



154 Meadowlark Health Centre  
156 Street & 87 Avenue  
Edmonton, Alberta T5R 5W9  
Tel (780) 429-4761  
Fax (780) 425-4274  
Toll Free 1-800-493-5446

## Physical Demands Analysis

### Water Truck Operator

Prepared for:  
Alberta Construction Association

<b>Job Title:</b>	Water Truck Operator	<b>Assessment Location:</b>	Edmonton, AB	<b>Data Collection Date:</b>	November 3, 2020
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<b>Completed By:</b>	Joanna Ellingson, BKin	<b>Submitted on:</b>	April 6, 2021
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<b>Disclaimer:</b>	The Physical Demands noted in this report may vary depending on company and location. Please contact the company directly to confirm this physical demands analysis is an accurate representation of the specific job title for the specific location.
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<b>Work Schedule:</b>	<b>Shift Duration:</b> 6 days/week, 10 hours/day; may vary depending on weather and work volume <b>Break Schedule:</b> Total of 1 hour break per day / when loading water into truck <b>Shift Rotation:</b> Working summer months (weather dependent) <b>On call is required:</b> Yes; 24 hours per day, 7 days per week <b>Overtime required:</b> No; but may be available depending on weather and work volume
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<b>Education / Experience:</b>	<b>Education required:</b> Not applicable. <b>Hours required for position:</b> N/A <b>Tickets that may be required (not limited to):</b> Class 1 or 3 Drivers license, First Aid, WHMIS, Construction Safety Training Systems (CSTS) and Basic Safety Orientation (BSO).
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<b>Labour Provider:</b>	Union 955
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<b>Job Overview:</b>	As a Water Truck Operator the worker is required to operate the water truck and use the water in the tank to maintain and clear roadways, by dispersing water across the roads.		
	% of shift	Job Task	Task Description
	5%	Pre-trip check	<ul style="list-style-type: none"><li>Completing a walk around of the water truck including: ensuring levers are working and tight, fluids are adequate, no leaks from the truck, hoses are present and secure on the truck, etc.</li><li>This will be repeated as each trip is completed throughout the shift.</li><li>Repairs or maintenance that is required and beyond the scope of the water truck operator should be reported to a supervisor.</li></ul>
	30%	Loading water into truck	<ul style="list-style-type: none"><li>Using the hoses and levers on the water truck to fill the water tank with water from a designated site.</li></ul>

			<ul style="list-style-type: none"> <li>This process will be repeated for each trip completed by the water truck operator and takes approximately 15 minutes for an experienced water truck operator.</li> </ul>
	60%	Spraying water on designated roadways	<ul style="list-style-type: none"> <li>Operating the vehicle on travelled routes and controlling the valves in the cab of the water truck to spray water on designated routes.</li> <li>This process will be repeated for each trip completed by the water truck operator and takes approximately 25-35 minutes for an experienced water truck operator.</li> </ul>
	5%	Post-trip check	<ul style="list-style-type: none"> <li>Completing a walk around of the water truck including: no damage was caused to the water truck during the drive, ensuring levers continue to work and are sealed tight, fluids are adequate, no leaks from the truck, hoses are present and secure on the truck, etc.</li> <li>This will be repeated as each trip is completed throughout the shift.</li> <li>Repairs or maintenance that is required and beyond the scope of the water truck operator should be reported to a supervisor.</li> </ul>

<b>Equipment/ Tools:</b>	<ul style="list-style-type: none"> <li>Hammer (1 lbs.)</li> <li>Wrench (for simple maintenance on the truck-up to 2 lbs.)</li> <li>Hoses (located on the truck-approximately 22 lbs. while on truck)</li> <li>Levers on exterior of water truck</li> <li>Valves in the cab of water truck</li> <li>Fluids for truck maintenance (up to 12 lbs.)</li> </ul>
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<b>Exposures / Environment:</b>	<ul style="list-style-type: none"> <li>Outdoor elements (heat, cold, wind, etc.)</li> <li>Dust</li> <li>Highway traffic</li> </ul>
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<b>Personal Protective Equipment Required:</b>	<ul style="list-style-type: none"> <li>Hard hat</li> <li>Steel toed boots</li> <li>Gloves</li> <li>Safety glasses</li> <li>Safety vest or high visibility stripes</li> <li>Long sleeves and pants</li> </ul>
<b>Personal Protective Equipment as Required:</b>	<ul style="list-style-type: none"> <li>Hearing protection</li> </ul>

NOC STRENGTH LEVEL KEY	
Strength Level	Definition
Limited (Lim)	Up to 5 kg (11 pounds)
Light (L)	5 kg to 10 kg (11 – 22 pounds)
Medium (M)	10 kg to 20 kg (22 – 44 pounds)
Heavy (H)	Greater than 20 kg (44 pounds plus)

*\*Strength Level Key based on the National Occupational Classification*

FREQUENCY KEY		
Frequency	% of Workday	Hours – Based on 8 hour Workday
Not Required (N/R)	0%	0
Rarely (R)	1 – 5%	<25 min/day
Occasionally (O)	6 – 33%	25 min to 2 hours 40 min/day
Frequently (F)	34 – 66%	2 hours 41 min to 5 hours 17 min/day
Constantly (C)	67 – 100%	5 hours 18 min to 8 hours/day

*\*Frequency Key based on WCB Alberta Recommendations*

Job Demand	Frequency / NOC Strength Level					Details/ Measurements
	N/R	R	O	F	C	
Material Handling:						
Floor to Waist Level Lifting	X					Not required.
Knee to Waist Level Lifting		Lim	L			To release hoses (~22 lbs.), maintenance as required on water truck (fluids-up to 12 lbs.).
Waist to Waist Level Lifting		Lim	L			To release hoses (~22 lbs.), maintenance as required on water truck (fluids-up to 12 lbs.).
Waist to Chest Level Lifting		Lim				Completing maintenance as required on water truck (fluids-up to 12 lbs.).
Waist to Shoulder Level Lifting		Lim				Completing maintenance as required on water truck (fluids-up to 12 lbs.).
Waist to Overhead Level Lifting		Lim				Completing maintenance as required on water truck (fluids-up to 12 lbs.).
Front Carry			L			Removing hose from truck in order to access water source (~22 lbs.).
Right / Left-handed Carry (Dominant Hand)		Lim				Carrying fluids from water truck to complete maintenance (up to 12 lbs.)
Shoulder Carry			L			Resting hose on the shoulder to disassemble from the water truck (~22 lbs.)
Static Pushing/Pulling (Force)			Heavy NOC Level			Moving levers at end range of motion to assemble/disassemble hose and adjust water valves being used.

<b>Dynamic Pushing/Pulling (Force)</b>			Heavy NOC Level			Pushing (up to 85.0 lbs. force)/pulling (108.0 lbs. force) levers to adjust valves, pushing (63.5 lbs. force) hood to check oil/fluids during pre/post-trip check, using wrench for truck maintenance.
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Job Demand	Frequency					Details/Measurements
	N/R	R	O	F	C	
Upper Extremity Work:						
Hand Gripping					X	Opening bypass, adjusting water hose, levers, gripping wheel, various fluids/hammer/wrench for truck maintenance.
Pinch Gripping				X		Operating toggles to start release of water, valves in the truck to start/stop water spraying.
Upper Extremity Coordination					X	Opening bypass, operating toggles, valves in truck, adjusting water hose, levers, gripping wheel, various fluids/hammer/wrench for truck maintenance.
Reaching Forward					X	Adjusting hose when filling water, adjusting levers on truck, valves in cab of truck, operating water truck, maintenance on truck as required, during pre and post-trip check.
Overhead Shoulder Level Reaching				X		Completing maintenance on truck (higher level hoses, levers, valves, filling fluids, etc.), reaching for higher placed valves in cab of truck, cleaning hood of truck as necessary.
Below Shoulder Level Reaching				X		Reaching for lower level hoses, toggles, levers on outside of truck and valves on inside of truck, maintenance on lower level aspects of truck as required, reaching for wheel while operating water truck.
Throwing	X					Not required.

Job Demand	Frequency					Details/Measurements
	N/R	R	O	F	C	
Positional Work:						
Trunk Flexion (Bending)			X			Adjusting lower level levers, accessing pump, pre/post-trip checks.
Trunk Rotation (Twisting)		X				Adjusting lower level levers, accessing pump, pre/post-trip checks.
Kneeling		X				Filling water jug, pre/post-trip checks.
Crawling	X					Not required.
Crouching	X					Not required.
Squatting	X					Not required.

<b>Neck Flexion</b>				X		Checking surroundings, during loading phase, adjusting water hose and levers, pre/post-trip check, driving water truck.
<b>Neck Extension</b>			X			Checking surroundings, during pre/post-trip check, loading water as required.
<b>Neck Rotation</b>				X		Checking surroundings, during loading phase, adjusting water hose and levers, pre/post-trip check, driving water truck.

Job Demand	Frequency					Details/Measurements
	N/R	R	O	F	C	
<b>Static Work:</b>						
<b>Sitting</b>				X		Operating water truck.
<b>Static Standing</b>			X			During loading of water onto truck.
<b>Balancing</b>			X			On site during loading of water onto truck.

Job Demand	Frequency					Details/Measurements
	N/R	R	O	F	C	
<b>Ambulation:</b>						
<b>Walking: Level Surfaces</b>		X				In office (as required).
<b>Walking: Uneven Surfaces</b>			X			On site; while loading water, pre/post-trip check.
<b>Walking: Slopes</b>		X				Dependent on site.
<b>Jumping</b>	X					Not required.
<b>Running</b>	X					Not required.

Job Demand	Frequency					Details/Measurements
	N/R	R	O	F	C	
<b>Climbing:</b>						
<b>Stairs</b>	X					Not required.
<b>Ladder</b>			X			Opening/closing hatch, entering/exiting cab or truck.
<b>Other</b>		X				While pushing/pulling hood.



**PHOTOS OF TASKS AND WORK ENVIRONMENT**

**Figure 1:** Dashboard and controls in cab of water truck.



**Figure 2:** Controls in cab of water truck to adjust water pressure/frequency.



**Figure 3:** Hose attachment at the back of water truck and where the water sprays out.



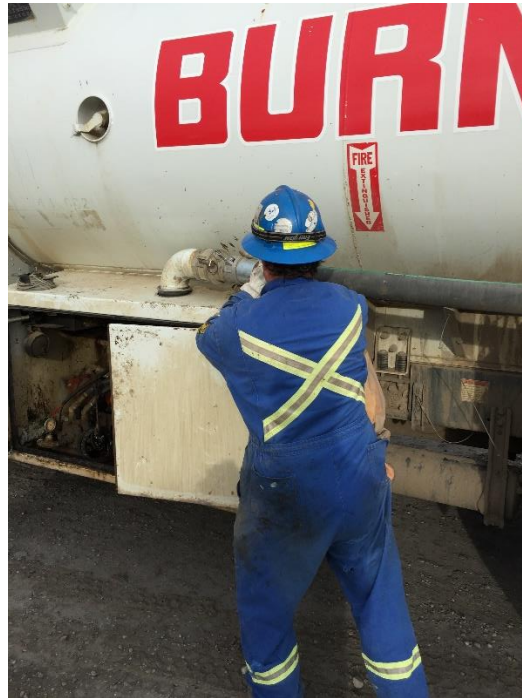
**Figure 4:** Lever located on exterior of truck.



**Figure 5:** Climbing on the grill of the water truck to access the hood.



**Figure 6:** Using the shoulder to adjust/rest hose during loading phase.



If you have any questions, and/or would like to discuss this assessment and report further, I can be reached at (780) 429-4761.

Sincerely,

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**Joanna Ellingson, BKin**  
**Kinesiologist**

**SITE SPECIFIC JOB DEMAND ADDITIONS:**

Job Demand	Frequency					Details/Measurements
	N/R	R	O	F	C	
Site Specific Job Demand:						



### Validation Agreement

<b>Job Title:</b>	Water Truck Operator
<b>Data Collection Date:</b>	November 3, 2020

We the undersigned have reviewed the Physical Demands Analysis for this position and agree that the physical demands documented in this report are representative of the true demands of the tasks associated with the job title as assessed on the date listed above.

<b>Completed by:</b>	Joanna Ellingson, BKin	Lifemark Clinician Name and Credentials
<b>Approved by:</b>		Management Representative
<b>Approved by:</b>		Worker Representative
<b>Approved by:</b>		Labour Provider Representative