



FORMAL HAZARD ASSESSMENT

TITLE: Vacuum Truck Operation				FHA #: 008							
Positions Considered:			Assessment Team:				Date Created:		April 16, 2023		
Vac Truck Operator Field Technician/Labourer			Ollie Adeogun Alex Baker Darren Mills				Revision #:				
							Last Revision Date:				
Task	Health	Safety	Hazards Associated with Task <i>Identify hazards (as applicable) presented by; operations, equipment, vehicles, materials, products, working conditions and environment.</i>	Raw Risk Rating			Controls <i>Consider the Hierarchy of Controls.</i>	Residual Risk Rating			
				Severity	Probability	Overall Risk Rating		Severity	Probability	Overall Risk Rating	
Manual Material Handling <i>(Lifting hoses, fittings, parts, and supplies.)</i>		x	Strains and sprains from improper handling / lifting	4	3	12	Eng: Lift assists (hoists, pneumatic) Adm: Manual Material Handling COP training, adhere to proper lifting techniques in "Lifting and Handling" practice manual, Competency Assessments annually. PPE: CSA Approved Gloves.	3	2	6	
		x	Cuts and Scrapes from improper handling / lifting	3	3	9	Eng: Adm: Manual Material Handling COP training, adhere to proper handling techniques in "Lifting and Handling" practice manual, Competency Assessments annually. PPE: CSA Approved Gloves, CSA approved hardhat, CSA Approved eyewear, Coveralls.	2	2	4	
	x	x	Musculoskeletal injuries from improper handling / lifting	3	3	9	Eng: Adm: Manual Material Handling COP training, Micro breaks during job, frequent stretching, variation of tasks, Competency Assessments annually. PPE:	3	2	6	
Working around facility/site production		x	Burns from hot equipment lacking barriers	4	3	12	Eng:	3	2	6	



							Adm: Work site permit review, site specific hazard assessment, tailgate meeting attendance, site orientation. PPE: FR Coveralls, CSA approved eye protection, CSA approved gloves.			
	x	Inhalation of fumes	4	3	12		Eng: Adm: Work site permit review, site specific hazard assessment, tailgate meeting attendance, site orientation, Gas monitor. PPE: Respirator, SCBA if H2S is present.	2	2	4
	x	Hidden obstacles / poor site conditions causing injury	3	3	9		Eng: Designated walkways, signage Adm: Work site permit review, site specific hazard assessment, tailgate meeting attendance, site orientation. PPE: CSA approved hardhat, CSA approved footwear.	3	1	3
Walking and working around shops, storage yard, and equipment	x	Slips, trips, falls on slippery or uneven surfaces (sand, gravel, ice)	3	3	9		Eng: Designated walkways, icy conditions salted/graveled. Adm: Housekeeping Safe Work Practice, site orientation, signage. PPE: CSA approved footwear	2	2	4
	x	Struck by moving vehicle or equipment	4	3	12		Eng: Positive barriers, rear view camera and monitor system. Adm: Spotters, Best Practice – Working on site, site orientation, tailgate meeting. PPE: High visibility workwear, CSA approved hardhat, CSA approved footwear, CSA approved eyewear.	2	2	4
Interacting with other workers, contractors, and customers	x	Violence from others	3	3	9		Eng: Adm: De-escalation training, Violence and Harassment Policy / procedure, Emergency response plan. PPE:	2	1	2
	x	Harassment from others	3	2	6		Eng: Adm: De-escalation training, Violence and Harassment Policy / procedure, Emergency response plan. PPE:	2	1	2
Operating Power Mobile Equipment	x	Striking workers due to congestion or restricted line of sight	4	3	12		Eng: Adm: Equipment operator training, Equipment Operator Manual, SWP – Powered Mobile Equipment, Spotter. PPE:	2	2	4
	x	Crushing injuries due to falling loads	3	4	12		Eng: Lock wire, Synthetic Web Sling	2	2	4



							<p>Adm: Equipment operator training, Equipment Operator Manual, SWP – Powered Mobile Equipment, Spotter, Pre use inspection, Reliable Securement SOP.</p> <p>PPE: Impact gloves, CSA Approved Footwear, CSA Approved Hardhat.</p>			
	x		Entanglement due to contact with rotating parts	3	4	12	<p>Eng: Equipment Guards, Emergency shut offs.</p> <p>Adm: Equipment operator training, Equipment Operator Manual, SWP – Powered Mobile Equipment, Pre use inspection.</p> <p>PPE: Impact gloves, CSA Approved Footwear, CSA Approved Hardhat.</p>	2	2	4
Cleaning Tanks (<i>Confined space</i>)	x	x	Oxygen deficiency	4	3	12	<p>Eng: Venting hose, Temperature gauges.</p> <p>Adm: Confined space COP, Confined space entry and monitor ticket, CSA Z1006-16 Management of Work in Confined Spaces, Atmospheric testing, Monitor/tending worker, Gas Monitor.</p> <p>PPE: SABA, head lamp, hearing protection, radio, FR Coveralls, CSA approved gloves, CSA approved footwear, CSA approved hard hat, Harness.</p>	3	1	3
		x	Explosive atmosphere	4	4	16	<p>Eng: Venting hose, Temperature gauges.</p> <p>Adm: Confined space COP, Confined space entry and monitor ticket, CSA Z1006-16 Management of Work in Confined Spaces, Atmospheric testing, Monitor/tending worker, Gas Monitor.</p> <p>PPE: SABA, Hearing protection, radio, FR Coveralls, CSA approved gloves, CSA approved footwear, CSA approved hard hat, Harness.</p>	3	2	6
	x		Thermal (Heat) Stress	3	3	9	<p>Eng: Venting hose, Temperature gauges.</p> <p>Adm: Confined space COP, Confined space entry and monitor ticket, CSA Z1006-16 Management of Work in Confined Spaces, Atmospheric testing, Monitor/tending worker, Gas Monitor.</p> <p>PPE: SABA</p>	2	1	2
	x		Exposure to Toxic Vapours	4	3	12	<p>Eng: Venting hose, Temperature gauges.</p> <p>Adm: Confined space COP, Confined space entry and monitor ticket, CSA Z1006-16 Management of Work in Confined Spaces, Atmospheric testing, Monitor/tending worker, Gas Monitor.</p> <p>PPE: SABA</p>	2	2	4
	x		Exposure to Solvents or Dust	4	3	12	<p>Eng: Venting hose, Temperature gauges.</p>	2	2	4



							<p>Adm: Confined space COP, Confined space entry and monitor ticket, CSA Z1006-16 Management of Work in Confined Spaces, Atmospheric testing, Monitor/tending worker, Gas Monitor.</p> <p>PPE: SABA, Radio, FR Coveralls, CSA approved gloves, CSA approved footwear, CSA approved hard hat, Harness.</p>			
Driving Vehicles and Equipment	x	Vehicle accident causing Injury	3	4	12	<p>Eng: Seatbelt</p> <p>Adm: Pre trip inspection, Journey Management Procedure, Safe Driving COP, TDG, Preventative maintenance program.</p> <p>PPE:</p>	2	2	4	
	x	Poor Weather Conditions (Snow, blizzards, storms, limited visibility, bright light)	4	3	12	<p>Eng: Winter tires, seatbelt, fog lights</p> <p>Adm: Pre trip inspection, TDG, Journey Management Procedure, Safe Driving COP.</p> <p>PPE: Eye protection</p>	2	2	4	
	x	Wildlife on highway	3	3	9	<p>Eng: Seatbelt, deer whistle</p> <p>Adm: Pre trip inspection, Journey Management Procedure, Safe Driving COP.</p> <p>PPE:</p>	2	2	4	
	x	Traffic Hazards on highway / on site	3	3	9	<p>Eng: Winter tires, seatbelt</p> <p>Adm: Pre trip inspection, Journey Management Procedure, TDG, Safe Driving COP.</p> <p>PPE:</p>	2	1	2	
	x	Equipment Malfunction causing injury	4	3	12	<p>Eng: Pressure sensors, engine sensors, emergency shut off.</p> <p>Adm: Competency assessments annually, Pre trip inspection, Journey Management Procedure, Safe Driving COP, TDG, Preventative maintenance program.</p> <p>PPE:</p>	2	1	2	
Position and Secure Truck at Loading / Unloading site	x	Truck unintentionally rolling	3	3	9	<p>Eng: Park Brake, Wheel chocks, Emergency valves.</p> <p>Adm: SOP – Vacuum Truck Operation, TDG, Competency assessments annually.</p> <p>PPE: CSA approved footwear, CSA approved hardhat</p>	2	1	2	
	x	Slip or fall when entering / exiting truck	3	3	9	<p>Eng: Side steps / running boards</p> <p>Adm: New worker training program, SOP – Vacuum Truck Operation, Competency assessments annually, TDG, 3-point contact when entering / exiting truck.</p> <p>PPE: CSA approved footwear, CSA approved hardhat</p>	2	2	4	



	x	Backing up – other equipment / objects on site	4	3	12	<p>Eng: Back up censor, back up camera</p> <p>Adm: SOP – Vacuum Truck Operation, spotters, Competency assessments annually</p> <p>PPE:</p>	2	2	4
	x	Backing up – people on site	4	3	12	<p>Eng: Back up censor, back up camera</p> <p>Adm: SOP – Vacuum Truck Operation, spotters, Safe Driving COP, Competency assessments annually</p> <p>PPE:</p>	3	1	2
Unloading / Loading tanks (Vacuum / Discharge)	x	Leaks or spills from tank	4	3	9	<p>Eng: Emergency Valves, Drip bucket</p> <p>Adm: SOP – Vacuum Truck Operation, Site Specific Hazard Assessment, Applicable SDS, TDG, PPE Policy, Emergency Response Plan, Work permit, Gas monitor.</p> <p>PPE: Neoprene Gloves, CSA approved eyewear, FR Coveralls, CSA approved footwear, Respirator, Chemical spill kit.</p>	2	2	4
	x	Chemical interaction causing explosion	4	4	16	<p>Eng: Flame Arrester, Grounding equipment</p> <p>Adm: SOP – Vacuum Truck Operation, Site Specific Hazard Assessment, Applicable SDS, TDG, PPE Policy, Emergency Response Plan, Work permit, Gas monitor.</p> <p>PPE: Neoprene Gloves, CSA approved eyewear, FR Coveralls, CSA approved footwear, Respirator, Fire extinguisher.</p>	3	2	6
	x	Chemicals / materials igniting causing fire	4	3	12	<p>Eng: Flame Arrester, Grounding equipment</p> <p>Adm: SOP – Vacuum Truck Operation, Site Specific Hazard Assessment, Applicable SDS, TDG, PPE Policy, Emergency Response Plan, Work permit, Gas monitor.</p> <p>PPE: Neoprene Gloves, CSA approved eyewear, FR Coveralls, CSA approved footwear, Respirator, Fire extinguisher, Chemical spill kit.</p>	2	2	4
Dumping Vac Truck into Sump	x	Worker sliding into sump	3	3	12	<p>Eng:</p> <p>Adm: Offloading into Sumps Procedure, Safe Driving COP, Site Specific Hazard Assessment, Pre/Post trip inspection, Competency assessment annually, Operator Training.</p> <p>PPE: High visibility workwear, CSA approved hardhat, CSA approved footwear, CSA approved eyewear.</p>	2	2	4
	x	Slips, Trips, Falls due to uneven surfaces (sand, gravel, ice)	3	3	9	<p>Eng:</p> <p>Adm: Offloading into Sumps Procedure, Site Specific Hazard Assessment, Competency assessment annually, Operator Training.</p>	2	1	2



							PPE: High visibility workwear, CSA approved hardhat, CSA approved footwear, CSA approved eyewear.			
Working with Chemicals	x		Exposure to Asphyxiants/Carcinogens (Inhalation)	4	3	12	Eng: Adm: Applicable SDS, TDG, PPE Policy, Emergency Response Plan, COP Hydrogen Sulphide Environment, COP Chemical Flammables and Combustibles, H2S Alive Ticket, site specific hazard assessment, Gas Monitor. PPE: Neoprene Gloves, CSA approved eyewear/face shield, Coveralls, CSA approved footwear, Respirator.	3	2	6
	x		Exposure to Corrosives, Irritants, Carcinogens, Mutagens, Teratogens (Absorption)	4	3	12	Eng: Adm: Applicable SDS, TDG, PPE Policy, Emergency Response Plan, COP Hydrogen Sulphide Environment, COP Chemical Flammables and Combustibles, H2S Alive Ticket, site specific hazard assessment, Gas Monitor. PPE: Neoprene Gloves, CSA approved eyewear/face shield, Coveralls, CSA approved footwear.	2	2	4
Working near Hydrogen Sulphide "H2S" (Sour Site)	x		Exposure to H2S gas	4	3	12	Eng: Adm: COP Hydrogen Sulphide Environment, COP Chemical Flammables and Combustibles, Emergency Response Plan, H2S Alive Ticket, Work site permit review, site specific hazard assessment, tailgate meeting attendance, site orientation, Gas Monitor, signage. PPE: SCBA, Respiratory mask.	3	2	6
Climbing on Tanks		x	Slips or Falls from Height	3	3	9	Eng: Adm: Fall Protection ticket, Competency assessment annually, Pre trip/Post trip inspection, SOP – Vacuum Truck Operation. PPE: CSA Approved footwear, Fall Protection System	2	1	2
		x	Strains or Sprains from awkward / repetitive motion	3	3	9	Eng: Adm: COP – Ergonomics, SOP – Vacuum Truck Operation. PPE:	2	1	2
Working Alone		x	Loss of communication	3	3	9	Eng: Adm: Journey Management Procedure, SWP – Working Alone. PPE: Cellphone, Two-way radio.	2	2	4
		x	Injury while alone	3	3	9	Eng: Adm: Journey Management Procedure, SWP – Working Alone, Vehicle First Aid Kit, Cellphone, Two-way radio. PPE:	2	2	4



Risk Matrix

		Severity			
		1 - Insignificant	2 - Minor	3 - Major	4 - Severe
Probability	4 - Almost Certain	Medium 4	High 8	Extreme 12	Extreme 16
	3 - Likely	Medium 3	Medium 6	High 9	Extreme 12
	2 - Unlikely	Low 2	Medium 4	Medium 6	High 8
	1 - Rare	Low 1	Low 2	Medium 3	Medium 4

Probability pertains to the extent of how likely it is for the risk to occur.

The 4 risk rating levels for this component are:

1. **Rare** – unlikely to happen or has never happened.
2. **Unlikely** – has the possibility to happen or has happened at least once.
3. **Likely** – almost sure to happen or has happened multiple times.
4. **Almost certain** – sure to happen or has happened frequently.

Severity is to determine the level of effects that the hazard could cause.

The 4 risk rating levels for this component are:

1. **Insignificant** – can cause injuries/illnesses requiring first aid or negligible property damage.
2. **Minor** – can cause moderate injuries/illnesses requiring medical aid or moderate property damage.
3. **Major** – can cause irreversible injuries/illnesses requiring long term aid or serious property damage.
4. **Severe** – can result in a fatality or irreversible property damage.

Overall Risk Rating

Severity x Probability = Overall Risk Rating

Low - no further action needed; proper control measures are in place.

Medium – proceed with caution and monitor at regular intervals.

High – must be reviewed and reassessed prior to work proceeding.

Extreme – work must be stopped until adequate controls have reduced hazard to an acceptable level.

