Appendix 5-3

ESRA's Environmental Protection Procedures

Environmental Protection Procedures

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ENVIRONMENTAL PROTECTION PROCEDURES

CLEARING AND GRUBBING

Revision March 2015

Procedure name: Clearing and Grubbing

Reference number EP1

1.0 Description

.1 The clearing and grubbing of vegetation shall be undertaken as instructed by the East Side Road Authority (ESRA) to accommodate for various activities, including geotechnical investigation, construction camp preparation and quarry site development. The Contractor is responsible for ensuring compliance with contract specifications, environmental legislation, permits and authorizations.

2.0 Purpose

.1 The purpose of this procedure is to ensure that clearing and grubbing operations are conducted in accordance with applicable environmental legislation, regulations, guidelines, permits and contracts.

3.0 Legislation and Supporting Documents

- ESRA Contracts and Associated Documents
- Applicable Manitoba Conservation Work Permits
- The Manitoba Conservation Brush Disposal Guidebook – March 2005
- The Manitoba Stream Crossing Guidelines for the Protection of Fish Habitat – May 1996
- Environmental Protection Guidelines - Appendix 7.1 of PR 304 to Berens River All-Season Road Environmental Impact Assessment – August 2009
- Fisheries Act (R.S., 1985, c. F-14)
- The Manitoba Conservation Forest Management Guidelines for Terrestrial Buffers – 2010-2015

4.0 Procedures

.1 Clearing and grubbing shall be limited to the site and associated access routes.

.2 Clearing and grubbing shall only be undertaken between September, 1 of any year and April, 1 of the following year.

.3 Within the limits as directed and staked out by the Contract Administrator, all brush and trees, except those designated by the Contract Administrator to be saved, is to be cut level with the ground, and all surface debris, excluding merchantable timber but including fallen timber, slash limbs, brush, grass and weeds, is to be disposed

as directed or permitted by the Contract Administrator. Disposal may involve:

- Burning
- Spreading and compacting
- Limbing/Chipping

.4 All clearing and grubbing operations shall be clearly marked and completed to the approval of the Contract Administrator. The Contract Administrator will take into account required buffers, and sensitive areas.

.5 Where possible, grubbing shall not occur within 2 m (2.5 yards) of standing timber in order to prevent damage to root systems of adjacent standing trees and reduce the occurrence of blow down.

.6 Clearing activities shall be limited to removing vegetation to ground level without disturbing root mass. Height of stumps shall not exceed 30 centimetres

.7 Trees shall be felled towards the centre of the area to be cleared. Any brush falling outside the area to be cleared shall be moved back to the work area and disposed as directed by the Contract Administrator. The Contractor shall take all precautions against the damage to other trees, traffic structures, pole lines or property in the felling of trees. The Contractor is liable for any damages occurring in the performance of this work.

.8 Timber from which forest products can be manufactured shall be cleared of limbs and stockpiled on the worksite as directed or permitted by the Contract Administrator. Usable timber shall be the property of the Contractor and is to be removed from the work area.

.9 There shall be no bulldozing of woody debris into standing timber.

.10 Existing trails, trap lines, portages and other travelways shall not be altered so as to interfere with other users.

.11 No clearing and grubbing shall be permitted from April 1 to September 1 to avoid disturbance to nesting birds and other wildlife species.

.12 Clearing within 30 meters of a watercourse shall be by hand

.13 Cleared trees and vegetation shall not obstruct waterways during any season, and shall be stored above the ordinary high water mark (1 in 2 year high water mark).

4.1 Brush Disposal

.1 Disposal of cleared trees and brush must be done as directed or approved by the Contract Administrator. Disposal may involve

burning, compacting, piling, burying, windrowing and compacting, limbing and chipping.

.2 All cleared vegetation and debris that is to be burned shall be piled and compacted in windrows. Windrows shall be compacted to lie as close to the ground as possible (maximum height of 0.6 of a meter) and shall be no closer than 1 meter to the bush line. Burn piles shall be located a minimum of 15 meters from other wood and brush piles and standing timber.

.3 Merchantable wood that is identified by the Contract Administrator shall be stockpiled outside and immediately adjacent to the clearing limits. Stockpile sites shall be located within existing clearings or areas of non-merchantable timber. Stockpile sites shall not be located within 100 meters of a waterbody. Unless otherwise specified, all stockpiled material shall be removed from Crown land by April 30 following the date of issuance.

.4 The burning of debris piles shall not permitted in the spring or early summer to avoid disturbing small wildlife species which may have young in the piles or may have prepared nesting sites. The best and preferred option for wildlife is burning in the fall or winter.

.5 No burning of debris piles shall occur on deep organic soils. Piles shall be a minimum of 15 meters away from standing timber and the high water mark of any waterbody.

.6 Slash shall be piled in a manner that allows for clean, efficient burning of all material. Avoid mixing soil into the slash.

.7 The Contractor shall obtain a burning permit for open fires between April 1 and November 15. Burning between November 16 and March 31 does not require a burning permit; however, the supervising officer shall be advised prior to any burning. All fires shall be completely extinguished by March 31

.8 Ensure safety precautions are taken to keep the fire under control. Burn piles shall be monitored, to ensure that subsequent fire hazards are not present. Upon completion of the burn, burn piles shall be completely extinguished.

.9 All occurrences of fire spreading beyond the debris piles shall be reported to the Contract Administrator and the Natural Resources District Supervisor.

ENVIRONMENTAL PROTECTION PROCEDURES

PETROLEUM STORAGE

Revision March 2015

1.0 Description

.1 The storage and handling of petroleum and allied products shall be undertaken in accordance with contract specifications, environmental legislation, permits and authorizations as approved by the East Side Road Authority (ESRA).

.2 Fuel spills, leaks and releases present a hazard to human health and safety, and can be a threat to wildlife habitats, vegetation, soil, surface water and wetlands, groundwater and aquifers, and structures such as wells, drains and ditches. Besides the potential impacts on health and the environment, there may be significant costs associated with wasted fuel, treatment of oily wastewater, and remediation of fuel-impacted sites. The Contractor is responsible for complying with all contract specifications, environmental legislation, permits and authorizations.

2.0 Purpose

.1 The purpose of this procedure is to ensure that all petroleum storage is carried out in accordance with applicable legislation, regulations, guidelines, permits and contracts.

3.0 Legislation and Supporting Documents

- ESRA Contracts and Associated Documents
- The Manitoba Environment Act - C.C.S.M. c. E125
- The Workplace Safety and Health Act - C.C.S.M. c. W210
- Applicable Manitoba Conservation Work Permits
- The Dangerous Goods Handling and Transportation Act, C.C.S.M. c. D12
- Storage and Handling of Petroleum Products and Allied Products Regulation – 188/2001
- National Fire Code of Canada. Canadian Commission on Building and Fire Codes, National Research Council of Canada, 2005
- Environmental Protection Guidelines - Appendix 7.1 of PR 304 to Berens River All-Season Road Environmental Impact Assessment – August 2009

4.0 Procedures

4.1 Petroleum Storage and Handling

.1 All petroleum handling and storage shall comply with Manitoba *Regulation 188/2001* respecting *"Storage and Handling of Petroleum Products and Allied Products".*

.2 Petroleum products shall be transported in accordance with the Manitoba Provincial "*Dangerous Goods Handling and Transportation Act"*.

.3 All reasonable precautions shall be taken to ensure that refuelling only takes place within a Designated Area used for fuel storage or handling.

.4 In the event that a piece of equipment must be refuelled outside a Designated Area, the fuel shall be transported in Approved containers.

.5 Absorbent pads, or other precautions, such as a high density polyethylene (HDPE) groundsheet, shall be used to contain the fuel and prevent fuel from being spilled onto the ground surface.

.6 Equipment shall not be refueled from a watercraft.

.7 All reasonable precautions shall be taken to ensure that cleaning, washing, and servicing of equipment only takes place within a Designated Area.

.8 All mobile equipment that is not in use shall be parked within a Designated Area.

.9 All Designated Areas used for petroleum product storage shall be a minimum distance of 100 metres from any water body and shall have the top soil stripped and be underlain with at least 30 cm of impermeable soil or approved alternate and dyked in such a manner as to contain any leakage or spillage. The dykes shall be designed, constructed and maintained to retain not less than 100% of the capacity of the total number containers or 110% of the largest container, whichever is greatest. The top soil shall be stored and used in the restoration of the site.

.10 Tank vehicles used to deliver fuel to the worksite and/or used to move fuel around the worksite shall meet the requirements for highway tanks for the shipment of dangerous goods by road set out in CSA Preliminary Standard B620-98, *Highway Tanks and Portable Tanks for the "Transportation of Dangerous Goods"*.

.11 All Designated Areas used for petroleum storage shall be a minimum distance of 3 metres from a property line or building and 15 metres horizontally from hydroelectric poles and lines.

.12 Construction, installation and removal of petroleum storage tank systems shall occur under the supervision of a registered licenced petroleum technician.

.13 Petroleum storage tanks shall be grounded and the dispensing tank shall be attached with a bonding cable to an appropriate location on the receiving tank prior to commencing fueling.

.14 Petroleum products shall be labeled as to their contents and stored and handled within designated areas.

.15 Dedicated petroleum storage areas shall provide spill containment and facilitate clean up through measures such as:

- maximum separation from environmentally sensitive features;
- clear identification of the materials present;
- access restricted to authorized vehicles and employees;
- impervious bermed storage areas; and
- dedicated spill response equipment.

.16 Storage sites for petroleum products shall be secured and signs including hazard warnings, who to contact in case of a spill, access restrictions and under whose authority the access is restricted shall be posted.

.17 All employees involved in the handling and storage of fuels shall have WHMIS and spill response training.

.18 All combustible engines shall be shutdown during fueling.

.19 There shall be no smoking and no open flames at the petroleum storage area at any time.

.20 Only above ground storage tanks shall be used for the storage of bulk petroleum products. The tanks shall be equipped with overfill protection and spill containment consisting of perimeter dykes or secondary containment in the tank design. If dykes are used, the containment areas shall be dewatered after a rainfall event and the containment water disposed of as approved by the Contract Administrator. Product inventory shall be taken weekly by the owner/operator of all aboveground storage tanks greater than 5000 litres and retained for inspection upon request.

.21 All petroleum storage tanks with a capacity greater than 5000 litres shall be registered with Manitoba Conservation. New tanks shall be registered before installation. Tanks shall be designed, installed, and operated in accordance with the Manitoba Provincial *"Dangerous Goods Handling and Transportation Act"* and the Federal *"Transportation of Dangerous Goods Act"*. Smaller stationary tanks shall adhere to requirements of the Manitoba Fire Code. A copy of the petroleum license shall be posted at the fuelling site.

.22 Fueling from unregistered tanks shall not be permitted.

.23 Concrete barriers shall be installed around all petroleum storage tanks to prevent collisions.

.24 Bulk waste oil shall be stored in aboveground oil tanks, which shall have secondary containment and a weatherproof cover. Waste oil shall be recycled by a reputable recycling agency. Waste oil shall never be used as a dust suppressant.

.25 All petroleum storage containers and tank vehicles shall be inspected daily for leaks and spillage. Damaged or leaking fuel storage containers shall be promptly removed from site.

.26 All petroleum handling and storage areas shall be kept clear of snow and materials so as to allow clear access and routine inspection and leak detection.

.27 In the event that there is a spill onto the ground surface from any piece of equipment, such as a broken hydraulic hose, the entire affected area shall be cleaned up and all contaminated soil shall be appropriately disposed of offsite. Such events shall be reported to the Contract Administrator.

.28 As petroleum storage and equipment servicing areas are taken out of service any remediation shall be conducted, including the appropriate disposal of the contaminated material to the satisfaction of the Contract Administrator.

.29 The Contractor shall designate on-site Emergency Spill Response Coordinators.

.30 The Contractor shall prevent fuel, lubricants or compounds from being released. All empty containers from equipment refueling and servicing shall be removed to a licenced disposal site. The Contractor shall be thoroughly familiar with provincial/federal spill response compliance procedures.

.31 Materials required for spill containment and clean up shall be available at all sites where construction related activities occur. All vehicles hauling fuel shall carry materials and equipment for emergency spill containment.

.32 At locations where stationary filled oil equipment is used, oil containment measures such as secondary containment shall be incorporated (i.e., berms).

.33 Contaminated soils resulting from releases shall be remediated or disposed of in a manner approved by the Contract Administrator.

.34 Fuel barrels shall be securely fastened to the vehicle during transport and if possible during refueling operations.

.35 All petroleum product storage sites and mobile transportation units shall, at all times, be equipped with appropriate categories of equipment and volumes of fire suppression products.

.36 Fueling procedures shall be posted where fueling occurs.

4.2 Emergency Response Plan For Spills

.1 It is the responsibility of the Contractor to conduct appropriate soil testing on Designated Area(s) and contract work sites prior to the mobilization of equipment to the site to establish baseline conditions. The Contractor will be held responsible for any contamination unless evidence to the contrary can be provided by the contractor.

.2 The Contractor shall ensure that due care and caution is taken to prevent spills, at all times.

.3 An updated list of key contacts and telephone numbers for reporting spills, problems, etc., shall be kept on-site at all times.

.4 A Workplace Hazardous Materials Information System (WHMIS) file shall be maintained on-site for all hazardous materials at the work area. Prior to commencement of the Work, Material Safety Data Sheets (MSDS) shall be submitted to ESRA and the Contract Administrator for all hazardous materials to be used on-site. No material shall be brought to the site without prior submission of a MSDS.

.5 All major spills of petroleum products or other hazardous substances with significant impact on the environment and threat to human health and safety (as defined in Table 1) shall be reported to Manitoba Conservation and the Contract Administrator, immediately after occurrence of the environmental accident, by calling the 24-hour emergency number (204) 945-4888.

.6 All spills shall be reported to ESRA and the Contract Administrator within 24 hours whether it was necessary to report the spill to Manitoba Conservation or not. The spill report shall include the following:

- location of spill or release (GPS coordinates)
- personnel responding to the spill
- material spilled
- cause of spill
- estimated amount of material spilled
- estimated area and volume of soil affected by the spill
- cleanup action undertaken
- means used to contain, transport and dispose of the materials involved

.7 The Contractor shall designate a qualified supervisor(s) as the on-site emergency response coordinator(s) who shall be on site at all times that work is being undertaken.. The emergency response coordinator(s) shall have the authority to redirect manpower and equipment in order to respond in the event of a spill.

.8 An updated environmental emergency plan and on-site spill response and containment plan for each dangerous good/hazardous waste shall be maintained in the work area at all times.

.9 The designated emergency response coordinator shall periodically review and if necessary revise the on-site response plan.

.10 Appropriate materials for containment and cleanup of any spill of dangerous goods or hazardous wastes shall be available on-site when such materials are present in the work area. Also designated personnel and first responders shall be familiar with the storage location and proper application of such containment and cleanup materials.

.11 All spills of quantities less than those set out in Table 1 and without a potential impact to the environment shall be contained and cleaned up immediately by on-site personnel in accordance with the on-site emergency response and containment plan.

Table 1

Spills that must be reported to Manitoba Conservation as Environmental Accidents

Column I **Classification**	Column II **Hazard**	Column III **Reportable Quantity Or Level**
1	Explosives	All
2.1	Compressed Gas (Flammable)	100 L*
2.2	Compressed Gas	100 L*
2.3	Compressed Gas (Toxic)	All
2.4	Compressed Gas (corrosive)	All
3	Flammable liquids	100 L
4	Flammable Solids	1 Kg
5.1 PG** I & II	Oxidizer	1 Kb or 1 L
PG III	Oxidizer	50 Kg or 50 L
5.2	Organic Peroxide	1 Kg or 1 L
6.1 PG I	Acute Toxic	1 Kg or 1L
PG II & III	Acute Toxic	5 Kg or 5 L
6.2	Infectious	All
7	Radioactive	Any discharge or radiation level exceeding 10 m Sv/h at the package surface and 200 uSv/h at 1m from the package
8	Corrosive	5 Kg or 5 L
9.1	Miscellaneous (Except PCB mixtures)	50 Kg 0
9.1	PCB mixtures	500 grams
9.2	Aquatic Toxic	1 Kg or 1 L
9.3	Wastes (Chronic Toxic)	5 Kg or 5 L

.12 All personnel responsible for the handling of dangerous goods and hazardous wastes shall be familiar with the on-site response and containment plan.

.13 The following actions shall be taken by the person in charge of the spilled material or by first person(s) arriving at the scene of a hazardous material accident or by the on-site emergency-response coordinator:

.1 **Notification and Spill Assessment**

.1 Notify the emergency-response coordinator

.2 Identify exact location and time of accident

.3 Request assistance as required by magnitude of accident from Manitoba Conservation (24-hour Spill Response Line (204) 945-4888), Police, Fire Department, or Ambulance and Company backup

.4 Notify Manager, Special Projects and Environmental Services for the ESRA

.2 **Attend to Public Safety**

.1 Secure the area from public access

.2 Eliminate ignition sources

.3 Initiate evacuation of immediate area if necessary

.3 **Gather and Assess Information on Status of Situation, noting:**

.1 Personnel on-site

.2 Cause and effect of spill

.3 Estimated extent of damage

.4 Amount and type of material involved

.5 Proximity to waterways

.4 **If safe to do so, and in Accordance with the On-Site Response and Containment Plan Try to Stop the Dispersion or Flow of Spill Material by:**

.1 Approach from upwind

.2 Stop or reduce leak if safe to do so

.3 Dyke spilled material with dry, inert sorbet material or dry clay

.4 Prevent spill material from entering waterways, utilities or other openings by dyking when in proximity to waterways

ENVIRONMENTAL PROTECTION PROCEDURES

SPILL RESPONSE

Revision March 2015

Procedure name: Reference number
Spill Response EP3

1.0 Description

.1 The Contractor shall develop and submit to the East Side Road Authority a spill response plan in accordance with all applicable contract specifications, environmental legislation, permits and authorizations.

.2 Fuel spills, leaks and releases present a hazard to human health and safety, and can be a threat to wildlife habitats, vegetation, soil, surface water and wetlands, groundwater and aquifers, and structures such as wells, drains and ditches. Besides the potential impacts on health and the environment, there may be significant costs associated with wasted fuel, treatment of oily wastewater, and remediation of fuel-impacted sites. The Contractor is responsible for complying with all contract specifications, environmental legislation, permits and authorizations.

2.0 Purpose

.1 The purpose of this procedure is to ensure that all necessary precautions are taken to prevent spills, leaks or releases, in accordance with applicable legislation, regulations, guidelines, permits and contracts.

3.0 Legislation and Supporting Documents

- ESRA Contracts and Associated Documents
- The Manitoba Environment Act - C.C.S.M. c. E125
- The Workplace Safety and Health Act - C.C.S.M. c. W210
- Applicable Manitoba Conservation Work Permits
- The Dangerous Goods Handling and Transportation Act, C.C.S.M. c. D12 - 2010
- Storage and Handling of Petroleum Products and Allied Products Regulation – 188/2001
- National Fire Code of Canada. Canadian Commission on Building and Fire Codes, National Research Council of Canada, 2005
- Environmental Protection Guidelines - Appendix 7.1 of PR 304 to Berens River All-Season Road Environmental Impact Assessment – August 2009

4.0 Procedures

4.1 General

.1 All petroleum handling and storage shall comply with Manitoba Regulation 188/2001 respecting *"Storage and Handling of Petroleum Products and Allied Products".*

.2 Petroleum products shall be transported in accordance with the Manitoba Provincial *"Dangerous Goods Handling and Transportation Act"* and the federal "*Transportation of Dangerous Goods Act"*.

.3 Tank vehicles used to deliver fuel to the worksite and/or used to move fuel around the worksite must meet the requirements for highway tanks for the shipment of dangerous goods by road set out in CSA Preliminary Standard B620-98, *Highway Tanks and Portable Tanks for the "Transportation of Dangerous Goods"*.

.4 Dedicated petroleum storage areas shall provide spill containment and facilitate clean up through measures such as:

- maximum separation from environmentally sensitive features;
- clear identification of the materials present;
- access restricted to authorized vehicles and employees;
- impervious bermed storage areas; and
- dedicated spill response equipment.

.5 All employees involved in the handling and storage of fuels and hazardous materials shall have WHMIS training.

.6 The Contractor shall designate on-site Emergency Spill Response Coordinators.

4.2 Emergency Response Plan For Spills

.1 The Contractor shall ensure that due care and caution is taken to prevent spills, at all times.

.2 An updated list of key contacts and telephone numbers for reporting spills, problems, etc., shall be kept on-site at all times.

.3 A Workplace Hazardous Materials Information System (WHMIS) file shall be maintained on-site for all hazardous materials at the work area. Prior to commencement of the Work, Material Safety Data Sheets (MSDS) shall be submitted to ESRA for all hazardous materials to be used on-site. No material shall be brought to the site without prior submission of a MSDS.

.4 All major spills of petroleum products or other hazardous substances with significant impact on the environment and threat to human health and safety (as defined in Table 1) shall be reported to Manitoba Conservation, immediately after occurrence of the

environmental accident, by calling the 24-hour emergency number (204) 945-4888.

.5 All spills shall be reported to ESRA within 24 hours whether it was necessary to report the spill to Manitoba Conservation or not. The spill report shall include the following:

- personnel responding to the spill
- material spilled
- cause of spill
- estimated amount of material spilled
- estimated area and volume of soil affected by the spill
- cleanup action undertaken
- means used to contain, transport and dispose of the materials involved

.6 The Contractor shall designate a qualified supervisor(s) as the on-site emergency response coordinator(s). The emergency response coordinator(s) shall have the authority to redirect manpower and equipment in order to respond in the event of a spill.

.7 An updated on-site spill response and containment plan for each dangerous good/hazardous waste shall be maintained in the work area at all times.

.8 The designated emergency response coordinator shall periodically review and if necessary revise the on-site response plan.

.9 Appropriate materials for containment and cleanup of any spill of dangerous goods or hazardous wastes shall be available on-site when such materials are present in the work area. Also designated personnel and first responders shall be familiar with the storage location and proper application of such containment and cleanup materials.

.10 All spills of quantities less than those set out in Table 1 and without a potential impact to the environment shall be contained and cleaned up immediately by on-site personnel in accordance with the on-site emergency response and containment plan.

.11 All personnel responsible for the handling of dangerous goods and hazardous wastes shall be familiar with the on-site response and containment plan.

Table 1

Spills that must be reported to Manitoba Conservation as Environmental Accidents

Column I **Classification**	Column II **Hazard**	Column III **Reportable Quantity Or Level**
1	Explosives	All
2.1	Compressed Gas (Flammable)	100 L*
2.2	Compressed Gas	100 L*
2.3	Compressed Gas (Toxic)	All
2.4	Compressed Gas (corrosive)	All
3	Flammable liquids	100 L
4	Flammable Solids	1 Kg
5.1 PG** I & II	Oxidizer	1 Kb or 1 L
PG III	Oxidizer	50 Kg or 50 L
5.2	Organic Peroxide	1 Kg or 1 L
6.1 PG I	Acute Toxic	1 Kg or 1L
PG II & III	Acute Toxic	5 Kg or 5 L
6.2	Infectious	All
7	Radioactive	Any discharge or radiation level exceeding 10 m Sv/h at the package surface and 200 uSv/h at 1m from the package
8	Corrosive	5 Kg or 5 L
9.1	Miscellaneous (Except PCB mixtures)	50 Kg 0
9.1	PCB mixtures	500 grams
9.2	Aquatic Toxic	1 Kg or 1 L
9.3	Wastes (Chronic Toxic)	5 Kg or 5 L

.12 The following actions shall be taken by the person in charge of the spilled material or by first person(s) arriving at the scene of a hazardous material accident or by the on-site emergency-response coordinator:

.1 **Notification and Spill Assessment**

.1 Notify the emergency-response coordinator

.2 Identify exact location and time of accident

.3 Request assistance as required by magnitude of accident from Manitoba Conservation (24-hour Spill Response Line (204) 945-4888), Police, Fire Department, or Ambulance and Company backup

.4 Notify Manager of Environmental Services for the MFA

.2 **Attend to Public Safety**

.1 Secure the area from public access

.2 Eliminate ignition sources

.3 Initiate evacuation of immediate area if necessary

.3 **Gather and Assess Information on Status of Situation, noting:**

.1 Personnel on-site

.2 Cause and effect of spill

.3 Estimated extent of damage

.4 Amount and type of material involved

.5 Proximity to waterways

.4 **If safe to do so, and in Accordance with the On-Site Response and Containment Plan Try to Stop the Dispersion or Flow of Spill Material by:**

.1 Approach from upwind

.2 Stop or reduce leak if safe to do so

.3 Dyke spilled material with dry, inert sorbet material or dry clay

.4 Prevent spill material from entering waterways, utilities or other openings by dyking Proximity to waterways

ENVIRONMENTAL PROTECTION PROCEDURES

NOISE CONTROL

Revision March 2015

Procedure name:
Noise Control

Reference number
EP4

1.0 Description

.1 All construction activities shall be undertaken by means that do not result in violation of the noise by-laws of adjacent municipal authorities. The Contractor is responsible for ensuring compliance with contract specifications, environmental legislation, permits and authorizations.

2.0 Purpose

.1 The purpose of this procedure is to ensure that the Contractor complies with noise by-laws of the adjacent municipal authorities.

3.0 Legislation and Supporting Documents

- ESRA Contracts and Associated Documents
- Applicable Permits, Authorizations and Licences.

4.0 Procedures

.1 All plant and equipment supplied by the Contractor for use on the Project shall be effectively “sound-reduced” by means of proper silencers, mufflers, acoustic linings, acoustic shields or acoustic sheds.

.2 The Contractor shall comply with the noise By-laws of the adjacent First Nations, communities and municipal authorities.

.3 Any operation of plant or equipment outside the hours as regulated by the adjacent First Nations, communities or municipal authorities shall require an exemption in writing. The Contractor shall provide a copy of such an exemption to the Contract Administrator.

ENVIRONMENTAL PROTECTION PROCEDURES

MATERIALS HANDLING AND STORAGE

Revision March 31, 2015

1.0 Description

.1 This procedure specifies materials handling and storage requirements during all phases of construction.

2.0 Purpose

.1 The purpose of this procedure is to ensure that construction sites are kept clean and orderly at all times in accordance with applicable contract specifications, legislation, permits and authorizations.

3.0 Legislation and Supporting Documents

- ESRA Contracts and Associated Documents
- The Dangerous Goods Handling and Transportation Act, CCSM c D12
- Workplace Safety and Health Act, CCSM c W210
- The Environment Act, CCSM c E125
- Onsite Wastewater Management Systems Regulation No. 83/2003
- Environmental Protection Guidelines - Appendix 7.1 of PR 304 to Berens River All-Season Road Environmental Impact Assessment – August 2009
- Applicable Permits, Authorizations and Licenses.

4.0 Procedures

4.1 General

.1 All construction areas shall be kept clean and orderly at all times during and at completion of construction.

.2 Waste material shall be recycled to a degree that is economically and practically feasible.

.3 There shall be no indiscriminate dumping of waste and litter on or off the construction site.

.4 Different waste streams shall not be mixed.

.5 All waste materials shall be collected and contained in a designated waste storage area and in containers appropriate to the waste classification until removed from the site for recycling or disposal.

.6 Waste storage sites shall be designated for each worksite and camp as approved by the Contract Administrator.

.7 Waste material (i.e. food and food containers) that is likely to attract nuisance wildlife shall be stored in wildlife proof storage bins and

hauled off site at regular intervals for disposal at an approved disposal facility.

.8 Contaminated runoff or water shall be contained and prevented from entering any watercourse. The collected contaminated runoff or water shall be hauled off site for disposal at an approved disposal facility.

4.2 Domestic Solid Wastes, Demolition and Construction Waste

.1 At no time during construction shall domestic solid, demolition, or construction waste be permitted to accumulate at any location on the work site, other than at a dedicated waste storage site, unless approved by the Contract Administrator.

.2 All domestic solid waste containers shall be clearly marked to identify the nature and type of material to be deposited (e.g. containers for recyclable material and containers for disposal).

.3 No on-site burning of waste or any other material is allowed unless approved by the Contract Administrator. The Contractor shall be responsible for obtaining a burning permit from Manitoba Conservation for burning between April 1 and November 15.

.4 All domestic solid waste storage shall be confined to Designated Areas.

.5 Waste concrete from concrete pumps and concrete trucks, cleanout materials from concrete trucks, concrete pumps and other equipment shall be deposited only in the concrete washout Designated Area. All of this material shall be hauled off site, for disposal at an approved landfill or to a recycling facility, not later than at the closure of the Designated Area.

4.3 Domestic Sewage

.1 All sewage shall be collected through the provision of an outside toilet facility in compliance with the *Onsite Wastewater Management Systems Regulation No. 83/2003.*

.2 All collected sewage shall be removed from the site at least once every seven (7) days by a registered sewage hauler, as defined in section 21(1) of the *Onsite Wastewater Management Systems Regulation No. 83/2003* and disposed of at a wastewater treatment facility licenced under The Environment Act or otherwise federally regulated.

4.4 Dangerous Goods/Hazardous Waste Handling and Disposal

.1 Dangerous goods/hazardous wastes shall be identified and shall be handled in accordance with The Dangerous Goods Handling and Transportation Act and Regulations and Health Canada's Workplace Hazardous Materials Information System (WHMIS).

.2 The Contractor shall have staff, trained and certified in the handling of dangerous goods, present on-site whenever said dangerous goods are being utilized for the performance of the work.

.3 All dangerous goods/hazardous waste shall be confined to Designated Areas and stored in a secure manner to prevent access by non-designated employees.

.4 Designated dangerous goods/hazardous waste storage areas shall have the top soil stripped and be lined with at least 30 cm of impermeable material or approved equal and dyked in such a manner as to contain any leakage or spillage. The dykes shall be designed, constructed and maintained to retain not less than 100% of the capacity of the total number of containers or 110% of the largest container, whichever is greatest. The top soil shall be stored and used in the restoration of the site.

.5 Disposal of hazardous waste shall only be at hazardous waste facilities licensed under The Dangerous Goods Handling and Transportation Act.

.6 All waste stored at designated hazardous waste storage areas shall be removed from the site at least once every seven (7) days.

.7 Hydrocarbons shall not be stored or disposed of in earthen pits on-site.

.8 All used oils shall be stored in appropriate drums or tanks until removed to a registered waste oil recycling centre or hazardous waste disposal facility.

.9 Used oil filters shall be drained, placed into suitable storage containers and disposed of at approved facilities. The oil drained out of the used filters shall be collected and handled in the same manner as used oil.

.10 A pesticide use permit shall be obtained prior to the application of pesticides. The Contractor shall ensure that all pesticides are applied by a licenced commercial applicator and adhere to all conditions specified in this permit. These conditions include submitting a properly completed post seasonal form to the Contract Administrator at the completion of the Contract or at the end of each calendar year confirming that any terms and conditions of the permit have been satisfied. The Contractor shall supply the following information to the Contract Administrator for this form:

.1 The name of each pesticide used

.2 The Pest Control Product number of each pesticide

.3 Quantity in litres of each pesticide used

.4 Total area treated in hectares

.5 A map of the treated areas

.6 Legal description of the land where practical

.7 Color coded map to indicate where each type of pesticide was used

.11 All pesticides shall be handled and applied by or under the direct supervision of a licensed commercial applicator, as defined in section 4.1 of the *Pesticides Regulation 94/88*, and further all pesticides shall be used in accordance with any terms and conditions of the permit.

.12 As dangerous goods/hazardous waste storage areas are taken out of service any remediation shall be conducted, including the appropriate disposal of the contaminated material to the satisfaction of the Contract Administrator.

ENVIRONMENTAL PROTECTION PROCEDURES

WORKING WITHIN OR NEAR FISH BEARING WATERS

Revision March 2015

Procedure name:
Working Within or Near Fish Bearing Waters

Reference number
EP6

1.0 Description

.1 This procedure specifies requirements for working within or near fish bearing waters during all phases of construction.

2.0 Purpose

.1 To ensure that any works occurring within a watercourse is conducted according to applicable guidelines and permit requirements.

.2 To ensure the implementation of appropriate mitigation measures and Best Management Practices to protect aquatic habitats.

.3 To ensure that water quality standards are met throughout the course of instream construction activities.

3.0 Legislation and Supporting Documents

- ESRA Contracts and Associated Documents
- Applicable Manitoba Conservation Work Permits
- Applicable Fisheries and Oceans Canada (DFO) Authorizations
- Manitoba Stream Crossing Guidelines for the Protection of Fish and Fish Habitat (www.gov.mb.ca/waterstewardship/fisheries/habitat/sguide.pdf)
- Freshwater Intake End-of-Pipe Fish Screen Guidelines – Department of Fisheries and Oceans 1995 (www.dfo-mpo.gc.ca/Library/223669.pdf)
- Environmental Protection Guidelines – Appendix 7.1 of PR 304 to Berens River All-Season Road Environmental Impact Assessment – August 2009
- Best Management Practices – Appendix 7.2 of PR 304 to Berens River All-Season Road Environmental Impact Assessment – August 2009

4.0 Procedures

.1 The Contractor shall schedule and plan the Work so that the amount of in-water work is kept to a minimum. Construction activities shall not occur within 100 meters of a watercourse with the exception of construction of a watercourse crossing.

.2 In-water work shall be restricted to low flow periods where possible. Whenever possible, in-water works shall be scheduled during a

period when the watercourse is seasonally dry or frozen to the bottom.

.3 The Contractor shall not undertake construction activities in fish bearing waters or potentially fish bearing waters between April 1 and June 30 of any year, or during periods of high stream flow or identified spawning periods.

.4 Material, cleared vegetation, stockpiles and/or waste shall not be deposited or stored within 100 meters of a watercourse, unless approved by the Contract Administrator. No borrow shall be removed from within 100 meters of water body.

.5 The disturbance to the stream bed and banks shall be minimized. Use existing trails, roads or cut lines to access the site where possible to avoid disturbance to riparian vegetation.

.6 All construction activities shall be suspended during adverse weather conditions (i.e., heavy rains).

.7 As a general rule, keep roads a minimum of 100 meters away from a watercourse except when crossing the watercourse. This often forces the alignment onto drier sites. If a 100 meter distance is not possible, allow a buffer zone of undisturbed vegetation between the road and the waterway, using a buffer zone width of approximately 10 m plus 1.5 times the slope gradient or 30 m, whichever is greater.

.8 Backfill (i.e. rip rap and other rock materials) installed adjacent to a fish bearing water body shall be clean and well graded granular material that is free of fines.

.9 Where possible, in-water work shall be staged to occur as a single event and machinery access shall be limited to a single point on the shoreline.

.10 The distance between the machinery access point and the worksite shall be minimized.

.11 The Contractor shall use an in-stream pad built of washed gravel where in-water equipment activity would generate excess sediment.

.12 If Work is being conducted under a Fisheries and Oceans Canada (DFO) Authorization, adhere to all conditions outlined within the Authorization.

.13 Equipment shall arrive on site in a clean, washed condition, and free of fluid leaks.

.14 Equipment shall be kept in good repair to prevent leakage of fuel oil etc. Avoid fuelling, changing oil, repairing or washing any equipment within 100 meters of the normal high water mark. Ensure runoff and water used for equipment cleaning does not enter any water body.

.15 Spill containment and cleanup supplies shall be stored and accessible on site at all times.

.16 Vehicles and other equipment shall be kept away from and out of the water unless instructed otherwise by the Contract Administrator.

.17 If there is no existing crossing and the watercourse must be crossed, a temporary crossing shall be constructed to keep all vehicles and equipment out of the watercourse.

.18 Concrete works shall be conducted in a manner that does not allow direct or indirect entry of concrete, concrete fines or concrete wastewater into the watercourse.

.19 Natural debris removal shall be limited to that which is necessary to protect bridge piers or abutments or to that which is blocking culverts.

.20 Debris and other objects shall be lifted out of the water whenever possible. Items shall not be dragged across the stream bed/lake bottom and banks/shoreline.

.21 All banks/shoreline areas that are disturbed shall be restored to their original conditions as soon as practicable, including re-vegetation if necessary. Erosion and sediment control measures shall be implemented, inspected and maintained until vegetation is established.

.22 Whenever it is necessary to remove existing beaver dams reference shall be made to the DFO document *"Manitoba Operational Statement Habitat Management Program DFO Beaver Dam Removal".* Work plans for beaver dam removal shall be provided to the Contract Administrator 5 business days prior to the start of dam removal.

ENVIRONMENTAL PROTECTION PROCEDURES

STREAM CROSSINGS

Revision March 31, 2015

Procedure name:
Stream Crossings

Reference number
EP7

1.0 Description

.1 The installation of stream crossings will be required to facilitate various activities. The Contractor is responsible for ensuring compliance with contract specifications, environmental legislation, permits and authorizations.

2.0 Purpose

.1 The purpose of this procedure is to ensure that stream crossings are installed in accordance with applicable environmental legislation, regulations, guidelines, permits and contracts.

3.0 Legislation and Supporting Documents

- ESRA Contracts and Associated Documents
- Applicable Manitoba Conservation Work Permits
- Manitoba Stream Crossing Guidelines for the Protection of Fish and Fish Habitat –May 1996 (www.gov.mb.ca/waterstewardship/fisheries/habitat/sguide.pdf)
- Freshwater Intake End-of-Pipe Fish Screen Guidelines – Department of Fisheries and Oceans 1995 (www.dfo-mpo.gc.ca/Library/223669.pdf)
- Ice Bridges and Snow Fills Operational Statement, Version 3.0 – Fisheries and Oceans Canada 2007 (www.dfo-mpo.gc.ca/regions/central/habitat/os-eo/provinces-territories-territoires/mb/index-eng.htm)
- Temporary Stream Crossing Operational Statement, Version 1.0 – Fisheries and Oceans Canada 2008 (www.dfo-mpo.gc.ca/regions/central/habitat/os-eo/provinces-territories-territoires/mb/index-eng.htm)
- Environmental Protection Guidelines - Appendix 7.1 of PR304 to Berens River All-Season Road Environmental Impact Assessment
- Best Management Practices – Appendix 7.2 of PR 304 to Berens River All-Season Road Environmental Impact Assessment – August 2009

4.0 Procedures

.1 All stream crossings shall be constructed in accordance with *The Manitoba Stream Crossing Guidelines for the Protection of Fish Habitat – May 1996*.

.2 A minimum vegetated buffer strip of 30 metres shall be maintained between the worksite and watercourse except at the actual crossing location.

.3 Where possible, existing stream crossings shall be utilized to traverse watercourses.

.4 Temporary stream crossings shall be located at straight stream sections, perpendicular to the bank. In particular, meandering bends, braided streams, alluvial fans and other unstable areas shall be avoided.

.5 Temporary stream crossings shall be located at a narrow channel section where the width is no greater than five meters (measured from high water mark to high water mark) to minimize the crossing length.

.6 Temporary stream crossings shall be designed for their intended construction loading and to accommodate anticipated water flows.

.7 The number of temporary stream crossings constructed shall be minimized.

.8 When feasible, the construction of stream crossings shall be scheduled for the period of lowest stream flow and should be a single event.

.9 Streams shall be crossed at right angles to minimize shoreline disturbance to the extent possible.

.10 The natural alignment of the stream shall be maintained.

.11 Where possible, there shall be no dredging, infilling, grading or excavating of the channel bed or banks.

.12 Temporary stream crossings shall be removed as soon as possible following completion of the work or when it is no longer required.

.13 Following the removal of a temporary stream crossing, the site shall be restored to its original state. The restoration shall include appropriate erosion and sediment control measures and re-vegetation of disturbed areas as required.

ENVIRONMENTAL PROTECTION PROCEDURES

TEMPORARY STREAM DIVERSIONS

Revision March 2015

Procedure name: Reference number
Temporary Stream Diversions EP8

1.0 Description

.1 Worksite isolation shall be undertaken as instructed by the East Side Road Authority (ESRA) to accommodate any in water works that must be conducted "in the dry" within fish bearing waters to minimize erosion and sedimentation and maintain downstream flows. The Contractor is responsible for ensuring compliance with contract specifications, environmental legislation, permits and authorizations.

.2 Suspended sediment presents a hazard to fish and fish habitat as it can clog and abrade gills, smother eggs, change habitat structure and cover food supply. Maintaining downstream flows is critical to the survival of many aquatic species.

2.0 Purpose

.1 The purpose of this procedure is to ensure that temporary stream diversions are installed in accordance with applicable environmental legislation, regulations, guidelines, permits and contracts.

3.0 Legislation and Supporting Documents

- ESRA Contracts and Associated Documents
- The Environment Act - C.C.S.M. c. E125
- The Workplace Safety and Health Act - C.C.S.M. c. W210
- Applicable Manitoba Conservation Work Permits
- Department of Fisheries and Oceans' *"Freshwater Intake End-of-Pipe Fish Screen Guideline" (1995).*
- The Manitoba Stream Crossing Guidelines for the Protection of Fish Habitat – May 1996
- Fisheries Act – RSC, 1985, c. F-14
- Environmental Protection Guidelines - Appendix 7.1 of PR 304 to Berens River All-Season Road Environmental Impact Assessment – August 2009

4.0 Procedures

4.1 General

.1 Temporary stream diversions shall be constructed under low flow conditions and shall be designed to accommodate flows that may occur during storm events.

.2 Instream diversion structures (i.e., sheet piling, sandbags, etc.) shall be constructed using erosion resistant materials.

.3 Temporary stream diversions shall be designed to provide fish passage, even during low flow conditions. If elevated pipes are used, remove diversion during fish migration periods.

.4 Stream diversion channels shall be constructed in the dry, excavating from downstream to upstream. Diversion channels shall have gentle curves and similar gradient to the natural watercourse.

.5 To help prevent potential erosion, the diversion channel shall be lined with erosion resistant materials (i.e., plastic, rock) where practicable.

.6 While the worksite is isolated, flow shall be maintained downstream at all times.

.7 A fish salvage operation shall be conducted by a qualified biologist with a "live fish handling permit" prior to dewatering of the isolated work area.

.8 The site shall be restored as soon as possible following completion of the Work. The restoration work shall include re-vegetation of disturbed areas (i.e. channel banks), infilling any temporary channels, removing all construction materials and debris and installation and maintenance of required erosion and sediment control measures.

4.2 Temporary Diversion Channels

.1 Temporary diversion channels shall be designed to accommodate expected watercourse flow from storm events.

.2 Temporary diversion channels shall be constructed "in the dry" by not excavating upstream and downstream ends of the channel.

.3 Existing watercourses shall not be disturbed until temporary diversion channels have been constructed.

.4 Diversion channels shall be opened from the downstream end first. Stabilize the connection of the diversion channel to the main watercourse. Pump flows around work site, if possible during construction of the channel connection.

.5 The upstream connection to the main watercourse shall be constructed and stabilized while pumping flows, if possible, around the work area.

.6 Gradient controls shall be used to ensure that diversion channel slopes correspond to the existing channel gradients.

.7 Erosion control measures shall be installed to protect any unstable channel beds and banks.

.8 The diversion channel shall be inspected following a severe rainstorm or at the end of the spring freshet to identify areas of incipient erosion. Eroded areas shall be repaired promptly.

4.3 Pumped Diversions

.1 Pumped diversions shall be used wherever a channel must be completely blocked to allow work ‘in the dry’.

.2 Intakes shall be sized and screened to prevent debris blockage and fish mortality in accordance with DFO’s *Freshwater Intake End-of-Pipe Fish Screen Guideline.*

.3 The Pumping system shall be sized to accommodate expected watercourse flow from storm events (generally 1 in 5 year event, although the 1 in 2 year event may be used for non-critical situations).

.4 Pumps shall be discharged onto geofabric, gravel, straw bales or an alternate approved by the Contract Administrator to dissipate the energy of discharge and mitigate scouring of channel banks and/or streambed.

ENVIRONMENTAL PROTECTION PROCEDURES

FISH PASSAGE

Revision March 31, 2015

Procedure name: Fish Passage

Reference number EP9

1.0 Description

.1 Providing fish passage shall be undertaken as instructed by the East Side Road Authority (ESRA) to accommodate for in-water construction activities. The Contractor is responsible for ensuring compliance with contract specifications, environmental legislation, permits and authorizations.

2.0 Purpose

.1 The purpose of this procedure is to ensure that fish passage is maintained in accordance with applicable environmental legislation, regulations, guidelines, permits and contracts.

3.0 Legislation and Supporting Documents

- ESRA Contracts and Associated Documents
- The Environment Act - C.C.S.M. c. E125
- Applicable Manitoba Conservation Work Permits
- Fisheries Act – RSC, 1985, c. F-14
- Environmental Protection Guidelines - Appendix 7.1 of PR 304 to Berens River All-Season Road Environmental Impact Assessment – August 2009

4.0 Procedures

.1 Flow shall not be constricted by more than one third (33%) of the original stream width.

.2 Flow shall be maintained at all times to permit the safe and unimpeded passage of fish. A temporary diversion channel to direct flows around the work site shall be constructed if flows are to be constricted by more than one third of the original stream width in fish bearing waters. In non fish bearing waters a pumped diversion may be used instead to maintain flows downstream.

.3 Cleared trees, vegetation or construction materials shall not obstruct waterways during any season, and shall be stored above the ordinary high water mark (1 in 2 year high water mark).

ENVIRONMENTAL PROTECTION PROCEDURES

FISH SALVAGE

Revision March 31, 2015

Procedure name: Fish Salvage

Reference number EP10

1.0 Description

.1 Fish salvage operations shall be undertaken as instructed by the East Side Road Authority (ESRA) to accommodate for in-water construction activities. The Contractor is responsible for ensuring compliance with contract specifications, environmental legislation, permits and authorizations.

2.0 Purpose

.1 To ensure that fish salvages are conducted in accordance with applicable environmental permits, guidelines and legislation.

.2 To ensure that best management practices and guidelines are implemented for the protection of aquatic species.

3.0 Legislation and Supporting Documents

- ESRA Contracts and Associated Documents
- Applicable Manitoba Conservation Work Permits
- Applicable Manitoba Water Stewardship Live Fish Handling Permit
- Applicable Fisheries and Oceans Canada Authorizations
- Environmental Protection Guidelines - Appendix 7.1 of PR304 to Berens River All-Season Road Environmental Impact Assessment

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4.0 Procedures

.1 A fish salvage operation shall be conducted where site isolation and/or dewatering is required.

.2 Fish salvages shall be conducted by qualified professionals possessing the necessary Manitoba Conservation Permits for fish handling.

.3 Fish salvages shall be conducted following the isolation of the worksite and prior to the completion of dewatering and/or commencement of construction works.

.4 Partial dewatering is permissible to decrease wetted area and increase efficiency of capture, provided that pump intakes are adequately screened (See DFO *Freshwater Intake End-of-Pipe Fish Screen Guideline*). However, the fish salvage shall be completed prior to dewatering the entire area.

.5 If necessary, captured fish shall be placed in a holding tank with adequate water until released.

.6 Captured fish shall be cataloged by species. The length and weight of a representative proportion of captured fish species shall be recorded.

.7 The following information shall be collected and recorded:

.1 Date

.2 Location (watercourse name and geographic coordinates)

.3 Description of project/construction works

.4 Physical habitat parameters – channel width, wetted width, size (area) and depth of salvage area, water temperature

.5 Fish capture method (e.g. Seine net, dip net, gill net, backpack electrofishing)

.6 Effort (e.g. two passes with a seine net; two people dip netting for 0.5 hours; backpack electrofishing for 350 seconds);

.7 Number of fish collected, by species

.8 Length and weight of a representative proportion of captured fish species

.8 All captured fish shall be released downstream of the worksite.

ENVIRONMENTAL PROTECTION PROCEDURES

CULVERT MAINTENANCE AND REPLACEMENT

Revision March 2015

Procedure name:
Culvert Maintenance and Replacement

Reference number
EP11

1.0 Description

.1 Culvert maintenance and replacement shall be undertaken as instructed by the East Side Road Authority (ESRA) to accommodate for in-water construction activities. The Contractor is responsible for ensuring compliance with contract specifications, environmental legislation, permits and authorizations.

2.0 Purpose

.1 To ensure that culvert maintenance and replacement is conducted in accordance with applicable environmental permits, guidelines and legislation.

3.0 Legislation and Supporting Documents

- ESRA Contracts and Associated Documents
- Applicable Manitoba Conservation Work Permits
- Manitoba Stream Crossing Guidelines for the Protection of Fish and Fish Habitat (www.gov.mb.ca/waterstewardship/fisheries/habitat/sguide.pdf)
- Freshwater Intake End-of-Pipe Fish Screen Guidelines – Department of Fisheries and Oceans 1995 (www.dfo-mpo.gc.ca/Library/223669.pdf)
- Applicable Fisheries and Oceans Canada (DFO) Authorizations or Letters of Advice
- Fisheries Act, RSC.,1985, c-F14
- The Environment Act - C.C.S.M. c. E125
- The Workplace Safety and Health Act - CCSM. c. W210
- Environmental Protection Guidelines - Appendix 7.1 of PR304 to Berens River All-Season Road Environmental Impact Assessment
- Best Management Practices – Appendix 7.2 of PR 304 to Berens River All-Season Road Environmental Impact Assessment – August 2009

4.0 Procedures

.1 Material and debris removal shall be timed to prevent disruption to sensitive fish life stages by adhering to DFO's restricted activity timing windows unless accumulated material is preventing the passage of water and/or fish through the structure. The Contractor shall not undertake construction activities in fish bearing waters or potentially fish bearing waters between April 1 and June 30 of any year, or during periods of high stream flow.

.2 Emergency debris removal using hand tools or machinery (e.g. backhoe) may be carried out at any time of year. Emergencies include situations where carrying out the project immediately is in the interest of preventing damage to property or the environment, or is in the interest of public health or safety. DFO is to be notified immediately.

.3 Effective erosion and sediment control measures shall be installed prior to starting work. These measures shall be inspected regularly during the course of construction. The contractor shall make all necessary repairs if any damage occurs.

.4 The contractor shall limit the removal of accumulated material (i.e., branches, stumps, other woody materials, garbage, etc.) to the area within the culvert, immediately upstream of the culvert and to that which is necessary to maintain culvert function and fish passage.

.5 Accumulated material and debris shall be removed slowly to allow clean water to pass, to prevent downstream flooding and reduce the amount of sediment-laden water going downstream.

.6 The contractor shall follow the mitigation measures and conditions set out in DFO's *Operational Statement* on the "*Beaver Dam Removal*" when removing beaver dams and associated debris for culvert maintenance.

.7 Machinery shall arrive at site in a clean condition and shall be operated on land (from outside of the water) and in a manner that minimizes disturbance to the bed and banks of the watercourse.

.8 The bed and banks of the watercourse shall be restored to preexisting conditions following a disturbance.

.9 To ensure that fish passage is maintained, culverts in fish bearing waters shall adhere to the following design criteria:

- .1 For culverts less than 25 m long the flow velocity through the crossing shall not exceed 1 m/s
- .2 For culverts greater than 25 m long the flow velocity through the crossing shall not exceed 0.8 m/s
- .3 The crossing shall not be impassable to fish for longer than 3 consecutive days once in 10 years or 7 consecutive days once in 50 years
- .4 The culvert shall be designed such that fish passage is possible even in low flows

.10 If more than one culvert is to be installed, a minimum of 2 m between adjacent culverts is recommended. There shall be no more than three culverts at one crossing.

.11 If works are being conducted under a DFO Authorization, all conditions outlined within the Authorization shall be adhered to.

.12 A site visit shall be conducted prior to the commencement of in-water construction activities to determine the site-specific environmental protection measures that may be required (i.e., worksite isolation methods, site restoration considerations, erosion and sediment control materials required, etc.).

.13 Cofferdams or other structures (diversions) shall be installed to separate the dewatered worksite from flowing water. Materials that are used to build these dams shall not be taken from below the high water mark (1 in 2 year high water level). Cofferdams shall be designed to accommodate any expected high flows during the construction period.

.14 Downstream flows shall be maintained at all times. If isolated sites are required, flows shall be detoured around the sites, and original flows through the site shall be restored as soon as work is completed.

.15 A fish salvage operation shall be conducted prior to dewatering of isolated sites.

.16 The contractor shall maintain a culvert gradient as close to the natural stream grade as possible.

.17 The contractor shall install culverts a minimum of 30 cm or 10% of culvert diameter (whichever is greater) below the normal stream bed.

.18 The contractor shall avoid using frozen backfill. Backfill shall be compacted to avoid settling, hydrostatic uplifting or side movements of the culvert that may lead to blockage of fish passage or washouts.

.19 Slopes shall be contoured to an appropriate steepness to minimize erosion; erosion controls shall be installed as soon as possible.

.20 Soils shall be graded in the direction away from the watercourse and never into the stream itself.

ENVIRONMENTAL PROTECTION PROCEDURES

BLASTING NEAR A WATERCOURSE

Revision March 31

Procedure name:
Blasting Near A Watercourse

Reference number
EP12

1.0 Description

.1 Blasting within or near a watercourse shall be undertaken as instructed by the East Side Road Authority (ESRA). The Contractor is responsible for ensuring compliance with contract specifications, environmental legislation, permits and authorizations.

2.0 Purpose

.1 To ensure that blasting near water bodies is conducted according to applicable guidelines and permit requirements.

.2 To ensure the protection of aquatic environments by implementing appropriate Best Management Practices during blasting activities.

3.0 Legislation and Supporting Documents

- Dangerous Goods Handling and Transportation Act, CCSM c. D12
- ESRA Contracts and Associated Documents
- Applicable Manitoba Conservation Work Permits
- Applicable Fisheries and Oceans Canada (DFO) Authorizations or Letters of Advice
- Manitoba Stream Crossing Guidelines for the Protection of Fish and Fish Habitat (www.gov.mb.ca/waterstewardship/fisheries/habitat/sguide.pdf)
- Guidelines for the Use of Explosives In or Near Canadian Fisheries Waters (1998) (www.dfo-mpo.gc.ca/oceans-habitat/habitat/water-eau/explosives-explosifs/page03_e.asp)
- Environmental Protection Guidelines – Appendix 7.1 of PR 304 to Berens River All-Season Road Environmental Impact Assessment – August 2009
- Best Management Practices – Appendix 7.2 of PR 304 to Berens River All-Season Road Environmental Impact Assessment – August 2009

4.0 Procedures

.1 Blasting plans shall comply with blasting regulations and reflect the appropriate timing of life cycle events as they relate to critical life functions of fish and wildlife species (i.e. migration, calving, nesting and spawning). Therefore, to reduce impacts to birds and other wildlife, blasting activities shall be restricted to outside the most sensitive breeding and brood rearing months (i.e. May to late July) as much as possible. Blasting in watercourses classified as fish habitat

is prohibited between April 1 and June 30 of any year, or during periods of high stream flow or identified spawning periods.

.2 Where applicable, blasting shall be undertaken during winter months to minimize permafrost degradation.

.3 Reference shall be made to DFO's document "*Guidelines for the Use of Explosives in or Near Canadian Fisheries Waters" 1998*. Blasting plans shall be submitted to DFO and Manitoba Conservation prior to commencement of blasting in areas that could affect fish habitat.

.4 The blasting contractor shall possess all required permits/certificates. Notification shall be given to affected parties including site employees and the local general public prior to each blasting event.

ENVIRONMENTAL PROTECTION PROCEDURES

HERITAGE RESOURCES

Revision November 2015

Procedure name: Heritage Resources

Reference number EP13

1.0 Description

.1 Heritage resources are an important component of Manitoba's historical legacy which may be uncovered during a wide range of construction activities. Heritage resources may include human remains, a heritage site, a heritage object, and any work or assembly of works of nature or human endeavor that is of value for its archeological, paleontological, pre-historic, historic, cultural, natural, scientific, or aesthetic features, and may be in the form of sites or objects or a combination thereof.

2.0 Purpose

.1 To ensure that due consideration has been given throughout the design and construction phases of the project in order to minimize the potential disturbances to heritage resources.

3.0 Legislation and Supporting Documents

- ESRA Contracts and Associated Documents
- The Heritage Resources Act CCSM. c. H39.1
- Environmental Protection Guidelines - Appendix 7.1 of PR 304 to Berens River All-Season Road Environmental Impact Assessment – August 2009

4.0 Procedures

.1 Specific areas where heritage or cultural resources of interest are suspected of being present such as along major waterways at crossings shall be inspected prior to the start of construction to confirm potential presence and extent.

.2 Where archeological or historic artifacts are encountered during construction activities, work at that location shall immediately cease and the discovery shall be reported to the Field Supervisor and Contract Administrator. The Contract Administrator shall inform the Province of Manitoba's Historic Resources Branch and any affected communities.

.3 A specialist historic resource consultant shall be utilized to assess archeological or historic artifacts that are encountered and recommend mitigation measures. ESRA will engage interested communities and Manitoba's Historic Resources Branch to present and discuss mitigative options..

ENVIRONMENTAL PROTECTION PROCEDURES

WILDLIFE

Revision March 2015

Procedure name: Wildlife

Reference number EP14

1.0 Description

.1 Wildlife includes a broad range of species that may be affected by various activities. This procedure is intended to compliment other targeted procedures, regulatory requirements and monitoring plans. The Contractor is responsible for ensuring compliance with contract specifications, environmental legislation, permits and authorizations.

2.0 Purpose

.1 To ensure that appropriate environmental measures are implemented to avoid, minimize and/or mitigate potential effects on Wildlife.

3.0 Legislation and Supporting Documents

- ESRA Contracts and Associated Documents
- The Wildlife Act CCSM. c. W130
- The Endangered Species Act CCSM. c. E111
- Species at Risk Act S.C 2002, c. 29)
- Applicable Manitoba Conservation Work Permits
- Environmental Protection Guidelines - Appendix 7.1 of PR 304 to Berens River All-Season Road Environmental Impact Assessment – August 2009

4.0 Procedures

.1 Employees, workers and other staff shall not hunt or trap wildlife.

.2 The Contractor shall not remove, destroy or disturb species pursuant to *Manitoba Regulation 25/98*, or any future amendment thereof, respecting *Threatened, Endangered and Extirpated Species*, or species listed in the federal Species at Risk Act.

.3 Wildlife habitat shall not be destroyed or damaged, except pursuant to a licence, permit or other authorization issued for the Project.

.4 No person shall take or be in possession of or willfully destroy the nest or eggs of birds.

.5 No person shall remove, disturb, spring or in any way interfere with any trap set out lawfully by any other person for the purpose of taking furbearing animals.

.6 No blasting shall be permitted within close proximity to sensitive wildlife habitat during critical lifecycle periods.

.7 Construction camps and worksites shall be kept clean and tidy. All food and garbage waste shall be stored in an appropriate manner

and be disposed of at an area which has been designated as an appropriate waste disposal site.

.8 Employees, workers and other staff shall not feed or harass wildlife that they may encounter.

.9 Nuisance wildlife shall be immediately reported to the Natural Resources officer and onsite supervisor.

.10 Trees containing large nests of sticks and areas where active dens or burrows occur shall be identified, left undisturbed and reported to the Natural Resources Officer.

.11 Whenever it is necessary to remove existing beaver dams reference shall be made to the DFO document *"Manitoba Operational Statement Habitat Management Program DFO Beaver Dam Removal"* as well an *"Authorization to remove beaver dams"* must be issued by Manitoba Conservation.

.12 To reduce the possibility of vehicle collisions with wildlife, vehicle speed shall not exceed posted speed limits and wildlife warning signs shall be installed where appropriate.

.13 No temporary roadbed borrow operations shall occur within 2 kilometres of known caribou calving areas along access roads from May 15 to July 1 of any given year.

ENVIRONMENTAL PROTECTION PROCEDURES

WILDFIRES

Revision March 31, 2015

Procedure name: Reference number
Wildfires EP15

1.0 Description

.1 Wildfires can be a threat to people and activities taking place in wilderness areas particularly when under dry conditions. Advance planning and the implementation of safety measures is needed effectively respond to wildfires when they do occur.

2.0 Purpose

.1 The purpose of this procedure is to ensure that appropriate measures are in place to prevent and/or minimize effects caused by wildfires during construction and operation activities.

3.0 Legislation and Supporting Documents

- ESRA Contracts and Associated Documents
- The Fires Prevention and Emergency Response Act CCSM. c. F80
- The Forest Act CCSM. c. F150
- The Wildfires Act CCSM. c. W128
- The Workplace Safety and Health Act - CCSM. c. W210
- The Dangerous Goods Handling and Transportation Act C.C.S.M. c. D12
- Applicable Manitoba Conservation Work Permits
- Environmental Protection Guidelines - Appendix 7.1 of PR 304 to Berens River All-Season Road Environmental Impact Assessment – August 2009
- Wildfires in Manitoba: How to Prepare *[Brochure]*

4.0 Procedures

.1 An evacuation and emergency preparedness plan addressing wildfires shall be implemented and submitted to the Contract Administrator prior to commencing construction.

.2 No fires shall be started without first taking sufficient precautions to ensure that the fire can be kept under control.

.3 To the extent possible, burning shall be avoided during the dry season. In Manitoba the dry season is typically defined as occurring between April 1st and November 15th of a given year. In the event that burning is required, an application for a burning permit shall be submitted for approval to Manitoba Conservation. All conditions imposed by the burning permit shall be adhered to.

.4 In the event that burning is required, any active fires shall be monitored by staff for the duration of the burning activities. No fires shall be left unattended.

.5 No activity shall be conducted which may cause a fire to spread. Similarly, burning or smoldering matter shall not be placed where it may cause a fire to spread.

.6 A primary zone shall be established around camp sites and other longer term temporary structures associated with construction and maintenance activities. Flammable materials such as leaves, brush, dead limbs, and fallen trees shall be cleared from the area regularly.

.7 Combustible materials such as fuel and/or other hazardous substances shall be stored in a safe manner.

.8 The locations of construction camps, offices, and related structures shall be chosen in such a fashion as to minimize the risk of exposure to wildfires.

.9 In the event that a wildfire occurs, it shall be immediately reported to the Contract Administrator and to Manitoba Conservation at 1-800-782-0076.

.10 All reasonable steps shall be taken in order to prevent a fire from burning out of control or spreading from land owned or occupied for construction purposes.

.11 In the event that a wildfire is identified where construction activities are taking place, all reasonable attempts shall be made in order to extinguish the wildfire. All available equipment, services and labor shall be made available at the disposal of an officer for the purposes of wildfire protection operations.

.12 All construction and related activities taking place in the vicinity of a wildfire shall cease until advised by the Contract Administrator that it is safe to resume operations.

ENVIRONMENTAL PROTECTION PROCEDURES

EROSION AND SEDIMENT CONTROL

Revision March 2015

Procedure name: Reference number
Erosion and Sediment Control EP16

1.0 Description

.1 Erosion and sediment control shall be implemented as required to prevent, minimize and/or mitigate environmental effects. The Contractor is responsible for ensuring compliance with contract specifications, environmental legislation, permits and authorizations.

2.0 Purpose

.1 The purpose of this procedure is to ensure that erosion and sediment control measures are installed to prevent, minimize and/or mitigate environmental effects in accordance with contract specifications, applicable legislation and associated regulations and guidelines.

3.0 Legislation and Supporting Documents

- ESRA Contracts and Associated Documents
- The Fires Prevention and Emergency Response Act CCSM. c. F80
- The Forest Act CCSM. c. F150
- The Wildfires Act CCSM. c. W128
- The Workplace Safety and Health Act - CCSM. c. W210
- The Dangerous Goods Handling and Transportation Act CCSM. c. D12
- Applicable Manitoba Conservation Work Permits
- Environmental Protection Guidelines - Appendix 7.1 of PR 304 to Berens River All-Season Road Environmental Impact Assessment – August 2009

4.0 Procedures

.1 The installation of erosion and sediment control measures shall be completed in accordance with the Contract Documents as approved by the Contract Administrator.

.2 Prior to construction, all vegetated areas that are to be preserved or untouched shall be well marked out and noted.

.3 Vegetation cover shall be preserved for as long as possible; operations shall be halted during heavy rainstorms.

.4 Effective erosion and sediment control measures shall be installed before starting work within or near fish habitat.

.5 Erosion and sediment control measures shall be inspected regularly and after every major rain or spring melt event; necessary repairs shall be made immediately after damage has been discovered.

.6 A turbidity curtain shall be installed downstream of all in-water works within fish bearing waterways.

.7 Hand clearing shall be utilized within 30 meters of a water way instead of mechanical clearing where possible to prevent disturbance of the organic soil layer.

.8 Slash and debris that is collected during clearing operations shall be retained and used to temporarily protect erosion-prone slopes.

.9 Sediment shall be prevented from entering streams by placing overburden or topsoil stockpiles well above the high water mark.

.10 Stream banks and bed shall be protected with erosion-resistant materials such as riprap at culvert openings.

ENVIRONMENTAL PROTECTION PROCEDURES

CONCRETE WASHOUT AREA MANAGEMENT PRACTICES

Revised March 30, 2015

Prepared by: T.Martin	Revision Number 17.1	Date Issued: March 2015
Approved by		Date of Revision 2015-03-30
Disclaimer, special note, etc.		

1.0 Description

1. This procedure specifies best management practices for the implementation and use of concrete washout areas during all phases of construction.

2.0 Purpose

1. The purpose of this procedure is to ensure that any concrete, concrete fines or washout produced is disposed of in accordance with applicable contract specifications, legislations, permits and authorizations.

3.0 Legislation and Supporting Documents

- ESRA Contracts and Associated Documents
- Applicable Manitoba Conservation Work Permits
- Environment Act
- Manitoba Stream Crossing Guidelines for the Protection of Fish and Fish Habitat (www.gov.mb.ca/waterstewardship/fisheries/habitat/sguide.pdf)
- Freshwater Intake End-of-Pipe Fish Screen Guidelines – Department of Fisheries and Oceans 1995 (www.dfo-mpo.gc.ca/Library/223669.pdf)
- Environmental Protection Guidelines - Appendix 7.1 of PR304 to Berens River All-Season Road Environmental Impact Assessment
- Best Management Practices – Appendix 7.2 of PR 304 to Berens River All-Season Road Environmental Impact Assessment – August 2009
- Fisheries Act (RSC., 1985, c. F-14)

4.0 Procedures

1. Concrete wash out areas should be designated at the pre-construction site meeting and approved by ESRA.

2. Concrete washout areas should be located a minimum of 100 meters away from the normal high water mark of a waterbody or watercourse and in a non porous soil location, as outlined in GR130.8.1.1

3. Concrete works shall be conducted in a manner that does not allow direct or indirect entry of concrete, concrete fines or concrete washout into the watercourse in accordance with GR130.15.1.20 and GR130.8.1.

4. As per tender submission, specification 330, Section 5.10.3. - Concrete truck wash out areas shall be at a dedicated site 100m away from nearby

watercourses and waterbodies and shall be cleaned up at the end of the construction activities to the satisfaction of the Contract Administrator.

5. Where water for concrete washout activities is taken from a watercourse or waterbody, the Department of Fisheries and Oceans Freshwater Intake End-of-Pipe Fish Screen Guidelines, the Water Rights Act and other appropriate legislative and mitigative measures must be followed.

6. The contractor shall comply with all requirements as laid out in the Water Rights Act, including but not limited to:
    a. The contractor must not release any excess cement and/or wastewater to surface waters, including wetlands.
    b. Any containment area must not be connected to or drain to any surface waters, including wetlands.
    c. Any wastewater generated on site must be contained within the construction site.

7. The contractor shall comply with all requirements as laid out in the Environment Act Licence No. 2929 regarding utilization, cleanup and disposal of water, waste and hazardous materials at the washout site.

8. All Concrete obtained and utilized for ESRA projects must be sourced from a concrete batch plant licensed in accordance with the Manitoba Environment Act.

9. The contractor shall comply with all requirements laid out in the Concrete Batch Plant licence.

10. The contractor shall follow guidelines as laid out in the Environmental Impact Assessment, including but not limited to:
    a. Appendix 7.1, Section 12.7 – Reclamation and Site Cleanup:
    The contractor will
        - begin reclamation and site cleanup as soon as construction has been completed;
        - recontour, stabilize, and re-vegetate disturbed areas to suit original conditions

ENVIRONMENTAL PROTECTION PROCEDURES

DUST SUPPRESSION PRACTICES

March 30, 2015

Prepared by: T.Martin	Revision Number 18.1	Date Issued: March 2015
Approved by		Date of Revision 2015-03-30
Disclaimer, special note, etc.		

Procedure name
DUST SUPPRESSION PRACTICES

Reference number
EP18

1.0 Description

1. This procedure specifies best management practices for the implementation and use of dust suppression on roadways during all phases of construction.

2.0 Purpose

1. The purpose of this procedure is to ensure that any chemical or material used on roads for suppression dust is done so in accordance with applicable contract specifications, legislations, permits and authorizations.

3.0 Legislation and Supporting Documents

- ESRA Contracts and Associated Documents
- Applicable Manitoba Conservation Work Permits
- The Environmental Act, CCSM c E125
- Canadian Environmental Protection Act, 1999, SC 1999, c 33
- Manitoba Stream Crossing Guidelines for the Protection of Fish and Fish Habitat (www.gov.mb.ca/waterstewardship/fisheries/habitat/sguide.pdf)
- Environmental Protection Guidelines - Appendix 7.1 of PR304 to Berens River All-Season Road Environmental Impact Assessment
- Best Management Practices – Appendix 7.2 of PR 304 to Berens River All-Season Road Environmental Impact Assessment – August 2009
- Fisheries Act (R.S., 1985, c. F-14)

4.0 Procedures

1. Follow the manufacturer’s specifications or other tested and approved procedures.
2. The application shall be limited to the roadway, driveway or parking lot.
3. Carefully monitor the application rate to ensure adequate coverage without pooling or runoff of products.
4. The amount of dust suppressant applied should not exceed the minimum amount required to effectively suppress dust.
5. There should be no evidence of excess product on the roadway.
6. The material must not migrate or run off the traveled portion of the roadway.
7. Dust suppressants must conform with the manufacturer's specifications and must not contain concentrations of contaminants that would not normally be found in the suppressant.

8. Ensure that dust suppressants do not enter and contaminate water bodies, including surface and groundwater. Do not allow the product to leave the roadway.
9. Do not apply products to areas of roads that are subject to flooding.
10. Do not apply products if precipitation is occurring, or forecast to occur before the product sets or cures.

5.0 Working near water

- Observe a 50 metre setback from any watercourse.
- Apply as per the manufacturer's guidelines.
- Avoid over-application or application beyond the road shoulder.

ENVIRONMENTAL PROTECTION PROCEDURES

BORROW PIT DECOMMISSIONING

December 2015

Procedure name: Reference number
Borrow Pit Decommissioning EP19

1.0 Description

.1 The excavation of a borrow pit shall be undertaken in areas outlined by the Contractor, Contract Administrator or by the East Side Road Authority (ESRA), and consist of the excavating of material, other than Solid Rock.

.2 The decommissioning of borrow pits shall include the removal or disposal of all site debris, appropriate sloping of borrow pit sides, removal of site access, and promoting of natural re-establishment of vegetation. The Contractor is responsible for ensuring compliance with all contract specifications, environmental legislation, permits and authorizations.

2.0 Purpose

.1 The purpose of this procedure is to ensure that borrow pit decommissioning operations are conducted in accordance with applicable environmental legislation, regulations, guidelines, permits and contracts.

3.0 Legislation and Supporting Documents

- ESRA Contracts and Associated Documents
- Applicable Manitoba Conservation Work Permits
- The Manitoba Conservation Brush Disposal Guidebook – March 2005
- The Manitoba Stream Crossing Guidelines for the Protection of Fish Habitat – May 1996
- Environmental Protection Guidelines - Appendix 7.1 of PR 304 to Berens River All-Season Road Environmental Impact Assessment – August 2009
- Fisheries Act (R.S., 1985, c. F-14)
- The Manitoba Conservation Forest Management Guidelines for Terrestrial Buffers – 2010-2015
- Manitoba Infrastructure and Transportation Standard Construction Specifications for Grading – January 2008

4.0 Procedures

4.1 Clearing and Grubbing

.1 Where clearing and grubbing is required, it shall be completed prior to excavation of the borrow pit.

.2 Clearing and grubbing shall be limited to the site and associated access routes.

.3 Clearing and grubbing shall only be undertaken between September, 1 of any year and April, 1 of the following year.

.4 All clearing and grubbing operations shall occur in accordance with the Clearing and Grubbing Environmental Protection Procedure (EP1).

4.2 Brush Disposal

.1 Disposal of cleared trees and brush must be done as directed or approved by the Contract Administrator. Disposal may involve burning, compacting, burying, windrowing and compacting, limbing and chipping.

.2 All cleared vegetation and debris that is to be burned shall be piled and compacted in windrows. Windrows shall be compacted to lie as close to the ground as possible (maximum height of 0.6 of a meter) and shall be no closer than 1 meter to the bush line. Burn piles shall be located a minimum of 15 meters from other wood and brush piles and standing timber.

.3 Merchantable wood that is identified by the Contract Administrator shall be stockpiled outside and immediately adjacent to the clearing limits. Stockpile sites shall be located within existing clearings or areas of non-merchantable timber. Stockpile sites shall not be located within 100 meters of a waterbody. Unless otherwise specified, all stockpiled material shall be removed from Crown land by April 30 following the date of issuance.

.4 The burning of debris piles is not permitted in the spring or early summer to avoid disturbing small wildlife species which may have young in the piles or may have prepared nesting sites. The best and preferred option for wildlife is burning in the fall or winter.

.5 No burning of debris piles shall occur on deep organic soils. Piles shall be a minimum of 15 meters away from standing timber and the high water mark of any waterbody.

.6 Slash shall be piled in a manner that allows for clean, efficient burning of all material. Avoid mixing soil into the slash.

.7 The Contractor shall obtain a burning permit for open fires between April 1 and November 15. Burning between November 16 and March 31 does not require a burning permit; however, the supervising officer shall be advised prior to any burning. All fires shall be completely extinguished by March 31

.8 Ensure safety precautions are taken to keep the fire under control. Burn piles shall be monitored, to ensure that subsequent fire hazards

are not present. Upon completion of the burn, burn piles shall be completely extinguished.

.9 All occurrences of fire spreading beyond the debris piles shall be reported to the Contract Administrator and the Natural Resources District Supervisor.

.10 All brush disposal operations shall occur in accordance with the Clearing and Grubbing Environmental Protection Procedure (EP1).

4.3 Borrow Pit Sloping

.1 The borrow pit excavation shall be conducted as uniformly as possible to the depths and within the limits outlined by contract specifications, environmental legislation, permits and authorizations.

.2 Upon excavation completion, stockpiled stripping shall be placed uniformly over the slopes and bottom of the borrow pit.

.3 Side slopes shall maintain a slope of 4:1, unless otherwise permitted or directed.

.4 Upon completion of the borrow pit excavation, the Contactor shall cap, level and trim the borrow pit prior to decommissioning the area. If burying woody debris, the area shall be capped with ½ metre of clay. Stockpiled topsoil shall be spread to promote natural re-establishment of vegetation.

4.4 Access Road Removal

.1 The temporary access road to the borrow pit, and any equipment brought onto site, shall be removed or blocked as soon as possible following completion of the work or when it is no longer required.

.2 Following the removal of the temporary access road, the site shall be restored as per section 4.3.4.

4.5 Re-Vegetation

.1 Borrow pits will be left in a manner which promotes natural re-vegetation of the site.

.1 In cases where seeding is required, and when conditions permit, it shall commence immediately upon completion of capping and trimming operations. When conditions do not permit immediate seeding, ESRA will endeavor to ensure seeding is completed within the next growing season.

.2 Seeding operations shall not be carried out under adverse conditions of high winds, or ground covered with snow, ice, or standing water.

ENVIRONMENTAL PROTECTION PROCEDURES

Quarry Site Selection and Requirements

March 31, 2016

Prepared by: Gordon Chamberlain	Revision Number	Date Issued: March 31, 2016
Approved by		Date of Revision March 31, 2016
Disclaimer, special note, etc.		

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Appendices

Appendix A – Quarry Site Plan

1.0 Description

1. This procedure specifies best management practices for the selection of quarry sites and quarry development.

2.0 Purpose

1. The purpose of this procedure is to outline criteria for site selection of quarries and their development.

3.0 Legislation and Supporting Documents

- ESRA Contracts and Associated Documents
- The Fires Prevention and Emergency Response ACT CCSM. c. F80
- The Forest Act CCSM. c. F150
- The Wildfires Act CCSM c. W128
- The Workplace Safety and Health Act – CCSM. c. W210
- The Dangerous Goods Handling and Transportation Act CCSM. c. D12
- Applicable Manitoba Conservation Work Permits
- Environmental Protection Guidelines – Appendix 7.1 of PR 304 to Berens River All-Season Road Environmental Impact Assessment – August 2009
- Explosives Act R.S.C., 1985, c. E-17

4.0 General

.1 General

.1 The Contractor is to comply with all legislation, licences, authorizations and permits respecting the Project.

.2 This quarry site selection and requirements procedure is to be read in conjunction with GR140.33 Quarry, GR140.34 Crushing, GR140.35 Drilling, GR140.36 Blasting, GR140.37 Magazine Licence and Explosive Storage, GR140.38 and .39 Explosive Transportation

5.0 Procedures – Site Selection Criteria

.2 Site Selection

All proposed quarries are subject to a site selection analysis by ESRA to confirm that the proposed quarry site will not interfere with sensitive features including heritage resources and known cultural sites; sensitive wildlife habitat including species at risk and migratory birds; surface water, fish or fish habitat; or other sensitive sites.

.1 No operator of a quarry is to establish or mine a quarry closer than 150 metres from a or residence, unless the operator has established a vegetated berm or tree screen sufficient to shield the quarry from view from the residence.

.2 With the exception of quarries that are contiguous with the road right-of-way, all quarry operations shall maintain a 100 metres buffer from the proposed road right-of-way.

.3 Habitat occupied by endangered species shall be avoided (GR130.19.2).

.4 Quarry site selection shall consider the proximity of sensitive sites including waterbodies, wildlife, heritage resources and culturally important sites. Setbacks will vary depending on circumstances however selected areas are to be a minimum of:

1. 100m from a water course or water body (GR130.15.1.2)
2. 100m buffer from any large stick nest, eagle nest, heron rookery, or any other sensitive wildlife area (GR130.19.9)
3. 30m from heritage resources or identified cultural sites
4. Other setbacks as required

.5 Prior to development quarry sites shall be assessed for the potential of acid rock generation with the intent of not developing such sites.

6.0 Quarry Development

.3 General

.3 The Contractor is to comply with all legislation, licences, authorizations and permits respecting the Project.

.4 All operations are subject to the appropriate Acts and Regulations,

.5 The Contractor is not to commence any mobilization or drilling activities until a Quarry Lease and Work Permit have been issued by the Province of Manitoba.

.6 The Contractor's Site Supervisor is to attend a pre-construction meeting with the ESRA Contract Administrator, at a mutually agreed upon date, to discuss the development of the quarry and establishment of the crushing operation. The meeting is to be initiated by the Contractor and be held in advance of commencing the field quarry establishment operations. Topics to be discussed will include the type and quantity of equipment to be used, sequence of work, traffic control, environmental requirements and other pertinent topics.

.4 Scope of Work

.1 The development of the Quarry lease shall be in accordance with the attached site plan.

.2 The major components of the Work are as follows:

a) Access Road Construction

b) Clearing and Grubbing

c) Blasting

d) Gravel Crushing and Stockpiling of aggregate

.3 A buffer zone shall be maintained between the excavation area and the registered quarry site boundary.

.5 Fuel Handling and Spill Response

.1 All dangerous goods must be handled in accordance with The Dangerous Goods Handling and Transportation Act.

.2 The Contractor shall ensure that due care and caution is taken to prevent spills, at all times.

.3 Tank vehicles used to deliver fuel to the work site and/or used to move fuel around the work site must meet the requirements for highway tanks for the shipment of dangerous goods by road set out in CSA Preliminary Standard B620-98, *Highway Tanks and Portable Tanks for the Transportation of Dangerous Goods*

.4 An updated list of key contacts and telephone numbers for reporting spills, problems, etc., is to be kept on-site at all times.

.5 A Workplace Hazardous Materials Information System (WHMIS) file is to be maintained on-site for all hazardous materials at the work area. Prior to commencement of the Work, Material Safety Data Sheets (MSDS) are to be submitted to the Contract Administrator for all hazardous materials to be used on-site. No material shall be brought to the site without prior submission of a MSDS.

.6 All spills shall be reported to the Contract Administrator within 24 hours. The spill report shall include the following:

- Personnel responding to the spill
- Material spilled
- Cause of spill
- Estimated amount of material spilled
- Estimated area and volume of soil affected by the spill
- Cleanup action undertaken
- Means used to contain, transport and dispose of the materials involved

.7 The Contractor shall designate a qualified supervisor(s) as the on-site emergency response coordinator(s). The emergency response coordinator(s) shall have the authority to redirect manpower and equipment in order to respond in the event of a spill.

.8 Appropriate materials for containment and cleanup of any spill of dangerous goods or hazardous wastes shall be available on-site when such materials are present in the work area. Also designated personnel and first responders shall be familiar with the storage location and proper application of such containment and cleanup materials.

.9 All spills shall be contained and cleaned up immediately by on-site personnel in accordance with the on-site emergency response and containment plan.

.6 Quarry Site Development and Mobilization

.1 Description

.1 This section of the covers the mobilization and demobilization of equipment, tools, materials, facilities and all things necessary for the Work including but not limited to site access, site work roads, site drainage, snow removal, clearing and grubbing, general site cleanup and restoration.

.2 Equipment/Materials

.1 Equipment, implements, tools, materials, and facilities are to be of a size and type as required to complete the Work in the required time. The equipment to be used for the Work is to include, but may not be limited to, bulldozers, front-end loaders, rock trucks, graders and backhoes.

.2 All equipment, implements, tools, plants, materials, and facilities are to be kept in good working order. The Contractor is required to have sufficient standby equipment available at all times, as required.

.3 Submittals

- The Contractor shall submit to ESRA a site plan showing the location of the proposed crushing operation.
- The Contractor is to provide ESRA at least eleven working days advance notice of the location of the crushing operation. The notice to ESRA is to include a drawing of the working area including the location of the initial extraction area, the progression of the extraction area and the location of sheds, offices, toilets and other temporary structures, drainage and stockpile areas. The suitability of the working area is to be subject to approval of ESRA.
- The Contractor is to provide the ESRA Contract Administrator with at least six working days advance notice of the intention to commence production of aggregates. The notice shall include a preliminary schedule for the clearing, establishment of access, relocation of equipment, establishment of water and wastewater services, blasting and commencement of crushing operation.
- Prior to preparatory work for each blast the Contractor is required to submit a blast plan to the Contract Administrator including such information as
- the location, depth and area of each blast;
- diameter, depth, pattern and inclination of blast holes;
- the type, strength, amount, column load and distribution of explosives to be used per hole, per delay and per blast;
- the sequence and pattern of delays and the description and purposes of any special methods to be adopted.

.4 Construction Methods

.1 Site work roads are to be confined to the Quarry Lease with the exception of the quarry access road.

.2 The Contractor is responsible for maintaining the site and promoting surface water runoff to minimize ponding after rainfall events. In the event that ponding

does occur, it shall be discharged or removed through erosion and sediment control devices, as accepted by the Contract Administrator.

.7 Clearing and Grubbing

.1 Description

.1 Clearing and grubbing consists of the removal and disposal of all tree stumps, roots, logs, shrubs, grass, weeds, fallen timber and other surface litter wherever they occur within the crushing operation and stockpile sites.

.2 Burning of debris piles will be required when large accumulations of limbs and tops are not desired as fuelwood or for use as alternate forest products. Piles left for long periods of time will become a fire hazard.

.3 All persons involved in clearing and grubbing activities shall follow safe work practices and procedures regarding chain saw operation, fueling, personal protective equipment, safety features, and transportation and storage.

.4 All persons involved in tree felling shall posses a training certificate for chainsaw and tree felling operations.

.2 Construction Methods

.1 Prior to the production of aggregates, the source of supply is to be cleared, grubbed and stripped of overburden to only the extent and manner necessary as approved by ESRA.

.2 Brush disposal must be in accordance with the ***Manitoba Conservation Brush Disposal Guidebook – March 2005.***

.3 Within the limits as directed and staked out by ESRA, all brush and trees, except those designated by ESRA to be saved, is to be cut level with the ground, and all surface debris, excluding merchantable timber but including fallen timber, slash limbs, brush, grass and weeds, is to be disposed as directed or permitted by ESRA.

.4 Within areas where excavation will be made and where the embankment grade is less than one metre above the original ground level, all stumps and roots are to be grubbed out.

.5 Trees are to be felled towards the centre of the area to be cleared. Any brush falling outside the area to be cleared is to be moved back to the work area and disposed as directed by ESRA. The Contractor is to take all precautions against the damage to other trees, traffic structures, pole lines or property in the felling of trees. The Contractor is liable for any damages occurring in the performance of this work.

.6 Timber from which forest products can be manufactured is to be cleared of limbs and piled on the quarry site as directed or permitted by ESRA. Usable timber is to be the property of the Contractor and is to be removed from the work area.

.7 A buffer zone is to be maintained between the excavation area and the registered quarry site boundary

.8 No operator of a quarry is to establish or mine a quarry closer than 150 metres from a Provincial Trunk Highway, Provincial Road or residence,

unless the operator has established a vegetated berm or tree screen sufficient to shield the quarry from view from the road or residence.

.9 The burning of debris piles is not permitted in the spring or early summer to avoid disturbing small wildlife species which may have young in the piles or may have prepared nesting sites. The best and preferred option for wildlife is burning in the late summer or fall.

.10 No burning of debris piles shall occur on deep organic soils. Piles shall be a minimum of 15 metres away from standing timber and the high water mark of any waterbody.

.11 Slash shall be piled in a manner that allows for clean, efficient burning of all material. Avoid mixing soil into the slash.

.12 A burning permit is required, for open fires, between April 1 and November 15. Burning between November 16 and March 31 does not require a burning permit; however, the supervising officer must be advised prior to any burning. All fires must be completely extinguished by March 31.

.13 Ensure safety precautions are taken to keep the fire under control. Burn piles must be monitored, to ensure that subsequent fire hazards are not present. Upon completion of the burn, burn piles must be completely extinguished.

.14 All occurrences of fire spreading beyond the debris piles must be reported to the District Supervisor.

7.0 Quarrying and Crushing Operations

.1 Description

.1 This subsection addresses those activities associated with the day to day operation of the quarry site, including but not limited to blasting, crushing and stockpiling of materials.

.2 Materials

.1 The produced aggregate and supplementary granular material shall consist of sound durable particles of crushed rock, gravel, stone, sand and fines free from sod, roots and organic material.

.2 The aggregate shall be well-graded and shall not vary from the maximum to minimum of the specification ranges for consecutive tests.

.3 Traffic gravel shall be subject to testing at the time the material is being produced in accordance with ESRA instruction. The Contractor shall place the processed aggregate in a separate stockpile until satisfactory production tests have been completed. Rejected material shall be immediately moved either to the vicinity of the feed end of the crusher for reprocessing or to an area completely removed from any approved material.

.4 The addition of supplementary granular material to a quarried material shall not be permitted.

.5 Crushers shall, unless otherwise approved by ESRA, be equipped with an approved mechanical sampling device for obtaining samples off the main delivery belt.

.3 Submittals

.1 In accordance with Section 25 of the Manitoba Provincial ***Quarry Minerals Regulation – M162*** the holder of a quarry shall provide the Mining Recorder with:

- an annual statement of the total quantity of quarry mineral produced from the quarry lease;
- a royalty payment;
- a rehabilitation levy payment; and
- the annual rent, no later than the 30th day following the anniversary date of the lease.

.2 Only quarry minerals that are **produced and removed** from the quarry shall be included within the annual statement.

.3 Quarry mineral removed by a contractor for a public purpose is **exempt** from payment of royalties where the public agency certifies in an **exemption certificate** prepared on a form furnished by the recorder that the quarry mineral has been used for a public purpose.

.4 Pursuant to subsection 6.3.1, a rehabilitation levy of **10¢ per tonne** is required for production of aggregate quarry mineral (** Every operator of an aggregate quarry shall remit to the recorder a rehabilitation levy equal to the product of the number of tonnes of aggregate quarry mineral produced multiplied by .10). This only applies to quarry minerals that are **produced and removed** from the quarry lease (the lease holder does not pay this fee as long as the quarry mineral remains stockpiled on the quarry lease).

.4 Construction Methods

.1 Quarry operations shall not be permitted within 150 metres of a Provincial Trunk Highway, Provincial Road or Residence.

.2 The Contractor is required to ensure all fuel storage and equipment servicing areas are located a minimum of 100 metres from any waterbody.

.3 If authorized to work in or near a waterbody the Contractor is required to ensure that any work is done in accordance with the ***Manitoba Stream Crossing Guidelines for the Protection of Fish and Fish Habitat, May 1996.***

.4 The Contractor may be subject to operational restrictions if in close proximity to sensitive wildlife receptors such as caribou calving areas as required by ESRA and/or as provided by permit.

.5 The Natural Resource Officer in Lake Winnipeg East, must be notified no less than one week prior to completion of operations to allow for final inspection of the operation.

.6 All operations must be completed to the approval of the local Natural Resource Officer.

.7 Immediately following blasting, and at any time during the quarry operation, all excavated faces which, in the opinion of the Contract Administrator and/or the Contractor, are unsafe or appear to endanger persons, work, or property, shall be scaled and the loose rock shall be removed from the excavation.

.8 The active excavation face is to be maintained at stable slopes, to the satisfaction of the Contract Administrator.

.9 The Contractor is required to adhere to the maximum peak particle velocity and minimum set back distances as recommended in the ***Guidelines for the Use of Explosives In or Near Canadian Fisheries Waters, 1998***.

.10 The Contractor is required to minimize disturbance to vegetation and install erosion and sediment control measures to as directed by the Contract Administrator.

.11 The Contractor is to maintain the quarry site in a tidy condition and free from the accumulation of debris.

.12 The suitability and location of stockpile sites, as well as access to the sites, including sites at the crushing operation or elsewhere shall be subject to the approval of ESRA.

.13 The Contractor is required to provide stockpile sites, which are level, well-drained and have adequate bearing capacity to support the weight of the material which is to be placed thereon.

.14 Stockpiles are to be constructed at locations and by methods that will neither interfere with nor damage utility lines or other utility infrastructure.

.15 Access to stockpiles shall be readily available at all times

.16 The Contractor is to clear the stockpile sites of all debris, vegetation, rocks, snow and other objectionable material prior to placing any aggregate on the stockpile sites.

.17 The pile of material at the end of the discharge belt shall not be allowed to build up to a height greater than 3 metres.

.18 Stockpiling is to be performed using loaders, trucks or stacking conveyors.

.19 When trucks or loaders are used, loads shall be spot dumped uniformly over the entire stockpile area. The aggregate shall be placed in layers not exceeding 1.25 metres in depth. Each layer shall be completed and levelled prior to placing the succeeding layer.

.20 If more than one material is to be stockpiled at the same site, each stockpile shall be separated by a sufficient distance to allow equipment access to all sides of the stockpile.

.21 Aggregates which become mixed with others of different kind, class, source or gradation or which become contaminated by foreign material will be rejected and shall be promptly removed from the site of work.

.22 The completed stockpiles shall be neat, regular in form and constructed to occupy the smallest feasible area.

8.0 Decommissioning Phase

.1 A Decommissioning Plan is to be developed in consultation with ESRA and in accordance with all applicable Legislation and Regulations.

Contractor	Date
Environment Officer	Date

ENVIRONMENTAL PROTECTION PROCEDURES

SITE SELECTION – TEMPORARY WORKS

Revision April 18, 2016

Procedure name: Site Selection – Temporary Works

Reference number EP21

1.0 Description

.1 This procedure specifies best management practices for the selection of temporary works sites, including: camps and laydown areas, general temporary works, and access roads.

2.0 Purpose

.1 The purpose of this procedure is to outline criteria for selection of temporary works sites to prevent and/or minimize effects during their development, operation, and decommissioning.

3.0 Legislation and Supporting Documents

- ESRA Contracts and Associated Documents
- Applicable Manitoba Conservation Work Permits
- Applicable Fisheries and Oceans Canada (DFO) Authorizations or Letters of Advice
- The Manitoba Stream Crossing Guidelines for the Protection of Fish Habitat – May 1996
- Temporary Stream Crossing Operational Statement, Version 1.0 – Fisheries and Oceans Canada 2008
- The Manitoba Conservation Forest Management Guidelines for Terrestrial Buffers – 2010-2015
- Fisheries Act (R.S., 1985, c. F-14)
- The Environment Act, CCSM c E125
- The Heritage Resources Act CCSM. c. H39.1
- The Wildlife Act CCSM. c. W130
- The Endangered Species Act CCSM. c. E111
- Species at Risk Act S.C 2002, c. 29
- Environmental Protection Guidelines - Appendix 7.1 of PR 304 to Berens River All-Season Road Environmental Impact Assessment – August 2009
- Project 4 – All-Season Road Connecting Barens River to Poplar River First Nation Environmental impact Statement– February 2016

4.0 Procedures

Use the following citing criteria for temporary works where appropriate.

Selection Criteria for Temporary Construction Sites	
Camps and Laydown Areas	The Contractor shall submit details of the proposed camp and/or laydown area for review and acceptance by the Contract Administrator in accordance with the General Conditions. Submittals shall include marked up Drawings, and coordinates of the proposed camp and/or laydown area including access, and shall provide sufficient detail to demonstrate full compliance with these specifications (GR130.3.1).
	No work is to begin without having the proper permits or authorizations in hand for said work (GR130.4.1) such as provincially issued Work Permits.
	The Contractor shall adhere to conditions specified in any and all permits, authorizations, licences, approvals and letters of advice or directive issued for the Work (GR130.4.2)
	Avoid habitat occupied by endangered species (GR130.19.2)
	Avoid habitat defined as a Caribou calving area. No operations with 2 km of known caribou calving areas from May 15 to July 1 of any given year, unless by prior approval (EP14 – Wildlife 4.13)
	Avoid areas identified as nesting sites of colonial birds
	Avoid areas of cultural and archaeological sensitivity as defined by traditional knowledge surveys and studies
	Preference will be given to areas with natural drainage and low lying areas will be avoided
	Preference will be given to areas in the proximity of current construction activities
	Preference will be given to areas in the proximity of existing access routes and roads
	Preference will be given to areas that are flat as to reduce the work needed to level the area
	Preference will be given to areas that minimize the risk of exposure to wildfires (GR130.20.8)
	Avoid altering existing trails, portages, and other travel routes (Project 4 – EIS 3.3.3)
	Preference will be given to areas that minimize haul distances resulting in reduced potential for noise, equipment emissions and dust (Project 4 – EIS 7.2.3)
	Area should be located within 500 m of the proposed all-season road right-of-way (Project 4 – EIS 3.3.4)
	Selected areas are to be a minimum of 100 m from a water course or water body (GR130.8.5, GR130.15.1.2, & EP6 - Working Within or Near Fish Bearing Waters 4.7)
	Material, cleared vegetation, stockpiles and/or waste shall not be deposited or stored within 100 m of a water body, unless approved by the Contract Administrator (GR130.15.1.1 & EP6 Working Within or Near Fish Bearing Waters 4.4)
	Construction activities shall not occur within 100 m of a watercourse (GR130.15.1.2). Where a 100 m distance is not possible, a buffer zone of undisturbed vegetation between the construction activities and the watercourse shall be established. The buffer zone width shall be established according to the following formula: Width = 10 m + 1.5(slope gradient) or 30 m, whichever is greater (GR130.15.1.3)

	Maintain a 100 m buffer from any large stick nest, eagle nest, heron rookery, or any other sensitive wildlife area (GR130.19.9 & GR130.17.1.5)
	Clearing and grubbing shall only be undertaken between September 1 of any year, and April 1 of the following year (GR130.17.1.2); conduct pre-clearing migratory bird nest surveys during the nesting season (Project 4 – EIS Table 9.41)
	Grubbing activities shall end 2 m from any standing timber (GR130.17.3.1)
	Windrows shall be no closer than 1 m to the bush line. Burn piles shall be located a minimum of 15 m from other wood and brush piles and standing timber, and the high water mark of any water body
	Size of blasting areas and the magnitude of blast charges will be limited in the vicinity of sensitive receptors (e.g., use more holes with smaller charges) (Project 4 – EIS 9.2.3)
	Petroleum storage shall be a minimum distance of 3 m from a property line or building and 15 m horizontally from hydroelectric poles and lines (EP2 – Petroleum Storage 4.11)
	Selected areas are to be a minimum of 100m from a water course or water body (GR130.15.1.2)
	Other: – Tender packages issued to contractors include mapping of "areas of non-disturbance" that are off-limits and not to be developed for temporary or permanent works Areas of non-disturbance include heritage and cultural resources, sensitive environmental sites for wildlife or vegetation, trapper cabins or other structures and include appropriate setbacks as referenced from Manitoba Conservation Forest Practices Guidebook Forest Management Guidelines For Terrestrial Buffers: Table 1 (GR130.17.1.5)Table 2 (GR130.17.1.4). Guidance material provided to contractors to support contract submittals (including plans for camps and laydown areas) are encouraged to use existing disturbed areas, flat terrain and avoid areas of high water table where practical.

Temporary Works General	All Temporary Works are subject to approval by the Contract Administrator before development by the Contractor. The Contact Administrator ensures that the temporary works do not conflict with known sensitive features (i.e. heritage and cultural sites, sensitive wildlife areas such rookeries and nesting colonies, large stick nests, species at risk habitat, trapper cabins) or are developed during sensitive timing windows. Temporary works (camps, laydowns, quarries) are subject to provincial Crown Lands Work Permits and additional restrictions may be incorporated in these permits if site specific conditions require. (GR130.4)
Access Roads	Existing stream crossings will be utilized whenever possible and the number of temporary stream crossings will be minimized (GR130.15.5). If a temporary stream crossing is necessary, requirements stated in GR130.15 (Working within or near water)and GR130.16 (Erosion and Sediment Control) will be adhered to
	Maintain a buffer from sensitive habitat*(GR130.17.1.5)
	Maintain a buffer from physical features (i.e trapper cabins)*(GR130.17.1.4)
	Maintain a 100m buffer from any large stick nest, eagle nest, heron rookery, or any other sensitive wildlife area (GR130.19.9)
	Avoid habitat occupied by endangers species (GR130.19.2)
	Avoid habitat defined as a Caribou calving area
	Avoid areas defined as nesting sites of colonial birds
	Avoid areas of cultural and archeological sensitivity as defined by traditional knowledge surveys and studies (GR130.18)
	Avoid areas of known permafrost where possible (insulating top cover of organic soil will be employed if unavoidable) (GR130.17.2.1)
	Avoid areas in proximity to communities in order to comply with municipal and/or First Nation noise bylaws (GR130.12.2)
	Avoid areas that will result in changes to existing trails, trap lines, portages, and other travel corridors (GR130.17.3.3)
	Preference will be given to areas in the proximity of current construction activities
	Preference will be give to areas with winter access for clearing purposes (GR130.17.1.2)
	Preference will be given to locations for which the contractor can limit public access (GR130.8.8)
	Preference will be given to terrains which can be restored to their original condition (GR130.8.7)
	Preference will be given to areas where the terrain allows from the straightest and shortest

	possible route

*Manitoba Conservation Forest Practices Guidebook Forest Management Buffers: Table 1.Guidelines For Terrestrial

**Maintain a buffer from physical features as defined by the Manitoba Conservation Forest Practices Guidebook Forest Management Guidelines For Terrestrial Buffers: Table 2.