STANDARD OPERATING PROCEDURE

Automotive Servicing		Document Number: 960C-SOP-213
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AUTOMOTIVE SERVICING

						
1	APP	Feb 26, 2024	Approved	Tammy Siver	Trent Skinner / Serghei Ceban	Cameron Smith
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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 automotive servicing.

2.0 SCOPE AND APPLICATION

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

3.0 HAZARDS AND CONTROLS

- Unplanned movement of vehicle.
    - Confirm parking / emergency brake is functional.
    - Always apply parking / emergency brake in addition to ensuring the vehicle transmission is in park prior to leaving vehicle unattended.
    - Use wheel chocks when vehicle is on vehicle lifting devices (ramps) or hoists.
    - Follow 950C-C-028 Hazardous Energy Isolation Code and ensure vehicle is adequately locked out while being worked on.
    - Follow 960C-SOP-111 Live Work procedure if vehicle cannot be locked out during parts of the task.
    - Vehicle keys must stay in the possession of the worker completing vehicle walk around inspection.
- Poor visibility in work area.
    - Ensure adequate lighting is available for the task. If necessary, install an additional light source such as a light plant or light stand in the work area.
- Material falling on worker during task.
    - Visually check the amount of mud and material buildup under the front of the truck. Report excessive material buildup to supervision to determine if vehicle will require washing prior to service.
- Vehicle lifting device not adequate for task.
    - Supervision to supply appropriate vehicle lifting device for the task and confirm compliance to annual inspection requirements.

- Vehicle lifting device must meet or exceed ASME Portable Automotive Lifting Device (PALD) or ASME Portable Automotive Service Equipment (PASE) Standards. If using a fixed lift, follow 960C-SOP-303 Operation of Two Post Vehicle Hoist to setup vehicle for servicing and ensure hoist meets or exceeds ANSI Automotive Lift Standard.
- In addition to a pre-use inspection, vehicle lifting device must be inspected as per manufacturer requirements.
- Vehicle lifting device must be suitable for the vehicle weight and tire width. Review manufacturer specifications to confirm acceptable weight and width.

- Damaged or defective tooling and equipment.
  - Confirm tooling and vehicle lifting device are not damaged or defective. Portable vehicle lifting device (ramps) must not be cracked, bent or corroded. All labels must be present and legible.
  - Remove from service and report to supervision any damaged or defective tooling or equipment.
  - Immediately remove from service and report to supervision if vehicle lifting device has been subject to abnormal shock or load.
- Worker unfamiliar with how to use tooling or equipment.
  - Review operating manual for tooling and equipment and contact supervisor for assistance. Do not use tooling or equipment if unfamiliar with it or unsure how to use it.
- Congested work area. Body contact with vehicle when climbing and working under vehicle.
  - Use headlamp and other lighting devices to ensure work area is visible.
  - Be aware of congested work area and reduced head and body clearance. Ensure hard hat is secure on head. Use slow movements when climbing under vehicle.
- Hot oil contacting skin or face.
  - Wear close fitting eye protection, task specific gloves (oil/heat/cut resistant) and coveralls. Consider using Kevlar type compression sleeves to cover body between coveralls and gloves.
  - Position body and hands to be clear from the oil flow trajectory and potential splash zone when oil pan plug and oil filter is removed.
- Oil contacting ground resulting in environmental contamination.
  - Place a drain pan directly under the engine oil panel plug. Use two people to place drain pan under vehicle if pan is awkward or too heavy for one person (>50 lbs).

- Hand injuries from using excessive force or tools slipping when removing engine oil filter.
    - Use proper tools for the task and ensure tooling and gloves are clean. Use the proper oil filter removal tool for the make and model of the vehicle. Ensure proper grip and use of tool.
- Using improper tooling.
    - Use the proper oil filter removal tool for the make and model of the vehicle.
- Slippery surface causing tools or hands to slip when installing engine oil plug or causing engine oil plug to not seat properly.
    - Wipe excess oil off engine oil drain spout before installing oil plug.
    - Ensure oil plug is secure. Use proper tooling if required.
- Over filling of fluids.
    - When required to use a funnel, ensure it is the proper size of funnel to fill engine oil.
    - Use manufacturer specs for engine oil levels.
- Engine damage from low oil pressure; workers in line of fire during live testing.
    - Check engine oil level prior to starting engine.
    - Follow 960C-SOP-111 Live Work, start vehicle and monitor oil pressure gauge; observe for alarms. Unit must be shut down immediately if there is an oil pressure alarm or the oil pressure gauge light is on.
    - Spotter will stand to the side and observe if any oil is leaking. If oil leaks, spotter will notify driver. Driver (service technician) will shut down unit and re-apply lockout prior to inspecting oil leak.
    - Vehicle will remain in park with emergency brake applied during live testing.
    - No personnel will be under or in front / behind vehicle while it is running.
- Uneven and or soft ground creating an unstable surface when vehicle is driven on portable vehicle lifting device (ramp).
    - Ensure ground conditions are hard and flat.
    - Ensure ground conditions have been sanded if there is ice or slippery conditions.
    - Review and follow manufacturer instructions manual when setting up ramps. Ground conditions must be hard and level to avoid load instability.
    - Ramps are not to be used to simultaneously support both ends or one side of a vehicle.

- Awkward and or heavy lifting of portable vehicle lifting device (ramps).
    - Confirm weight of portable vehicle lifting device (ramp). Use more than one person to lift the ramp if weight is greater than 50 lbs. If equipped, use ramp's wheel system to move the ramp into position.
- Vehicle driving off portable vehicle lifting device (ramp).
    - Use a spotter to guide vehicle onto ramp. Spotter will remain in view of driver and to the side of the vehicle (out of the line of fire). Driver will only take commands from designated spotter.
    - Driver will use slow speed when climbing up ramp. Vehicle tires must be centered on ramps and positioned straightforward. Tires extending past ramp edge are not permitted. Once vehicle reaches top of ramp, apply brakes.
- Unplanned movement of vehicle once on portable vehicle lifting device (ramp).
    - Once vehicle reaches top of ramp, apply parking brake and emergency brake.
    - Install wheel chocks behind the vehicle rear wheels.
- Vehicle striking other personnel in area (i.e. spotter).
    - Do not stand in the line of fire. Stand to the front and side of the vehicle, in view of the operator.
- Lack of communication or miscommunication with spotter.
    - Communication signals and methods will be established between driver and spotter prior to task.
    - Driver will only take commands from designated spotter.
- Slip or fall while dismounting vehicle once on portable vehicle lifting device (ramp).
    - Use three-point contact and exit the vehicle slowly. Be aware that the vehicle distance to ground has been increased.
- Vehicle falling off ramp due to instability of portable vehicle lifting device (ramp).
    - Vehicle tires must be centered on ramps and positioned straightforward. Tires extending past ramp edge are not permitted.
    - Confirm vehicle is secure on ramp by shaking front to back and side to side. Do not stand in the line of fire when confirming the vehicle is secure on the ramp.
- Uneven ground conditions resulting in body injury when climbing under vehicle and laying on the ground.
    - Ensure ground condition is smooth and flat. Consider placing fire blanket or alternative ground cover to remove lumps and uneven conditions.

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 HSE

Refers to the Health, Safety & Environment department.

5.4 Servicing

To perform routine maintenance or repair work on a vehicle or machine including but not limited to oil and filter changes as well as a general inspection.

5.5 Automotive

Self-propelled vehicles designed to be on road. Also referred to as light and medium duty vehicles.

5.6 PALD

Portable Automotive Lifting Device. Also referred to as an automotive or vehicle ramp.

6.0 PROCEDURE

1) Complete a hazard assessment (FLRA/JSA) for task. Follow up with supervision if unsure of the task, hazards or controls.
2) Park vehicle on flat level ground, confirm park brake and emergency brake are functional. Shut down unit and apply emergency brake.
3) Complete a vehicle walk around inspection to observe for any leaks or exterior damages. Report all damages and or leaks to supervision prior to servicing the vehicle.
4) Visually check the amount of mud and material buildup under the vehicle. Report excessive material buildup to supervision to determine if vehicle will require washing prior to service.
5) Inspect tooling. Remove from service and report to supervision any damaged or defective tooling.

6) Determine appropriate automotive lifting device for task. If using a vehicle hoist, refer to 960C-SOP-303 Operation of a Two Post Light Vehicle Hoist and then proceed to Step 14 of this procedure.
7) Inspect portable automotive lifting device (ramps) prior to use. Document inspection on FLRA card.
8) Place portable automotive ramps in front of light vehicle steering (front) tires. If ramp has a handle, it should be lowered and pushed the inside of ramp prior to driving the vehicle on the ramp.
9) Using a spotter, drive light vehicle onto ramps. Ensure tires are centered on the ramps.
10) Place vehicle in park, apply emergency brake, shut down unit and remove keys from ignition.
11) Lockout unit and exit vehicle.
12) Place wheel chocks behind rear wheels.
13) Confirm vehicle is secure on ramp. Remain out of the line of fire and shake the vehicle sideways and endways to confirm the vehicle and the ramps are stable.
14) Install drain pan under vehicle.
15) Climb under unit, position body so that it is not underneath engine oil panel and reach over to unscrew engine oil panel plug.
16) Drain engine oil into drain pan.
17) Remove and replace engine oil filter ensuring the gasket from the old filter is not stuck to the oil filter mounting surface.
18) Install engine oil plug.
19) Fill oil where fill cap is indicated. Confirm oil level is in the full range.
20) If required, remove and replace air filter.
21) Clear personnel from under the vehicle. If using a light vehicle hoist, lower vehicle to ground.
22) Complete live testing checklist and install live testing signage.
23) Enter vehicle, remove lockout device(s), start vehicle and observe oil pressure gauge. Immediately shutdown unit if there is an oil pressure alarm.
24) Bring engine RPM to 1500 while observing the oil pressure light/gauge for 30 seconds and then shut down engine.
25) If no oil leaks, reset engine oil life on vehicle dash and document SMR.
26) Shutdown unit, apply lock and exit vehicle. Confirm oil level is in the full range.
27) Remove oil pan from under vehicle and ensure it is placed out of the work area.
28) Remove wheel chocks.
29) Enter vehicle, remove lock and start engine.
30) Using spotter, reverse unit off ramps and or drive unit out of work area.

7.0 NOTES

Additional fluid checks may be required when the vehicle is raised on an automotive hoist. These can include but are not limited to brake and differential fluid checks. Follow vehicle manufacturer instructions for the make and model of the vehicle when completing these tasks and ensure additional hazards and controls are documented on a hazard assessment.

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.

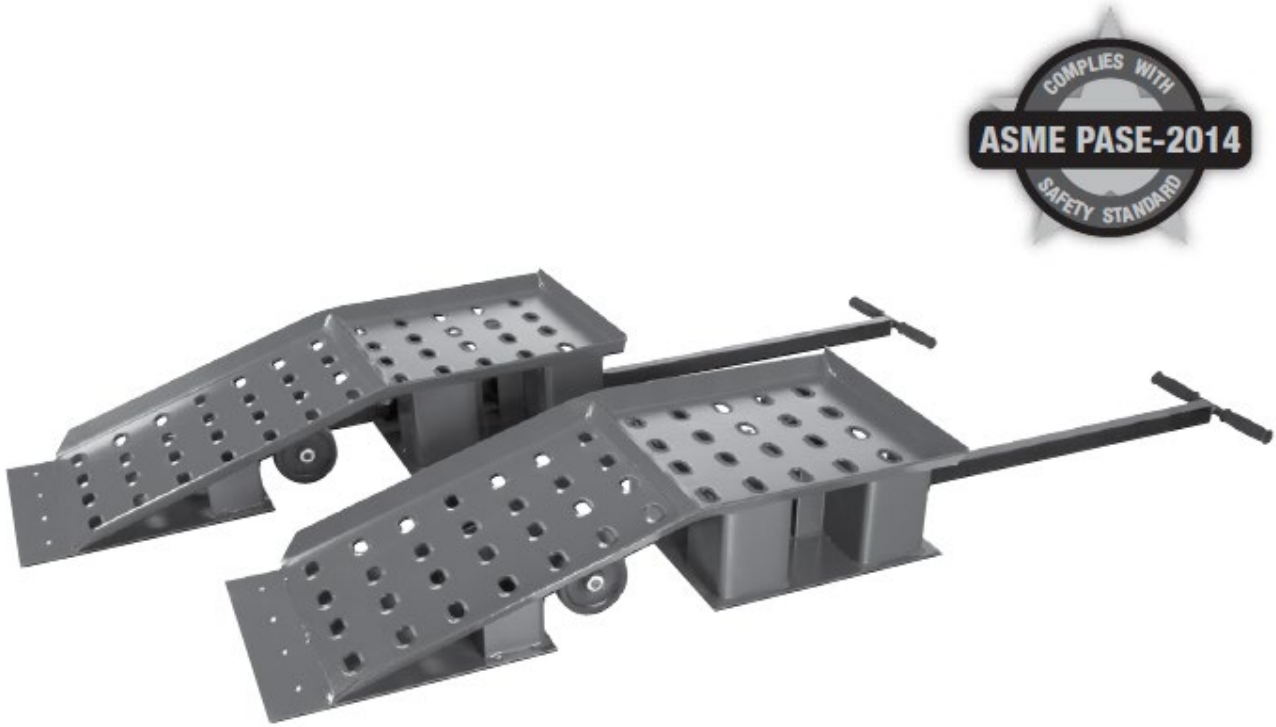
8.0 REFERENCES

- 950C-C-008 Cranes, Hoists & Rigging Code
- 950C-C-028 Hazardous Energy Isolation Code
- 960C-SOP-111 Live Work
- 960C-SOP-303 Operation of a Two Post Light Vehicle Hoist
- 999C-F-077 Annual Portable Lifting Device (PALD) Inspection

9.0 APPENDICES

- Appendix A – Example of a Portable Automotive Lifting Device

Appendix A Example of a Portable Automotive Lifting Device



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