



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

Heavy Equipment Operator - Excavator

Prepared for:
Alberta Construction Association

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|-------------------|--------------------------------------|-----------------------------|------------------------------|------------------------------|---------------|
| Job Title: | Heavy Equipment Operator - Excavator | Assessment Location: | Main Street, Airdrie Alberta | Data Collection Date: | July 23, 2020 |
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| Completed By: | Joanna Taets Von Amerongen | Submitted on: | October 13, 2020 |
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| Disclaimer: | 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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| Work Schedule: | <p>Shift Duration: 6 days/week, 10 hours/day; depending on volume and weather</p> <p>Break Schedule: Total of 1 hour break per day / 2-15 minute breaks with 1-30 minute lunch break.</p> <p>Shift Rotation: Day shifts: 7:00 am to 5:00 pm; Night shifts: 7:00 pm to 7:00 am</p> <p>On call is required: No</p> <p>Overtime required: Yes; depending on volume and weather</p> |
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| Education / Experience: | <p>Education required: Not applicable</p> <p>Hours required for position: Not applicable</p> <p>Tickets that may be required (not limited to): Basic Safety Orientation (BSO) and practical training provided by Standard General on site, RSTS with WHMIS 2015, Ground Disturbance.</p> |
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| Labour Provider: | N/A |
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| Job Overview: | As an Excavator Operator, the worker is required to operate the excavator on site by laying pipe down into the trench box, lifting and moving pea gravel into the trench box and providing underground pipe to pipe layers with cable slings. | | |
| | % of shift | Job Task | Task Description |
| | 1-2% | Equipment and Safety Check | <ul style="list-style-type: none"> Checking excavator to ensure fluids are adequate, controls are working, no mechanical failures or changes in excavator from last shift. Reporting any issues to Standard General's shop as necessary. |
| | 1% | Individual Field Level Risk Assessment (IFLRA) | <ul style="list-style-type: none"> Identifying hazards, exposures, plans for hazards and exposures, personal protective equipment (PPE) required. |



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| | 1-2% | Tailgate Meeting | <ul style="list-style-type: none"> The crew's plan for the day including progress on site thus far, plan for remaining route and the day. |
| | 1-2% | Site Preparation | <ul style="list-style-type: none"> Using the Excavator, assisting the Underground Pipe Layers with removing equipment and tools from nearby site storage, ensuring proper site measurements are reviewed with crew and review tasks for the day. Prepare site for day's work. |
| | 93-96% | Operating Excavator | <ul style="list-style-type: none"> Operating excavator using various controls to move trench walls, lay pipe down in correct position/placement, placing pea gravel into trench box. |
| | 1-2% | Site Clean up | <ul style="list-style-type: none"> Once shift is complete, use the excavator to assist with cleaning site as necessary. |

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| Equipment/ Tools: | <ul style="list-style-type: none"> Excavator |
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| Exposures / Environment: | <ul style="list-style-type: none"> Dust Heat Wind Cold Air Conditioning |
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| Personal Protective Equipment Required: | <ul style="list-style-type: none"> Hard hat Steel toed boots Safety vest Long pants |
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| Personal Protective Equipment as Required: | <ul style="list-style-type: none"> Masks worn within 6 feet due to COVID |
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| NOC STRENGTH LEVEL KEY | |
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| 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 | | |
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| 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 |

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| 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 | X | | | | | Not required |
| Waist to Waist Level Lifting | X | | | | | Not required |
| Waist to Chest Level Lifting | X | | | | | Not required |
| Waist to Shoulder Level Lifting | X | | | | | Not required |
| Waist to Overhead Level Lifting | X | | | | | Not required |
| Front Carry | X | | | | | Not required |
| Right / Left-handed Carry (Dominant Hand) | X | | | | | Not required |
| Shoulder Carry | X | | | | | Not required |
| Static Pushing/Pulling (Force) | X | | | | | Not required |
| Dynamic Pushing/Pulling (Force) | | | | | Light NOC Level | Pushing/pulling controls in Excavator. |

| Job Demand | Frequency | | | | | Details/Measurements |
|----------------------------------|-----------|---|---|---|---|--|
| | N/R | R | O | F | C | |
| Upper Extremity Work: | | | | | | |
| Hand Gripping | | | | | X | Gripping the hand controls in Excavator, refilling fluids, mechanical checks. |
| Pinch Gripping | | X | | | | Gain access to enter cab of Excavator. |
| Upper Extremity Coordination | | | | | X | Operating the hand controls in Excavator, refilling fluids, mechanical checks. |
| Reaching Forward | | | | | X | Reaching the hand controls in Excavator, refilling fluids. |
| Overhead Shoulder Level Reaching | X | | | | | Not required |

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| Below Shoulder Level Reaching | | | | | X | Reaching the hand controls in Excavator, refilling fluids. |
| Throwing | X | | | | | Not required |

| Job Demand | Frequency | | | | | Details/Measurements |
|----------------------------------|-----------|---|---|---|---|--|
| | N/R | R | O | F | C | |
| Positional Work: | | | | | | |
| Trunk Flexion (Bending) | X | | | | | Completing equipment and safety inspection. |
| Trunk Rotation (Twisting) | | | | X | | Checking surroundings on site, communicating with crew. |
| Kneeling | X | | | | | Not required |
| Crawling | X | | | | | Not required |
| Crouching | | X | | | | Completing equipment and safety inspection. |
| Squatting | | X | | | | Completing equipment and safety inspection. checking blind spots of Excavator. |
| Neck Flexion | | | | X | | Completing equipment and safety inspection, checking surroundings on site and blind spots of Excavator, communicating with crew. |
| Neck Extension | | | | X | | Completing equipment and safety inspection, checking surroundings on site and blind spots of Excavator. |
| Neck Rotation | | | | X | | Completing equipment and safety inspection, checking surroundings on site and blind spots of Excavator, communicating with crew. |

| Job Demand | Frequency | | | | | Details/Measurements |
|------------------------|-----------|---|---|---|---|---|
| | N/R | R | O | F | C | |
| Static Work: | | | | | | |
| Sitting | | | | | X | While operating Excavator. |
| Static Standing | | X | | | | During IFLRA, tailgate meeting, breaks. |
| Balancing | | | X | | | On site during IFLRA, tailgate meeting, entering and exiting cab of Excavator |

| Job Demand | Frequency | | | | | Details/Measurements |
|---------------------------------|-----------|---|---|---|---|--|
| | N/R | R | O | F | C | |
| Ambulation: | | | | | | |
| Walking: Level Surfaces | | | X | | | Dependent on site - during equipment and safety inspection, tailgate meeting, breaks, communicating with crew. |
| Walking: Uneven Surfaces | | | X | | | Dependent on site - during equipment and safety inspection, tailgate meeting, breaks, communicating with crew. |



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| Walking: Slopes | | X | | | | Dependent on site - during equipment and safety inspection, tailgate meeting, breaks, communicating with crew. |
| Jumping | X | | | | | Not required |
| Running | X | | | | | Not required |

| Job Demand | Frequency | | | | | Details/Measurements |
|------------------|-----------|---|---|---|---|---------------------------------|
| | N/R | R | O | F | C | |
| Climbing: | | | | | | |
| Stairs | X | | | | | Not required |
| Ladder | X | | | | | Not required |
| Other | | X | | | | Entering and exiting Excavator. |

PHOTOS OF TASKS AND WORK ENVIRONMENT

Figure 1: Interior, controls, foot pedals of an Excavator.



Figure 2: Excavator Operator side view.



Figure 3: View of Excavator Operator position: posterior view.



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

Physical Demands Analysis
Job Title: Heavy Equipment Operator - Excavator
Date Prepared: August 18, 2020
Prepared for: Alberta Construction Association



Sincerely,

Joanna Taets Von Amerongen, BKin
Kinesiologist

SITE SPECIFIC JOB DEMAND ADDITIONS:

| Job Demand | Frequency | | | | | Details/Measurements |
|----------------------------------|-----------|---|---|---|---|-------------------------------------|
| | N/R | R | O | F | C | |
| Site Specific Job Demand: | | | | | | |
| Writing | | X | | | | Filling out IFLRA. |
| Vibration | | | | | X | Operating Excavator: from controls. |
| Wrist Flexion/Extension | | | | | X | Operating controls on Excavator. |

Validation Agreement

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| Job Title: | Heavy Equipment Operator - Excavator |
| Data Collection Date: | July 23, 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.

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| Completed by: | Joanna Taets Von Amerongen, BKin | Lifemark Clinician Name |
| Approved by: | Matt Cooper, Paul Parsons | Management Representative |
| Approved by: | | Worker Representative |
| Approved by: | | Labour Provider Representative |