CITY OF VICTORIA
PHYSICAL DEMANDS ANALYSIS

Effective Date: Sept. 11, 2007

Job Titles:	- Labourer - Sewer - Catch Basin Cleaner - Labourer - Jet Nozzle Truck	**Date of Job Site Visit(s):**	- July 24, 2007 - August 15, 2007 - Sept. 11, 2007
Department:	Underground Operations	**On-Site Contact Person:**	David Myles (Manager)
Location:	Various Underground Job Sites / Public Works Yard	**Classification:**	Regular Duty

POSITION FUNCTION

This Physical Demands Analysis report represents a combination of three positions that fall within the 'Underground Operations' section of the City of Victoria's Engineering Department. The primary functions of each of the three 'target positions' being considered in this report are as follows:

1. **Labourer – Sewer:** Employees in this position are responsible for performing the labouring duties associated with a range of tasks, including (but not necessarily limited to) the following: catch basin installation, sewer line connections, installing storm sewer lines, installing sanitary sewer lines, and manhole installation.

2. **Catch Basin Cleaner:** Employees in this position complete a range of duties whose primary purpose is to maintain and clear catch basins, as well as respond to special requests for unclogging other utilities within the City of Victoria.

3. **Labourer - Jet Nozzle Truck:** Employees in this position complete a range of duties whose primary purpose is to assist the Jet Nozzle Operator in maintaining clean storm and sanitary sewer drains.

TOOLS & EQUIPMENT

Employees working within the aforementioned three 'target positions' use the following tools / equipment in the performance of their essential duties:

1. **Labourer – Sewer:**

- *Power Tools* – jackhammer, chain saw, circular pipe saw, fan, hydraulic pump, gas detector, 'jumping jack'-style tamper
- *Hand Tools* – long / short handled shovel, small digging shovel, long pry bar, chains, sledge hammer, hand saw, broom, rake, screwdriver, socket sets for couplers, ladder, rope / strapping
- *Equipment / Components* - cement mix (40 kg bags), hot cement mix, catch basins, cement rings, grates, manholes, manhole covers, plastic pipe (varying length / diameter), clay pipe (varying length / diameter), pipe couplings, pipe elbows, pipe Y junctions, pipe dope, pipe grease, video 'scope' camera and monitor
- *Traffic Control Items* – traffic cones, traffic signs ('lane closure', 'workers / equipment at work')
- *Safety Equipment* – rubber / leather gloves, long pants, hard hat, face shield / safety glasses, ear protection (as needed), reflective vest, steel toe boots, first aid kit

2. **Catch Basin Cleaner:**

- *Power Tools* – vacuum truck, combo-truck, vacuum hose, control box for running truck boom
- *Hand Tools* – straight-bar, T-bar / J-bar, sledgehammer, hand rods, screwdriver, wrench
- *Equipment / Components* - vacuum hose, water hose with trigger
- *Traffic Control Items* – traffic cones, traffic signs ('lane closure', 'workers / equipment at work')
- *Safety Equipment* – rubber / leather gloves, long pants, hard hat, face shield / safety glasses, ear protection (as needed), reflective vest, steel toe boots, first aid kit

3. **Labourer - Jet Nozzle Truck:**

- *Power Tools* – flushing truck (including specialized flushing attachments)
- *Hand Tools* – rodding attachments, hooked bar for pulling manhole covers, long pike pole, sledgehammer, screwdriver, wrench
- *Equipment / Components* - hose reel, hose-heads, 'tigertail' collar (to guide hose)
- *Traffic Control Items* – traffic cones, traffic signs ('lane closure', 'workers / equipment at work')
- *Safety Equipment* – rubber / leather gloves, long pants, hard hat, face shield / safety glasses, ear protection (as needed), reflective vest, steel toe boots, first aid kit

USUAL METHODS

Employees working within the aforementioned three 'target positions' utilize the following methods in the performance of their primary essential duties:

1. **Labourer – Sewer:**

a) Gather tools, materials, and equipment for the workday and load them onto the truck.
b) Crew (consisting of Labourer, Pipelayer, Foreman, Truck Driver, and Backhoe / Excavator Operator) drives to the worksite and sets up traffic cones / signs.
c) Tools / equipment are carried from the truck to a spot near where the ditch will be dug.
d) Prior to excavation, a worker will hand-locate and mark underground utility lines so that backhoe operator is aware of cautionary digging zones.
e) Backhoe / Excavator digs a ditch to expose pipe or grade a new trench, while Labourer uses brooms / shovels to keep edges of ditch clear of dirt / rocks that may interfere with subsequent work.
f) Labourer enters ditch via ladder, or by stepping into it (i.e. if it is a shallow ditch).
g) One Labourer remains at road level in order to prepare the pipe and components before they are lowered into the ditch (e.g. cutting / greasing pipe, mixing cement, etc.). He/she will also arrange all the necessary couplings / connections for that particular jobsite, and will lower them as needed into the ditch either by hand or by use of a rope.
h) One Labourer remains in the ditch, and he/she works with the Piplelayer to complete the repair, or to install the pipe / component in the ditch. This initially requires use of a shovel to remove dirt / rock away from the pipe / connection (e.g. connection to a live storm sewer or sanitary sewer line).
i) The Labourer (or Pipelayer) in the ditch will make a cut in the existing line using a hand or power saw to tie-in the new connection. He/she guides the coupling / connection that is lowered into the ditch, and tightens the couplings with a socket wrench.
j) Grease is placed in the bell of the connection, in preparation for receiving the end of a length of pipe. The Labourer (or Pipelayer) will guide a section of pipe (up to four-metre length) as it is lowered into the ditch by the backhoe. Once this length of pipe is properly positioned and its end is loosely fit into the bell opening, the Labourer uses a long pry bar to push / pull the pipe-end into the bell. These steps are repeated until pipe is laid the length of the ditch.

k) If a catch basin is installed, the backhoe will excavate an area for the catch basin, and will lift / lower the catch basin components into position. The Labourer (or Pipelayer) will install and tie-in the catch basin with the existing storm sewer line using the steps as described above.
l) The ditch is refilled via Backhoe / Excavator, and the dirt is compacted via a 'hoe-pack' (backhoe attachment), or via the Labourer manually using a 'jumping jack'-style tamper
m) Note: as needed for trouble-shooting, the Labourer will feed a video 'scope' camera into a sewer line, and will use a monitor to identify problematic areas.
n) Note: in the course of completing sewer work duties the Labourer may be required to enter confined spaces where noxious gases might be present. A 'gas detector' device is used to detect these gases to ensure workers will only enter safe workspaces.

2. <u>Catch Basin Cleaner</u>:

a) Gather tools, materials, and equipment for the workday and load them onto the truck.
b) Crew drives to the worksite and sets up traffic cones / signs.
c) Straight-bar is removed from its 'holster' on outside of truck, and carried to catch basin.
d) Straight-bar is used to probe catch basin for blockages.
e) If catch basin is clear, straight-bar is carried back to truck, re-holstered, and workers proceed to next catch basin.
f) If catch basin is not clear, a T-bar is removed from truck and carried to the catch basin.
g) T-bar is used to pull grate up and out of the catch basin. The grate is dragged out of the way (i.e. dragged approx. one metre distance).
h) Hand controls are used to raise the boom of the truck (avoiding overhead wires), and via a combination of controlling the hydraulic boom and manually pushing / pulling, the vacuum hose is manoeuvred into the catch basin.
i) Occasional need for use of a water hose (with squeeze-trigger) to keep the basin clear of debris.
j) Hand controls are used to raise the boom and re-set the vacuum hose into its travelling position on the front bumper of the truck.
k) Grate is dragged back into place using the T-bar.
l) Note: the process described above is repeated 40 - 60 times per work shift.

3. <u>Labourer - Jet Nozzle Truck</u>:

a) Gather tools, materials, and equipment for the workday and load them onto the truck.
b) Crew drives to the worksite and sets up traffic cones / signs.
c) Labourer removes manhole cover using hooked bar.
d) Hose reel is swung into place over manhole.
e) Appropriate head is attached to hose end, and hose is slipped through the 'tigertail' collar.
f) Labourer leans over manhole, lowers dangling hose into manhole (guiding it with 'tigertail') until it connects with the drain hole.
g) Motor on flusher is engaged to run water forcefully through the hose into the drainpipe.
h) Once flushing is complete, hose is pulled out (usually by motor, but occasionally by hand).
i) Note: the aforementioned steps can also occur in open culverts. In these cases, it is sometimes necessary to drag the hose for 100+ feet (often through heavy bush) when the nature of certain locations prevents the truck from being able to access the target area.

ADMINISTRATIVE ISSUES

The aforementioned three 'target positions' are associated with the following administrative issues:

1. **Labourer – Sewer:**

   The typical shift for these workers extends from 07:00 am to 15:30 pm, or 8:00 am to 16:30 pm. On a typical shift, workers receive two 15-minute rest periods, and one 30-minute lunch break. Shifts are scheduled Monday to Friday, although workers can be called out 24 hours per day, seven days per week in an emergency. Overtime is a position requirement, but does not occur on a regular basis. Overtime can involve an extended workday, or being called-in during off hours.

2. **Catch Basin Cleaner AND Labourer - Jet Nozzle Truck**

   The typical shift for these workers extends from 07:00 am to 15:30 pm, or 8:00 am to 16:30 pm. On a typical shift, workers receive two 15-minute rest periods, and one 30-minute lunch break. Shifts are scheduled Monday to Friday, although overtime is occasionally required during weekends or night time hours if drainage conditions deteriorate due to heavy rainfall and/or if flooding occurs as a result of drain back-ups.

WORK ENVIRONMENT

The aforementioned three 'target positions' are associated with the following work environments:

1. **Labourer – Sewer:**

   Physical Effort:
   Lift and move heavy equipment and materials (occasional basis)

   Mental Effort:
   Within normal limits

   Visual / Auditory Effort:
   Within normal limits

   Work Environment:
   - *Work outside (continuous, aside from riding in truck to worksites)
   - Work in close proximity to moving traffic (frequent)
   - Exposure to equipment noise (occasional to frequent, e.g. saws, jackhammers, tampers, backhoes / excavators, etc.)
   - Exposure to equipment vibration (occasional to frequent, e.g. saws, jackhammers, tampers, etc.)
   - Exposure to exhaust fumes and airborne particulates – airborne dirt / dust or saw-cutting particulates (occasional)
   - Exposure to contaminated waste produces from sanitary sewers (occasional to frequent). Working around water is a key element of this position, including keeping the following lines clear: sanitary sewers, storm sewers, house hook-ups, and culvert drains (as well as resolving line blockages when they do occur).

   *Note: the environmental conditions can considerably alter the degree of challenge of this job. It is possible to be exposed to widely varying conditions, including:
   - extremely hot conditions (i.e. with implications for dehydration, sunburn, heat stroke)
   - extremely wet conditions (i.e. with implications for less reliable footing, less stability of trenches, increased heaviness when shovelling wet dirt / mud / clay, and a need for higher grip forces due to slipperiness of tools / pipe components, etc.)

- extremely cold conditions (i.e. with implications for less reliable footing due to snow / ice, less stability of trenches due to slushy wetness, increased heaviness when shovelling wet dirt / mud / clay, and a need for higher grip forces due to slipperiness of tools / pipe components, etc.)

2. <u>Catch Basin Cleaner</u> AND <u>Labourer – Jet Nozzle Truck</u>:

Physical Effort:
Lift and move heavy equipment and materials (occasional to frequent basis)

Mental Effort:
Within normal limits

Visual / Auditory Effort:
Within normal limits

Work Environment:
- *Work outside (continuous, aside from riding in truck to worksites)
- Work in close proximity to moving traffic (frequent)
- Exposure to equipment noise (frequent, e.g. vacuum hose, flusher motor, etc.)
- Exposure to equipment vibration (frequent, e.g. vacuum hose, flusher hose, etc.)
- Exposure to exhaust fumes and airborne particulates – airborne dirt / dust (occasional)
- Exposure to contaminated waste produces from sanitary sewers (occasional to frequent). Working around water is a key element of these positions, including keeping the following lines clear: sanitary sewers, storm sewers, house hook-ups, and culvert drains (as well as resolving line blockages when they do occur).

*Note: the environmental conditions can considerably alter the degree of challenge of these jobs. It is possible to be exposed to widely varying conditions, including:
- extremely hot conditions (i.e. with implications for dehydration, sunburn, heat stroke)
- extremely wet conditions (i.e. with implications for less reliable footing, and a need for higher grip forces due to slipperiness of hoses)
- extremely cold conditions (i.e. with implications for less reliable footing due to snow / ice, and a need for higher grip forces due to slipperiness of hoses)

<u>KEY SKILLS AND ABILITIES</u> (refers to all 3 UNDERGROUND OPERATIONS 'Target Jobs')

- Understand and discuss job-related matters.
- Operate a variety of heavy industrial equipment and vehicles.
- Operate hand tools and light power equipment.
- Establish and maintain effective working relationships.
- Deal with the public in a courteous and tactful manner.
- Work safely on widely varying job sites (i.e. on various streets throughout residential and commercial neighbourhoods).

<u>INDEPENDENCE</u> (refers to all 3 UNDERGROUND OPERATIONS 'Target Jobs')

- Workers within these positions are under direct supervision at all times.
- Work is assigned according to a weekly schedule (set by foreman / supervisor), while also acknowledging that this schedule will need be adjusted as necessary to accommodate 'emergency' call-outs (e.g. sewer repairs, drain blockages, flooding resulting drain back-ups, etc.).

- Problems (e.g., an inability to complete certain tasks for various reasons, malfunctioning tools / power equipment, etc.) or complaints from the general public are referred to foreman / supervisor.

<u>QUALIFICATIONS</u> (refers to all 3 UNDERGROUND OPERATIONS 'Target Jobs')

Formal Education, Training and Occupational Certification:

- Grade 10 education minimum, and
- Current and valid Class 5 B.C. Driver's Licence.

Experience:

- 1 year of related experience … or …
- an equivalent combination of education and experience.

UNDERGROUND OPERATIONS SUMMARY TABLE

<table>
<tr><th>JOB TASK</th><th colspan="2">TASK DETAILS</th></tr>
<tr><td rowspan="2">Lifting
Floor to Waist</td><td colspan="2">Max = 98 lbs (rare, when lifting catch basin grates)

Avg = 50 - 80 lbs (occasional)</td></tr>
<tr><td>e.g. Lifting of various items, including (but not limited to) the following:
catch basin grate (98 lbs),
two workers lifting a 188 lb manhole cover (94 lbs/person) during manhole installation / rehabilitation,
bag of cement mix (88 lbs),
manhole cover (85 lbs),</td><td>catch basin side inlet hoods (82 lbs),
two workers lifting a 2” X 10” X 20 ft. fir plank weighing: dry = 87 lbs, wet = 110 lbs (i.e. lifting of up to 55 lbs/person),
portions of PVC pipe / couplings / connections (50+ lbs).</td></tr>
<tr><td rowspan="2">Lifting
Waist to Shoulder / Head</td><td colspan="2">Max = 50 lbs (rare to occasional, when lifting portions of PVC pipe / couplings / pipe connections on & off truck bed)

Avg = 40 - 50 lbs (occasional to frequent)</td></tr>
<tr><td colspan="2">e.g. Lifting of various items, including (but not limited to) the following:
portions of PVC pipe / couplings / connections that are lifted on / off truck bed (50+ lbs).</td></tr>
<tr><td rowspan="2">Lifting
Floor to Shoulder / Head</td><td colspan="2">Max = 50 lbs (rare, two workers lifting suction tubes caked with mud causing them to weigh up to 100 lbs, and placing these tubes onto truck-mounts of ‘Catch Basin Cleaner’ vehicle, most often occurs when digging for hydro or when sucking out deep manholes)

Avg = 40 lbs (occasional to frequent)</td></tr>
<tr><td colspan="2">e.g. Lifting of various items, including (but not limited to) the following:
one or two workers lifting suction tubes (dry = 40 lbs, wet = 80 - 100+ lbs),
tools / equipment passed upwards out of ditch (50+ lbs),
portions of PVC pipe / couplings / pipe connections that are lifted upwards out of ditch (50+ lbs).</td></tr>
</table>

<table>
<tr><td rowspan="2">Carrying
Two-Handed</td><td colspan="2">Max = 98 lbs (rare, when carrying catch basin grates)

Avg = 40 - 80 lbs (occasional to frequent)</td></tr>
<tr><td>e.g. Bilateral Carrying of various items, including (but not limited to) the following:
catch basin grate (98 lbs) carried over a distance of 5 feet,
bag of cement mix (88 lbs) carried over a distance of 100 ft.,
manhole cover (85 lbs) carried over a distance of 25 ft.,
two workers carrying a 2” X 10” X 20 ft. fir plank weighing: dry = 87 lbs, wet = 110 lbs over a distance of 30 feet (i.e. carrying of up to 55 lbs/person),</td><td>one or two workers carrying suction tubes (dry = 40 lbs, wet = 80 - 100+ lbs) over a distance of 25 feet,
tools / equipment carried over a distance of 25 ft.,
portions of PVC pipe / couplings / connections (50+ lbs) carried over a distance of 25 ft.</td></tr>
<tr><td rowspan="2">Carrying
One-Handed</td><td colspan="2">Max = 50 lbs (occasional, when carrying 5-gallon bucket of ‘Anchor Tight’ cement powder over a distance of 25 ft.)

Avg = 20 - 40 lbs (occasional)</td></tr>
<tr><td colspan="2">e.g. Unilateral Carrying of various items, including (but not limited to) the following:
bucket of ‘Anchor Tight’ cement powder (50 lbs) carried over a distance of 25 ft.,
bucket of ‘Root Killer’ chemical compound (44 lbs) carried over a distance of 25 ft.,
bucket of ‘Lining Resin’ chemical compound (40 lbs) carried over a distance of 25 ft.,
sledgehammer (20 lbs) carried over a distance of 30 ft.</td></tr>
<tr><td rowspan="2">Pushing</td><td colspan="2">Max = 55 lbs of <u>force</u> (occasional, when using pry-bar to push end of pipe into ‘bell’ of another pipe section)

Avg = 30 lbs of <u>force</u> (occasional)</td></tr>
<tr><td>e.g. Pushing associated with varied tasks, including (but not limited to) the following:
using pry-bar to push end of sewer pipe into ‘bell’ of another pipe section (up to 55 lbs <u>force</u>),
jackhammer usage (varied force),
brief but high pushing force when using socket wrench to tighten pipe couplings,</td><td>varied but moderate pushing force required for operation of jackhammer and “jumping-jack” style tamper,
varied but light - moderate force required to guide suction tube inside of catch basin pot.</td></tr>
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<table>
<tr><td rowspan="2">Pulling</td><td colspan="2">Max = 150 lbs of force (occasional, when using T-Bar to break the ‘seal’ of dirt / road debris when removing manhole covers, and to subsequently pull / drag the manhole cover over a 3-foot distance)

Avg = 60 - 90 lbs of force (occasional)</td></tr>
<tr><td>e.g. Pulling associated with varied tasks, including (but not limited to) the following:
using T-Bar to remove / drag manhole cover (150 lbs force),
using T-Bar to remove / drag ‘waffle lid’ (105 lbs force),
pulling fittings into position by hand (100 + lbs force),
using J-Hook to remove / drag catch basin grate (92 lbs force),
pulling / dragging of jackhammer (62 lbs force) over a distance of 10 - 25 feet,</td><td>brief but high pulling force when using socket wrench to loosen pipe couplings,
pulling of 1” Vactor hose, with force required dependant upon
a) length of hose pulled (e.g. 80 ft. of hose = 35 lbs force, 170 ft. of hose = 70 lbs force), and
b) geography (i.e. forces increase when pulling hose on uphill grades, through bush, around corners, etc.).</td></tr>
<tr><td rowspan="2">Reaching

Above Shoulder</td><td colspan="2">Max Duration = 1 minute (rare, when mounting / removing suction tubes off truck racks as part of ‘Catch Basin Cleaner’ job duties)</td></tr>
<tr><td colspan="2">e.g. Overhead reaching during a few tasks, including (but not limited to) the following:
mounting / removing suction tubes off truck racks (up to 1 minute duration of reaching above head level),
reaching overhead to pass tools / equipment in / out of ditch (5 seconds duration).</td></tr>
<tr><td rowspan="2">Reaching

Below Shoulder</td><td colspan="2">Frequency = Frequent to Constant</td></tr>
<tr><td colspan="2">e.g. Reaching: to low levels during the vast majority of job tasks.</td></tr>
<tr><td>Neck Motion

- Flexion (look down)
- Extension (look up)
- Rotation (side turn)</td><td colspan="2">Flexion: Max Duration = 1 - 5 minutes (looking down at pipe or looking down into ditch / manhole opening)

Extension: Max Duration = 3 minutes (looking upward out of ditch / manhole)

Rotation Max: Duration = 5 sec (turning head to side)</td></tr>
<tr><td>Sitting</td><td colspan="2">Max Portion of Shift = combined total of 10 - 15% of shift (predominately while travelling in trucks between job sites, for 5 - 20 minutes per trip).

Max Sustained Duration = 20 minutes</td></tr>
</table>

<table>
<tr><td>Standing / Walking</td><td colspan="2">Max Portion of Shift = combined total of 85 - 90% of shift

Max Sustained Duration = 2.5 hours (i.e. remaining on one’s feet until break periods, when sitting is an option if preferred)</td></tr>
<tr><td rowspan="2">Climbing

Ladders</td><td colspan="2">Max = 20 ladder rungs (rare, when climbing in / out of a deep sewer via manhole)

Avg = 6 - 12 ladder rungs (rare to occasional)

Note: climbing of <u>stairs</u> is not a component of this job.</td></tr>
<tr><td colspan="2">e.g. Ladder Climbing is required in the following scenarios:
climbing in / out of sewer (10 - 20 ladder rungs),
climbing in / out of deep ditch (6 - 12 ladder rungs),
climbing a few rungs into large trucks.</td></tr>
<tr><td>Sledge Hammering</td><td colspan="2">Rare to occasional, when dirt / road debris have firmly ‘sealed’ manhole / catch basin covers, which prevents their removal solely using a T-bar.
(i.e. sledgehammer is used to loosen road debris and break the ‘seal’, allowing for manual removal of covers using normal T-bar procedure).</td></tr>
<tr><td rowspan="2">Bending / Stooping</td><td colspan="2">Max Portion of Shift = 20 - 30% of shift (occasional to frequent)

Max Sustained Duration = 4 minutes sustained bending (rare to occasional, when preparing pipe sections in ditch)

Bending Depth = bending to a depth 1 foot above ground-level
(Note: workers can bend knees if preferred)

Note: squatting / kneeling are acceptable postural substitutions for bending in certain job task scenarios.</td></tr>
<tr><td>e.g. Bending during various tasks, including (but not limited to) the following:
preparing pipe sections in ditch (3 - 4 minute sustained bend),
working in confined manhole space (3 - 4 minute sustained bend),</td><td>inspecting catch basins after they are cleaned out (2 - 3 minute sustained bend),
picking up lightweight items off of ground (e.g. tools and small equipment components).</td></tr>
</table>

<table>
<tr><td>Ground Level Postures

(i.e. Kneeling and/or Squatting)</td><td colspan="2">Max Portion of Shift = 10 - 15% of shift (occasional)

Max Sustained Duration = 4 minutes sustained squatting / kneeling (rare to occasional, when preparing pipe sections in ditch)

Note: bending is an acceptable postural substitution for kneeling / squatting in certain job task scenarios.</td></tr>
<tr><td></td><td>e.g. Kneeling / Squatting during various tasks, including (but not limited to) the following:
preparing pipe sections in ditch (3 - 4 minute sustained squat / kneel),
working in confined manhole space (3 - 4 minute sustained squat / kneel),
preparing pipe / components before they are lowered into the ditch, involving tasks such as cutting / greasing pipe, etc. (2 - 3 minute sustained squat / kneel),</td><td>inspecting catch basins after they are cleaned out (2 - 3 minute sustained squat / kneel, or on one’s hands & knees to clean roots out of catch basin pot),
arranging couplings / connections in preparation for lowering them into the ditch (1 - 2 minute sustained squat / kneel),
picking up lightweight items off of ground (e.g. tools and small equipment components).</td></tr>
<tr><td>Crawling</td><td colspan="2">Max Distance = 40 feet of crawling on hands and knees (rare to occasional, when preparing pipe sections in ditch)

Avg Distance = 5 - 20 feet of crawling (occasional)</td></tr>
<tr><td>Sweeping</td><td colspan="2">Max Duration = 30 minutes of sustained sweeping using push-broom (rare to occasional, sweeping to keep edges of ditch clear of dirt / rocks after excavator / backhoe initially digs ditch, and sweeping to clear dirt / debris from road upon completion of job)

Avg Duration = 5 - 15 minutes (rare to occasional)</td></tr>
<tr><td>Raking</td><td colspan="2">Max Duration = 10 minutes sustained raking (rare to occasional, when raking gravel or when levelling freshly poured wet cement)

Avg Duration = 5 minutes (rare to occasional)</td></tr>
<tr><td>Shovelling</td><td colspan="2">Max Duration = 15 minutes sustained (occasional, when shovelling various substances as outlined below)

Avg Duration = 5 - 10 minutes (rare to occasional)</td></tr>
<tr><td></td><td>e.g. Shovelling of the following substances:
mud / clay in ditch,
gravel,</td><td>wet cement,
top soil.</td></tr>
</table>