

PLANT RISK ASSESSMENT REPORT



SECTION 1: PLANT IDENTIFICATION

Report Number:	407/201-11B	Assessment Date:	30 th January 2013
Company:	Wacker Neuson	Plant Type:	Excavator Models: 803, 1404, 1703, ET18, 2003, 28Z, 38Z, 50Z, 75Z
Assessment Purpose:	<input type="checkbox"/>	Operational risks associated with the unit as it stands – On site	
	<input type="checkbox"/>	Operational risks associated with the unit as it stands – Desk top analysis	
	<input type="checkbox"/>	Access Systems	
	<input type="checkbox"/>	Modification/s	
	<input checked="" type="checkbox"/>	Other : Group assessment of plant type	
Assessed by:	Darren Husson – VEHTEC Pty Ltd		

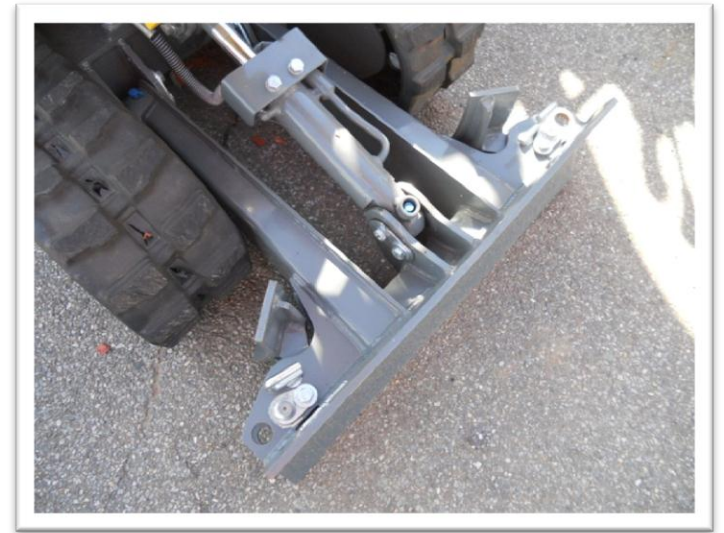


SECTION 2: PLANT SUMMARY

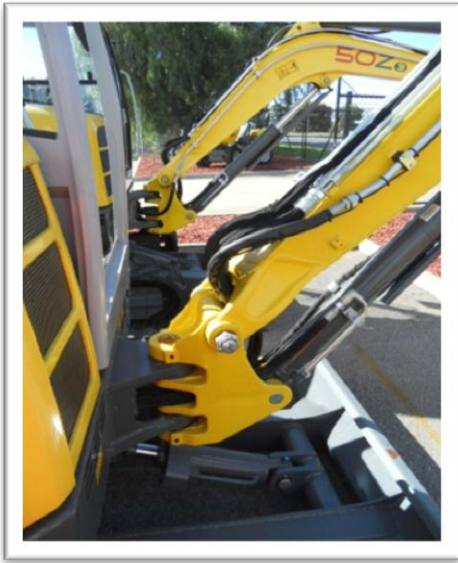
Preamble:

This assessment encompasses the Wacker Neuson range of Tracked Excavators outlined above. The range offers auxiliary hydraulics for multiple attachments, diesel engines ranging from 13.7kW – 74.9kW, enclosed and exposed cabins, adjustable track/dozer blade widths and adjustable cabin angle options. This risk assessment covers the configuration at the time of analysis (without payload or additional plant). 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.

Is the plant designed for its intended use?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<i>Final Sign off by Employer/Owner user - All actions/recommendations complete</i> Name: _____ Position: _____ Signed: _____ Date: _____
Has the plant been modified from the original design?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Is the plant in good working condition?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Is action required before the plant can be safely used?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Has the required action / remedy been undertaken?	<input type="checkbox"/> Yes <input type="checkbox"/> N/A	



Photographs are for illustrative purposes only. Functions, layout, engines and bodies will vary between models



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SECTION 3: RISK ANALYSIS LIKELIHOOD AND CONSEQUENCES

Table 1. Measure of Likelihood (L)		
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

Table 2. Measure of Consequences or Impact (C)		
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

Table 3. Risk Analysis Matrix (Risk)					
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. Continuous review.
- **M**= Moderate risk, management responsibility. Periodic review
- **L**= low risk, manage by routine procedures. Periodic review to ensure risk does not increase.

*Only hazards with a risk deemed higher than 'low' need to be controlled

SECTION 4: 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 (Operator/bystander inadvertent involvement with load being shifted by bucket or attachment– unit has good operator visibility)	Yes	D	5	H
1.2	Puncturing (Operator/bystander inadvertent involvement with load being shifted by bucket or attachment– unit has good operator visibility)	Yes	D	5	H
1.3a	Cutting (Operator/bystander inadvertent involvement with load being shifted by bucket or attachment– unit has good operator visibility)	Yes	D	5	H
1.3b	(Operator/bystander pinch points exist whilst adjusting dozer blade, track width and cabin angle)	Yes	D	3	M
1.3c	(Operator when closing engine cover)	Yes	D	3	M
1.4	Stretching (Operator incorrect entry/egress from operator cabin/platform)	Yes	D	2	L
1.5	Stabbing	No			
1.6a	Trapping (Operator/bystander inadvertent involvement with load being shifted by bucket or attachment– unit has good operator visibility)	Yes	D	5	H
1.6b	(Unit tipping or rolling over in steep/uneven terrain – or tracks slipping on wet surface – ROPS or TOPS/FOPS cabin and canopies. Operators seatbelt to be worn – Stabiliser bar(s) to be utilised as per Operators Manual)	Yes	D	3	M
1.6c	(Operator when closing engine cover)	Yes	D	3	M
1.6d	(Operator/bystander pinch points exist whilst adjusting dozer blade, track width and cabin angle)	Yes	D	3	M
1.7	Abrasion (Operator/bystander inadvertent involvement with load being shifted by bucket or attachment– unit has good operator visibility)	Yes	D	5	H
1.8	Engulfment (Operator/bystander inadvertent involvement with load being shifted by bucket – unit has good operator visibility)	Yes	D	5	H
1.9a	Crushing (Operator/bystander inadvertent involvement with load being shifted by bucket or attachment– unit has good operator visibility) (Unit not to be used for craning unless craning valves fitted as per AS 1418)	Yes	D	5	H
1.9b	(Unit tipping or rolling over in steep/uneven terrain – or tracks slipping on wet surface – ROPS or TOPS/FOPS cabin and canopies. Operators seatbelt to be worn – Stabiliser bar(s) to be utilised as per Operators Manual)	Yes	D	3	M
1.6c	(Operator when closing engine cover)	Yes	D	3	M
1.9d	(Operator/bystander pinch points exist whilst adjusting dozer blade, track width and cabin angle)	Yes	D	3	M
1.10a	Shearing (Operator/bystander inadvertent involvement with load being shifted by bucket or attachment– unit has good operator visibility)	Yes	D	5	H
1.10b	(Operator/bystander pinch points exist whilst adjusting dozer blade, track width and cabin angle)	Yes	D	3	M
1.11	Tearing (Operator incorrect entry/egress from operator cabin/platform)	Yes	D	3	M
1.12	Asphyxiation	No			
1.13	Slips, Trips (Wet or muddy boots when boarding/alighting – hand/grab rails fitted allowing for 3 points of contact)	Yes	D	2	L
1.14	Falls (Wet or muddy boots when boarding/alighting – hand/grab rails fitted allowing for 3 points of contact. Operator seat belt to be worn when in machine is in operation.)	Yes	D	2	L

1.15	Falling Objects (Operator/bystander inadvertent involvement with load being shifted by bucket or attachment)(Unit not to be used for craning unless craning valves fitted as per AS 1418)	Yes	D	5	H
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 (All hydraulic couplings to only be connected / disconnected with engine off and pressure released) (Burst hydraulics line – limited exposure to lines – never attempt to locate sources of hydraulic fluid leaks)	Yes	D	2	L
2.2	Explosion (No smoking around machine in particular the battery and fuel system)	Yes	D	2	L
2.3	Radiation	N/A			
2.4	Vapour	N/A			
2.5	Dust (Exposed cabin/platform allow for infiltration of dust into operators environment. Appropriate PPE to be worn as per Employers/Owners SOP)	Yes	E	2	L
2.6	Moisture (Exposed cabin/platform allow for infiltration of moisture into operators environment. Appropriate PPE to be worn as per Employers/Owners SOP)	Yes	E	2	L
2.7	Gases (Exhaust directed to the rear or lower than cabin/platform) (Bucket contacting buried gas main)	Yes	D	5	H
2.8	Fire	No			
2.9	Vibration (Frequent rest breaks to be taken to reduce fatigue – Some models incorporate suspension seat to reduce severity)	Yes	E	2	L
2.10	Electricity (Raised boom contacting overhead power lines, bucket contacting buried power lines)	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 checking, do not attempt to open hot radiator or hydraulic tank, perform engine level checks when cold – Refer Operators Manual)	Yes	E	2	L
2.15	Temperature Extremes	No			
2.16	Noise (High dB levels) (Where exposed operator environment exists) (Appropriate PPE to be worn when required by SOP)	Yes	E	2	L
Yes / No / N/A					
3	Manual handling requirements have been assessed as acceptable (Employers/Owners assessment required)	Yes			
4	Repetitive, forceful, awkward, sustained movements have been minimised/ eliminated	Yes			
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	Yes			
8	Operator controls are identified and marked appropriately	Yes			
9	Emergency stops are clearly marked	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 (Operator can lock out hydraulic functions in cabin)	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	Yes			
16	Lighting is adequate for plant operation, maintenance and cleaning at any time (Safety beacon, work lighting fitted)	Yes			

17	Noise levels have been assessed as below 85dB(A) (Employers/Owners responsibility) (PPE to be worn as per SOP)	Yes			
18	Personal Protective Equipment (PPE) has been provided for safe operation of this plant (Employers/Owners responsibility)	N/A			
19	PPE requirements are signposted (Employers/Owners responsibility dependant on internal Management Policies)	No			
20	There is provision for safe cleaning of this plant	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 (Mechanical failure when boom elevated)	Yes	D	5	H
24	A safe system of work has been established to remove jam/blockage (Only trained personnel should attempt to repair elevated bucket if it becomes jammed)	Yes			
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/Owners responsibility)	N/A			
28	The rigidity and stability of the plant and supporting structure is adequate. (Providing unit is operated within gradability limits and operating capacities)	Yes			
29	The environment in which the plant is situated has been assessed for its interrelationship with this plant as acceptable (WZTM controls in place to keep bystanders at safe distances) (Employers/Owners 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/Owners responsibility)	N/A			

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					
1.1 1.2 1.3a 1.3b 1.3c 1.6c 1.6d 1.7 1.8 1.9a 1.9c 1.9d 1.10a 1.10b	Moderate	High	<p><u>Hazard</u> Operator or bystander inadvertent involvement with load being shifted by the bucket, or contact with the boom and/or attachment or front blade.</p>	<p><u>Action Required</u></p>	<p>Nil</p>		
			<p><u>Comments</u> Pinch points exist during adjustment of the variable track and dozer blade widths as well as when closing the engine cover.</p>	<p>Responsible Person</p>	<p>Operator</p>	<p>Due Date</p>	
			<p><u>Controls</u> Bystanders are to keep clear of working machine, operator is not to lift, move or swing the bucket above any person or truck cabin. Use a signal man if the machine needs to be operated in congested areas. The machine is of the minimal tail-swing design so rear impact is reduced.</p> <p>When the operator is not actively engaged in digging, the console should be disengaged therefore locking out the hydraulic functions and preventing inadvertent operation.</p>	<p>Actioned by: (Name & Date)</p>			
			<p>Bystanders to be kept a safe distance from excavator during cabin tilt (where applicable) and track width adjustment procedure if fitted.</p> <p>Operator to maintain self-awareness whilst adjusting width of dozer blade.</p> <p>Anti Burst Valves and Craning Valves are not fitted, so the excavator shall not be used as a crane (refer AS 1418) and is not to be operated above or over any person or bystander.</p> <p><u>Revised Risk Assessment</u> With the above controls in place the risk is considered to be controlled.</p>	<p>Verified by: (Name & Date)</p>			

1.4 1.11 1.13 1.14	Low	Moderate	<p><u>Hazard</u> Cab/Operator platform entry.</p> <p><u>Comments</u> Operators to exit the cabin or operators platform in the same orientation they entered. Utilise the three points of contact principle.</p> <p>Good traction is afforded on steps.</p> <p><u>Revised Risk Assessment</u> With the above controls in place the risk is considered to be controlled.</p>	<u>Action Required</u>	Nil		
			Responsible Person	Operator	Due Date		
			Actioned by: (Name & Date)				
			Verified by: (Name & Date)				
1.6b 1.9b 1.15	Moderate	High	<p><u>Hazard</u> Unit roll over in steep or uneven terrain or falling objects.</p> <p><u>Comments</u> Operators to analyse the area for operation prior to commencing job. Follow the basic rule travel straight up and down slopes, keep the boom extended and the bucket low, avoid turning on slopes.</p> <p>Unit is fitted with tracks and front blade; this provides excellent stability for field operations.</p> <p>Particular care to be taken when adjusting the width of tracks and the cabin tilt angle (where fitted). Unit not to be operated outside of stated capabilities as per Operators Manual.</p> <p>ROPS or TOPS/FOPS cabin or operator canopies are fitted. Refer Operators Manual for machine specific protection. Operator to ensure seatbelt is worn at all times when operating machine.</p> <p><u>Revised Risk Assessment</u> With the above controls in place the risk is considered to be controlled.</p>	<u>Action Required</u>	Nil		
			Responsible Person	Operator	Due Date		
			Actioned by: (Name & Date)				
			Verified by: (Name & Date)				

2.7 2.10	Significant	High	<p><u>Hazard</u> Raised boom contacting overhead power lines, bucket contacting buried power lines or gas lines.</p> <p><u>Comments</u> “Look Up and Live” methodology to be used. “Dial before you Dig” to be used prior to excavating.</p> <p>Extreme care to be taken when operating around power lines. For excavations that need to be conducted around power lines ensure minimum distances are adhered to and utilise a look-out as required.</p> <p>Detailed information is available from SA Power Networks: http://www.sapowernetworks.com.au/centric/industry/contractors_and_designers/dial_before_you_dig.jsp ; and http://www.sapowernetworks.com.au/centric/industry/contractors_and_designers/dial_before_you_dig.jsp</p> <p><u>Revised Risk Assessment</u> With the above controls in place the risk is considered controlled.</p>	<u>Action Required</u>	Nil				
			Responsible Person	Operator		Due Date			
			Actioned by: (Name & Date)						
			Verified by: (Name & Date)						

SECTION 6: CONTROL MEASURES AND TRAINING

Control Measures

Pre-Operation	Prior to any operations the operator/supervisor is responsible for conducting a job risk assessment. This is to include but not limited to, the suitability of this piece of plant to integrate and complete the required task. Complete familiarisation of the Operators Manual and all systems shall be considered Mandatory.
General Operation	The unit is intended for relatively flat ground deployment only with limitations stated within Operators Manual. Appropriate PPE to be worn by the operator as per Employers/Owners Standard Operating Procedures (SOP).
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 range is fitted with ROPS or TOPS/FOPS cabins and canopies – Refer Operators manuals for specific protection for each model. Anti Burst Valves and Craning Valves are not fitted, so the excavators shall not be used as a crane (refer AS 1418) and is not to be operated above or over any person or bystander. This document has been prepared with due care, however cannot be considered complete given the limited knowledge of the intended operational environment.
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.
Attachments	The unit has the capacity to be fitted with a variety of attachments. Only OEM attachments (or those authorised by the OEM) should be used on the plant. Non authorised attachments may affect the safety and stability of the plant when in operation. Each attachment may require an additional Risk Assessment to be carried out and/or a revision of this document. Complete familiarity with the attachments Operation Manual shall be considered mandatory prior to operation. Different attachments may impact on current Work Zone Traffic Management paradigms.
Continuous Review	This document is not intended to be static, nor is it intended to be considered complete for all situations. This document forms the basis to allow the Employer/Owner of the asset to have an informed position. A system of continuous review should be embraced in line with Management Policies.

Operator Competencies

Formal Qualifications:	Must comply with the regulations enforced by the WorkSafe authority within the state that the plant is being operated.
Competency Assessed Skills:	Skills must comply with the requirements of the guidelines established by the relevant state based WorkSafe authority and assessed by the state WorkSafe body's authorised assessor.
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 Employer/Owner

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
Tracks to be checked for correct tension	Once per month

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