

## GLOSSARY

°C	The symbol for degree Celsius.
<	The symbol for less than.
>	The symbol for greater than.
%	The symbol for percent.
<b>abandonment and reclamation</b>	The act of permanently stopping operations, removing facilities and restoring land to a productive state.
<b>Active I Channel</b>	A watercourse with perennial flow, discernible banks and substrate, and a drainage area less than 1,000 km <sup>2</sup> . In winter, it might be partially frozen to the bottom because of groundwater input, beaver activity, or large pools and deep water.
<b>Active II Channel</b>	A watercourse with intermittent flow, discernible banks and substrate, and a drainage area less than 1,000 km <sup>2</sup> . In winter, it is frozen to the bottom or dry below the ice surface.
<b>adult fish</b>	Fish that are fully developed and have attained sexual maturity.
<b>adverse effect</b>	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.
<b>all-weather road</b>	A paved or unpaved, i.e., gravel, road that is open to traffic all year.
<b>anadromous species</b>	Fish that travel up freshwater streams from the sea to spawn.
<b>anchor fields</b>	The three natural-gas fields, Niglintgak, Taglu and Parsons Lake, whose production will provide the initial volume of gas shipped in the project pipelines.
<b>angling</b>	Capturing fish with a hook and line.
<b>anoxic</b>	Lacking oxygen.
<b>APG</b>	The abbreviation for Aboriginal Pipeline Group.
<b>aquatic</b>	Growing in, living in or frequenting water. Also, occurring, or situated, in or on, water.

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<b>bank</b>	The rising slope or face of ground bordering a watercourse. It is located above the streambed and below the level of rooted vegetation.
<b>bankfull width</b>	The width of a watercourse when it completely fills its channel and the elevation of the water surface reaches the upper margins of the bank.
<b>baseflow</b>	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.
<b>baseline</b>	A surveyed condition that serves as a reference point to which later surveys or assessments are coordinated or correlated.
<b>benthic</b>	Dwelling on, or relating to, the bottom of a body of water.
<b>benthos</b>	Organisms that live on the bottom of a waterbody, in or near the substrate.
<b>biophysical</b>	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.
<b>boulder</b>	A large rock with a diameter exceeding 256 mm.
<b>boulder garden</b>	An aquatic habitat characterized by an abundance of boulders that provide instream cover for fish.
<b>borrow site</b>	An area that could be excavated to provide material, such as gravel or sand, to be used, where required, by the project.
<b>brackish water</b>	Saline water with a soluble salt concentration between that of fresh water and sea water, but not as high as sea water.
<b>channel</b>	A natural or artificial waterway that periodically or continuously contains moving water, has a definite bed, and has banks that confine the water at low to moderate streamflow.
<b>cobble</b>	A rock fragment larger than a pebble and smaller than a boulder, with a diameter of 64 to 256 mm.
<b>compliance monitoring</b>	Monitoring to ensure that: <ul style="list-style-type: none"><li>• the environmental mitigation outlined in the environmental protection and reclamation plans is implemented</li><li>• work proceeds in compliance with regulations and the proponents' environmental policies</li></ul>

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<b>compressor station</b>	A facility containing equipment that is used to increase pressure to compress natural gas for transportation in a pipeline.
<b>confluence</b>	The place where two watercourses meet and flow together to form one.
<b>Construction Phase</b>	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.
<b>COSEWIC</b>	The abbreviation for the Committee on the Status of Endangered Wildlife in Canada.
<b>creek</b>	A small lotic system that serves as the natural drainage course for a small drainage basin.
<b>cumulative effects</b>	Changes to the environment caused by an action, including projects and activities, in combination with other past, present and future human actions.
<b>dB</b>	The abbreviation for decibels.
<b>decommissioning</b>	The act of taking a processing plant or facility out of service and isolating equipment, to prepare for routine maintenance work, suspending or abandoning.
<b>delta</b>	An area of alluvial deposits, usually triangular in shape, at the mouth of a river or stream.
<b>delta channel</b>	A watercourse flowing through a delta.
<b>demersal</b>	Sinking to or lying on the bottom, or living on or near the bottom and feeding on benthic organisms.
<b>DFO</b>	The abbreviation for Department of Fisheries and Oceans.
<b>diadromous species</b>	Fish that migrate between salt and fresh waters.
<b>discharge</b>	The rate of flow at a given moment, expressed as volume per unit of time.
<b>downstream</b>	In the direction of flow of a watercourse.

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<b>effects monitoring</b>	Monitoring conducted to: <ul style="list-style-type: none"><li>• confirm the accuracy of predicted effects</li><li>• determine the effectiveness of mitigation and enhancement measures</li></ul>
<b>EIS</b>	The abbreviation for environmental impact statement.
<b>environment</b>	The components of the earth, including: <ul style="list-style-type: none"><li>• land, water and air, including all layers of the atmosphere</li><li>• all organic and inorganic matter and living organisms</li><li>• the interacting natural systems that include all components referred to in the previous bullets</li></ul>
<b>environmental effect</b>	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.
<b>environmental impact assessment</b>	The process of evaluating the biophysical, social and economic effects of a proposed project.
<b>environmental impact statement</b>	A report containing the environmental impact assessment.
<b>estuary</b>	A semi-enclosed coastal body of water that has a free connection with the open sea and within which sea water is diluted with fresh water.
<b>facilities</b>	Structures of the gathering and gas pipeline systems, including compressor and pump stations, block valves, pigging facilities, heater stations and meter stations.
<b>fines</b>	Particulate material, less than 2 mm in diameter, including sand, silt, clay and fine organic material.
<b>flat habitat</b>	Stream habitat characterized by low-velocity and nearly laminar flow, differentiated from pool habitat by high channel uniformity and depositional substrate.
<b>floodplain</b>	A low-lying area adjacent to a river or lake that can be inundated during periods of seasonally high water levels, such as floods.
<b>fluvial</b>	Pertaining to, or produced by, the action of a stream or river. Also, pertaining to anything existing, growing, or living in or near a river or stream.

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<b>forage fish</b>	Fish species used as food source by other fish.
<b>freezeup</b>	Freezing up of a watercourse or waterbody in the fall or winter.
<b>freshet</b>	Rapid temporary rise in stream discharge and water level caused by heavy rains or rapid melting of snow and ice.
<b>fry</b>	A young fish at the post-larval stage. Can include all fish stages from newly hatched to fingerling.
<b>gas conditioning facility</b>	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.
<b>gas pipeline</b>	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> .
<b>gathering pipelines</b>	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.
<b>gathering system</b>	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.
<b>geographic extent</b>	The quantitative measurement of the area within which an effect occurs.
<b>gill net</b>	A net that captures fish by entangling the head, gills or fins.
<b>gravel</b>	A substrate particle between 2 and 64 mm in diameter.
<b>groundwater</b>	Subsurface water that is recharged by infiltration and enters streams through seepage and springs.
<b>ha</b>	The metric symbol for hectare.
<b>habitat</b>	The place or environment where a plant or animal naturally or normally lives and grows.
<b>holding habitat</b>	A place with low water velocity where fish can rest and conserve energy.

<b>hydrology</b>	The science dealing with the waters of the earth, including their properties, circulation, distribution and reaction with the environment.
<b>icing</b>	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.
<b>infrastructure</b>	Basic facilities, such as transportation, communications, power supplies and buildings, which enable an organization, project or community to function.
<b>instream</b>	Within the wetted perimeter of the stream channel.
<b>instream cover</b>	Areas with structure, e.g., boulders, rock and logs, in a stream channel that provide aquatic organisms with shelter or protection from predators or competitors.
<b>inundation</b>	Flooding, or to be covered with standing or flowing water.
<b>Inuvik area facility</b>	The gas processing facility to be located near Inuvik where gas and liquids will be processed and separated, then delivered to the gas and NGL pipelines.
<b>invertebrate</b>	Large group of lower animals that lack a spinal column.
<b>juvenile fish</b>	Young fish, similar in form to an adult, but not yet sexually mature.
<b>key indicator</b>	A factor used to measure the status of a valued component.
<b>KI</b>	The abbreviation for key indicator.
<b>km</b>	The metric symbol for kilometre.
<b>km<sup>2</sup></b>	The metric symbol for square kilometre.
<b>L</b>	The metric symbol for litres.
<b>Large River Channel</b>	A watercourse with perennial flow, a wetted width greater than 25 m, and a drainage area greater than 1,000 km <sup>2</sup> .
<b>lateral</b>	A gathering pipeline that connects the production area facilities to the Inuvik area facility.
<b>limiting factor</b>	Anything that has a measurable controlling effect on a species' growth or expansion, or on a biophysical element's continued capability to support its ecosystem.

<b>littoral zone</b>	Shallow shore area of a waterbody where light can usually penetrate to the bottom and that is often occupied by rooted aquatic plants. The extent of the plants might mark the boundaries of the zone.
<b>LSA</b>	The abbreviation for local study area.
<b>m</b>	The metric symbol for metre.
<b>m/s</b>	The metric symbol for metres per second.
<b>m<sup>2</sup></b>	The metric symbol for square metre.
<b>m<sup>3</sup></b>	The metric symbol for cubic metre.
<b>m<sup>3</sup>/s</b>	The metric symbol for cubic metres per second.
<b>m<sup>3</sup>/d</b>	The metric symbol for cubic metres per day.
<b>Mackenzie Gas Project</b>	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.
<b>macro-</b>	A prefix meaning large, comprehensive, or visible to the naked eye.
<b>macrophyte</b>	A plant visible to the naked eye, especially one in an aquatic habitat.
<b>mg/L</b>	The metric symbol for milligrams per litre.
<b>minnow</b>	The common name for any freshwater fish of the family Cyprinidae. Also used for any small or young fish.
<b>mitigation</b>	The elimination, reduction or control of a project's adverse effects, including restitution for any damage caused to the environment by such effects through avoidance, replacement, restoration, compensation or other means.
<b>monitoring</b>	Periodic inspection to meet the following objectives: <ul style="list-style-type: none"><li>• observe and report on compliance with approval conditions</li><li>• confirm effectiveness of approved protection measures</li><li>• verify the accuracy of impact predictions</li><li>• identify any effects not predicted in the impact assessment</li></ul>

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<b>morphological</b>	Pertaining to physical attributes of a waterbody and the methods for measuring those attributes.
<b>Mt</b>	The metric symbol for megatonnes.
<b>natural gas</b>	A compressible mixture of hydrocarbons with a low specific gravity that occurs naturally in a gaseous form.
<b>natural gas liquids</b>	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.
<b>NGL</b>	The abbreviation for natural gas liquid.
<b>NGTL</b>	The abbreviation for NOVA Gas Transmission Ltd.
<b>Niglintgak field</b>	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.
<b>Niglintgak lateral</b>	The gathering pipeline connecting the Niglintgak gas conditioning facility to a connection point on the Taglu lateral at the Taglu gas conditioning facility.
<b>open water</b>	A portion of lake or stream that remains unfrozen or is not covered by ice during winter.
<b>Operations Phase</b>	The phase of a project during which the pipeline and associated facilities are operated.
<b>overwinter</b>	To live or keep alive through the winter.
<b>overwintering habitat</b>	Habitat used by aquatic organisms during winter.
<b>Parsons Lake field</b>	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.
<b>Parsons Lake lateral</b>	The gathering pipeline connecting the Parsons Lake gas conditioning facility to a connection point at the Storm Hills pigging facility.

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<b>permafrost</b>	Perennially frozen ground, occurring wherever the ground temperature remains below 0°C for two or more consecutive years.
<b>pH</b>	A measure of the relative acidity or alkalinity of a liquid. The pH scale ranges from 1 to 14, with 7 being neutral, 1 being the most acidic and 14 being the most alkaline.
<b>pig</b>	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.
<b>pig launcher</b>	A facility on a pipeline for inserting and launching a pig
<b>pig receiver</b>	A piping arrangement whereby an incoming pig can be diverted into a receiving cylinder, isolated and then removed.
<b>pingo</b>	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.
<b>pipeline corridor</b>	The 1-km-wide area that centres on the combined right-of-way for the gas and NGL pipelines, from the Inuvik area facility south to the NGTL interconnect facility in Alberta, defined for the purpose of the EIS biophysical baseline and effects assessment studies.
<b>pool</b>	A discrete portion of a watercourse channel, featuring increased depth and reduced velocity relative to adjacent riffle and run habitats. It is produced by channel scour.
<b>production area</b>	The area that encompasses all project components located north of the Inuvik area facility, including the Niglintgak, Taglu and Parsons Lake fields, the gathering pipeline and associated facilities, infrastructure, and the 1-km buffer area surrounding each of these project components, defined for the purpose of the EIS biophysical baseline and effects assessment studies.
<b>project, the</b>	The abbreviation for the Mackenzie Gas Project.
<b>project proponents</b>	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.
<b>rapids</b>	A channel type with high velocity, turbulent flow, and very coarse substrate. It is deeper than a riffle.

<b>rear</b>	To feed and provide nursery habitat for larval and juvenile fish.
<b>reclamation</b>	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 prior to the disturbance, depending on the goal of the process. Reclamation includes the management of a disturbed site and revegetation where necessary.
<b>residual effects</b>	Environmental effects that remain after mitigation. Effects that are present after mitigation has been applied.
<b>riffle</b>	A channel type featuring high velocity relative to run habitat, but lower than rapids. The surface is broken by submerged or exposed bed material and the channel is shallow relative to other habitat types.
<b>right-of-way</b>	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.
<b>riparian</b>	Situated or dwelling on the margin of a river or other waterbody.
<b>river</b>	A large, natural or human-modified freshwater stream that flows in a defined course or channel. It has considerable flow volume compared to its smaller tributaries.
<b>RSA</b>	The abbreviation for regional study area.
<b>run</b>	A channel type featuring moderate to high current velocity relative to pool and flat habitats. Its water surface is largely unbroken. It is generally deeper than riffle and rapid habitats.
<b>runoff</b>	The water from rain and snow that flows over land to streams, ponds or other surface waterbodies. Also, the water from precipitation that does not infiltrate into the ground or evaporate.
<b>sand</b>	Substrate particles between 0.062 and 2 mm in diameter.
<b>scour</b>	Localized erosion of substrate from the streambed by flowing water, when water velocity is high.
<b>sediment</b>	Fragmented material from weathered rocks and organic material that is suspended in, transported by, and eventually deposited by, air, water or ice.

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<b>SEV</b>	The abbreviation for severity of effect.
<b>side channel</b>	An elongated extension off a main channel that can become separated from the main channel under low flow conditions, and dry up.
<b>silt</b>	Fine soil particles between 0.004 and 0.062 mm in diameter, carried by flowing water and deposited as sediment on the bottom or shore of a lake or stream.
<b>slope</b>	The percentage of vertical rise relative to the horizontal distance, e.g., a level site of 0° has a 0% slope, and 45° is equivalent to a 100% slope.
<b>spawning</b>	Fish reproduction process characterized by females and males depositing eggs and sperm into the water simultaneously or in succession so as to fertilize the eggs.
<b>spawning habitat</b>	Habitat selected by fish for spawning.
<b>species at risk</b>	An extirpated, endangered or threatened species or a species of special concern, as defined in the <i>Species at Risk Act</i> .
<b>spring breakup</b>	The time of year when the temperature rises sufficiently to thaw ice, causing it to break up in rivers and lakes.
<b>Storm Hills lateral</b>	The gathering pipeline connecting the Storm Hills pigging facility to a connection point at the inlet of the Inuvik area facility.
<b>stream</b>	A small, natural watercourse containing flowing water for at least part of the year.
<b>stream gradient</b>	The number of metres a watercourse drops per kilometre of its length, measured in the direction of flow. Also known as <i>stream slope</i> .
<b>study area</b>	The area within the spatial boundaries of the scope of the biophysical environmental effects assessment.
<b>submergent vegetation</b>	Aquatic vegetation that grows with its roots under water and with leaves and stems that do not emerge above the surface of the water.
<b>substrate</b>	Mineral and organic material forming the bottom of a watercourse or waterbody.
<b>Taglu field</b>	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.

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<b>Taglu lateral</b>	The gathering pipeline connecting the Taglu gas conditioning facility to a connection point at the Storm Hills pigging facility.
<b>thalweg</b>	The path of a stream or river that follows the deepest part of the channel.
<b>traditional knowledge</b>	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.
<b>transect</b>	A line or strip across the earth's surface, or through any object, along which a survey or observations are made.
<b>tributary</b>	A stream that feeds or flows into a larger watercourse or waterbody.
<b>TSS</b>	The abbreviation for total suspended solids.
<b>tundra</b>	A vast treeless zone, between the ice cap and the tree line of North America and Eurasia, characterized by a short growing season and permanently frozen subsoil. Tundra refers both to the region and the vegetation growing within it.
<b>turbidity</b>	The relative clarity of a waterbody. A measure of the extent to which light penetration in water is reduced by presence of suspended particles, such as silt, clay, organic matter or plankton.
<b>universal transverse mercator</b>	A mapping grid system for establishing fixed point locations using exact measurements.
<b>upstream</b>	Direction from which a river or stream flows.
<b>UTM</b>	The abbreviation for universal transverse mercator.
<b>Vegetated Channel</b>	A watercourse with ephemeral flow, no discernible banks or sediment transport, and a drainage area less than 15 km <sup>2</sup> . It is primarily a shallow flow through shrubs and trees during spring runoff or rainfall. It is dry most of the year.
<b>valued component</b>	Characteristic or feature that represents important environmental conditions identified by assessment specialists, communities or stakeholders.
<b>VC</b>	The abbreviation for valued component.

<b>water column</b>	A portion of water in a waterbody extending vertically from a given point on the surface to any depth. It is generally used to locate, describe or characterize the chemical and physical constituents at a given depth or depth range.
<b>water crossing</b>	A location where a pipeline or access road crosses a stream, river or lake.
<b>waterbody</b>	A body of water up to the high-water mark, including canals, reservoirs, oceans and wetlands, but not including sewage or waste treatment lagoons.
<b>watercourse</b>	A natural or artificial channel with perennial or intermittent flow and definable bed and banks.
<b>watershed</b>	A region or area draining into a particular stream or river.
<b>wetlands</b>	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.

