

STANDARD OPERATING PROCEDURE

Using a Winch Tractor

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Page 1 of 9

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USING A WINCH TRACTOR

1	APP	Aug 12, 2025	Approved	Tammy Siver	Gerald Fraser	Serghei Ceban
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Page 2 of 9

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The following is a step-by-step procedure on how to complete a specific task or meet a facility specific requirement. Standard Operating Procedures (SOPs) are written for all identified critical tasks. By virtue of the hazard or complexity associated with critical tasks it is paramount that the SOP be followed as written. SOPs contain a listing of high-level hazards associated with the task, for detailed hazard analysis reference the applicable Task Hazard Assessments. SOPs do not replace the requirements contained in the company Standards, Codes, and Processes nor does it replace the need to comply with required legislation. Section 8.0 references documentation that the worker shall understand before work commences.

1.0 PURPOSE

- To establish a company standard to safely and effectively carry out work as it applies to using a winch tractor.

2.0 SCOPE AND APPLICATION

- This document applies to all company Heavy Construction Mining operations. Ensure all site-specific requirements are met or exceeded before performing the task.

3.0 HAZARDS AND CONTROLS

- Winch line failure. Hand and body injuries when using winch line.
 - Never engage or disengage the clutch if winch line is under load, winch rope is in tension or drum is moving.
 - Never touch winch rope or hook while under tension or under load.
 - All hooks must have a safety latch.
 - Never wrap the winch line back onto itself.
 - Ensure there are at least five (5) full wraps of winch line on the drum at all times.
 - Avoid shock loading the winch line. Always use slow and controlled motions. Do not jerk or yank a load.
 - Align the load and winch directly. Do not winch at a sharp angle. The fleet angle should be kept as small as possible to ensure proper spooling and to maximize cable and winch life. To promote even cable spooling, keep the fleet angle below three (3) degrees. Whenever possible, spool through a block at the back of the truck body. Never pull directly against the flange of the winch cable drum as this may cause the cable or the winch to break.
 - Use double palmed leather gloves or puncture and cut resistant gloves when handling winch lines.
 - Do not allow the winch line to slide through the worker's hands when spooling or unspooling. Always use the hand-over-hand method to keep tension while spooling.
 - All personnel must remain a minimum of two (2) times the length of the winch line away from it while in operation.
- Equipment or materials falling off trailer while being loaded or offloaded.
 - Select an appropriate loading or offloading area on level ground. Clear the area of unnecessary personnel (people not directly involved in the task).
 - Personnel operating equipment will be trained and competent as per the Company's Equipment Training Program.

STANDARD OPERATING PROCEDURE

Using a Winch Tractor		Document Number: 965C-SOP-004
Original Approval Date: Aug 12, 2025	Revision Number: 1	Page 3 of 9
Latest Revision Date: Aug 12, 2025	Next Revision Date: Aug 12, 2028	Document Approval Level: 4

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- A minimum of one spotter will be used to load and offload equipment. Additional spotters will be required in congested areas or areas with limited visibility.
- Review loading / offloading plan and communication signals with all involved personnel.
- Ensure trailer is free from mud, debris and other loose items. Use a deicer to remove ice from the trailer deck.
- Equipment and materials will be loaded slowly and with controlled movements.
- Equipment and materials must be secured and prevented from movement prior to attaching or detaching winch lines.
- Unstable or improperly secured loads. Equipment or materials falling off trailer while being transported.
 - Place the heaviest items over the trailer's axles and distribute weight evenly across the deck. Ensure the load placement does not affect the vehicle's stability or maneuverability.
 - Equipment will be securely chained and bound on all four corners prior to transport. Secure equipment using engineered tie down ears. Wrap chains around equipment tracks or frame. Ensure equipment is cross chained so the chains pull against each other.
 - Chains will be appropriately sized to the equipment being secured; at a minimum they will be ½ inch Grade 70 Transport Chain.
 - All equipment implements will be grounded or secured from movement during transport.
 - Equipment will be de-energized (shutdown) during transport.
 - Bulk fuel and materials will be removed from articulated fuel and lube trucks prior to transport.
 - Personnel securing loads will be trained and competent to secure loads.
 - All tie downs must be marked with a Working Load Limit.
 - All tie downs and other parts of a cargo securement system must be located inside any rub rails whenever practical. Edge protection must also be used whenever a tie down could be subject to wear or cutting at the point where it touches an article of cargo. The edge protection must resist wear, cutting and crushing.
 - Ensure there is no loose material, such as mud, dirt or other debris as well as no loose objects on the trailer deck prior to travel.
- Unplanned movement of equipment, transport truck or trailer.
 - Equipment will be de-energized (shutdown) while being secured to deck and during transport.
 - All equipment implements will be grounded or immobilized while being secured to deck and during transport.
 - Trailer brakes will be applied anytime the trailer is disconnected from transport truck and during loading and offloading activities.
 - Transport truck brakes will be applied anytime the vehicle is left unattended.
 - Caution: trailer may move while winching equipment and skids onto trailer during icy conditions. Use wheel chocks or another effective control to prevent trailer from moving. Do not stand in the line of fire between the vehicles.
 - When loading equipment that does not have braking ability (i.e. crawler tractors and excavators that have had their axles removed), use another machine, in addition to the winch, to stabilize the equipment from moving while being loaded onto the trailer.

STANDARD OPERATING PROCEDURE

Using a Winch Tractor		Document Number: 965C-SOP-004
Original Approval Date: Aug 12, 2025	Revision Number: 1	Page 4 of 9
Latest Revision Date: Aug 12, 2025	Next Revision Date: Aug 12, 2028	Document Approval Level: 4

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- Trailer disconnecting from transport truck while moving.
 - Visually confirm that the deck lock pin is fully engaged and safety pin is installed before moving trailer.
- Personnel in line of fire during loading and offloading activities.
 - Spotters will not place themselves in the line of fire of equipment. They will not stand directly behind, in front or between the equipment, transport truck and or trailer.
 - Personnel will not stand beside trailer until equipment is stable on trailer, implements have been grounded and equipment is shutdown.
 - Equipment and materials must be secured and prevented from movement prior to attaching or detaching winch lines.
 - All personnel must remain a minimum of two (2) times the length of the winch line away from it while in operation.
 - Winch tractor cab must have bars or headache rack on the back window to protect cab from uncontrolled release of winch line.
- Contact with materials and equipment in loading and offloading areas.
 - Loading and offloading areas shall be free of obstructions.
 - Loading and offloading areas should be out of traffic areas whenever possible. If loading or offloading must be conducted in traffic areas, traffic will be controlled by means of signage, spotters, and/or flag persons.
 - Ensure ground conditions are well sanded and graded to minimize slipping.
- Hand and body injuries while securing equipment to trailers using chains and binders.
 - **Use only ratchet type load binders** to tie down equipment.
 - Ensure body parts are not in the line of fire or in pinch point areas when tightening tie downs.
 - Inspect tools and chains prior to use. Do not use defective or damaged tooling.
 - Do not throw chains.
- Unclear communication with spotter.
 - Review loading / offloading plan and communication signals with all involved personnel.
 - Primary spotter will remain in visual contact with equipment operator. Primary spotter will spot equipment operator from the good side of the equipment.
 - All other spotters will remain in visual contact with primary spotter.
 - Equipment operator will stop if visual contact with primary spotter is lost.
- Personnel falling from trailer or equipment.
 - Ensure trailer is free from mud, debris and other loose items. Use a deicer to remove ice from the trailer deck.
 - Use three-point contact when mounting and dismounting equipment. Ensure equipment steps are free from mud and debris.

STANDARD OPERATING PROCEDURE

Using a Winch Tractor		Document Number: 965C-SOP-004
Original Approval Date: Aug 12, 2025	Revision Number: 1	Page 5 of 9
Latest Revision Date: Aug 12, 2025	Next Revision Date: Aug 12, 2028	Document Approval Level: 4

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- Use fall protection if work must be completed at heights greater than 6 feet or 1.8 meters.
- Keep trailer steps clear of mud and ice.
- Defective or damaged equipment, tools or rigging.
 - Perform an inspection of all tools, rigging and equipment prior to task. Do not use any damaged, defective or unsafe equipment.
 - Replace winch line if there are signs of wear, fraying or damage.
 - Ensure all lights and safety equipment are in proper working order.
 - Wear seatbelts at all times when equipment is in operation.
 - Never exceed the winch's rated capacity. Winch lines must have a minimum ultimate breaking strength safety factor of 2:1.

4.0 CHECKLIST

- ☐ Attend all preparatory meetings (IE: daily PSI; job scope; review of JSA's and SOP's for the job).
- ☐ Complete FLRA cards before starting the work.
- ☐ Ensure all personnel involved in the task are aware of the hazards and the controls to be used, as identified in the SOP's; JSA's; and FLRA's.
- ☐ Conduct a pre-job inspection of all equipment to be worked on and tools to be used.
- ☐ **Standard of Training required for working on this job: On-the job training.**

5.0 DEFINITIONS

5.1 Company

Means North American Construction Group Ltd. (NACG) and all directly or indirectly owned subsidiary companies, including joint ventures.

5.2 Company Personnel

Includes the Company's employees, officers, directors, agents, associates, consultants/contractors, temporary employees and third-party processors.

5.3 Fleet Angle

Fleet angle is the angle between the wire rope and an imaginary line extending perpendicular to the drum. This angle varies with the width of the drum and the distance between the lead sheave and the drum. The proper fleet angle helps the wire rope to wind evenly onto the drum, and helps to reduce wear to the wire rope, drum, and lead sheave.

5.4 HSE

Refers to the Health, Safety & Environment department.

6.0 PROCEDURE

6.1 General Procedure

- 1) Complete a hazard assessment (i.e. FLRA) for the task. Inform supervision of any hazard outside of the workers' control.

STANDARD OPERATING PROCEDURE

Using a Winch Tractor		Document Number: 965C-SOP-004
Original Approval Date: Aug 12, 2025	Revision Number: 1	Page 6 of 9
Latest Revision Date: Aug 12, 2025	Next Revision Date: Aug 12, 2028	Document Approval Level: 4

This document is not controlled if printed.

- 2) Confirm load weight is acceptable for trailer size.
- 3) Inspect transport truck, trailer, winch, cable, tooling and equipment. Do not use tooling or rigging that is damaged, defective or has unsafe conditions. Notify supervision, tagout and remove from service. Notify supervision of any equipment, transport truck or trailer that is damaged, defective or unsafe. Do not operate equipment, transport truck or trailer if unsafe.
- 4) Prepare trailer for loading. Ensure the deck is clean and free from mud, dirt and loose items. Use a deicer to remove ice from the trailer deck.
- 5) Inspect loading and offloading areas. Ensure the area is level and free from obstacles.
- 6) Identify spotter(s). Review loading / offloading plan and communication signals.

6.2 Disconnecting Trailer from Hydraulic Gooseneck

- 1) Select loading area.
- 2) Apply trailer brakes.
- 3) Start engine on power pack or engage P.T.O.
- 4) Move spacer block control to 'up' position.
- 5) Raise deck until spacer blocks swing to 'up' position.
- 6) Lower deck until links clear deck pin.
- 7) Lower neck support arm until neck is supported on tractor or jeep frame.
- 8) Remove safety pin from deck locking pin.
- 9) Move deck pin lock control to 'disengaged' position.
- 10) Disconnect air and electrical lines.
- 11) Detach gooseneck (drive ahead).

6.3 Connecting Trailer to Hydraulic Gooseneck

- 1) Move deck pin lock control to 'engaged' position.
- 2) Line up gooseneck with trailer guide trough. Using a spotter, back up to the trailer deck and stop before engaging the trailer. Visually verify that the gooseneck is at the proper elevation to properly engage the guide trough.
- 3) Back up gooseneck until lock pins and links engage.
- 4) Install safety pin above deck lock pin. Visually confirm that the gooseneck lock pin is fully engaged and safety pin is installed before moving trailer.
- 5) Raise gooseneck support arm all the way up.
- 6) Move spacer block control to 'down' position.
- 7) Lower deck onto spacer blocks.
- 8) Shut off power pack engine or disengage P.T.O.

STANDARD OPERATING PROCEDURE

Using a Winch Tractor

Document Number: 965C-SOP-004

Original Approval Date: Aug 12, 2025

Revision Number: 1

Page 7 of 9

Latest Revision Date: Aug 12, 2025

Next Revision Date: Aug 12, 2028

Document Approval Level: 4

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- 9) Connect air and electrical lines.
- 10) Perform a walkaround visual inspection of the complete unit to ensure proper condition before departing.

6.4 Loading Skid Mounted Equipment using a Winch Tractor

- 1) Review loading plan and communication signals with all involved personnel.
- 2) Disconnect trailer from winch tractor. Follow steps in section 6.2.
- 3) Position winch tractor at the rear of the trailer.
- 4) Unspool or release winch line and attach directly to skid or to a wire rope sling attached to skid.
- 5) Clear area of personnel. All personnel must remain a minimum of two (2) times the length of the winch line away from it while in operation.
- 6) Enter the cab of the winch tractor or use the remote to activate winch to pull skid onto trailer.
- 7) Stop winch once skid is loaded onto trailer.
- 8) Secure skid to trailer using the appropriate sized securing devices (chains and binders) for the size of the load.
 - a. Set up four (4) securing devices on the designated tie-down points on the skidded equipment, usually on each corner. Use engineered tie down ears on trailer.
- 9) Release tension on winch line and disconnect. Respool winch line onto drum.
- 10) Double-check all fastenings and conduct a final visual inspection before transport.
- 11) Connect trailer to transport truck. Follow steps in section 6.3.

6.5 Offloading Skid Mounted Equipment using a Winch Tractor

- 1) Review offloading plan and communication signals with all involved personnel.
- 2) Attach winch line to skid and tighten line.
- 3) Clear area of personnel. All personnel must remain a minimum of two (2) times the length of the winch line away from it while in operation.
- 4) Remove all securing devices.
- 5) Air up rollers on trailer. Unspool or release winch line using winch controls in the cab or on the remote.
- 6) Unload skid slowly and with control using the winch line.
- 7) When the rear end of the skid mounted equipment touches the ground, release the brakes on the truck and roll out. Continue to winch off until the front end of the skid mounted equipment touches the ground.
- 8) Release tension on winch line. Respool winch line onto drum.
- 9) Lower trailer.
- 10) Disconnect winch line.

STANDARD OPERATING PROCEDURE

Using a Winch Tractor

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Original Approval Date: Aug 12, 2025

Revision Number: 1

Page 8 of 9

Latest Revision Date: Aug 12, 2025

Next Revision Date: Aug 12, 2028

Document Approval Level: 4

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6.6 Loading Disabled Equipment using a Winch Tractor

- 1) Review loading plan and communication signals with all involved personnel.
- 2) Disconnect trailer from winch tractor. Follow steps in section 6.2.
- 3) Position winch tractor at the rear of the trailer.
- 4) Unspool or release winch line and attach directly to the engineered tow point on the disabled equipment.
- 5) Clear area of personnel. All personnel must remain a minimum of two (2) times the length of the winch line away from it while in operation.
- 6) Enter the cab of the winch tractor or use the remote to activate winch to pull skid onto trailer.
- 7) Stop winch once the disabled equipment is loaded onto the trailer.
- 8) Secure disabled equipment to trailer using the appropriate sized securing devices (chains and binders) for the size of the load.
 - a. Set up four (4) securing devices on the designated tie-down points on the disabled equipment, usually on each corner. Use engineered tie down ears on trailer.
- 9) Release tension on winch line and disconnect. Respool winch line onto drum.
- 10) Double-check all fastenings and conduct a final visual inspection before transport.
- 11) Connect trailer to transport truck. Follow steps in section 6.3.

6.7 Offloading Disabled Equipment using a Winch Tractor

- 1) Review offloading plan and communication signals with all involved personnel.
- 2) Disconnect trailer from winch tractor. Follow steps in section 6.2.
- 3) Position winch tractor at the rear of the trailer.
- 4) Connect winch line to engineered tow point on the disabled equipment.
- 5) Position towing support equipment at the front of the trailer. Attach tow cable to engineered tow point on disabled equipment.
- 6) Clear area of personnel. All personnel must remain a minimum of two (2) times the length of the winch line away from it while in operation.
- 7) Remove all securing devices.
- 8) Towing support equipment will tow disabled equipment off trailer while winch line is being released. The winch line will be used to maintain control of disabled equipment as it is being towed off trailer.
- 9) Once disabled equipment is off the trailer, release tension on winch line and disconnect from equipment. Respool winch line onto drum.

7.0 NOTES

If this task is to be done by a method different than described in this SOP, the work must **STOP** and the alternate method must be **DOCUMENTED** with an adequate hazard assessment tool such as a JSA. The document must be **APPROVED** by a supervisor before such procedures are implemented.

STANDARD OPERATING PROCEDURE

Using a Winch Tractor

Document Number: 965C-SOP-004

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Revision Number: 1

Page 9 of 9

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8.0 REFERENCES

- Alberta Commercial Vehicle Safety Regulation
- Canada National Safety Code
- Alberta Occupational Health and Safety Code Part 6 Section 114 Winching Operations
- 911C-P-002 Equipment Training Program
- 940C-P-002 Commercial Vehicle Use Guidelines
- 950C-C-058 Transportation Code
- 962C-SOP-008 Signaling Equipment
- 965C-SOP-001 Operating Highway Transport Vehicles

9.0 APPENDICES

- No appendices.