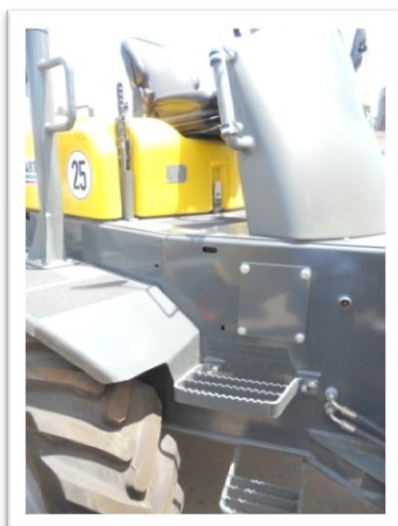
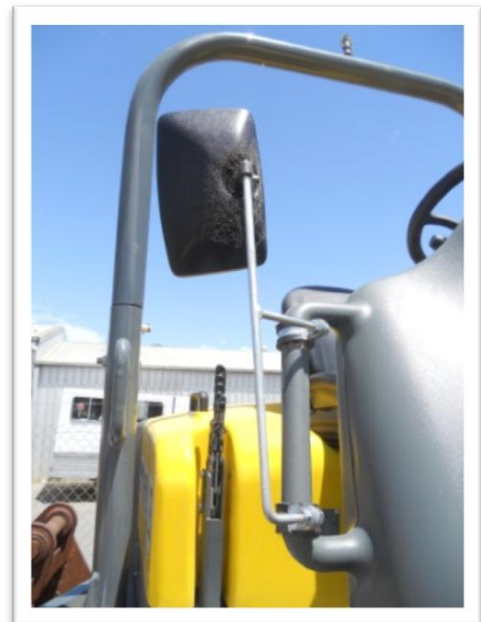


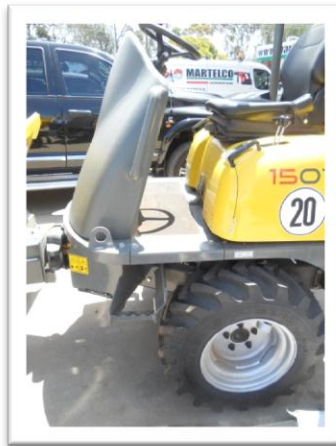
PLANT RISK ASSESSMENT REPORT

SECTION 1: PLANT IDENTIFICATION

Report Number:	407/151
Assessment Date:	9 TH November 2011
Company:	Wacker Neuson Pty Ltd
Make:	Wacker Neuson
Models:	1.5 tonne to 6.0 tonne All Wheel Tipper(s)
Type:	Fixed and/or Swivel Tipper
Assessment Purpose:	On Site operational risks associated with the unit as it stands
Assessed by:	Darren Husson – VEHTEC Pty Ltd







SECTION 2: MACHINE PREAMBLE

The Wacker Neuson range of All-Wheel dumpers are specifically designed for off-road use with high clearance and a centre-pivot turning point. Each model in the range is fitted with a folding ROPS and capable of speeds of up to 25km/h. Capacities able to be carried range from 1,500 - 6,000kgs and can be fixed tip or swivel tipping. These types of machines are typically hazardous when incorrectly used and/or maintained.

This document is intended to highlight Occupational Health Safety and Welfare related risks that may present during on site set up and operation and has been conducted in accordance with the OHS&W Legislation – 2010 Part 3 Division 3.3.



SECTION 3: HAZARD IDENTIFICATION

Hazard Item N°	Hazard Item Observation Detail	Hazard	L	C	Risk
1	Plant in its current state has potential to cause injury/illness due to:				
1.1	Entanglement (Bystander inadvertent involvement with swivel of or raising/lowering Tipper. Operator has good vision from operators platform)	Yes	E	3	M
1.2	Puncturing	No			
1.3	Cutting				
	(Pinch point when closing engine cover)	Yes	D	3	M
	(Bystander caught in the swivel of or raising/lowering action of tipper) (refer 1.1)	Yes	E	3	M
	(Operator raising or lowering the ROPS structure)	Yes	D	3	M
1.4	Stretching (Operator when accessing operator platform. Grab/hand rails are not within path of entry/egress direction and pose stretching risk for operators)	Yes	C	2	M
1.5	Stabbing	No			
1.6	Trapping				
	(Wheel nuts coming loose after wheel removal or incorrect tyre air pressures)	Yes	D	4	S
	(Unit tipping or rolling over when tipping in steep/uneven terrain)	Yes	D	4	S
	(Bystander caught in the swivel of or raising/lowering action of tipper)(refer 1.1)	Yes	E	3	M
	(Operator raising or lowering the ROPS structure)	Yes	D	3	M
1.7	Abrasion (Bystander caught in product being tipped) (Operator has good vision from operators platform)	Yes	E	3	M
1.8	Engulfment (Refer 1.7)	Yes	E	3	M
1.9	Crushing (Refer 1.3 & 1.7)	Yes	E	3	M
	Crushing (Refer 1.6) (Crush zone when turning) (Transport lock to be in place when undertaking maintenance in crush zone or power to be isolated)	Yes	E	4	S
1.10	Shearing (Refer 1.3)	Yes	D	3	M
1.11	Tearing (Refer 1.4)	Yes	C	2	M

1.12	Asphyxiation	No			
1.13	Slips, Trips (Unit is fitted with access steps both sides that provide residue gaps and adequate tread width. Grab/hand rails are not within path of entry/egress direction and pose stretching risk for operators)	Yes	C	2	M
1.14	Falls (Operator falling from operator platform during operation) (Refer 1.13) (Operator seat is fitted with a seat belt, to be used at all times)	Yes	D	2	L
1.15	Falling Objects (Unsecured loads can fall from the tipper and impact on bystanders) (Wheel nuts that are not tensioned correctly may come loose and cause a runaway wheel which can impact other road users or bystanders) (The ROPS is a fold away design, use of the ROPS folded shall be considered carefully)	Yes	D	4	S
1.16	Expelled Parts	No			
2	Plant in its current or intended state has the potential to create a hazardous condition due to:				
2.1	Pressured Content (Burst hydraulics line – lines are well protected within base units design)	No			
2.2	Explosion (Battery generates explosive gases – no smoking near battery. Correct battery charging procedures to be employed)	Yes	D	2	L
2.3	Radiation	No			
2.4	Vapour (Open area during operation, exhaust well vented)	No			
2.5	Dust (Open operator platform – susceptible to dust from product being transported and/or tipped) (Exposure to be considered as part of the JSA)	Yes	B	1	M
2.6	Moisture (When operated in rainy conditions, risk to be assessed per job) (Exposure to be considered as part of the JSA)	Yes	C	1	L
2.7	Gases (Refer 2.4)	No			
2.8	Fire	No			
2.9	Vibration	No			
2.10	Electricity (Raised tipper contacting overhead power lines. Unlikely due to tipper body length and physical constraints)	Yes	E	5	S
2.11	Friction	N/A			
2.12	Ice Formation	N/A			
2.13	Laser Beams	N/A			
2.14	Hot and Cold Parts (Engine when performing maintenance checks, checks to be undertaken when unit is cold. Never open radiator cap when unit is hot)	Yes	E	2	L
2.15	Temperature Extremes (Open air operational environment, subject to employers internal policies)	No			
2.16	Noise (Low dB levels) (Decals on vehicle indicate sound power - Use of noise attenuating PPE should be considered mandatory) (Employers responsibility)	Yes	A	3	S
3	Manual handling requirements have been assessed as acceptable	N/A			
4	Repetitive, forceful, awkward, sustained movements have been minimised/ eliminated	N/A			
5	The current guard (s) and their condition are adequate for this plant (Designed for application)	Yes			
6	Is the guarding appropriate for all work requirements (Designed for application)	Yes			
7	Operator controls are located for ease of use by operators (Controls located to give operator good vision of task being undertaken)	Yes			
8	Operator controls are identified and marked appropriately	Yes			
9	Emergency stops are clearly marked (Handbrake and Ignition Key)	Yes			
10	Emergency stops are located at the most likely place (s) for emergency use	Yes			
11	The power source of the plant has been designed, constructed, installed, protected, maintained as to minimise the risk of harm to employees (Unit to be maintained as per Operators manual)	Yes			
12	There is provision to lock out the plant, and dissipate energy	Yes			
13	Access platforms/ladders/handrails are provided	Yes			
14	Access to moving parts from the platform can be performed safely	N/A			
15	Access platforms/ladders/handrails provide secure, non-slipping access (Refer 1.13)	No	C	M	2
16	Lighting is adequate for plant operation, maintenance and cleaning at any time (No external work lights fitted) (To be considered as part of the JSA)	No			

17	Noise levels have been assessed as below 85dB(A) (Operators noise level unknown. Noise attenuating PPE is required) (Employers responsibility)	No	D	2	L
18	Personal Protective Equipment (PPE) has been provided for safe operation of this plant (Employers responsibility)	N/A			
19	PPE requirements are signposted (Employers' responsibility dependant on internal Management Policies)	No			
20	There is provision for safe cleaning of this plant (NB availability of cleaning devices)	N/A			
21	Safe access to areas to be cleaned has been provided	N/A			
22	There is provision for easy and safe scrap removal	Yes			
23	The plant has the potential to jam/block (Tipper system is hydraulically controlled, in the advent of a hose burst the system may jam)	Yes	D	3	M
24	A safe system of work has been established to remove jam/blockage (Only trained operators should attempt to lower the tipper if it is jammed) (Employers responsibility)	N/A			
25	Safe system of work has been established for any sample retrieval	N/A			
26	There is adequate provision to properly service and routinely grease and oil the plant (Unit to be maintained by appropriately trained personnel)	Yes			
27	Safe systems of work have been established for hazards associated with any necessary maintenance of the plant (Employers responsibility)	N/A			
28	The rigidity and stability of the plant and supporting structure is adequate. (Unit to be operated within constraints as outlined within the Operators Manual)	Yes			
29	The environment in which the plant is situated has been assessed for its interrelationship with this plant as acceptable (Employers Responsibility)	N/A			
30	Ventilation and/or other air flow needs are adequate	Yes			
31	Static electricity hazards have been assessed and controlled	N/A			
32	Workplace substances associated with the use of the plant have been assessed	N/A			
33	Authorised entry systems for the plant and surrounds have been established	N/A			
34	The upstream and downstream effects of malfunction or unscheduled stoppage of the plant have been considered (Employers Responsibility)	N/A			

SECTION 4: RISK ANALYSIS LIKELIHOOD AND CONSEQUENCES

Level	Description	Detail
A	Almost Certain	The event is expected to occur in most circumstances
B	Likely	The event will probably occur in most circumstances
C	Moderate	The event should occur at some time
D	Unlikely	The event could occur at some time
E	Rare	The event may occur only in exceptional circumstances

Level	Description	Detail
1	Insignificant	No injuries, low financial loss
2	Minor	First Aid treatment, on site release immediately contained, medium financial loss
3	Moderate	Medical treatment required, on site release contained with outside assistance, high financial loss
4	Major	Extensive injuries, loss of production capability, off site release with no detrimental effects, major financial loss
5	Catastrophic	Death, toxic release off site with detrimental effect, huge financial loss

Likelihood	Consequences				
	Insignificant 1	Minor 2	Moderate 3	Major 4	Catastrophic 5
A (Almost certain)	S	S	H	H	H
B (Likely)	M	S	S	H	H
C (Moderate)	L	M	S	H	H
D (Unlikely)	L	L	M	S	H
E (Rare)	L	L	M	S	S

Legend:
H= high risk, detailed research and management planning required
S= significant risk, senior management attention needed
M= moderate risk, management responsibility
L= low risk, manage by routine procedures

SECTION 5: RISKS AND CONTROLS

Summary of Hazards Identified and solution(s) to adequately manage the respective risk.				
Hazard Item No	Level of Risk	Action Required / Comments	Responsible Person	Due Date Comp. Date
1.1 1.3 1.6 1.7 1.9 1.10	Moderate / Significant	<p><u>Hazard</u> The Tipper operation presents entanglement, cutting, trapping, abrasion, crushing and shearing hazards.</p> <p><u>Comments</u> Tip site must be assessed for its suitability prior to operation.</p> <p><u>Controls</u> Non-essential persons and bystanders must be removed from the work zone prior to operation. The operator must select a position for operation that is stable, clear of obstacles and provides a clear view of the work zone.</p> <p>When tipping the operator is to ensure the unit is on level ground, and the tip is initiated as per the manufacturer’s guidelines. (Warning decals fitted.)</p> <p>The operator is to keep clothing and body clear of ROPS when raising or lowering the ROPS structure. Securing pins are to be used at all times when the ROPS is raised.</p> <p>When undertaking maintenance, the pivot lockout / transport lock is to be used at all times. Bystanders are to be kept clear of pivot centre. Care to be taken when closing the engine cover.</p> <p>Work zone traffic management procedures need to be implemented prior to operation.</p> <p><u>Revised Risk Assessment</u> With the above controls in place the risk is considered controlled.</p>	Operator	As required
1.4 1.11 1.13	Moderate/Significant	<p><u>Hazard</u> Stretching and tearing when entering or egressing from the operator’s platform.</p> <p><u>Comments</u> Access steps are fitted to each side to facilitate entry and exit points for the operator’s platform. These are supported by hand rails and the use of the rear body ‘mudguards’ to allow operator entry/egress.</p> <p><u>Controls</u> Operators to exit the work platform in the same orientation they entered. Utilise the three points of contact principle. Clean residue mud from boots and steps as required.</p> <p>Whilst three points of contact are available, they pose a stretching and tearing risk for operators to use with the grab rails not placed parallel to the path of motion of the operator.</p> <p>Where fitted, the mirror mounts shall be fastened in a position that does not obstruct the grab handles. With the mirror mount altered the access system can be considered compliant.</p> <p><u>Revised Risk Assessment</u> With the above controls in place the risk is considered controlled.</p>	Operator / Fleet Services	Alter mirror mounts Prior to Operation

1.6 1.15	Significant	<p><u>Hazard</u> Falling objects.</p> <p><u>Controls</u> Operation of the tipper is to occur only within a designated Work Zone Traffic Management area.</p> <p>Wheel nuts are to be visually checked prior to operation and physically checked after a wheel has been removed for maintenance as per the manufacturer's recommendations.</p> <p>Consideration should be given to fitting wheel nut checkers.</p> <p><u>Revised Risk Assessment</u> With the above controls in place the risk is considered controlled.</p>	Operator	As required
1.15	Significant	<p><u>Hazard</u> Operation without the ROPS deployed.</p> <p><u>Comments</u> The ROPS system can be folded down and the unit can still be operated.</p> <p><u>Controls</u> Careful consideration must be employed for operation with the ROPS in the down position. Controls will need to be instigated within the JSA.</p> <p><u>Revised Risk Assessment</u> With the above controls in place the risk is considered controlled.</p>	Fleet Services	Prior to Operation
2.5 2.16 17	Moderate / Significant	<p><u>Hazard</u> Dust and Noise</p> <p><u>Comments</u> The operator platform is unsheltered from the environment or the load being carried/tipped. Tipper location must be assessed for its suitability prior to operation.</p> <p><u>Controls</u> Suitably rated PPE is to be worn by the operator at all time when using the machine. Use of noise attenuating PPE to be considered prior to operation.</p> <p><u>Revised Risk Assessment</u> With the above controls in place the risk is considered controlled.</p>	Operator	As required
2.10	Significant	<p><u>Hazard</u> Raised tipper body can come into contact with overhead power lines.</p> <p><u>Controls</u> Operators to analyse the area for operation prior to doing so. "Look Up and Live" methodology to be used. Information is available from ETSA Utilities.</p> <p>Extreme care to be taken when operating around power lines. For lifts that need to be conducted around power lines ensure minimum distances are adhered to and utilise a look-out as required.</p> <p><u>Revised Risk Assessment</u> With the above controls in place the risk is considered controlled.</p>	Operator	As required
23	Moderate	<p><u>Hazard</u> Jam/block.</p> <p><u>Comments</u> Only to be used for tipping within a Work Zone Traffic Management (WZTM) designated area. In the advent of a mechanical or hydraulic fault the tipper body may suddenly lower without warning as no hose burst protection is fitted.</p> <p><u>Controls</u> Jam/blocks to be cleared as per the Operators Manual. Operators are not to place body or limbs under the tipping body without utilising the safety strut. Clearing of jam/block is only to be undertaken by trained operator or maintenance staff.</p> <p><u>Revised Risk Assessment</u> With the above controls in place the risk is considered controlled.</p>	Operator	As required

*Only items with a higher than "Low" risk assessment need to be controlled.

SECTION 6: CONTROL MEASURES AND TRAINING

CONTROL MEASURES

Pre-Operation	A Standard Operating Procedure (SOP) should be developed for the correct use of the units systems prior to deployment. Complete familiarisation of the Operators Manual and all systems shall be considered Mandatory.
General Comment	The unit has been assessed as it stands and deemed for <u>off road use only</u> . In its current form, it is not to be registered for on road use or as a Special Purpose Vehicle (SPV). On the larger units, consideration should be given to the fitment of a grab rail on the mudguard outer edge and/or modifying the access system to meet AS3868 'Earthmoving Machinery – Design guide for access systems'.
General Operation	The unit is intended for relatively flat ground tipper deployment only. Appropriate PPE to be worn by the operator.
Operational Risk	This risk assessment does not negate the requirement of the operator/supervisor to conduct an operational risk assessment of this piece of plant for its intended use and its interface with the operators and the suitability of this piece of plant to integrate and complete the required task. This document has been prepared with due care, however cannot be considered complete given the limited knowledge of the intended operational environment. The unit has been supplied to the client's specification as per the purchase order received, and it is assumed the original specification was developed with the operational nature of the vehicle in mind.
Work Zone Traffic Management	This risk assessment has been prepared with the knowledge that effective Work Zone Traffic Management (WZTM) systems will be employed in line with AS1742.3, OHS&W Regulations 2010, Road Traffic Act 1971 and internal Standard Operating Procedures.

OPERATOR COMPETENCIES

Formal Qualifications:	Medium Rigid (MR) Driver's License
Competency Assessed Skills:	On the job training as appropriate
General Training Instruction:	On the job training by qualified Operator
Experience:	As appropriate and assessed (as above)
Standard Work Procedure (s):	To be developed by the client/user

SECTION 7: PLANT INSPECTIONS, MAINTENANCE AND TESTING

Inspection, Maintenance and Testing Requirements	Frequency
Manufacturers Operator and Service manuals as supplied with the unit	Refer Operator Manual
Servicing and Maintenance	As per Manufacturers guidelines
Tyre pressures – refer to Operator Manual or Placard for recommended pressures	Visually - Daily
	Physically - Monthly
Wheel nuts to be checked for correct tension	Visually - Daily
	Physically - Month

**This is not a definitive list and may need to be revised over time*