

LIST OF ABBREVIATIONS

%	Percent
µg	Microgram
µm	Micrometre
µS	Microsiemen
°C	Temperature in degrees Celsius ($^{\circ}\text{F} = (1.8 \times ^{\circ}\text{C}) + 32$)
°F	Temperature in degrees Fahrenheit
AADT	Annual average daily traffic
Adt/d	Air-dried metric tonne per day of pulp
AGL	Above ground-level
AIA	Archaeological impact assessment
AOX	Adsorbable organic halogens
Application	Application for an environmental assessment certificate under BCEAA
asl	Above mean sea level
ATOR	Approved application terms of reference
BACT	Best available emission control technology
BBS	Breeding bird survey
BCEAA	British Columbia Environmental Assessment Act
BC MOE	British Columbia's Ministry of Environment
BCR	British Columbia Railway
BCTC	British Columbia Transmission Corporation
BEC	Biogeoclimatic Ecosystem Classification
BMPs	Best management practice(s)
BOD ₅	5-day biochemical oxygen demand
BTU or Btu	British thermal unit
CaCO ₃	Calcium carbonate
CALMET	CALMET diagnostic computer model
CALPOST	CALPOST statistical processing program
CALPUFF	CALPUFF dispersion model
CCME	Canadian Council of Ministers of the Environment
CDC	Conservation data centre
CEA	Cumulative effect assessment
CEA Act	Canadian Environmental Assessment Act
CEA Agency	Canadian Environmental Assessment Agency
CEPA	Canadian Environmental Protection Act
CFT	Call for power issued by BC Hydro
CH ₄	Methane
CI	Continuous improvement
cm	Centimetre
CMT(s)	Culturally modified tree(s)

CN	Curve number as applied to the US Soil Conservation Service (now National Resources Conservation Service) method for modelling storm water runoff.
CO	Carbon monoxide
CO ₂	Carbon dioxide
COD	Carbon oxygen demand
COSEWIC	Committee on the status of endangered wildlife in Canada
CPT(s)	Cone penetration test(s)
CSR	Contaminated sites regulation
CWS	Canada-wide standards
CWS	Canadian Wildlife Service
d	Day
dB	Decibel – a unit used in acoustics to quantify a measured sound pressure level (SPL) as the log to the base 10 of the ratio to 20 micropascals (in gases). 20 micropascals corresponds to the threshold of human hearing.
dBA	Decibels measured using the A scale sound level filter which has been widely adopted for environmental noise measurement.
DFO	Department of Fisheries and Oceans
DO	Oxygen demand
DRE	Doig River Energy Ltd. – DRE is an oilfield service company established by the Doig River First Nation with support and strong alliances with other Treaty 8 First Nations.
EA	Environmental assessment
EAO	British Columbia's Environmental Assessment Office
EEM	Environmental effects monitoring
EMP	Environmental management plan
EOR	Element occurrence report
EP	Effective precipitation
EPA	Electricity purchase agreement
ERP	Emergency response plan
ESA	Environmentally sensitive area
ESP	Electrostatic precipitator
FBMP	Forest bird monitoring program
FISS	Fisheries information summary system
g	Gram
gal	Gallon
GCP	Good combustion practice
GHGs	Greenhouse gas(es)
GJ	Gigajoule
GPS	Global positioning system
GWP	Global warming potential
ha	Hectare (1 ha = 2.471 acres)
HFCs	Hydrofluorocarbons
hr	Hour
ICBC	Insurance Corporation of British Columbia

IDF	Intensity duration frequency curve for rainfall
IPCC	Inter-governmental panel on climate change
J	Joule
K	Temperature in degrees Kelvin
KCAC	Keeping clean areas clean
kg	Kilogram (1 lb = 0.4536 kg)
kJ	Kilojoule (1 BTU = 1.055 kJ)
km	Kilometre
kPa	Kilopascal (1 lb/in ² = 6.8948 kPa)
kV	Kilovolt
L	Litre
LAER	Lowest achievable emission rate
lb(s)	Pound(s) (1 lb = 0.4536 kg)
L _{eq}	Sound level in dB containing the equivalent sound energy
m	Metre
m ²	Square metre
m ³	Cubic metre
MDS	MYCO/DRE Services 2005 Ltd., – MDS is a oil and gas industry service company in which a number of Treaty 8 First Nations are involved.
MELP	Previously the BC Ministry of Environment, Lands and Parks. Now part of the Ministry of Environment.
mg	Milligram
MGEC	Mackenzie Green Energy Centre
MGELP	Mackenzie Green Energy Limited Partnership
min	Minute
MJ	Megajoule
mm	Millimetre
MMBTU	Million british thermal unit
MOE	BC Ministry of Environment
MSC	Meteorological Service of Canada
MSDS	Material safety data sheets
MU	Management unit
MW	Megawatt of electricity
MWh	Megawatt hour (1 MWh = 3,412 BTU)
N ₂ O	Nitrous oxide
NAAMP	North American Amphibian Monitoring Program
NCASI	National Council for Air and Stream Improvement
NO ₂	Nitrogen dioxide
NO _x	Nitrogen oxide and nitrogen dioxide
O ₂	Oxygen
O ₃	Ozone
OCS	Owl calling station
OSB	Oriented strand board
P&T	Pope & Talbot
Pa	Pascal

PCBs	Polychlorinated biphenyls
PFCs	Perfluorocarbons
PHC	Pacific Hydrology Consultants
PM	Particulate matter (total)
PM ₁₀	Particulate matter under 10 µm in diameter
PM _{2.5}	Particulate matter under 2.5 µm in diameter
psf	Pounds per square foot
RA(s)	Responsible authority(ies) under CEA Act
RACT	Reasonably available control technology
RIC	Resource inventory committee
RMUs	Resource management unit(s)
ROD	Region of discharge
ROW	Right of way
s	Second
SCR	Selective catalytic reduction
SCS	Soil conservation service
Section 11 Order	Procedural order issued under section 11 of BCEAA
SF ₆	Sulphur hexafluoride
SNCR	Selective non-catalytic reduction
SO ₂	Sulphur dioxide
SO _x	Sulphur dioxide and sulphur trioxide
SRW	Statutory right of way
STG	Steam turbine generator
Study Area	Geographic area specific to each issue
SWMP	Storm water management plan
TCLP	Toxicity characteristic leaching procedure
TJ	Tetrajoule
TKE	Turbulent kinetic energy
TM	Traffic measurement
TMPs	Traffic measurement point(s)
TOC	Total organic carbon
Tonne	Metric tonne (1 ton = 0.907 tonne)
TRS	Total reduced sulphur compounds
TSS	Total suspended solids
UNBC	University of Northern British Columbia
UNFCC	United Nations Framework Convention on Climate Change
US EPA	United States Environmental Protection Agency
UTM	Universal transverse mercator coordinates
VEC	Valued ecosystem component

VOC(s)	Volatile organic compound(s), as defined by the US Environmental Protection Agency (40 CFR Part 51 Section 51.100 Definitions), are any compound of carbon, excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate, which participates in atmospheric photochemical reactions. Numerous compounds with low photochemical reactivity are excluded. In practical terms, VOCs from combustion processes include all hydrocarbons other than methane and ethane, which have negligible photochemical reactivity.
wb	Wet basis. Indicates the mass of wood residues and absorbed water at its stated moisture content.
WHMIS	Workplace hazardous material information system
yr	Year

Metric Prefixes

μ	Micro (10^{-6})
m	Milli (10^{-3})
c	Centi (10^{-2})
k	Kilo (10^3)
M	Mega (10^6)
G	Giga (10^9)
T	Tetra (10^{12})

GLOSSARY

Beehive burner	A large conical steel shell with a screened opening in the top in which woodwaste is piled on a simple grate and burned, usually under poor combustion conditions and with high particulate matter emissions.
Biomass	In the energy production industry, refers to biological material which can be used as fuel.
Cogeneration	The simultaneous production of two forms of useful energy. In this case, energy is produced in the form of steam and electricity.
Common air contaminants	Carbon monoxide (CO), nitrogen oxides (NO _x , as NO ₂), sulphur oxides (SO _x , as SO ₂), volatile organic compounds (VOC), particulate matter less than 10 microns in diameter (PM ₁₀), and particulate matter less than 2.5 microns in diameter (PM _{2.5}).
Construction noise	Unwanted sounds that are emitted from equipment and activities during construction.
Construction waste	Wastes generated during construction that includes steel, wood, aluminum, plastic, cardboard, and other types of solid wastes.
Dominant truck routes	The primary road corridors that will be used from transportation of wood residue from fuel supply areas to the MGEC plant site.
Fugitive emission sources	Emissions not emitted through a stack (or equivalent) where they can be collected or reduced by emission controls technology.
Grade	Slope of a surface usually reported in percent.
Greenhouse gases	In this study, this term includes carbon dioxide (CO ₂), methane (CH ₄), and nitrous oxide (N ₂ O), the primary greenhouse gases.
Hazardous waste	Any waste generated at the facility that is defined as hazardous in the provincial Hazardous Waste Regulation.
Higher heating value	Heating value of a fuel assuming the moisture produced by the combustion of hydrogen in the fuel is in liquid form.
Hog fuel	Mixed wood and bark mill residues shredded typically to minus 75 mm in maximum dimension using a hog pulverizer. A common term used in the forest industry for wood residue or woodwaste.
Kraft soap	A by-product of the Kraft pulping process produced during the manufacture of wood pulp that is formed by the reaction of wood resin acids with sodium hydroxide. It is also called resin soap. Kraft soap has a high heating value and can be a premium fuel source. Acidification of the kraft soap produces tall oil.
Lower heating value	Heating value of a fuel assuming the moisture produced by the combustion of hydrogen in the fuel is in vapour form.
Moisture content	This may be reported for wood residue on a dry basis and a wet basis. Moisture content on a wet basis is the ratio of the mass of water to the combined mass of dry wood and water, expressed as a percentage. Moisture content on a dry basis is the ratio of the mass of water to the mass of dry wood, expressed as a percentage.

Primary clarifier sludge	Pulp mill effluent composed mainly of wood fibre with smaller amounts of dregs and lime mud that is removed by gravity in the primary clarifier in the first stage of effluent treatment. The water content of the sludge from the clarifier at Pope & Talbot is reduced typically to 65% by compaction in a press.
Plant operational noise	Unwanted sounds that will come from specific equipments inside the plant while in operation.
Project disturbed area	The area within the boundaries of the property that will be purchased for the MGEC (MGEC site) and on which the power plant and ash landfill will be located, as well as the right-of-ways for off-site pipelines on land owned by Pope & Talbot and, potentially, Canfor.
Stakeholder	A stakeholder group refers to a community or business group with an interest in the project (e.g., Chamber of Commerce).
Study area	Geographic area specific to each VEC that was included in the scope of the environmental assessment, as specified in Section 4.2 of the Terms of Reference.
Toxicity (to fish)	<p>This term refers to the biological toxicity of effluent and is determined using a standard bioassay. The two most common tests are the 96-hrLT₅₀ and the 96-hr LC₅₀ fish bioassays.</p> <p>The 96-hr LT₅₀ lethal toxicity test exposes test fish (i.e., rainbow trout for fresh water) to undiluted (i.e., 100% concentration) effluent for a period up to 96 hours. To pass this test at least 50%, or five out of ten, of the test fish must live after 96 hours of exposure. If five or more test fish survive, the effluent is said to be “non-acute lethal.</p> <p>The 96LC₅₀ test determines the concentration of effluent that is lethal to 50% of the test organism after exposure for 96 hours. The LC₅₀ limits are derived by statistical analysis of mortalities in several test concentrations after 96 h exposure. A common fresh water test fish for regulatory purposes is rainbow trout.</p>
Valued ecosystem components (VEC)	Any part of the environment that is considered important by the Proponent, members of the public, scientists, government and First Nations involved in the assessment process. Importance may be determined on the basis of cultural value or scientific concern.
Wood residue	A mixture of shredded bark, sawdust, shavings, lumber trim ends and other forms of waste wood produced during the manufacture of lumber at sawmills, or chipped tree tops, branches, and unmerchantable timber left after logging operations.
Woodwaste	Term commonly used in the forest industry for wood residue from forest products operations.