Based on the screening of potential interactions presented in Table 2 the proposed larger volume condensate tank will not result in material changes to the effects on VCs as previously assessed in the EAC Application. As a result, no change to the conclusions of the Assessment Report (EAO 2015) is expected for any of the VCs.

Studies and assessments that were submitted during the environmental assessment process and that are relevant to the proposed changes include the baseline information describing navigational routes, fishing, hunting, and harvesting areas, habitat areas, commercial shipping use, recreational and tourism use, and marine use by Indigenous Nations in Átl'ka7tsem (Howe Sound). The interactions identified between VCs and Project components/activities in the EAC Application (Woodfibre 2015) informed this amendment application, as did the assessment of accidents and malfunctions and the assessment of Aboriginal Interests. No other studies or assessments relevant to the proposed changes have been identified.

**Table 2: Potential Interactions with Valued Components and Intermediate Components**

VC Assessed in EAC Application	Supporting IC	Interaction Rating	Assessment Approach	Rationale for Inclusion or Exclusion
Atmospheric Environment (Air Quality) (VC)	Site Contamination	1	Excluded from further assessment, negligible change anticipated	<p>The change in criteria air contaminants as result of constructing a larger volume condensate tank is considered negligible as the EAC Application considered a broad range of equipment routinely operating at the Project site during the construction period; this included excavators, bulldozers, cranes, forklifts and loaders. There is not expected to be a difference in equipment needed for the assembly of the larger tank, as the tank is expected to be prefabricated off-site and lifted into position.</p> <p>The proposed larger condensate tank will not result in a meaningful change to air quality, nor a material change to the conclusions of the Assessment Report. Any potential effects can be appropriately managed via existing EAC conditions and commitments (e.g., Construction Environmental Management Plan).</p> <p>The marine transport assessment completed as part of the EAC Application (Woodfibre LNG 2015) included fuel delivery barges and flat-top barges. The shipping of condensate was considered as part of the transportation of materials and personnel in the EAC Application. The number of condensate shipments is expected to be reduced with the proposed changes, from approximately two shipments per month as described in the EAC Application down to approximately one shipment per month. As such, shipping of condensate is not carried forward. The required marine transport management and monitoring plan for Operations will address shipping, including shipping of condensate.</p>
Greenhouse Gas Management (VC)	Not Applicable	1	Excluded from further assessment, negligible change anticipated	<p>The change in equipment required to install the tank is expected to be negligible as the EAC Application assessed a broad range of mobile equipment routinely operating at the site during Project construction (e.g., excavators, bulldozers, cranes, forklifts and loaders). There is not expected to be a difference in equipment needed for the assembly of the larger tank as the tank is expected to be prefabricated off-site and lifted into position.</p> <p>The change to construction GHG emissions due to installing a larger volume condensate tank is considered negligible relative to the previously assessed effects and will not lead to a material change to the conclusions of the Assessment Report and Project GHG emission targets from mobile equipment will be managed through existing EAC conditions and commitments (e.g., Best Management practices for greenhouse emissions).</p> <p>The marine transport assessment completed as part of the EAC Application (Woodfibre LNG 2015) included fuel delivery barges and flat-top barges. The shipping of condensate was considered as part of the transportation of materials and personnel in the EAC Application. The number of condensate shipments is expected to be reduced with the proposed changes, from approximately two shipments per month as described in the EAC Application down to approximately one shipment per month. As such, shipping of condensate is not carried forward. The required marine transport management and monitoring plan for Operations will address shipping, including shipping of condensate.</p>
Vegetation Communities (VC)	Not Applicable	0	Not carried forward; no interaction identified	<p>No interaction between the proposed larger volume condensate tank and vegetation communities is anticipated as the condensate tank will be located entirely within the CPA and Certified LNG Facility Area and there will be no additional disturbance; therefore, this VC is excluded from further assessment. There is no interaction between the shipping of condensate / transport using barges and vegetation.</p>
Terrestrial Wildlife and Marine Birds <sup>1</sup>	Atmospheric Sound Light Surface Water Quality Surface Water Quantity Marine Water Quality	0	Not carried forward; no interaction identified	<p>No interaction between the proposed larger volume condensate tank and terrestrial wildlife and marine birds is anticipated as the condensate tank will be located entirely within the CPA and Certified LNG Facility Area and there will be no additional disturbance or interaction beyond that already assessed; therefore, this VC is excluded from further assessment. The EAC conditions and commitments for terrestrial wildlife and marine birds will still apply (e.g., Wildlife Management and Monitoring Plan and BMPs).</p> <p>The marine transport assessment completed as part of the EAC Application (Woodfibre LNG 2015) included fuel delivery barges and flat-top barges. The shipping of condensate was considered as part of the transportation of materials and personnel in the EAC Application. The number of condensate shipments is expected to be reduced with the proposed changes, from approximately two shipments per month as described in the EAC Application down to approximately one shipment per month. As such, shipping of condensate is not carried forward. The required marine transport management and monitoring plan for Operations will address shipping, including shipping of condensate.</p>

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VC Assessed in EAC Application	Supporting IC	Interaction Rating	Assessment Approach	Rationale for Inclusion or Exclusion
Freshwater Fish and Fish Habitat (VC)	Site Contamination Surface Water Quality Surface Water Quantity Marine Water Quality	0	Not carried forward; no interaction identified	No interaction between the proposed larger volume condensate tank and freshwater fish and fish habitat is anticipated as the tank will be located entirely within the CPA and the Certified LNG Facility Area; this area will be banded (secondary containment), and in the unlikely event of a spill, condensate will be contained and managed inside the banded area. Therefore, this VC is excluded from further assessment. The shipping of condensate / transport using barges does not interact with freshwater fish and fish habitat.
Marine Benthic Habitat (VC)	Geotechnical & Natural Hazards Site Contamination Marine Water Quality	0	Not carried forward; no interaction identified	No interaction between the proposed larger volume condensate tank and marine benthic habitat is anticipated and this VC is therefore excluded from further assessment. As per the EAC Application, the shipping of condensate / transport using barges does not interact with marine benthic habitat, however, it is assessed in the context of accidents and malfunctions.
Marine Fish and Marine Mammals <sup>2</sup>	Atmospheric Sound Surface Water Quality Marine Water Quality	0	Not carried forward; no interaction identified	No interaction between the proposed larger volume condensate tank and marine fish and marine mammals is anticipated as the tank will be located entirely within the existing CPA and LNG Facility Area approximately 108 m from Howe Sound and this VC is therefore excluded from further assessment. The marine transport assessment completed as part of the EAC Application (Woodfibre LNG 2015) included fuel delivery barges and flat-top barges. The shipping of condensate was considered as part of the transportation of materials and personnel in the EAC Application. The number of condensate shipments is expected to be reduced with the proposed changes, from approximately two shipments per month as described in the EAC Application down to approximately one shipment per month. As such, shipping of condensate is not carried forward. However, as described in Section 3.1 Woodfibre LNG will retain a suitably qualified contractor to ship condensate using barges that meet Transport Canada's guideline standards for the construction, inspection and operation of barges carrying oil or dangerous chemicals in bulk. Further, the required marine transport management and monitoring plan for Operations will address shipping, including shipping of condensate.
Labour Market (VC)	Not Applicable	1	Excluded from further assessment, negligible change anticipated	Changes to employment, labour market balance, labour market income and changes to training opportunities as a result of the proposed larger volume condensate tank change are expected to be negligible relative to the overall Project. The activity of installing and operating a tank, and the transportation of condensate has not changed. As a result, the evaluation provided in the Assessment Report will not change.
Sustainable Economy (VC)	Not Applicable	1	Excluded from further assessment, negligible change anticipated	Additional expenditures required as result of the proposed larger volume condensate tank are expected to be negligible in comparison to overall Project expenditures. As a result, the evaluation provided in the Assessment Report will not change.
Infrastructure and community services (VC)	Not Applicable	1	Excluded from further assessment, negligible change anticipated	The proposed larger volume condensate tank will result in a marginal increase in the flammable liquid stored on site. The infrastructure and community services VC in the EA Application assessed the change in demand for emergency services on an overall Project-wide basis during Project operation and construction. As such, the proposed larger tank will not result in a meaningful change to the evaluation in the EAO Assessment Report and effects will be managed through existing EAC conditions and commitments (e.g., Emergency Response Plan). Further consideration of accidents and malfunctions is presented below in Section 7.0. The marine transport assessment completed as part of the EAC Application (Woodfibre LNG 2015) included fuel delivery barges and flat-top barges. The shipping of condensate was considered as part of the transportation of materials and personnel in the EAC Application. The number of condensate shipments is expected to be reduced with the proposed changes, from approximately two shipments per month as described in the EAC Application down to approximately one shipment per month. As such, shipping of condensate is not carried forward. The required marine transport management and monitoring plan for Operations will address shipping, including shipping of condensate.
Marine Transport (VC)	Not Applicable	1+	Excluded from further assessment, negligible change anticipated	The proposed larger volume condensate tank will result in a reduction in vessels (transport barge or tanker barge) transiting Howe Sound to the LNG Facility to remove condensate and will reduce overall marine traffic resulting from the Project during operations. This change is considered negligible and will not change the conclusions of the Assessment Report.

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Land and Resource Use	Not Applicable	0	Not carried forward; no interaction identified	No interaction is expected as the proposed larger volume condensate tank will be located entirely within the CPA and LNG Facility Area, the activity of construction and use of the tank will remain the same as previously defined, and there will be no additional effects to land and resource use. This VC is therefore excluded from further assessment. Shipping of condensate is not applicable to this VC; it is limited to land-based resource use.
Visual Quality (VC)	Light	1	Excluded from further assessment, negligible change anticipated	The proposed larger volume condensate tank (approximately 11 m in diameter x 15 m in height) is not considered to alter visual quality from terrestrial- and marine-based viewpoints and effects are considered negligible relative to those previously assessed and will not lead to a material change to the Assessment Report. Any potential effects can be appropriately managed via existing EAC conditions and commitments (e.g., Visual Quality Management Plan). The proposed larger volume tank remains small in comparison to the overall LNG Facility and supporting infrastructure. The marine transport assessment completed as part of the EAC Application (Woodfibre LNG 2015) included fuel delivery barges and flat-top barges. The shipping of condensate was considered as part of the transportation of materials and personnel in the EAC Application. The number of condensate shipments is expected to be reduced with the proposed changes, from approximately two shipments per month as described in the EAC Application down to approximately one shipment per month. As such, shipping of condensate is not carried forward. The required marine transport management and monitoring plan for Operations will address shipping, including shipping of condensate.
Current Use of Lands and Resources for Traditional (VC)	Atmospheric Sound Light Surface Water Quality Surface Water Quantity Marine Water Quality	0	Not carried forward; no interaction identified	The proposed larger volume condensate tank will result in a negligible change to current use of lands and resources for traditional purposes as the condensate tank will be located within the existing CPA and LNG Facility Area and there will be no additional disturbance; therefore, this VC is excluded from further assessment. The marine transport assessment completed as part of the EAC Application (Woodfibre LNG 2015) included fuel delivery barges and flat-top barges. The shipping of condensate was considered as part of the transportation of materials and personnel in the EAC Application. The number of condensate shipments is expected to be reduced with the proposed changes, from approximately two shipments per month as described in the EAC Application down to approximately one shipment per month. As such, shipping of condensate is not carried forward. The required marine transport management and monitoring plan for Operations will address shipping, including shipping of condensate.
Heritage Resources (VC)	Not Applicable	0	Not carried forward; no interaction identified	No interaction between the proposed larger volume condensate tank and heritage resources has been identified as the tank will be constructed within the existing CPA and LNG Facility Area. No new ground disturbance beyond that already assessed is anticipated. Potential impacts to heritage resources will be managed using Best Management Practices (BMPs) and mitigation measures (e.g., chance find procedures) identified in the existing management plans. This VC is therefore excluded from further assessment. The marine transport assessment completed as part of the EAC Application (Woodfibre LNG 2015) included fuel delivery barges and flat-top barges. The shipping of condensate was considered as part of the transportation of materials and personnel in the EAC Application. The number of condensate shipments is expected to be reduced with the proposed changes, from approximately two shipments per month as described in the EAC Application down to approximately one shipment per month. As such, shipping of condensate is not carried forward. The required marine transport management and monitoring plan for Operations will address shipping, including shipping of condensate.
Community Health and Well-being (VC)	Not Applicable	0	Not carried forward; no interaction identified	No interaction between the proposed larger volume condensate tank and community health and well-being is anticipated. The larger tank is not expected to interact in a way that differs from the original assessment, when considering employment and income, education, house, community connectedness, etc. This VC is therefore excluded from further assessment. The marine transport assessment completed as part of the EAC Application (Woodfibre LNG 2015) included fuel delivery barges and flat-top barges. The shipping of condensate was considered as part of the transportation of materials and personnel in the EAC Application. The number of condensate shipments is expected to be reduced with the proposed changes, from approximately two shipments per month as described in the EAC Application down to approximately one shipment per month. As such, shipping of condensate is not carried forward. The required marine transport management and monitoring plan for Operations will address shipping, including shipping of condensate.

VC Assessed in EAC Application	Supporting IC	Interaction Rating	Assessment Approach	Rationale for Inclusion or Exclusion
Public Health (VC)	Atmospheric Sound Light Site Contamination Surface Water Quality Marine Water Quality	1	Excluded from further assessment, negligible change anticipated	<p>Potential effects on human health related to the proposed condensate tank change (e.g., potential for additional lighting) are considered negligible. The larger tank remains small in comparison to the overall LNG Facility and supporting infrastructure. The proposed change will not result in a change to the conclusions of the Assessment Report. Changes related to accidents and malfunctions are considered in Section 7.0.</p> <p>The marine transport assessment completed as part of the EAC Application (Woodfibre LNG 2015) included fuel delivery barges and flat-top barges. The shipping of condensate was considered as part of the transportation of materials and personnel in the EAC Application. The number of condensate shipments is expected to be reduced with the proposed changes, from approximately two shipments per month as described in the EAC Application down to approximately one shipment per month. As such, shipping of condensate is not carried forward. The Human Health Risk Assessment included marine vessel exhausts during operation.</p>

Notes:

- 1 The EAC Application assessed Avifauna, At-risk Bat Species, Amphibians and Marine Birds as separate VCs, these were grouped under Terrestrial Wildlife and Marine Birds in the Assessment Report
- 2 The EAC Application assessed Forage Fish and Other Fish (Marine) and Marine Mammals as separate VCs, these were grouped under Marine Fish and Marine Mammals in the Assessment Report

## 7.0 ASSESSMENT OF ACCIDENTS AND MALFUNCTIONS

Accidents and malfunctions resulting from construction, operation and decommissioning of the Project on VCs was assessed in Section 11 of the EAC Application, based on a preliminary Quantitative Risk Assessment (QRA) developed with credible worst-case scenarios. The proposed change to the Project will not introduce additional accident or malfunction scenarios nor additional risk during the construction or decommissioning phases from those previously assessed; these phases are therefore excluded from this amendment assessment.

The following operational phase accident and malfunction events relevant to condensate were identified in the EAC Application:

- Loss of Containment of Liquefied Natural Gas—Condensate Storage Release
- Explosion or Fire

“Loss of Containment of Liquefied Natural Gas—Condensate Storage Release” was included as a loss of containment scenario in the preliminary QRA (Lloyd’s Register Consulting 2014) and the EAC Application (Woodfibre LNG 2015; Accidents and Malfunctions Section 11). This scenario included a condensate storage release based on a leak size of 6 inches (125 millimetres) from the 250 m<sup>3</sup> condensate storage tank proposed at the time, which included a bund with capacity to contain 110% of the tank volume. While release of condensate was included in this scenario, the credible worst-case scenarios assessed were the failure of a blow-down valve and release of a large volume of LNG inventory contained within a segment between two emergency shutdown valves, and the release of LNG to the marine environment from one floating storage and offloading unit tank. The entire upland processing train is sited within a concrete bund that would capture and contain spilt LNG. Based on these worst-case scenarios, of which a release of condensate would be of lesser consequence, the conclusion of the Assessment Report was that while the consequences of a loss of containment could be high, such an event is considered a rare<sup>2</sup> occurrence during the life of the Project due to comprehensive preventative mitigations and the robust regulatory review of accident protocols under the BCER framework.

The proposed 1500 m<sup>3</sup> condensate storage tank will have a bund installed that is 110% of the total tank volume in line with the BCER Drilling and Production Regulation<sup>3</sup> and other industry standards and would be capable of containing the entire contents of the tank in the event of loss of containment.

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<sup>2</sup> EAC Application definitions for categories of likelihood defined “rare” as an event that could occur only in exceptional circumstances. Not expected to occur during the life of the Project.

<sup>3</sup> Regulation available at <https://www.bc-er.ca/files/documents/DPR-266-2022-Early-Consolidation.pdf> and other industry standards.

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Potential effects associated with a loss of containment of condensate will be managed via relevant existing mitigation measures and commitments specified in Section 11.3.6.2 and Table 22-1 of the EAC Application (Woodfibre 2015). These include:

- Mitigation M11-1 Revegetate disturbed areas: In the event of a spill, vegetation and soil may be removed to facilitate cleanup. Any removed vegetation will be replaced after cleanup to encourage re-establishment of natural vegetation communities.
- Mitigation M11-2 Development of Spill Contingency and Cleanup Measures Plan for Marine Birds: This plan will be developed in keeping with the province of BC's *Marine Oil Spill Prevention and Preparedness Strategy* (MOE, 1991) and will include the United States Environmental Protection Agency (EPA) suggestions (US EPA 2014).
- Mitigation M11-3 Develop Heritage Site-specific Clean-up Plan: If the spill occurs over or into ground where a palaeontological, archaeological, or historical site exists or where potential for a paleontological site has been identified but not assessed, a professional palaeontologist, archaeologist, historic archaeologist or built-heritage specialist respectively will be engaged to participate in the non-emergency development of the Environmental Management Plan (EMP) specific to the spill event.
- Designing the Project to comply with Canadian Standards Association standard Z276, whereby LNG facilities must be designed with drainage and containment facilities such as dikes, berms, or impounding walls that have sufficient capacity to contain spills consistent with the storage volumes and flow rates of the facility.
- Designing the Project to include a combination of a drainage system and a bund surrounding the proposed facility to collect any spills in the process area.
- Implementing management controls such as safe work procedures and work permitting processes
- As per industry standards and requirements, work sites and equipment will undergo regular maintenance and inspection, personnel qualifications will be maintained, and proper documentation will be reviewed and updated on a regular basis. Supervisors will conduct risk assessments for activities deemed necessary to identify the potential hazards and take appropriate conservative measures

The increase in the size of the condensate tank does not result in a material change to the assessment of accidents and malfunctions, and the design and management mitigation measures included in the EAC Application and Assessment Report are considered applicable and effective with respect to the larger tank size.

While the consequences of a loss of containment could be high, such an event is still considered a rare occurrence<sup>4</sup> with the larger tank size during the life of the Project due to preventative mitigations and

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<sup>4</sup> EAC Application definitions for categories of likelihood defined "rare" as an event that could occur only in exceptional circumstances. Not expected to occur during the life of the Project.



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regulatory requirements. Detailed Quantitative Risk Assessment has been completed that includes the proposed condensate tank volume increase in accordance with BCER requirements.

Condensate storage was also considered under “Explosion or Fire” as a flammable material associated with the Project in the accidents and malfunctions section of the EAC Application. The very low probability risk associated with condensate would be related to a pool fire; a pool fire event within the process area would be contained in size by the bund and drainage systems to the spill basin. A pool fire could cause short-term effects to air quality, particularly in the immediate area surrounding the condensate tank

The preliminary QRA (Lloyd’s Register Consulting 2014) concluded that the LNG Facility does not introduce any unacceptable risk for the public either at the plant boundaries or at the closest populated area for the category “flammable releases from the process plant” which included the condensate storage tank, among several other flammable materials.

A condensate fire analysis has been completed for the proposed 1500 m<sup>3</sup> tank and layout (Risktec 2023), to validate tank spacing and to support the BCER permitting process. The condensate tank was evaluated for thermal radiation effects from the process modules and the refrigerant storage areas, and from overpressure. A pool fire within the condensate tank bund was also modelled in the QRA (2023) to demonstrate the worst-case bund fire radiation effects.

The following fire prevention and fire response mitigation measures, as presented in Section 11 of the EAC Application are considered applicable to the proposed larger condensate tank:

## 7.1.1 Fire Prevention Measures

- Confining or diverting potential spill sources using curbs, dikes, and trenches. The LNG process train and land-based storage units will be protected by bunds for spill collection and to reduce pooling and the potential for pool fires.
- Systems to prevent or limit releases (e.g., fire-safe valves, remote operable valves, minimum flanges, small bore connections, minimal use of sight glasses for visual observation of liquid levels in pipes/vessels to minimize potential failure points).
- A drainage system layout that limits the travel distance of potential spills.
- Welded joints in valve and piping arrangements, which are stronger than mechanical ones.
- Process control and instrument protective systems with early warnings for when normal process parameters are approaching the limits or are exceeded.
- Emergency shutdown systems that provide the means of bringing the facility or facility sections to a safe or steady state.

## 7.1.2 Fire Protection Measures

- Designing and arranging equipment and materials that pose a fire hazard to reduce the probability of fire escalation in the event of fire.
- Fire-resistant construction materials and methods will be used in selecting load-bearing structures, such as pipe racks and vessel skirts.

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- Electric cables, instrument conduits, and hydraulic tubing, that are normally underground will be protected where these are critical to a controlled emergency isolation, shutdown, or depressurization.
- Designing control valves and depressurizing valves, along with their actuators and actuating systems.
- Locating firefighting equipment (including fixed water monitors, dry risers, fire extinguishers, fire hose boxes, fire hydrants, fire water pumps, fire trucks, and foam systems) at pre-determined, strategic locations in the process areas.
- A storage tank with a volume of approximately 3,800 m<sup>3</sup> will supply water to a gravity-fed firefighting system, plus a secondary system will be on hand to pump seawater if required.
- Exposure protection will be in place by means of water deluge systems for equipment handling butane and lighter products beyond a certain volume.
- A detection system that includes fire, gas, heat, and smoke detectors to immediately detect any release of hydrocarbon at the earliest stage of development.
- Locating the main control room outside the hazard area to facilitate rapid plant shutdown in an emergency.

The change to the size of the condensate storage from 300 m<sup>3</sup> to 1500 m<sup>3</sup> (operating volume of 1000 m<sup>3</sup>) does not result in a material change to the EAC assessment conclusions for explosion or fire, as the natural gas explosion or fire event previously assessed is still the worst-case scenario given the much larger volume of natural gas (as compared to condensate) expected to be stored. As described in the EAC Application, it is unlikely that a fire would extend beyond the boundaries of the LNG facility, however, in the event that that were to occur, a large fire that spreads beyond the Project footprint could result in long-term consequences to vegetation and wildlife/wildlife habitat. The design and management mitigation measures, specifically fire prevention and fire protection measures, along with the applicable Canadian Standards Association (CSA) standards included in the EAC Application remain applicable and are expected to be effective in limiting or avoid effects associated with explosion or fire.

Potential effects will be managed via existing mitigation measures (as per above) and commitments (Mitigation M11-1, M11-2 and M11-3 listed above), and as a result the evaluation provided in the Assessment Report will not change; the consequences for personnel working within the facility are potentially major if they are near an explosion or fire event, however with the implementation of design and mitigation measures the likelihood of an explosion or fire is considered rare.

The Project is permitted by the BCER. The Liquefied Natural Gas Facility Regulation (the Regulation) dictates that this LNG Facility be designed, constructed, operated and maintained in accordance with CSA standards, in particular, CSA Z276: Liquefied Natural Gas - Production, Storage, and Handling. Woodfibre LNG is in the process of submitting an amendment application to their existing Facility Permit (under the Regulation). This amendment will include the new design and placement of the larger condensate storage tank. In addition to the facility amendment approval by BCER, Woodfibre LNG is submitting a Leave to Construct package to the BCER which provides the engineering details of the new design and, as required as part of their Quantitative Risk Assessment, an updated HAZOP (hazard and operability) that will assess any risks associated with the new tank design and placement. This

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documentation will be reviewed by the BCER prior to approving the Leave to Construct for the construction of the larger condensate storage tank. No construction can commence prior to the Leave to Construct being granted by the BCER.

## 8.0 CHANGES TO INDIGENOUS INTERESTS ASSESSMENT

The EAO defines Indigenous interests as “Interests related to an Indigenous nation and their rights recognized and affirmed by Section 35 of the *Constitution Act*, 1982, including Treaty rights and Aboriginal rights and title, that may be impacted by a proposed project” (EAO 2020).

The following Indigenous<sup>5</sup> groups were identified as participating Indigenous nations in Woodfibre LNG’s EAC Application and are anticipated to participate in the amendment assessment process:

- Squamish Nation
- Tsleil-Waututh Nation

Musqueam Indian Band has been engaged on the Project but was not identified as a participating Indigenous nation in the EAC Application and is therefore not included in this section. Information regarding Woodfibre LNG’s ongoing engagement with Musqueam Indian Band is included in Section 9.1.

The potential interactions presented in this amendment application are very localized, occurring within the traditional territory of the Squamish Nation. Woodfibre LNG also acknowledges that it is operating within the unceded territory of the səliłwətał (Tsleil-Waututh) Nation (e.g., marine shipping).

The Assessment Report (EAO 2015) considered potential impacts of the Project to Squamish Nation’s Indigenous Interests, specifically hunting activities (hunting and trapping; fishing and marine harvesting; gathering; and cultural sites, trails, and travelways). No interaction is anticipated between the proposed change to a larger condensate storage tank and Squamish Nation hunting activities. This is because the tank will be located entirely within the Certified LNG Facility Area within the in the CPA, an area which will not be accessible for Indigenous use (e.g., hunting, gathering) during Project operation. Squamish Nation was engaged as part of the original environmental assessment process, continues to participate in the Project as per applicable EAC conditions, and has provided feedback on this amendment application (see Section 9.1).

In the event of an explosion or fire associated with condensate (e.g., pool fire), effects are expected to be limited, as discussed in Section 7.0, and maintained within the LNG Facility boundaries due to the presence of the process area bund and the drainage systems that will be in place, as well as the design and mitigation measures related to fire response and fire prevention.

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<sup>5</sup> In the EAC Application “Aboriginal” was used to describe these communities; however, since 2015 ‘Indigenous’ has been used for consistency with the United Nations Declaration on the Rights of Indigenous Peoples.

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As the change to a larger condensate storage tank will occur entirely with the Certified LNG Facility Area within the CPA, and as an accidental event (loss of containment and/or explosion or fire) is expected to be contained entirely within this area, no change to the characterization of residual effects as presented in the Assessment Report is anticipated. The Assessment Report describes “minimal impacts” to Squamish Nation’s Indigenous interests associated with hunting, fishing, gathering, and cultural sites, trails and travelways.

Tsleil-Waututh Nation was engaged as part of the original environmental assessment process and continues to participate in the Project as per applicable EAC conditions. As described in Section 3.1 and Section 6.0, shipping of condensate (shipping routes which overlap the unceded territory of the səilwətał (Tsleil-Waututh) Nation) was assessed in the EAC Application. As the number of condensate shipments is expected to be reduced with the proposed changes, from approximately two shipments per month as described in the EAC Application down to approximately one shipment per month, shipping of condensate was not carried forward. However, Woodfibre LNG’s marine transport management and monitoring plan for Operations will be applicable to condensate shipping.

Tsleil-Waututh Nation traditional territory overlaps the marine portion of the CPA but does not overlap the terrestrial portion of the CPA, however, Tsleil-Waututh Nation has provided comment on the amendment application and is participating in the amendment assessment process (see Section 9.1). In their comments, Tsleil-Waututh Nation did not provide any views on whether the proposed changes are likely to result in adverse effects on their interests. Woodfibre LNG is committed to on-going engagement with Tsleil-Waututh Nation through the construction and operational phases of the Project to ensure transparency and is actively communicating through a regular Technical Working Group established with Tsleil-Waututh Nation.

## 9.0 SUMMARY OF ENGAGEMENT ON THE AMENDMENT

### 9.1 INDIGENOUS ENGAGEMENT

Woodfibre LNG has engaged with Indigenous Nations regarding the proposed changes and will continue to engage as part of this amendment. The Indigenous Nations Woodfibre LNG have engaged to date include:

- Squamish Nation
- Tsleil-Waututh Nation
- Musqueam Indian Band

Consultation with Indigenous Nations (Squamish Nation, Musqueam Indian Band and Tsleil-Waututh Nation) on the change to condensate storage was first raised in correspondence related to the BCER Facility Permit Amendment via email on July 6, 2023. Information attached included details on Condensate Storage and Offloading.

Consultation continued on September 26, 2023 via email and briefing memorandum with notification to Nations (Squamish Nation, Tsleil-Waututh Nation, and Musqueam Indian Band) about the EAC Condensate Amendment and the proposed changes to schedule A of the Certified Project Description to increase the volume of the condensate storage container.

#### 9.1.1 Squamish Nation

Feedback regarding the proposed changes was received from Squamish Nation on October 26, 2023 at the monthly Woodfibre LNG-Squamish Nation Environmental regulatory check-in meeting. Squamish Nation indicated that they had no immediate feedback requiring a response from Woodfibre LNG.

Woodfibre LNG will continue to engage with Squamish Nation on their interests and issues related to the change in condensate storage. Woodfibre recognizes that Squamish Nation has a particular interest in the loading and shipping of condensate and will seek to resolve issues related to this; first looking for opportunities to address issues through the development of the operations management plan for marine transport, with an understanding that additional analysis may be requested, and the results of the analysis will be the subject of future discussions.

#### 9.1.2 Tsleil-Waututh Nation

Tsleil-Waututh Nation provided feedback regarding the proposed changes to Woodfibre LNG on October 16, 2023 which was addressed via a tracking table spreadsheet on December 11, 2023.

### 9.1.3 Musqueam Indian Band

Woodfibre LNG has not received a response from Musqueam Indian Band regarding the proposed changes. Woodfibre LNG followed up with Musqueam Indian Band on November 21, 2023 but did not receive feedback.

### 9.1.4 Ongoing Engagement

Woodfibre LNG will continue to seek collaborative engagement with Squamish Nation, Tsleil-Waututh Nation, and Musqueam Indian Band, and will be responsive to any input they provide, to support the amendment process.

The record of engagement is included in Appendix A.

## 9.2 STAKEHOLDER AND PUBLIC ENGAGEMENT

Woodfibre LNG has advised the BCER about this proposed EAC amendment and will continue to engage with the BCER through the development of a permit amendment application (LNG Facility Permit) required to authorize these proposed changes.

Woodfibre LNG discussed the amendment request with Transport Canada on October 2, 2024 and provided Transport Canada with a copy of the initial amendment description on October 7, 2024; no immediate feedback was provided, but Transport Canada did confirm that it would engage in the EAO led process. The initial amendment application was also provided to the District of Squamish, via email, on September 13, 2024. A meeting was held on November 21, 2024 to discuss the application. To date, Woodfibre LNG has not received feedback from the District of Squamish on the documentation that was provided. If comments are received, Woodfibre LNG will work with Transport Canada and District of Squamish agencies to resolve any issues.

## 10.0 CONCLUSIONS

As holders of EAC#15-02 Woodfibre LNG is requesting to amend Schedule A of the Certified Project Description (EAO 2015) under section 32 of the EAA to increase the volume of the condensate tank storage capacity from 300 m<sup>3</sup> to a 1,1500 m<sup>3</sup> storage tank (operating volume of 1000 m<sup>3</sup>) to facilitate a change in Project shipping method for condensate (Figure 2). Figure 2). The proposed larger tank will be located fully within the Certified LNG Facility Area in the Certified Project Area. Any change to the shipping of condensate is anticipated to be negligible as the number of condensate shipments is expected to be reduced with the proposed changes, from approximately two shipments per month as described in the EAC Application down to approximately one shipment per month. The required marine transport management and monitoring plan for Operations will address shipping, including shipping of condensate, and will include measures to address issues that may be brought forward by Indigenous Nations, regulators or stakeholders.

Based on the screening of potential interactions presented in Table 1 with the implementation of mitigation measures required under EAC #E15-02, including management plans the proposed larger volume condensate tank will lead to no material changes to residual effects on VCs/ICs previously assessed in the EAC Application, Section 25 matters described in Table 2, or Indigenous Interests. As a result, the evaluation provided in the EAO's Assessment Report (2015) has not changed as result of this proposed amendment change.



November 26, 2024

## 11.0 CLOSURE

We trust that the information provided in this application to amend EAC #15-02 is accepted for your review. Please respond to the undersigned with confirmation of the amendment application and provide direction on next steps.

## 12.0 REFERENCES

- Environmental Assessment Office (EAO) 2020 EA User Guide. Introduction to Environmental Assessment Under the Provincial Environmental Assessment Act (2018) Version 1.01.
- Environmental Assessment Office (EAO) 2015 Woodfibre LNG Project Assessment Report.  
Available at: EPIC (gov.bc.ca)
- Woodfibre LNG (2015): Application for an Environmental Assessment Certificate for the Woodfibre LNG Project. Available at: EPIC (gov.bc.ca).
- Environmental Assessment Office (EAO) 2015 Woodfibre LNG Project: Schedule A Certified Project Description for An Environmental Assessment Certificate. Available at: Certified Project Description.pdf (gov.bc.ca).
- Lloyd's Register Consulting. 2014. Preliminary QRA for Woodfibre LNG. October 21, 2014. Available at: EPIC (gov.bc.ca).
- Risktec. 2023. Technical Note – Woodfibre LNG Project Condensate Storage Analysis. Prepared for McDermott International Ltd. March 2023.

# **APPENDIX A RECORD OF ENGAGEMENT**



Consultation Tracking Table - Record of Engagement

Document: Construction and Operation of an Increased Volume Condensate Storage EAC Amendment  
Updated: 22-Nov-24

CONDENSATE AMENDMENT STAKEHOLDER CONSULTATION RECORD OF ENGAGEMENT - November 20, 2024

Comment ID	Document Version	Commenting Party / Submitter	Section	Issue/Theme	Date Comments Received	Input Provided	WLING Response	Follow-up Required/ Current Status
<b>District of Squamish</b>								
	Rev 1	Woodfibre LNG	BC EAC Amendment Application	Construction and Operation of an Increased Volume Condensate Storage EAC Amendment	13-Sep-24	Email sent the District of Squamish staff with the amendment application attached.	Hi Devon and Kate,  I believe that Selena has spoken to you both about Woodfibre's application for an amendment to our Environmental Assessment Certificate. The application was submitted to request an amendment to the onsite condensate storage volume. Attached is the application, we are sharing this for information purposes and it's currently under review by EAO.  If you have any questions please let me know. Regards, Ashleigh	None
	Rev 1	Woodfibre LNG	BC EAC Amendment Application	Construction and Operation of an Increased Volume Condensate Storage EAC Amendment	21-Nov-24	Meeting with District of Squamish Planner	Meeting held with Robyn Hay, District of Squamish Industrial Major Project Planner to summarize the amendment application.	None
	Rev 1	Woodfibre LNG	BC EAC Amendment Application	Construction and Operation of an Increased Volume Condensate Storage EAC Amendment	21-Nov-24	Email sent to the new District of Squamish planner with the amendment application attached.	Hi Robyn,  Thank you for the call this afternoon. As discussed, the attached EAC amendment was provided to Devon and Kate back in September.  I will work to get a response to you for the engineering/technical driver for the amendment.  If you have any additional questions please let me know. Regards, Ashleigh	None
<b>Transport Canada</b>								
	Rev 1	Woodfibre LNG	BC EAC Amendment Application	Construction and Operation of an Increased Volume Condensate Storage EAC Amendment	2-Oct-24	Meeting with Transport Canada	Meeting held with Transport Canada staff to introduce them to the amendment and discuss their interest in the process moving forward. Transport Canada requested the amendment be sent to them and they would coordinate with their Marine Safety Team.	None
	Rev 1	Woodfibre LNG	BC EAC Amendment Application	Construction and Operation of an Increased Volume Condensate Storage EAC Amendment	October 7, 2024	Email to Transport Canada with amendment application attached	Good Afternoon Toke,  As discussed with WLNG last week attached is the documentation that was submitted to EAO for the condensate amendment.  If you have any questions please let me know. Regards, Ashleigh	None



Consultation Tracking Table - Record of Engagement  
 Document: Construction and Operation of an Increased Volume  
 Condensate Storage EAC Amendment  
 Updated: 22-Nov-24

First Round

CONDENSATE AMENDMENT INDIGENOUS CONSULTATION RECORD OF ENGAGEMENT - November 20, 2024							
Correspondence Date	Correspondence Type	Indigenous Nation	Issue/Theme	Date Comments Received	Input received	W LNG Response	Follow-up Required/ Current Status
7/6/2023	Email from W LNG to Squamish Nation	Squamish Nation	Pre-application Memo including details on details on Condensate storage and offloading	9/11/2023	Acknowledgement that SN have thus far deferred to BCER expertise on this sort of engineering detail	none	No
7/6/2023	Email from W LNG to Tsleil-Waututh Nation	Tsleil-Waututh Nation	Pre-application Memo including details on details on Condensate storage and offloading	no comments received	none	none	Follow-up email sent on 9/11/2023, No further feedback received
7/6/2023	Email from W LNG to Musqueam	Musqueam	Pre-application Memo including details on details on Condensate storage and offloading	no comments received	none	none	Follow-up email sent on 9/11/2023, No further feedback received
9/26/2023	Email from W LNG to Squamish Nation	Squamish Nation	EAC Amendment - Condensate Tank	10/26/2023	Feedback was received from Squamish Nation at the monthly Woodfibre LNG-Squamish Nation Environmental regulatory check-in meeting on October 26. Squamish Nation indicated that there was no immediate feedback requiring a response from Woodfibre LNG.	none	No
9/26/2023	Email from W LNG to Musqueam	Musqueam	EAC Amendment - Condensate Tank	no comments received		n/a	n/a
9/26/2023	Email from W LNG to Tsleil-Waututh Nation	Tsleil-Waututh Nation	EAC Amendment - Condensate Tank	10/16/2023	<p>Does this mean the quantity of condensate for each transfer will increase? If CPD increases from 300 m3 to 1,000 m3, will the transfer of condensate only happen when the 1000 m3 is fully filled? Will the condensate be transferred by one truck doing multiple trips or by multiple trucks</p> <p>Please provide the methods employed to determine that the difference in equipment will not result in a meaningful change to the conclusions of the Assessment Report.</p> <p>Please provide the methods employed to determine that the change will not lead to a material change to the conclusions of the Assessment Report.</p> <p>Please provide the methods employed to determine that the change to potential effects from construction and operation of the Project on relevant community infrastructure and community services such as fire and emergency management response is negligible relative to the overall Project.</p> <p>Please provide the rationale of this statement and the design details of the proposed larger bund for TWN to review and comment.</p> <p>Please provide the rationale of designing a secondary containment with 110% of the total volume on the condensate tank.</p> <p>What methods and parameters are included in the QRA? Will the results be shared with TWN?</p>	<p>The increased capacity of the condensate tank will allow for a reduced shipping frequency, reducing transits by approximately 50% from what was originally anticipated. Condensate is expected to be transported via a tanker barge with capacity of 1000-2000 m<sup>3</sup>. The frequency of shipping is expected to be approximately 1 barge per month, on average. Woodfibre LNG will retain a suitably qualified contractor to ship condensate using barges that meet Transport Canada guideline Standards for the Construction, Inspection and Operation of Barges Carrying Oil or Dangerous Chemicals in Bulk. Further details of this guidance is available at: <a href="https://tc.canada.ca/en/marine-transportation/marine-safety/standards-construction-inspection-operation-barges-carrying-oil-dangerous-chemicals-bulk#5-pollution-prevention-requirements">https://tc.canada.ca/en/marine-transportation/marine-safety/standards-construction-inspection-operation-barges-carrying-oil-dangerous-chemicals-bulk#5-pollution-prevention-requirements</a>. The amendment application has been updated to include this clarification.</p> <p>"In making a determination of potential interactions the original EAC Application for Atmospheric Environment (Air Quality) Valued Component (VC) was reviewed against available design information for the condensate tank.</p> <p>The change in equipment required to install the tank is expected to be negligible as the original EAC application considered a broad range of equipment routinely operating at the Project site during the construction period; this included excavators, bulldozers, cranes, forklifts and loaders. There is not expected to be substantial difference in equipment needed for the assembly of the larger tank, as the tank is expected to be prefabricated off-site and lifted into position. As such, the proposed larger tank will not result in a meaningful change to the EAO Assessment Report and any potential effects (vehicle exhaust, excavating, grading) to air quality will be managed through existing EAC conditions and commitments (e.g., Construction Environmental Management Plan). Clarification has been added to amendment application, where appropriate. "</p> <p>In making a determination of potential interactions the original EAC Application for Greenhouse Gas Management Assessment was reviewed against available design information for the condensate tank. The change in equipment required to installation of the tank is expected to be negligible as the original EAC application assessed a broad range of mobile equipment routinely operating at the site during Project construction (e.g. excavators, bulldozers, cranes, forklifts and loaders). There is not expected to be substantial difference in equipment needed for the assembly of the larger tank as the tank is expected to be prefabricated off-site and lifted into position. As such, the proposed larger tank will not result in a meaningful change to the EAO Assessment Report and Project GHG emissions targets from mobile equipment will be managed through existing EAC conditions and commitments (e.g., Best Management practices for greenhouse emissions). Clarification has been added to amendment application, where appropriate. "</p> <p>"In making a determination of potential interactions the original EAC Application section for infrastructure and community services was reviewed against available design information for the condensate tank.</p> <p>The proposed larger condensate tank increase from 300 m3 to 1500 m3 will result in a negligible change in effects of the Project on infrastructure and community services as the infrastructure and community services VC assessed the change in demand for emergency services on an overall Project-wide basis during Project operation and construction. As such, the proposed larger tank will not result in a meaningful change to the EAO Assessment Report and effects will be managed through existing EAC conditions and commitments (e.g., Emergency Response Plan). Clarification has been added to amendment application, where appropriate. "</p>	No further feedback received