



**Plant Hazard & Risk Assessment of the  
Vermeer McLaughlin Vacuum System  
VSK30 – 250  
(FORMERLY VSK 250)**

Prepared by:	Gerhard A. Hendricks (CPE)	Date:	August 31, 2017
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## PLANT HAZARD CHECKLIST

Date:	August 31, 2017
Plant Name:	Vermeer McLaughlin VSK30 - 250 Vacuum System <b>(FORMERLY VSK 250)</b>
Plant Location:	DESKTOP AUDIT PROCESS
Description:	Modulated Heavy Duty Vacuum System incorporating skid for mounting onto a transportation vehicle.

### Assessment Team:

Name	Position
Gerhard A. Hendricks (CPE)	Engineer / Ergonomist – GAH technical

### Notes:

- Consider the hazards in relation to the affect they may have on plant operators, anyone working, or in the near vicinity of the plant, visitors and contractors
- Consider the hazards for the Start Up, Operation, Cleaning, Maintenance, Shut Down, and Modification phases.
- Refer to the Plant Regulations and associated Code of Practice for specific details.
- If 'yes' is the answer to a question in the following checklist, the plant, parts of the plant and/or the situation associated with the hazard, should be identified on the checklist.

## PLANT HAZARD CHECKLIST

<b>A ENTANGLEMENT</b>	
1	<p>Can anyone's hair, clothing, gloves, necktie, jewellery, cleaning brushes, rags or other materials become entangled with moving parts of the plant, or materials in motion?</p> <p><b>YES.</b> Entanglement is highly possible when contact with body parts is made with the:</p> <ol style="list-style-type: none"> <li>1. Diesel motor drive unit and its rotating components including the drive belts and pulleys.</li> <li>2. Internal impellor (cooling fan) located at the front of the motor drive unit.</li> </ol>

<b>B CRUSHING</b>	
1	Can anyone be crushed due to:
a.	<p>Material falling off the plant?</p> <p><b>YES.</b></p> <ol style="list-style-type: none"> <li>1. In the event where tools and / or items of equipment are stored on the plant when it is operating.</li> <li>2. In the event where the large removable covers from the air filtration system (as located on the side of the plant) are being removed or replaced.</li> <li>3. In the event where components connected to the plant are not securely fastened.</li> </ol>
b.	<p>Uncontrolled or unexpected movement of the plant or its load?</p> <p><b>YES.</b></p> <ol style="list-style-type: none"> <li>1. The potential exists in the event where the plant is operating on unstable surfaces or on surfaces with a steep incline.</li> <li>2. In the event where the main vacuum tank is tilted (without warning other individual(s) that the tank cover has been un-locked), resulting in either the contents of the tank and/or the tank cover crushing the individual(s).</li> </ol>
c.	<p>Lack of capacity for the plant to be slowed, stopped or immobilised?</p> <p><b>YES.</b> In the event where the main cover of the main vacuum tank swings open when the vacuum tank is being titled on its main chassis.</p>

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<b>B</b>	<b>CRUSHING</b>	
d.	The plant tipping or rolling over?	<p><b>YES.</b> In the event where the plant is being used on surfaces that are either on a steep incline or on unstable surfaces.</p>
e.	Parts of the plant collapsing?	<p><b>YES.</b></p> <ol style="list-style-type: none"> <li>1. In the event where the hinge connected to the main vacuum tank cover is damaged and/or where hinges connected to the main vacuum tank and the chassis rails are damaged.</li> <li>2. In the event where the front mounted trailer support leg fails as a result of being damaged or where it is positioned on a surface that is not firm.</li> <li>3. It must also be noted that the potential for a fatal crush injury can occur when the main vacuum tank is in an elevated position during maintenance work.</li> </ol>
f.	Coming in contact with moving parts of the plant during testing, inspection, operation, maintenance, cleaning or repair?	<p><b>YES.</b> In the event where maintenance activities are being performed when the power unit of the plant is in operation.</p>
g.	Being thrown off or under the plant?	<p><b>YES.</b> In the event where an individual(s) is standing on any part of the plant when it is in operation.</p>
h.	Being trapped between the plant and materials or fixed structures?	<p><b>YES.</b></p> <ol style="list-style-type: none"> <li>1. When moving the plant with the aid of a towing vehicle and an individual(s) is placed between a fixed object(s) and the plant, the potential for such a crush injury can occur.</li> <li>2. In the event where the plant is disengaged from the towing vehicle and it moves due to being parked on an incline or where it is not securely parked with the aid of the front mounted trailer support leg.</li> </ol>

<b>B</b>	<b>CRUSHING</b>	
i.	Other factors not mentioned?	<p><b>YES.</b> In the event where any bystanders are located near the plant when it is being moved with the aid of a towing vehicle.</p> <p><b>NUMEROUS CRUSH POINTS EXIST AROUND THE MAIN VACUUM TANK AND IT'S PIVOT POINTS!</b></p> <p><b>ADDITIONAL NOTES BY OPERATOR TO BE INCLUDED IF APPLICABLE.</b></p>

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<b>C CUTTING, STABBING &amp; PUNCTURING</b>		
1	Can anyone be cut, stabbed or punctured due to:	
a.	Coming in contact with sharp or flying objects?	<b>YES.</b>  When applying the high-speed water jet to loosen dirt/stones, the potential for dirt and assorted debris to fly out at high speed and hit an individual exists.
b.	Coming in contact with moving parts of the plant during testing, inspection, operation, maintenance, cleaning or repair of the plant?	<b>YES.</b>  In the event where maintenance activities are being performed without first disabling the plant or if the maintainer is not qualified and trained to perform maintenance activities.
c.	The plant, parts of the plant or work pieces disintegrating?	<b>YES.</b>  1. When applying the high-speed water jet to dig holes, the potential for dirt and assorted debris to fly out at high speed and hit an individual exists.  2. The potential for an individual to be injured by the high-speed water jet also exists.
d.	Work pieces being ejected?	<b>YES.</b>  When applying the high-speed water jet to dig holes, the potential for dirt and assorted debris to fly out at high speed and hit an individual exists.
e.	The mobility of the plant?	<b>NOT APPLICABLE.</b>
f.	Uncontrolled or unexpected movement of the plant?	<b>YES.</b>  In the event where the high pressure wand is not held securely by the operator, the wand can move in a violent manner and hit either the operator or a bystander.

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g.	Other factors not mentioned?	<b>ADDITIONAL NOTES BY OPERATOR TO BE INCLUDED IF APPLICABLE.</b>
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<b>D</b>	<b>SHEARING</b>	
1	Can anyone's body parts be sheared between two parts of the plant, or between a part of the plant and a work piece or structure?	<p><b>YES.</b></p> <ol style="list-style-type: none"> <li>1. A sheer point hazard exists between the main vacuum tank and the vacuum tank cover when it is in the open position.</li> <li>2. Numerous sheer points exist between the main vacuum tank, its chassis rails and the hydraulic actuators when the main vacuum tank is in either the lowered or elevated position.</li> </ol>

<b>E</b>	<b>FRICTION</b>	
1	Can anyone be burnt due to contact with moving parts or surfaces of the plant, or material handled by the plant?	<p><b>YES.</b></p> <p>In the event where contact with the internal rotating pulleys and the connecting drive belts of the plant's motor unit is made during maintenance or inspection when the plant is in operation.</p>

<b>F</b>	<b>STRIKING</b>	
1	Can anyone be struck by moving objects due to:	
a.	Uncontrolled or unexpected movement of the plant or material handled by the plant?	<p><b>YES.</b></p> <ol style="list-style-type: none"> <li>1. In the event where the main vacuum tank door is not correctly secured following the removal of refuse in the tank.</li> </ol>
b.	The plant, parts of the plant or work pieces disintegrating?	<b>NOT APPLICABLE.</b>
c.	Work pieces being ejected?	<p><b>YES.</b></p> <ol style="list-style-type: none"> <li>1. When applying the high-speed water jet to dig holes, the potential for dirt and assorted debris to fly out at high speed and hit an individual exists.</li> <li>2. The potential for an individual to be injured by the high-speed water jet also exists.</li> </ol>



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<b>F STRIKING</b>		
d.	Mobility of the plant?	<b>YES.</b> When moving the plant around with the towing vehicle whilst an individual(s) is standing near the plant.
e.	Other factors not mentioned?	<b>YES.</b> During maintenance procedures if tools and equipment/parts are rested on the plant, they may possibly fall off.

<b>G HIGH PRESSURE FLUID</b>		
1	Can anyone come into contact with fluids under high pressure, due to plant failure or misuse of the plant?	<b>YES.</b> In the event where either one or a number of the numerous hydraulic hoses fitted to the plant bursts due to being in a damaged condition.

<b>H ELECTRICAL</b>		
1	Can anyone be injured by electrical shock or burnt due to:	
a.	The plant contacting live electrical conductors?	<b>YES.</b> In the event where the high-pressure water contacts live electrical conductors.
b.	The plant working in close proximity to electrical conductors?	<b>YES.</b> In the event where the high-pressure water contacts live electrical conductors.
c.	Overload of electrical circuits?	<b>NOT APPLICABLE.</b>
d.	Damaged or poorly maintained electrical leads and cables?	<b>NOT APPLICABLE.</b>
e.	Damaged electrical switches?	<b>NOT APPLICABLE.</b>
f.	Water near electrical equipment?	<b>NOT APPLICABLE.</b>
g.	Lack of isolation procedures?	<b>YES.</b> In the event where the hand held wand makes contact with an underground electrical power supply.
h.	Other factors not mentioned?	<b>NOT APPLICABLE.</b>

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<b>I EXPLOSION</b>		
1	Can anyone be injured by explosion of gases, vapours, liquids, dusts or other substances, triggered by the operation of the plant or by material handled by the plant?	<p><b>YES.</b></p> <ol style="list-style-type: none"> <li>1. In the event where refuelling practices are not performed in accordance with the manufacturer's strict recommendations.</li> <li>2. In the event where the battery fumes are incorrectly ventilated and the battery is near an ignition source.</li> </ol>

<b>J SLIPPING, TRIPPING &amp; FALLING</b>		
1	Can anyone using the plant, or in the vicinity of the plant, slip, trip or fall due to:	
a.	Uneven or slippery work surfaces?	<p><b>YES.</b></p> <p>In the event where a build-up of spoil is permitted to accumulate around the plant and the working environment.</p>
b.	Poor housekeeping, eg. Swarf in the vicinity of the plant, spillage not cleaned up?	<p><b>YES.</b></p> <p>In the event where a build-up of spoil is permitted to accumulate around the plant and the working environment.</p>
c.	Obstacles being placed in the vicinity of the plant?	<p><b>YES.</b></p> <p>In the event where a build-up of spoil or equipment is permitted to accumulate around the plant and the working environment.</p>

J SLIPPING, TRIPPING & FALLING		
d.	Other factors not mentioned?	<ol style="list-style-type: none"> <li>1. In the event where a build-up of spoil is permitted to accumulate around the plant and the working environment.</li> <li>2. In the event where an individual is standing on the top of the vacuum tank when performing maintenance work.</li> </ol> <p><b>ADDITIONAL NOTES BY OPERATOR TO BE INCLUDED IF APPLICABLE.</b></p>
2	Can anyone fall from a height due to:	
a.	Lack of a proper work platform?	<p><b>YES.</b></p> <p>In the event where an individual is standing on any section of the plant during operation of the plant or when performing maintenance based activities. This practice is not approved by the manufacturer of the plant under any circumstances.</p>

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<b>J</b>		<b>SLIPPING, TRIPPING &amp; FALLING</b>
b.	Lack of proper stairs or ladders?	<p><b>YES.</b> In the event where an individual is standing on any section of the plant during operation of the plant or when performing maintenance based activities. This practice is not approved by the manufacturer of the plant under any circumstances.</p>
c.	Lack of guardrails or other suitable edge protection?	<p><b>YES.</b> In the event where an individual is standing on any section of the plant during operation of the plant or when performing maintenance based activities. This practice is not approved by the manufacturer of the plant under any circumstances.</p>
d.	Unprotected holes, penetrations or gaps?	<p><b>YES.</b> In the event where an individual is standing on any section of the plant during operation of the plant or when performing maintenance based activities. This practice is not approved by the manufacturer of the plant under any circumstances.</p>
e.	Poor floor or walking surfaces, such as the lack of a slip-resistant surface?	<p><b>YES.</b> In the event where an individual is standing on any section of the plant during operation of the plant or when performing maintenance based activities. This practice is not approved by the manufacturer of the plant under any circumstances.</p>
f.	Steep walking surfaces?	<p><b>YES.</b> In the event where an individual is standing on any section of the plant during operation of the plant or when performing maintenance based activities. This practice is not approved by the manufacturer of the plant under any circumstances.</p>

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<b>J SLIPPING, TRIPPING &amp; FALLING</b>		
g.	Collapse of the supporting structure?	<p><b>YES.</b> In the event where an individual is standing on any section of the plant during operation of the plant or when performing maintenance based activities. This practice is not approved by the manufacturer of the plant under any circumstances.</p>
h.	Other factors not mentioned?	<p><b>ADDITIONAL NOTES BY OPERATOR TO BE INCLUDED IF APPLICABLE.</b></p>

<b>K ERGONOMIC</b>		
1	Can anyone be injured due to:	
a.	Poorly designed seating?	<b>NOT APPLICABLE.</b>

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b.	Repetitive body movement?	<p><b>YES.</b></p> <p>When using the high-pressure water or vacuuming wand on a regular/frequent basis without the opportunity for a rest break.</p>
c.	Constrained body posture or the need for excessive effort?	<p><b>YES.</b></p> <ol style="list-style-type: none"> <li>1. In the event where the operator is using the high-pressure water and vacuuming wand to remove debris located in difficult to access areas.</li> <li>2. The potential for a manual handling related injury to occur exists when closing and securing the vacuum tank cover.</li> </ol>
d.	Design deficiency causing mental or psychological stress?	<p><b>YES.</b></p> <p>In the event where the plant operator and their assistants are not trained in the correct use and operation of the plant.</p>
e.	Inadequate or poorly placed lighting?	<p><b>YES.</b></p> <p>When operating the plant, it is important to ensure that sufficient lighting levels are available at all times.</p>
f.	Lack of consideration given to human error or human behaviour?	<p><b>YES.</b></p> <p>In the event where the plant operator and their assistants are not trained in the correct use and operation of the plant and its attachments.</p>
g.	Mismatch of The Plant With Human Traits And Natural Characteristics?	<p><b>YES.</b></p> <p>In the event where the plant operator and their assistants are not correctly trained in the correct use and operation of the plant.</p>

h.	Other Factors not mentioned? (For more information on hazards associated with manual handling refer to the Victorian Manual Handling Code of Practice.)	<b>ADDITIONAL NOTES BY OPERATOR TO BE INCLUDED IF APPLICABLE.</b>
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<b>L SUFFOCATION</b>		
1	Can anyone be suffocated due to the lack of oxygen, or atmospheric contamination?	<b>YES. (HOWEVER HIGHLY UNLIKELY).</b>  In the event where the operator (or assistants) expose their face to the vacuum opening of the hand held wand when it is operating.

<b>M HIGH TEMPERATURE FOR FIRE</b>		
1	Can anyone come into contact with objects at high temperatures?	<b>YES.</b> In the event where contact is made with the diesel engine and the exhaust system.
2	Can anyone be injured by fire?	<b>YES.</b> 1. In the event where the potential for battery fumes are allowed to accumulate. 2. In the event where refuelling activities contravene the manufacturer's strict safety recommendations.

<b>N TEMPERATURE (THERMAL COMFORT)</b>		
1	Can anyone suffer ill health due to exposure to high or low temperature?	<b>YES.</b> In the event where the plant is being operated in extreme temperatures i.e. Hot or cold environments.

<b>O OTHER HAZARDS</b>		
1	Can anyone be injured or suffer ill-health from exposure to:	
a.	Chemicals?	<b>YES.</b> The possibility exists in the event where contact is made with the dieseline and the various lubricants as used throughout the plant.
b.	Toxic gases or vapours?	<b>YES.</b> In the event where the plant is being operated within a confined environment.
c.	Fumes?	<b>YES.</b> Potential for a build up of exhaust fumes when operating in a confined environment.



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<b>O</b>	<b>OTHER HAZARDS</b>	
d.	Dust?	<b>YES.</b> The potential for either the plant operator or personnel working around the plant to be subject to dust exposure and dirt in the eye exists.
e.	Noise? (For more information on hazards associated with noise, refer to the Victorian Noise Code of Practice.)	<b>YES.</b> Please refer to the following noise emission readings: Noise @ beside power unit when suction hose is in operation = 104 dB (A) Noise @ beside power unit = 103 dB (A) Noise @ 1.0 Mtr.= 93 dB (A) Noise @ 2.0 Mtr.= 91 dB (A) Noise @ 3.0 Mtr.= 88.5 dB (A) Noise @ 5.0 Mtr.= 86 dB (A) Noise @ 7.0 Mtr.= 81.5 dB (A) Noise @ 10.0 Mtr.= 80 dB (A)
f.	Vibration?	<b>YES.</b> The operator is subjected to varying levels of vibration when holding the hand held wand.
g.	Radiation?	<b>NOT APPLICABLE.</b>

O	OTHER HAZARDS	
h.	Other factors not mentioned?	ADDITIONAL NOTES BY OPERATOR TO BE INCLUDED IF APPLICABLE.

## PLANT HAZARD - RISK ASSESSMENT SUMMARY

(The following risk control strategies have been developed to ensure the safe operation of the plant for all users and people working in the vicinity of the plant)

### A. ENTANGLEMENT

Extreme care must be applied when accessing the motor drive unit (as located within the lockable cabinet) during operation of the plant.

In the event where maintenance activities are being performed on the motor drive unit when it is in operation extreme care must be applied to avoid contact with the rotating drive pulleys and drive belts.

At no stage must any individual place their body parts near the rotating pivot point of the overhead extension boom when it is either in operation or when it is being rotated.

Care must also be applied to ensure that NO loose clothing is worn when accessing the motor drive unit.

Where possible, the lockable cabinet doors must be locked during normal (non maintenance) operation of the plant.

### B. CRUSHING

In the event where maintenance based activities are being performed on either the elevated main vacuum tank, or when cleaning the inside of the elevated main vacuum tank, the following precautions MUST be taken:

- The **RED COLOURED** Vacuum Tank Lift Lock (as supplied by the manufacturer) MUST be applied to the hydraulic actuator positioned at the side of the plant.

When the vacuum tank cover is being tilted for the purpose of removing refuse, all persons not involved in this activity must be kept away from the vacuum tank cover.

Whilst the plant is in operation, the vacuum tank cover must be secured in the closed position.

Prior to moving the plant, all persons must be advised. Non-operational persons must be kept well away from the plant whilst it is being moved.

All persons required to perform service/maintenance activities on the plant must be correctly trained to perform such work.

As per the manufacturers' instructions, no person is permitted to stand on the plant whilst it is in operation.

No tools must be stored on the plant when it is in operation.

### C. CUTTING, STABBING & PUNCTURING

Only fully trained and qualified persons are to be involved in performing servicing/maintenance work on the plant.

When the vacuum tank cover is being tilted for the purpose of removing refuse, all persons must be kept away from the vacuum tank door.

Whilst the plant is in operation, the vacuum tank cover must be secured in the closed position.

All persons connected with the operation of the plant must be provided with effective personal protective equipment (PPE) that includes safety eyewear, gloves and footwear.

### D. SHEARING

No body parts must be placed anywhere near any of the numerous mechanical components when the plant is in operation.

Particular attention must be applied when handling the vacuum tank cover when it is being opened.

At no stage must any individual place their body parts near the resting cradle when the overhead extension boom is being lowered into its resting position.

Extreme care must be applied when tilting the main vacuum tank as numerous shearing hazards exist between the main vacuum tank, the chassis rails and the hydraulic actuators located on either sides of the plant. This warning applies during normal operation of the plant and when performing maintenance based activities on the plant.

In the event where maintenance based activities are being performed on either the elevated main vacuum tank, or when cleaning the inside of the elevated main vacuum tank, the following precautions MUST be taken:

- The **RED COLOURED** Vacuum Tank Lift Lock (as supplied by the manufacturer) MUST be fitted to the hydraulic actuator positioned at the side of the plant.

### E. FRICTION

Extreme care must be applied when accessing the motor drive unit (as located within the lockable cabinet) during operation of the plant.

In the event where maintenance activities are being performed on the motor drive unit when it is in operation extreme care must be applied to avoid contact with the rotating drive pulleys and drive belts.

Care must also be applied to ensure that NO loose clothing is worn when accessing the motor drive unit.

Where possible, the lockable cabinet doors must be locked during normal (non maintenance) operation of the plant.

## F. STRIKING

Under NO CIRCUMSTANCES must any person, other than the plant operator, be standing or be located near the hand held vacuum wand whilst the plant is in operation.

**THIS IS A NON NEGOTIABLE REQUIREMENT THAT MUST BE ENFORCED WITHOUT COMPROMISE!**

In the event where maintenance based activities are being performed on either the elevated main vacuum tank, or when cleaning the inside of the elevated main vacuum tank, the following precautions MUST be taken:

- The **RED COLOURED** Vacuum Tank Lift Lock (as supplied by the manufacturer) MUST be fitted to the hydraulic actuator positioned at the side of the plant.

All persons not directly involved with vacuuming operations must be removed from the site.

Tools and other ancillary equipment must not be stored on the plant.  
At no stage must any individual stand on the vacuum tank under any circumstances when the overhead extension boom is being rotated.

## G. HIGH PRESSURE FLUID

All hydraulic hoses (and their attaching fasteners) must be inspected and maintained on a regular basis and in accordance with the manufacturer's recommendations in order to ensure the integrity and safe operation of the plant.

## H. ELECTRICAL

Prior to performing vacuuming operations, the operator MUST first identify any potential underground electrical sources.

In the event where electrical sources are present, the electrical sources MUST first be de-activated prior to performing vacuuming operations.

## I. EXPLOSION

Prior to performing vacuuming operations, the operator MUST first identify any potential underground electrical sources.

In the event where electrical sources are present, the electrical sources MUST first be de-activated prior to performing vacuuming operations.

Plant re-fuelling activities must be performed in accordance with the manufacturer's safety instructions as outlined in the operating manual.

## J. SLIPPING, TRIPPING & FALLING

Wherever possible, all persons working with the plant must ensure that the work area around the plant is clear of debris to minimise the risk of a slip, trip or fall incident occurring.

Whilst the plant is in operation, no persons should be permitted to stand on any part of the plant. Strict observation of the manufacturers' recommendations should be complied with.

Only fully trained and qualified persons are to be involved in performing servicing/maintenance work on the plant.

It is important to ensure that housekeeping practices are maintained to a high standard to ensure that an individual(s) working with the plant does not slip, trip and fall when near the plant.

It is important to ensure that no individual(s) stands on any part of the plant at any stage when it is in operation. An exception to this requirement will only apply when maintenance operations are being performed on the plant.

At no stage must any individual stand on the vacuum tank under any circumstances when the overhead extension boom is being rotated.

## K. ERGONOMIC

It is important to ensure that all individuals who are required to operate the plant are fully trained with respect to the correct operation of the plant including all safety procedures that apply. There is **NO NEGOTIATION TO THIS REQUIREMENT!**

Care must be taken by the operator when using the high-pressure water and vacuuming wand on a regular and consistent basis. Reference should be made to the Victorian Manual Handling Regulations (1999) and Code of Practice regarding manual handling control strategies.

Careful consideration should be given to adequate and appropriate lighting levels when operating the machine.

## L. SUFFOCATION

Prior to performing operations with the plant, consideration must be given towards ensuring that the area offers effective levels of ventilation in order to minimize the potential for a build up of exhaust gasses.

At no stage **MUST** an individual place their head near the suction wand when it is in operation.

#### **M. HIGH TEMPERATURE FOR FIRE**

No persons involved with the operation of the plant must have contact with either the exhaust system or any internal workings of the plant at any stage, except where maintenance activities are to be performed by a qualified Vermeer service technician.

All refueling activities will need to comply with the manufacturers written safety instructions.

#### **N. TEMPERATURE (THERMAL COMFORT)**

The plant operator must be aware of the climatic conditions when performing their activities and take the necessary safety precautions to protect themselves from potential extremes in temperature.

Persons must keep a distance from the engine compartment at all times when the plant is in use.

#### **O. OTHER HAZARDS**

##### **(CHEMICALS)**

The plant operator or maintenance person(s) will need to wear suitable personal protective equipment when handling dieseline and all associated lubricants.

##### **(TOXIC GASES OR VAPOURS)**

The plant operator must keep well clear of the exhaust gases when the plant is being operated.

Care must be applied at all times when handling the battery unit to ensure that no poisonous gasses are inhaled.

##### **(FUMES)**

The plant operator must keep well clear of the exhaust gases when the plant is being operated.

##### **(DUST)**

The plant operator must take appropriate care with potential dust exposure as a result of vacuuming operations.

Suitable protective equipment must be worn in the event where the exposure to dust is experienced.

##### **(NOISE)**

It is recommended that an in-situ noise assessment be conducted in accordance with Victorian Occupational Health and Safety (Noise) Regulations 1992.

It is recommended that the plant operator be provided with and wear suitable hearing protection at all times when the plant is in use.

**(VIBRATION)**

The plant operator can be exposed to potentially high levels of vibration when handling the vacuuming wand.

It is recommended that the plant operator does not perform vacuuming operations for extended timeframes in order to minimise the exposure to vibration that will be transmitted via the vacuuming wand to the arms (and potentially whole of the body).

**(RADIATION)**

None of these hazards apply to the operation of this item of plant.



## IMPORTANT INFORMATION

*The above stated controls relate to the normal use of the plant as described from both the plant operator and those persons involved with vacuuming operations with the plant.*

*In the event where maintenance activities are being performed on the plant, additional care will need to be applied at all times due to the fact that the maintainer is often exposed to higher levels of risk.*

*It is important to ensure that all auditory and visual warning devices as fitted to the plant for the purpose of warning individuals when the plant is in operation be maintained to the manufacturers' operating standards at all times.*

*In an attempt to apply the appropriate risk controls, it is recommended that a fully trained and qualified Vermeer Pty Ltd maintenance person be employed to perform the necessary repairs and/ or maintenance activities on the particular item of plant.*

*It should also be noted that all individuals who are required to operate this item of plant or who will be working in the vicinity of the plant will need to be provided with a high level of training to ensure that they are fully aware of all of the risks associated with the item of plant and are well aware of the appropriate risk control strategies prior to the operation of the plant. This document, together with any additional information provided in the Vermeer Pty Ltd Safety/ Operators User Guide will need to be provided as part of this training information that should be provided to all plant operators and their assistants.*

## **SPECIAL NOTE:**

In order to comply with the Victorian OHS Regulations (2007) for Plant (Section 3.5.7 Warning devices), the plant will need to be fitted with either a flashing light or an auditory warning device mounted at a conspicuous part of the plant for the purpose of warning an individual(s) when the plant is in operation. Either one of these devices (flashing lights and auditory warning) will need to be hard wired into the operator controls for automatic actuation.

Furthermore, either one of these devices will need to be maintained to ensure that they operate (at all times) in accordance with their designed function.

Should you have any questions regarding the details contained within this report please do not hesitate to contact Gerhard A. Hendricks on 0418 100 902 at your earliest convenience.

A handwritten signature in black ink, appearing to read 'gal', followed by a long horizontal line extending to the right.

**Gerhard A. Hendricks (CPE)**  
**Engineer / Ergonomist**

**GAH technical**  
**A.B.N: 907 303 283 48**