

GLOSSARY

°C	The symbol for degree Celsius.
<	The symbol for less than.
>	The symbol for greater than.
%	The symbol for percent.
µeq/L	The symbol for microequivalents per litre.
abandonment and reclamation	The act of permanently stopping operations, removing facilities and restoring land to a productive state.
Active I Channel	A watercourse with perennial flow, discernible banks and substrate, and a drainage area less than 1,000 km ² . In winter, it might be partially frozen to the bottom because of groundwater input, beaver activity, or large pools and deep water.
Active II Channel	A watercourse with intermittent flow, discernible banks and substrate, and a drainage area less than 1,000 km ² . In winter, it is frozen to the bottom or dry below the ice surface.
adverse effect	The impairment of, or damage to, the environment or health of humans, or damage to property, or loss of reasonable enjoyment of life or property.
alkalinity	The total quantity of base in water that can be determined by titration with a strong acid.
alluvial	Pertaining to, or consisting of, alluvium, or material deposited by flowing water.
alluvium	Unconsolidated mineral material, usually clay, sand, silt and gravel, deposited by flowing water.
anchor fields	The three natural-gas fields, Niglintgak, Taglu and Parsons Lake, whose production will provide the initial volume of gas shipped in the project pipelines.
APG	The abbreviation for Aboriginal Pipeline Group.
aquatic	Growing in, living in or frequenting water. Also, occurring, or situated, in or on, water.

aquifer	A water-saturated, permeable body of rock capable of storing and transmitting groundwater to wells and springs under ordinary hydraulic gradients.
avulsion	A sudden change in the course of a stream by which a portion of land is cut off, such as where a stream cuts across and forms an oxbow.
baseflow	A portion of the stream discharge that is derived from natural storage, i.e., outflow from groundwater, large lakes or wetlands, or sources other than rainfall that create surface runoff.
baseline	A surveyed condition that serves as a reference point to which later surveys or assessments are coordinated or correlated.
bathymetry	The science of measuring ocean depths or the depths of large channels, to determine the bed topography.
bedrock	Solid rock that underlies soil or any other unconsolidated surficial cover.
biophysical	Referring to the air, noise, aquatic (groundwater, hydrology, water quality and fisheries) and terrestrial (soils, landforms, permafrost, vegetation and wildlife) conditions in the project area.
bog	Waterlogged, spongy ground consisting primarily of mosses that can decay and develop into peat.
borrow site	An area that could be excavated to provide material, such as gravel or sand, to be used, where required, by the project.
calcareous	Containing calcium or magnesium carbonate.
carbonate rock	A sedimentary rock, such as limestone or dolomite, consisting mainly of carbonate minerals.
cation	An atom, group of atoms, or compound that has a positive electrical charge.
CCME	The abbreviation for Canadian Council of Ministers of the Environment.
chlorophyll a	The photosynthetic pigment found in higher plants and algae.
closed talik	An area of unfrozen ground that is completely surrounded by permafrost.
colour	When referring to water, the measure of the amount of humic material, i.e., dark-coloured organic material.

compliance monitoring	Monitoring to ensure that: <ul style="list-style-type: none">• the environmental mitigation outlined in the environmental protection and reclamation plan is implemented• work proceeds in compliance with regulations and the proponents' environmental policies
compressor station	A facility containing equipment that is used to increase pressure to compress natural gas for transportation in a pipeline.
conductance	The measure of electrical conductance in a water sample. Conductance is an indicator of salinity.
conductivity	A measure of the ability of material to carry an electrical current.
Construction Phase	The phase of a project preceding the Operations Phase, during which project facilities and infrastructure are assembled and installed, and connected and tested to ensure that they operate as designed.
cm/a	The metric symbol for centimetres per year.
Cretaceous	The geological period between about 144 and 65 million years before present.
cumulative effects	Changes to the environment caused by an action, including projects and activities, in combination with other past, present and future human actions.
decommissioning	The act of taking a processing plant or facility out of service and isolating equipment, to prepare for routine maintenance work, suspending or abandoning.
deltaic fluvialite	Referring to river-deposited silt, sand and gravel from a delta formation.
detachment slide	The movement of the active layer down a sloped surface caused by permafrost in the active layer melting, allowing the layer to detach and slide down the failure surface.
Devonian	The geological period between about 408 and 360 million years ago.
discharge	The rate of flow at a given moment, expressed as volume per unit of time.
discontinuous permafrost	A zone of permafrost containing patches of unfrozen ground, such as beneath large rivers and lakes.

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dissolution	A process of chemical weathering whereby mineral and rock material passes into solution, e.g., calcium carbonate being removed from limestone.
dissolved organic carbon	A measure of the amount of organic carbon dissolved in water. Dissolved organic carbon is an indicator of the amount of humic material in surface waters.
dissolved oxygen	A measure of the amount of oxygen dissolved in water. Dissolved oxygen concentration provides an indication of the suitability of surface waters for aquatic life
DO	The abbreviation for dissolved oxygen.
dolomite	A carbonate mineral with a composition of $\text{CaMg}(\text{CO}_3)_2$.
drainage basin	An area in which surface runoff collects and from which it is carried by a drainage system, such as a river and its tributaries.
drinking water guideline	Concentration of a chemical in surface water, below which there is negligible risk to human health or aesthetic considerations related to the use of water for drinking.
effects monitoring	Monitoring conducted to: <ul style="list-style-type: none">• confirm the accuracy of predicted effects• determine the effectiveness of mitigation and enhancement measures
EIS	The abbreviation for environmental impact statement.
environment	The components of the earth including: <ul style="list-style-type: none">• land, water and air, including all layers of the atmosphere• all organic and inorganic matter and living organisms• the interacting natural systems that include components referred to in the previous bullets
environmental effect	For a project, any change that the project might cause in the biophysical environment. Also, any change to the project that might be caused by the environment.
environmental impact assessment	The process of evaluating the biophysical, social and economic effects of a proposed project.
environmental impact statement	A report containing the environmental impact assessment.

EPA	The abbreviation for the United States Environmental Protection Agency.
ephemeral drainage	Drainage that only occurs for a short time, usually after periods of rainfall or snowmelt, and that discontinues during dry seasons.
eutrophic	Referring to nutrient-rich lakes and rivers.
facilities	Structures of the gathering and pipeline systems, including compressor and pump stations, block valves, pigging facilities, heater stations and meter stations.
fen	Low land, such as peat land, that is wholly or partly covered by water, especially in the upper regions of old estuaries and around lakes. These areas do not drain naturally.
fetch	An area of the sea surface or a large waterbody, such as a lake, over which waves are generated by a wind having a constant speed and direction.
fine sediment	Sediment comprising silts and clays, consisting of particles less than 62 µm in diameter.
fracture	Any break in a rock, including joints, cracks and faults.
freshet	Rapid temporary rise in stream discharge and water level, caused by heavy rains or rapid melting of snow and ice.
friable	Easily crumbled or reduced to powder.
frost bulb	A frozen zone, typically formed around a chilled pipe, in otherwise unfrozen ground.
frost heave	The raising of a surface caused by ice in the underlying soil. This movement results from alternate thawing and freezing. Frost heaving generates stress on vertical support members of pipelines in the Arctic and, as a result, also on the pipeline.
gas conditioning facility	A facility located at each anchor field, which collects raw gas from the wells, and dehydrates and conditions the product for transport through the gathering system.

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gas pipeline	The proposed gas pipeline that would extend from the Inuvik area facility, parallel to the NGL pipeline along the Mackenzie River to Norman Wells, and continue south to connect to an extension of the existing Alberta system south of the Northwest Territories–Alberta boundary. Also known as the <i>Mackenzie Valley Pipeline</i> .
gathering pipelines	Four pipelines, also known as laterals, that transport natural gas and NGLs from the anchor fields to the Inuvik area facility. These include the Niglintgak lateral, Taglu lateral, Parsons Lake lateral and Storm Hills lateral.
gathering system	A system of pipelines and associated facilities that include four gathering pipelines, the Inuvik area facility, the NGL pipeline and related facilities, such as valves, pig launchers and receivers.
geographic extent	Quantitative measurement of the area within which an effect occurs.
glaciofluvial material	Material moved by glaciers and subsequently sorted and deposited by streams flowing from the melting ice.
groundwater	Subsurface water that is recharged by infiltration and enters streams through seepage and springs.
ha	The metric symbol for hectare.
habitat	The places or environment where a plant or animal naturally or normally lives or grows.
halite	The mineral sodium chloride, NaCl, which is native salt.
hardness	A measure of the amount of alkaline earth compounds, such as calcium and magnesium, dissolved in water.
HDD	The abbreviation for horizontal directional drilling.
headwater	The source and upper part of a stream or river.
humic	Referring to material from the humus portion of soil, which is the dark, relatively stable organic part, so well decomposed that the original sources cannot be identified.
hydrology	The science dealing with the waters of the earth, including their properties, circulation, distribution and reaction with the environment.

icing	A mass or sheet of ice formed on the ground surface during the winter by successive freezing of sheets of water that seep either from the ground, a river or a spring.
infrastructure	Basic facilities, such as transportation, communications, power supplies and buildings, which enable an organization, project or community to function.
intrapermafrost groundwater	Groundwater that occurs in unfrozen ground within permafrost.
Inuvik area facility	The processing facility to be located near Inuvik where gas and liquids will be processed and separated, then delivered to the gas and NGL pipelines.
karst	The formation of features by the solutional, and sometimes mechanical, action of water in a region of limestone, gypsum or other bedrock.
key indicator	A factor used to measure the status of a valued component.
keq/ha/a	The metric symbol for kiloequivalents per hectare per year.
kg/m³	The metric symbol for kilograms per cubic metre.
KI	The abbreviation for key indicator.
km	The metric symbol for kilometre.
km²	The metric symbol for square kilometre.
km/h	The metric symbol for kilometres per hour.
L/s	The metric symbol for litres per second.
lacustrine	Pertaining to, produced by, or inhabiting a lake or lakes.
lacustrine deposits	Sediments that have settled from suspension and underwater gravity flow, such as turbidity currents, in bodies of standing water.
Large River Channel	A watercourse with perennial flow, a wetted width greater than 25 m, and a drainage area greater than 1,000 km ² .
lateral	A gathering pipeline that connects the production area facilities to the Inuvik area facility.
limestone	A sedimentary rock composed mainly of calcium carbonate (CaCO ₃), principally in the form of calcite.

low-closure lake	A lake that is cut off from a river for a period each summer, but is flooded annually in the spring.
LSA	The abbreviation for local study area.
m	The metric symbol for metre.
m³	The metric symbol for cubic metre.
m/a	The metric symbol for metres per year.
m³/d	The metric symbol for cubic metres per day.
m³/s	The metric symbol for cubic metres per second.
m³/s/m	The metric symbol for cubic metres per second per metre.
Mackenzie Gas Project	A project that will develop three onshore natural gas anchor fields in the Mackenzie Delta and transport natural gas by pipeline to market in northwestern Alberta by 2009. The project comprises the anchor fields, wells, gathering pipelines and associated facilities, work camps, material stockpiling and shipping sites, roads, borrow sites, and other associated infrastructure.
major ion	Dissolved elements that are abundant in surface and ground waters. Major ions that are common in freshwater include bicarbonate, calcium, carbonate, chloride, magnesium, potassium, sodium, sulphate and sulphide.
mg/L	The metric symbol for milligrams per litre.
mitigation	The elimination, reduction or control of a project's adverse environmental effects, including restitution for any damage to the environment caused by such effects through avoidance, replacement, restoration, compensation or other means.
mm	The metric symbol for millimetre.
Mm³	The metric symbol for million cubic metres.
mm/a	The metric symbol for millimetres per year.

monitoring	Periodic inspection to meet the following objectives: <ul style="list-style-type: none">• observe and report on compliance with approval conditions• confirm effectiveness of approved protection measures• verify the accuracy of impact predictions• identify any effects not predicted in the impact assessment
moraine	An accumulation of glacial drift deposited by a glacier. It is well compacted to noncompacted material that is nonstratified and contains a heterogeneous mixture of particle sizes, often in a matrix of sand, silt and clay.
muskeg	A peat bog or tussock meadow, with variably woody vegetation, often occurring in areas of permafrost.
natural gas	A compressible mixture of hydrocarbons with a low specific gravity that occurs naturally in a gaseous form.
natural gas liquids	Hydrocarbons that are gaseous in the reservoir, but that will separate out in liquid form at the pressures and temperatures at which separators normally operate. The liquids consist of varying proportions of butane, propane, pentane and heavier fractions, with little or no methane or ethane.
NGL	The abbreviation for natural gas liquid.
NGL pipeline	The pipeline connecting the Inuvik area facility with the Enbridge Pipeline facilities at Norman Wells.
NGTL	The abbreviation for NOVA Gas Transmission Ltd.
Niglintgak field	The anchor field to be developed by Shell Canada Limited, which includes three well pads, one gas conditioning facility, flow lines and supporting infrastructure. The gas conditioning facility might be barge-based or land-based.
Niglintgak lateral	The gathering pipeline connecting the Niglintgak gas conditioning facility to a connection point on the Taglu lateral at the outlet of the Taglu gas conditioning facility.
oligotrophic	Refers to a waterbody that contains low levels of nutrients, i.e., sustains a low level of algae.
Operations Phase	The phase of a project during which the pipeline and associated facilities are operated.

organic compound	A chemical compound consisting of carbon chains or rings, except for carbon dioxide and carbonates, and also containing hydrogen with or without oxygen, nitrogen or other elements.
organic deposit	A layer of soil that contains plant and animal residue in various stages of decomposition.
outflow	The amount of water flowing out, e.g., groundwater seepage and stream water flowing out of a drainage basin.
PAH	The abbreviation for polycyclic aromatic hydrocarbon.
PAI	The abbreviation for potential acid input.
Parsons Lake field	The anchor field to be developed by ConocoPhillips Canada (North) Limited and ExxonMobil Canada Properties. Initially, the field will consist of the north pad, which will have one pad for the well sites and gas conditioning facility. A second well pad will be developed five to 10 years after the north pad.
Parsons Lake lateral	The gathering pipeline connecting the Parsons Lake gas conditioning facility to a connection point at the Storm Hills pigging facility.
PCB	The abbreviation for polychlorinated biphenyls.
percolate	The process of water oozing, seeping or filtering through soil without a definite channel or course.
perennial spring	A spring that flows during all seasons of the year.
permafrost	Perennially frozen ground, occurring wherever the ground temperature remains below 0°C for two or more consecutive years.
permeable	Relating to porous rock, sediment or soil being able to transmit a fluid. Also known as pervious.
pH	A measure of the relative acidity or alkalinity of a liquid. The pH scale ranges from one to 14, with 7 being neutral, 1 being the most acidic and 14 the most alkaline.
phenol	Organic compounds released by plants, decaying vegetation and some human activities. Anthropogenic sources of phenols include coal and wood distilleries, oil refineries, chemical plants, and animal and human waste.

physiographic region	An area that has similar geological structure and climate and whose pattern of topographic relief and landforms differs from that of adjacent regions.
pig	An in-line scraper, i.e., brush, blade cutter or swab, that is forced through a pipeline by fluid pressure. The pig is used to remove scale, sand, water and other foreign matter from the interior surfaces of the pipe. In hydrostatic testing, the pig is used inside the line to push air ahead of the test water and to push water out after the test.
pig launcher	A facility on a pipeline for inserting and launching a pig
pig receiver	A piping arrangement whereby an incoming pig can be diverted into a receiving cylinder, isolated and then removed.
pingo	An ice-cored hill, forced up by frost-heaving hydrostatic pressure in an area underlain by permafrost. It usually forms in drained or partially drained lake basins.
pipeline corridor	The 1-km-wide area, defined for the purpose of the EIS biophysical baseline and effects assessment studies, that generally centres on the combined right-of-way for the NGL and gas pipelines, from the Inuvik area facility south to the NGTL interconnect facility.
polychlorinated biphenyl	Refers to mixtures of synthetic organic chemicals that come in various forms, including oily liquids, solids and hard resins.
polycyclic aromatic hydrocarbons	An organic compound containing only hydrogen and carbon, consisting of multiple six-carbon rings. They are a product of incomplete combustion of organic materials, such as wood or fossil fuels.
potential acid input	The sum of the wet and dry deposition of sulphur and nitrogen compounds that have the potential to contribute to acidification of the receiving environment.
preglacial	Referring to the time before a period of glaciation.
production area	The area that encompasses all project components located north of the Inuvik area facility, including the Niglintgak, Taglu and Parsons Lake fields, the gathering pipelines and associated facilities, infrastructure, and the 1-km-wide buffer area surrounding each of these project components, defined for the purpose of the EIS biophysical baseline and effects assessment studies.
project, the	The abbreviation for the Mackenzie Gas Project.

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project proponents	The five organizations (Imperial Oil Resources Ventures Limited, the APG, ConocoPhillips Canada (North) Limited, Shell Canada Limited and ExxonMobil Canada Properties) that are undertaking the Mackenzie Gas Project.
recharge	The processes involved in the absorption and addition of water to the zone of saturation. Also refers to the amount of water added.
reclamation	The process of re-establishing a disturbed site to a former or other productive use, not necessarily to the same condition that existed before disturbance. The land capability might be at a level different, i.e., lower or higher, than that which existed before the disturbance, depending on the goal of the process. Reclamation includes the management of a disturbed site and revegetation where necessary.
reservoir	A subsurface, porous, permeable rock body that contains a natural accumulation of oil or gas or both.
residual effects	Environmental or socio-economic effects that remain after mitigation. Effects that are present after mitigation has been applied.
right-of-way	The pipeline easement in which the pipeline will be installed and operated. The pipeline right-of-way width for the project will vary from 30 to 50 m, depending on pipe size and the number of pipes to be installed in the trench.
RSA	The abbreviation for regional study area.
salinity	A measure of the quantity of dissolved solids in water.
scour	Localized erosion of substrate from the streambed by flowing water, when water velocity is high.
SDC	The abbreviation for significant discovery licence.
sediment quality	Refers to the physical, chemical or biological properties of sediments relative to their use or value as an environment for aquatic life.
seep	A small groundwater discharge that slowly percolates to the surface of the ground or into a stream.
sinkhole	A closed surface depression in regions of karst topography produced by the subsurface limestone geology or the collapse of cavern roofs.
spring freshet	The annual spring increase of flow in streams and rivers in cold climates as a result of melting snow.

Storm Hills lateral	The gathering pipeline connecting the Storm Hills pigging facility to a connection point at the inlet of the Inuvik area facility.
study area	The area within the spatial boundaries of the scope of the biophysical environmental effects assessment.
subpermafrost groundwater	Groundwater that occurs below the permafrost layer.
t	The metric symbol for tonnes.
Taglu field	The anchor field to be developed by Imperial Oil Resources Limited, consisting of one site that will include the well pads, gas conditioning facility, flow lines and supporting infrastructure.
Taglu lateral	The gathering pipeline connecting the Taglu gas conditioning facility to a connection point at the Storm Hills pigging facility.
talik	An area of unfrozen ground within a zone of permafrost. Taliks occur beneath major rivers and large lakes, but are not confined to these locations.
TDS	The abbreviation for total dissolved solids.
thalweg	The part of a river with the greatest flow and depth.
through talik	Unfrozen ground that extends underneath large waterbodies down through the permafrost zone.
thrust fault	A rock fault with a dip of 45° or less over much of its extent, on which the hanging wall appears to have moved upward relative to the footwall.
TOC	The abbreviation for total organic carbon.
total dissolved solids	A measure of the total concentration of chemicals that are dissolved in water or that are in particulate form smaller than a standard-size filter, i.e., 0.45 microns, in water. These chemicals are usually salts, such as calcium, sodium, chloride and sulphate ions.
total recoverable hydrocarbons	A measure of total volatile hydrocarbons and total extractable hydrocarbons, along with heavier carbon compounds.
total suspended solids	A measure of the total concentration of suspended solids in water.
TP	The abbreviation for total phosphorus.

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traditional knowledge	Cultural knowledge that is based on direct observation or information passed on orally from other community members, developed from centuries of experience of living off the land.
TSS	The abbreviation for total suspended solids.
turbidity	The relative clarity of a waterbody. A measure of the extent to which light penetration in water is reduced by the presence of suspended particles, such as silt, clay, organic matter and plankton.
unconsolidated sediment	Loosely arranged or unstratified sediment with particles not cemented together.
valued component	Characteristic or feature that represents important environmental conditions identified by assessment specialists, communities or stakeholders.
VC	The abbreviation for valued component.
waterbody	A body of water up to the high-water mark, including canals, reservoirs, oceans and wetlands, but not including sewage or waste treatment lagoons.
watershed	A region or area draining into a particular stream or river.
wetlands	A broad group of wet habitats where the water table is usually at or near the surface, or the land is covered by shallow water.