

Job Sheet and Risk Assessment							
Job No		77240/77089/77089		Date of Enquiry		02/11/2020	
Source of Enquiry				Site Visit Date		10/11/2020	
Time Work to Start				Accepted Date			
Contact Name		McAuliffe – Paul Challinor		Work Start Date		tbc	
Customer Address / Site Address				Nearest A&E			
Manox Site, Coleshill Road, Manchester, M40 7BF				Salford Royal, Stott Lane, Salford, M6 8HD			
What 3 Words		///nation.crest.rental					
Customer Telephone number		01614134211		Mobile number		07847 271342	
Email:							
Estimator Checklist							
Vehicle		UNIMOG					
Chipper & Key		☐ Trailed ☒ Tracked ☐ No Chipper Specify: BANDIT 20XP Black					
MEWP		☐ Specify:					
☐ Top handled saws	☐ Climbing equipment	☐ Wheelbarrow ☐ Trolley			☐ Stump grinder: ☐ S ☐ L		
☒ Ground saws	☐ Ladders / Tripod	☐ Winch Type:					
☐ Large saw	Rigging kit: ☐ S ☐ L	☐ Clean up kit & Blower			☐ Hammer / wedges		
☐ Hedge trimmer	Ladders Extension ☐ S ☐ L	☐ Chapter 8 Signage			☐ CAT Scanner		
☐ Pole chainsaw	☐ Brush cutter	☐ Knapsack Sprayer			☐ Bio Security		
☐ Hedge trimmer L. R	☐ Strimmer	☐ Chemicals:					
☐ Poles	☐ Petrol Drill	☐ Eco Plugs			☒ Fuel		
Notes: McAuliffe's to provide welfare and security.							
TPO / CA							
PERMISSION CHECKS							
TPO/CA check date	Planning authority	Planning Officer	Conservation Area/TPO		Permission granted		Felling licence required?
Date			☐ YES ☐ NO	☐ YES ☐ NO	☐ YES ☐ NO	☐ YES ☐ NO	
			Details		☐ TPO ☐ CA		
Biosecurity Risk – is there a concerning P&D present or suspected on or near the site?			☒ No concerning pests or diseases were present or suspected ☐ Yes – take and use the biosecurity kit				
Arrangements for the disposal of arising waste material			☒ Remove all ☐ Remove chip and leave logs on site ☐ Chip back to site, remove logs ☐ Chip back to site, leave timber in manageable pieces in situ ☒ Other...				
Wildlife disturbance			☒ Wildlife disturbance has been considered ☐ Specific assessment completed if protected species suspected				
Traffic Management Arrangements			☐ Chapter 8 kit required ☐ Specialist contractor required				
Underground Services			☐ Yes: ☐ Water ☐ Electric ☐ BT ☐ Other ☒ Unknown				
Overhead Services on Site			☐ Yes ☒ No if Yes: Shut down required: ☐ Yes ☐ No				
Welfare Arrangements			☐ Local arrangements... ☒ Customer facilities ☒ Welfare Unit				
Vibration Exposure			Is this a vibration heavy job – RA for use of handheld ☐ Yes ☐ No If yes: Refer to Vibration Equipment				
Coronavirus Controls			☒ Social distance required ☒ Face coverings ☒ Disinfect vehicles after use ☒ Disinfect tools after use ☒ Hand wipes / hand sanitiser used throughout the day				

Estimator - complete when undertaking the initial site visit	
Work Required	Work Method
Tree species, location, work required <u>77240</u> Shred contaminated brash/timber and excavated stumps using a DOPPSTADT DW3060 slow speed shredder. McAuliffe's to stockpile stumps. Screen all shredded material using a DOPPSTADT SM518. Trommel and remove shreds off site. Topsoil to stay on site.	☒ Machine (shear head, grapple saw etc)
	☐ Groundwork or pole equipment
	☐ MEWP and pole equipment
	☐ 2 Rope systems and 2 anchor points
	☐ 2 Rope systems and 1 anchor point
	☐ Climbing branches backed up using 1 rope system and 1 anchor point
Tree species, location, work required <u>77089</u> Day rate for shredding contaminated brash and timber. Supply of: 1 x Doppstadt DW3060 slow speed shredder. 1 x 21Ton forestry guarded excavator with brash grab and stump shear and operator. All shredded material to stay on site. +Minimum of 3 days hire.	☒ Machine (shear head, grapple saw etc)
	☐ Groundwork or pole equipment
	☐ MEWP and pole equipment
	☐ 2 Rope systems and 2 anchor points
	☐ 2 Rope systems and 1 anchor point
	☐ Climbing branches backed up using 1 rope system and 1 anchor point
Tree species, location, work required <u>77088</u> Fell all trees within site boundary to ground level inc trees along towpath. Flail all scrub back to ground level. Remove all arising from site.	☒ Machine (shear head, grapple saw etc)
	☒ Groundwork or pole equipment
	☐ MEWP and pole equipment
	☐ 2 Rope systems and 2 anchor points
	☐ 2 Rope systems and 1 anchor point
	☐ Climbing branches backed up using 1 rope system and 1 anchor point
Tree species, location, work required Climbers must use a supplementary system when using a chainsaw at the work position	☐ Machine (shear head, grapple saw etc)
	☐ Groundwork or pole equipment
	☐ MEWP and pole equipment
	☐ 2 Rope systems and 2 anchor points
	☐ 2 Rope systems and 1 anchor point
	☐ Climbing branches backed up using 1 rope system and 1 anchor point
Herbicide product and amount used	

Team Leader Checklist (with reference to the Estimator Checklist)			
Team Leader - Responsible for H&S on site including the rigging and water rescue plans.		First Aider - Responsible for first aid provision on site and accident/incident reporting.	
Aerial Rescuer - Responsible for planning the aerial rescue provision on site.		Emergency Meeting Point Helicopter access Postcode, What three words	
Site Specific Hazards		Controls to be Implemented	??
			☐
			☐
Rigging	Complete the rigging plan checklist		☐
Water	Complete the water rescue plan		☐
Mobile phone signal and location	☐ Low ☐ Medium ☐ High		
Rescue Plan – Brief the rescue plan 1, 2, 3 or 4 with reference to the rescue planning guide			??
1	Rescue an injured climber using a MEWP and Climbing Equipment		☐
2	Rescue an injured climber using a Ladder and Climbing Equipment		☐
3	Rescue an injured climber using Climbing Equipment		☐
4	Rescue an injured operator from a MEWP		☐
Access constraints			
Operator Declaration	The work to be done including the client requirements for safety and site management, the risk assessment and the welfare arrangements have been explained to me. I am familiar with the task and machine risk assessments that are in the truck file and I am comfortable to proceed with the work. I have checked my PPE and it is in good order.		
Date	Name	Sign	
Click or tap to enter a date.			
Click or tap to enter a date.			
Click or tap to enter a date.			
Click or tap to enter a date.			
Team Leader Declaration	I understand the work to be done as specified by the estimator and the client requirements for safety and site management. I have planned the work including the work at height, rigging and water rescue plans as applicable. I have completed and briefed the risk assessment and the welfare arrangements. I am familiar with the task and machine risk assessments that are in the truck file and I am comfortable to proceed with the work.		
☐ Chainsaws pre-start checks completed		☐ All PPE has been checked and found to be in order	
☐ Hedge trimmer pre-start checks completed		☐ Climbing equipment pre-start checks completed	
☐ Chipper pre-start checks completed		☐ Rigging equipment pre-start checks completed	
☐ Ladders and step ladders			
Date	Name	Sign	
Click or tap to enter a date.			
Damage / defect report	All damage and defects must be reported here.		
Signed off as complete (Customer and/or Team Leader) The work has been completed to the above specification and the site has been left in a safe and tidy condition			
Date work completed		Click or tap to enter a date.	

1 – Rescue an injured climber using a MEWP and Climbing Equipment	Person responsible for this action
A second climbing line shall be installed in the tree for rescue purposes if appropriate	Team leader
The condition of the casualty shall be assessed so that the emergency services can be given comprehensive information	Designated First Aider
Emergency services shall be called using the 999 / 112 service as soon as possible following incident	Ground Worker
The office shall be informed of the situation and of the actions taken so far	Designated First Aider
The rescuer shall ascend to the casualty using MEWP and Arboricultural climbing techniques	Designated Aerial Rescuer
First aid shall be administered in the tree if necessary and	Designated Aerial Rescuer
The rescuer and casualty shall descend to the ground	Designated Aerial Rescuer
First aid shall be administered whilst awaiting the arrival of the emergency services	Designated First Aider
First aid shall be administered whilst awaiting the arrival of a manager	Designated First Aider
Casualty removed to a place of safety/convalescence or to hospital if appropriate	Designated First Aider
2 – Rescue an injured climber using a Ladder and Climbing Equipment	Person responsible for this action
A second climbing line shall be installed in the tree for rescue purposes if appropriate	Team leader
The condition of the casualty shall be assessed so that the emergency services can be given comprehensive information	Designated First Aider
Emergency services shall be called using the 999 / 112 service as soon as possible following incident	Ground Worker
The office shall be informed of the situation and of the actions taken so far	Designated First Aider
The rescuer shall ascend to the casualty using a ladder and Arboricultural climbing techniques	Designated Aerial Rescuer
First aid shall be administered in the tree if necessary and then rescuer and casualty shall descend to the ground	Designated Aerial Rescuer
The rescuer and casualty shall descend to the ground	Designated Aerial Rescuer
First aid shall be administered whilst awaiting the arrival of the emergency services	Designated First Aider
First aid shall be administered whilst awaiting the arrival of a manager	Designated First Aider
Casualty removed to a place of safety/convalescence or to hospital if appropriate	Designated First Aider
3 – Rescue an injured climber using Climbing Equipment	Person responsible for this action
A second climbing line shall be installed in the tree for rescue purposes if appropriate	Team leader
The condition of the casualty shall be assessed so that the emergency services can be given comprehensive information	Designated First Aider
Emergency services shall be called using the 999 / 112 service as soon as possible following incident	Ground Worker
The office shall be informed of the situation and of the actions taken so far	Designated First Aider
The rescuer shall ascend to the casualty using Arboricultural climbing techniques	Designated Aerial Rescuer
First aid shall be administered in the tree if necessary	Designated Aerial Rescuer
The rescuer and casualty shall descend to the ground	Designated Aerial Rescuer
First aid shall be administered whilst awaiting the arrival of the emergency services	Designated First Aider
First aid shall be administered whilst awaiting the arrival of a manager	Designated First Aider
Casualty removed to a place of safety/convalescence or to hospital if appropriate	Designated First Aider
4 – Rescue an injured operator from a MEWP	Person responsible for this action
If the injured operator is able to control the MEWP, they make their own descent to the ground	Operator
If the injured operator is not able to control the MEWP, it shall be brought to the ground using the controls on the base unit	Ground Worker
The condition of the casualty shall be assessed so that the emergency services can be given comprehensive information	Designated First Aider
Emergency services shall be called using the 999 / 112 service as soon as possible following incident	Ground Worker
The office shall be informed of the situation and of the actions taken so far	Designated First Aider
First aid shall be administered whilst awaiting the arrival of the emergency services	Designated First Aider
First aid shall be administered whilst awaiting the arrival of a manager	Designated First Aider
Casualty removed to a place of safety/convalescence or to hospital if appropriate	Designated First Aider

TREEFELLERS LTD

Method Statement- McAuliffe Civil Engineering Ltd

Subcontractor Document reference number: 77240/77089/77089

Location: Manox Site, Coleshill Road, Manchester, M40 7BF



Revision	Author (SC)	Checked by (SC)	Accepted by (TF)	Date	Reason for revision
	Emma Hazel	Matt Pooley	Emma Hazel	06.01.21	New document

DOCUMENT OWNER: Treefellers Ltd

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1 Introduction

Fell all trees within site boundary to ground level including trees along towpath excluding any Mature trees on site. Mature trees will be completed on a separate site visit at a later date – tbc.

Flail all scrub back to ground level. Remove all arising from site.

2 Reference documents

NPTC	National Proficiency Tests Council
NPORS	National Plant Operators Registration Scheme
CSCS	Construction Skills Certification Scheme
SSSTS	Site Supervisor Safety Training Certificate
FMOG	Forest Machine Operation Certificate
COSHH	Control of Substances Hazardous to Health
AFAG	Arboricultural and Forestry Advisory Group
FISA	Forestry Industry Safety Accordance

3 Pre commencement requirements

CSCS Cards, First Aid training, Site induction, NPORS

4 Underground services

4.1 Planning

McAuliffe to advise on any underground services.

McAuliffe to advise of any services both buried and overhead at the work location and provide plans and drawings if required.

5 Methodology

Tree felling and scrub removal are to be carried out using the following methods: -

5.1 Tree Felling

Mechanical Tree felling

- *Plant operator to undertake site walkout of area to check for any unsuitable materials/hazards present. Where practicable trees will be felled using an 8-, 14- or 21-ton forestry guarded excavator with NPORS/FMOG operator fitted with tree shears with a cutting diameter of up to 400mm or a grapple saw with a cutting diameter of up to 580mm*
- *Plant operator is to follow safety guidance in FISA Guideline 704 Excavators in tree work*
- *A 25m risk zone will be in place demarcated by barrier tape, signs and banks person with NPORS Certificate*

Manual Tree felling

- *Trees that are unsuitable for mechanical felling will be felled manually by NPTC Competent operatives in accordance with FISA 302 using petrol driven chainsaws FISA guidelines 302 basic chainsaw felling, 307 felling large trees.*
- *Where necessary trees will be processed in accordance with FISA guidelines 303 chainsaw snedding 304, chainsaw cross cutting and manual stacking.*

5.2 Scrub removal

Mechanical scrub removal

- *Plant operator to undertake site walkout of area to check for any unsuitable materials/hazards present. Where existing fencing is present a section will be removed prior to mulching with bolt cutters and fencing pliers. Operator to wear suitable PPE.*
- *Hedges and scrub to be flailed to ground level using an 8-, 14- or 21-ton excavator with a hydraulically driven forestry flail. Operator to be NPORS/FMOC qualified.*
- *Work to be carried out in accordance with FISA guidelines 704 excavators in tree work, 204 Flails and mulchers in tree work.*
- *A 25m risk zone will be in place demarked by barrier tape, signs and Banks person with NPORS Certificate.*

Manual scrub removal

- *Hedges and scrub that are unsuitable or inaccessible for mechanised removal will be cleared using NPTC trained and qualified operations using brushcutter/chainsaw hedgecutter. Work will be carried in accordance with FISA guidelines.*

FISA 203 Clearing saw

FISA 301 Petrol driven chain saws

FISA 302 Basic chainsaw felling and manual take down

5.3 Wood Chipping

- *All material up to 24" will be chipped using a remote-controlled Bandit 20XP machine fed whole tree chipper which will be machine fed by an 8-, 14- or 21-ton forestry guarded excavators fitted with 360° rotating timber grabs, operators to be NPORS/FMOC qualified.*
- *A 25m risk zone will be in place demarcated by barrier tape, signs and a banks-person if required.*
- *Woodchippings will be blown directly into a unimog tractor fitted with a 10m2 chip box.*

6 Shredding of stumps

- *Stumps and light vegetation will be grubbed out with excavators and put through allow speed shredder. Shredded material will be removed from site leaving topsoil.*
- *Treefellers will load material into a slow speed shredder with an 8, 14 or 21-ton excavator and 360° rotating timber grab.*
- *For more information, please see FISA 704*

6.1 Disposal of arisings

- *All arising to be removed from site in walking floor articulated wagons.*

7 Area of Work



8 Programme

8.1 Start Date and Duration

Location	Start Date and Duration
<i>Manox Site, Coleshill Road, Manchester, M40 7BF</i>	<i>tbc</i>

8.2 Site working hours

Site working days	Site working hours
<i>Monday – Friday</i>	<i>tbc</i>

9 Resources and Equipment

9.1 Plant and equipment

- *Kobelco 21Ton Forestry Guarded Excavator with current LOLER cert*
- *Hyundai 145 LCR Forestry Guarded Excavator with current LOLER cert*
- *Kobelco 8 Ton Forestry Guarded Excavator with current LOLER cert*
- *2 x Rotating fixed timber grab*
- *Westech 350 Tree Shear*
- *FAE DML/HY 100 Forestry Mulcher*
- *Unimog U1650 4 x 4 with Hydraulic Winch and 3 way tipper*
- *Bandit 20XP remote control woodchipper 315HP 10T*
- *2 Stroke equipment chainsaw, Brushcutter, Hedge Trimmer and Blowers*

9.2 Materials

Woodchip/timber removal

9.3 Personnel and Labour and Competency

Personnel	Company Position	Competency
<i>Nick Brown</i>	<i>Operations Manager</i>	<i>SSSTS, NPTC CS10, CS11, CS14, CS16, CS34, CS35, NPTC Brushwood Chipper, NPTC Brushcutter, NPTC Stump Grinder, CSCS, NPORS C202UZ Excavator 360°, NPORS Co10J2 Telescopic Handler up to 9 metres, NPORSC403 Vehicle Marshall, NPORS So12A, NPORS CTTB operatives HS+E, NPORS Co01B1 counterbalance Lift truck. NPORS N202TJZ Excavator 360° tracked up to 10 Tonnes and attachments. NPORS No10JZ telescopic handler up to 9m attachment forks and bucket. Leica Geosystems Detection training academy, NPORS Vehicle Marshall, NPORS So12A CITB Operatives HS+ E Test, NPORS Level 2 Forest machine operations – Skidder, NPORS Level 2 Forest machine operations –base Machine, NPORS Level 2 Forest machine – Flail mulcher.</i>
<i>Tom Cozens</i>	<i>Climber/ Chainsaw Operator</i>	<i>CS31a, CS31b, CS32, CS33, CSS36, CS38, CS39, CS41, CS42, NPTC Woodchipper, NPTC Brushcutter, ROLO,</i>

Mike Sharp	Plant Operator/	NPORS N601 Agricultural tractor, NPORS N202WCZ, NPORS, NPORS Telescopic Handler, NPORS So12A CITB operatives HS+E test. Excavator 360°, CSCS
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10 Health and Safety

10.1 Health

For specific risk assessments please refer to below documents:

Tracked 3600 Excavator in Tree Work – 5 November 2020 – Version 1 – LM
Tracked 3600 Excavator Loading Arisings– 5 November 2020 – Version 1 – LM
3600 Excavator with a Mulching Head – 18 November 2020 – Version 1 – LM
Chainsaw Operations – 12 November 2020 – Version 1 – LM
Tractor Mounted Equipment and Operations - 12 November 2020 – Version 1 - LM
Tree Shear –12 November 2020 – Version 1 – LM
Wood Chipping Operations – 5 November 2020 – Version 1 - LM

10.2 Safety

Reference: *Tree and vegetation clearance job sheet and site-specific risk assessment.*

10.2.1 General Operative/Plant operative: -

- *Helmet with hearing protection complying with EN397, EM1731 and EN352.*
- *Protective boots complying with BS EN ISO 20345:2004, providing effective support to the ankle, mid sole protection and a protective toe cap.*
- *Protective gloves EN 381-7.*
- *Safety glasses BS EN 166:1.F.*
- *Hi Vis orange/Go-RT Outwear non-snag BS EN 471: class 2 or 3.*
- *Welder's gauntlets EN388 EN 407.*
- *Rigger boots not allowed.*
- *Full orange Hi Vis to be worn at all times.*

10.2.2 Chainsaw Operative: -

- *Helmet with hearing protection, visor and chin strap.*
- *Chainsaw trousers EN 381-5.*
- *Chainsaw boots EN345-2 providing effective support to the ankle, Mid Sole protection and a protective toe cap.*
- *Personal first aid kit with wound dressing.*
- *Protective gloves EN 381-7.*
- *Safety glasses BS EN 166:1.F.*
- *Hi Vis orange/Go-RT outerwear non-snag BS EN 471: class 2 or 3.*

- Welders gauntlets EN338 EN407
- Rigger boots not allowed.
- Full orange Hi Vis to be worn at all times.

10.3 Community Safety and Logistics

All site traffic to follow proposed routes to and from site. Site working hours strictly adhered to.

11 Environment

McAuliffe to supply ECOW if required. All work to be carried out in accordance with the environmental management plan and associated constraints maps. McAuliffe Guidelines are to be followed at all times. Any environmental incidents and near missed are to be reported to McAuliffe directly.

11.1 Air Quality

- *All vehicles and plant to be switched off when not in use.*
- *Drive efficiently.*
- *Maintain vehicle and plant at regular intervals.*
- *Use modern efficient engines where possible*
- *Make sure exhaust gasses do not discharge directly to the ground and area positioned at a height to facilitate appropriate disposal of exhaust emissions.*

12 Emergency Procedures

General

- *All teams working will be issued with job sheet and site-specific risk assessment detailing all necessary emergency contacts details including nearest hospital. Health and safety, environmental and wildlife emergency contacts.*
- *Operatives on site will have at least on mobile telephone, where there is no mobile reception on site- the site-specific risk assessment will detail the nearest landline telephone.*

Aerial Rescue

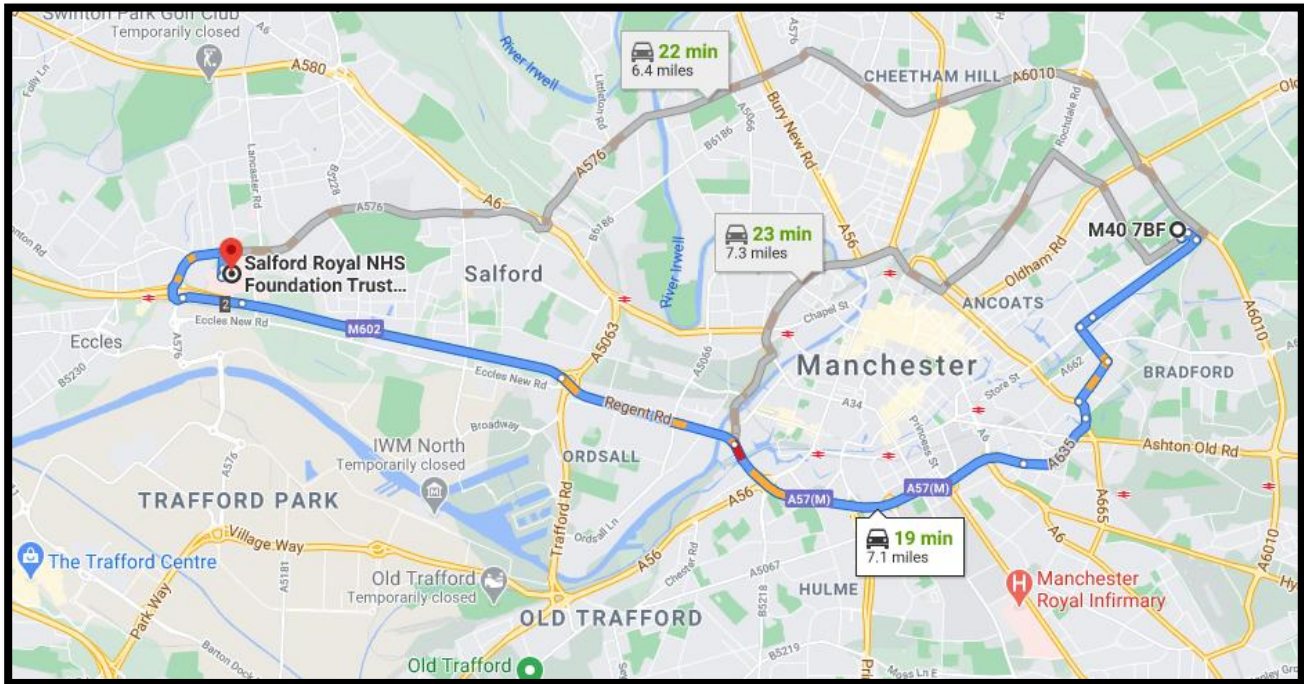
- *Tree surgery operatives are trained and competent in emergency procedures including aerial rescue.*
- *Operatives trained and competent in aerial rescue and rescue climbing kits will be provided at all work sites where tree climbing is to be undertaken.*
- *A designated aerial rescuer will be selected and detailed on the site-specific risk assessment undertaken prior to work commencing on site.*

First Aid

- *All operators will have completed training in emergency first aid*
- *A First aid kit is available in all vehicle and plant and welfare and store units.*
- *At least one member of staff per three operatives will have completed training in emergency first aid by a HSE approved training organisation.*

Nearest Hospital:

Salford Royal, Stott Lane, Salford, M6 8HD



Fire

Fire extinguishers serviced and in date are carried in all vehicle and plant including welfare and store units.

Type Extinguisher	Fire						Comments
	CLASS A Combustible materials (e.g. paper & wood)	CLASS B Flammable liquids (e.g. paint & petrol)	CLASS C Flammable gases (e.g. butane and methane)	CLASS D Flammable metals (e.g. lithium & potassium)	Electrical Electrical equipment (e.g. computers & generators)	CLASS F Deep fat fryers (e.g. chip pans)	
Water	✓	✗	✗	✗	✗	✗	Do not use on liquid or electric fires
Foam	✓	✓	✗	✗	✗	✗	Not suited to domestic use
Dry Powder	✓	✓	✓	✓	✓	✗	Can be used safely up to 1000 volts
CO2	✗	✓	✗	✗	✓	✗	Safe on both high and low voltage
Wet Chemical	✓	✗	✗	✗	✗	✓	Use on extremely high temperatures

Spill kits

Spill kits are available in vehicles, welfare and store unit and will be available in the immediate work area at all times.

Stop - Contain – Notify – clean up/dispose

Stop

Stop work immediately and if possible prevent any more material spilling. Eliminate any sources of ignition e.g. switch off plant, ensure that pollution shut off valves are used in compounds with formal drainage extinguish cigarettes. In the case of wildlife issues, stop work.

Contain

Contain the spillage using bunds of earth or sand, drip tray or spill kit contents immediately. For issues involving wildlife – cordon off area to prevent disturbance to wildlife.

Notify

Immediately report incident to your Supervisor who will then report to McAuliffe site Manager.

Clean up/Dispose

Mostly applying to spills: once the spill has been properly contained/soaked up, Use the appropriate equipment to collect the waste and place it in the appropriate Hazardous Waste.

Emergency Contact Details	Emergency Contact Numbers
Environment Agency	0800 807060

13 Monitoring of work

Daily inspections to be carried out by operations manager to monitor personnel and on-site work. Daily monitoring will include quality, safety, health and environment and will be documented and recorded on site.

14 Approval, review and briefing

Continuous daily briefings to be carried out at the start of each working day on site to include:

- *Detailed work that is due to be achieved that day.*
- *Any Potential risks/issues that could arise.*
- *Any Potential Ecology issues.*
- *Any amendment's to RAMS.*
- *Change in weather/forecast.*
- *Workforce planning and ensure capability that day.*
- *Relevant Tool box talks.*

Risk Assessment for a Tracked 360° Excavator in Tree Work

Scope:

This risk assessment shall include all foreseeable hazards resulting from operations using a tracked 360° excavator in tree work. Following assessment, controls shall be specified and implemented to ensure the health and safety of all staff and others including the travelling public that might be affected by the operations.

Likelihood (L)		Severity (S)	
1	Very Unlikely	1	Minor injury, no lost time, no damage
2	Unlikely	2	Minor injury, up to 7 days lost time, minor damage
3	Likely	3	Reportable injury, 7+ days lost time, temporary disruption to operations
4	Very Likely	4	Major injury, damage, theft
5	Certain	5	Fatality, major damage, industry disruption
Risk Rating (RR) = Likelihood (L) x Severity (S)			

Key to Risk Rating		Severity (S)				
		1	2	3	4	5
Likelihood (L)	1	1	2	3	4	5
	2	2	4	6	8	10
	3	3	6	9	12	15
	4	4	8	12	16	20
	5	5	10	15	20	25

Green	This level of risk is workable with care and attention.
Amber	This level of risk may be workable with care and attention, but the company and the operator shall strive to find and implement further controls.
Red	This level of risk is not acceptable. Work must not commence until further controls have been put in place.

This risk assessment must be read alongside the following guidance from the HSE

The guidance specifies the current best practice for the operation and it is the expectation of this company that all operations shall be undertaken as described wherever reasonably practicable to do so

Ref.	Title
FISA 204	Flails and Mulchers in Tree Work
FISA 703	Debogging and Recovery of Forestry Machines
FISA 704	Excavators in Tree Work
FISA 802	Emergency Planning
FISA 804	Electricity at Work: Forestry and Arboriculture
FISA 805	Training and Certification
UKAS	National Highways Sector Scheme 18

Identified Hazard	Level of Risk prior to control			Persons at Risk	Control Measures	Level of risk following control		
	L	S	RR			L	S	RR
Potential to cause harm to people, plant, reputation, product, or the environment.	L	S	RR	Operators, visitors, bystanders, travelling public	To be implemented on site prior to work. Work must not commence until these controls are in place.	L	S	RR
Competence Operator not familiar with the equipment or operation may cause injury or damage	3	5	15	Operator, bystanders, and adjacent property	All operators must have received appropriate training from a competent person	1	5	5

Working in the tree work environment. • Environmental damage • Injury to members of the public • Large wounds • Contamination with fuel and oil	3	5	15	Operator, bystanders, and adjacent property	• A site-specific risk assessment must be undertaken in order to make the machine operator aware of aspects of the local environment that could cause harm or be damaged by the proposed operations. • The site-specific risk assessment shall also highlight the presence of adjacent property or rights of way etc where special care needs to be exercised. • The following PPE shall be used: ○ Safety helmet (complying with EN 397) when the risk assessment identifies that it is needed. ○ Suitable hearing protection (complying with EN 352) where the noise level exceeds 80 dB(A) (see INDG363 Protect your hearing or lose it!). ○ Suitable protective gloves when handling materials such as fuel, ropes or chemicals. ○ Protective boots with good grip and ankle support (complying with EN ISO 20345). ○ Non-slag outer clothing appropriate to the prevailing weather conditions. ○ High-visibility clothing (complying with EN 471) should be worn when the risk assessment identifies that it is needed. • A suitable first-aid kit, including a large wound dressing, should be available in the base vehicle (see HSE leaflet INDG214 First aid at work: Your questions answered). • Hand-cleaning material such as waterless skin cleanser or soap, water and paper towels should be readily available. • You should have available and know how to use an emergency kit for spills of fuel, oil or chemicals.	1	5	5
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General	3	4	12	All bystanders and staff aiding the driver as banksmen	• All risk zones specified by the machine manufacturer must be clearly and prominently marked on all machines. This will normally be twice the maximum reach of the boom. In addition, the risk zone may need to be increased depending on the attachment being used (e.g. harvesting operations or debris ejected from flails etc). • A sign warning against working in the vicinity of overhead electric power lines must be prominently displayed in all machines, together with the maximum height of the machine and • the maximum height in the recommended (non-operational) travelling position. • When the machine is used in a lifting operation the Lifting Operations and Lifting Equipment Regulations 1998 (LOLER) will apply. In some cases (e.g. cable crane operations or lowering culvert pipes) the excavator may need to have a current certificate of thorough examination in accordance with the Regulations (see HSE Information sheet AIS29 LOLER: How the Regulations apply to forestry). • The machine operator is at particular risk from falls during onsite maintenance and refuelling operations. Ensure suitable means of access and safe working positions have been established.	1	4	4
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The machine	3	5	15	Operator	• Before work starts, an assessment should be carried out to identify the suitability of the machine in relation to the site and the task to be undertaken. • The features of the machine to be considered should include: ○ Stability and floatation – track length and width ○ Traction – grouser height and frequency ○ Ground clearance – raised undercarriage ○ Machine guarding – to prevent damage to pipework / components during the operation ○ Poor light conditions – adequate lighting must be fitted ○ Excavator Tracks – Rubber blocks to be fitted if machine to be used on trackway in wet conditions. • The risk assessment should identify what levels of operator protection are required on the machine. Consider: • Operator protective structures (OPS) – in the form of guarding (e.g. bars / mesh / polycarbonate glazing), to prevent harvesting residues etc entering the cab • Falling object protective structures (FOPS) – in the form of a frame / deflectors surrounding the cab to prevent falling objects striking and entering the cab • Roll-over protective structures (ROPS) – where there is a risk of the machine overturning.	1	5	5
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Preparing to work	3	5	15	All bystanders and staff aiding the driver as banksmen	• Ensure information has been provided about all worksite hazards identified in the risk assessment, and the control measures are fully understood. • Check the worksite for underground and overhead hazards and services, e.g. electricity cables, phone lines, water, and gas mains. Where present, ensure they are clearly marked and • provide suitable crossing points if necessary. • Many excavator operations involve working in isolation. • This must be addressed as part of the site risk assessment and an agreed lone-working procedure followed, e.g. a call-in or buddy system. • Select routes that are within the machine's and driver's capabilities. When using walking excavators also consider: • Identifying suitable access and egress points before work starts • Identifying potential obstructions and hazards, e.g. harvesting residue that may need treatment before work starts • Identifying any shallow soil, loose ground surfaces or large obstacles that can affect machine stability • Assessing and controlling the risk of objects being disturbed by the walking excavator and rolling downhill onto any work/access routes/footpaths etc below the worksite	1	5	5
Struck by the machine • Injury to persons as a result of direct contact by the machine when it is moving from a position of rest to a position of work.	3	5	15	All bystanders and staff aiding the driver as banksmen	• All staff and visitors on the work site shall maintain a 15m exclusion zone of the stationary machine unless the machine has had all power shut down and they have made direct line of sight contact with the driver.	1	5	5

Operation	3	5	15	Operator and bystanders in the proximity	• Carry out pre-start checks in accordance with the manufacturer's handbook. Ensure safety guards and attachments are securely fixed in position. • Use the steps and handholds provided to enter and leave the machine. • Ensure nobody is in the immediate vicinity when the equipment is started. • Before operating the travel levers, ensure you know in which direction the machine is pointing. • Use extreme caution when reversing or slewing. Be sure there is a clear path around the machine. • Keep any attachment as close as possible to the ground. • Do not operate the machine if any part of it, or its load, can come within 15 m of overhead electric power lines unless it has been established that the line voltage does not exceed 33 kV, in which case this distance may be reduced to 9 m (see FISA leaflet 804 Electricity at work: Forestry and arboriculture). • A different approach to safety distances is required during extraction by cable crane, mechanical harvesting or mechanical roadside processing (see relevant AFAG leaflets). • When using walking excavators, ensure the wheels and legs are set as wide as possible to maintain stability. The cab should be kept as level as possible. • Be aware that the weather conditions may affect the machine handling characteristics. • Be aware of the limitations of the machine on slopes, soft ground and other major obstacles. • Wherever possible, localised obstacles such as harvesting residue, stumps, rocks etc should be moved or avoided to allow safe operation and travel. On steep ground do not allow this material to roll where it may be hazardous to anyone below. • If the machine begins to slide or becomes unstable, lower the attachment onto the ground as quickly as possible.	1	5	5
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Contact with energised cables or installations	3	5	15	Operator and bystanders in the proximity	- The operator must maintain visual contact with the bucket / attachment at all times. - Dense ground covering vegetation must be broken down in layers in order to judge the proximity of the ground more accurately	1	5	5
Spillage of oil or similar fluid	3	4	12	Local environment and infrastructure	- All hoses and pipes shall be guarded to a level that is reasonably practicable. - A spill kit must be carried on the vehicle at all times. - See also the environmental aspects and impacts risk assessment.	1	4	4
Parking the machine	3	4	12	Operator and bystanders in the proximity	Before leaving the operator's seat: - Lower all implements and attachments to a safe position - Check you have locked out all control systems - Shut down the engine and remove the keys	1	4	4

Machine maintenance	3	4	12	Operator, plant fitter and bystanders in the proximity	• Maintenance shall be carried out by a competent person, in accordance with the manufacturer's handbook, and shall meets the requirements of the Provision and Use of Work Equipment Regulations 1998 • A level site with good footing shall be selected for maintenance • The machine must be fully stopped, and the ignition key must be removed. If appropriate, the electrical system shall be isolated. • All parts that could move or fall must be secured • Only the appropriate tools and techniques shall be employed • Where bolts have to be replaced they must be replaced by the same grade and type of bolt. • Do not use your hand to check for hydraulic fuel leaks – use a piece of paper or cardboard. Hydraulic fluid under pressure can penetrate the skin. If such contamination occurs seek medical attention at once. • No procedure should be attempted for which the operator has not been trained. • Where there is a risk of falling from the machine, appropriate measures shall be taken to ensure operator safety. This can include the use of fall-arrest systems where appropriate. • Do not attempt to operate a double-acting ram that has a broken pipe. Use other controls to lower the boom to a safe position and release the load if required. • Ensure all hydraulic pressure in the systems to be maintained or repaired is released before work starts. Where this is not possible, ease the residual pressure by careful slackening of joints. • Two spanners shall be used to refit a pipe or hose to avoid twisting the hose • Maintenance record shall be kept	1	4	4
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Machine transport	3	4	12	Operator loading the machine and bystanders in the proximity	- Know the machine's width, height, length and weight and ensure the transport vehicle is suitable. - Make sure the trailer is parked on firm, level ground before loading or unloading. - When loading and unloading the machine, travel at the slowest speed possible. The ramp surface should be clean and free of mud, grease etc which may cause the machine to slide. - If slewing is necessary when the machine is on the trailer, do this as slowly as possible, making sure other people are at a safe distance. - Engage the slew lock and secure the machine to the trailer.	1	4	4
Emergency procedures					- Ensure a designated and responsible person knows the daily work programme and agree with them a suitable emergency contact procedure. Where reasonably practicable, use a mobile phone or radio and a pre-arranged call-in system. - Ensure the operators can provide the emergency services with enough detail for them to be found if there is an accident, e.g. the grid reference, distance from the main road, type of access (suitable for car/four-wheel-drive/emergency service vehicles). - Know the location details before they are needed in an emergency (also see FISA leaflet 802 Emergency planning). - Do not attempt to jump clear of an overturning machine – sit tight and stop the engine.			
Monitoring and review					This risk assessment shall be reviewed: - Annually - Following any change in any aspect of the method of work - Following any modification to the machines - Following any incident			

Risk Assessment for a Tracked 360° Excavator Loading Arisings

Scope:

This risk assessment shall include all foreseeable hazards resulting from operations using a tracked 360° excavator to load arising waste material. Following assessment, controls shall be specified and implemented to ensure the health and safety of all staff and others including the travelling public that might be affected by the operations.

Likelihood (L)		Severity (S)	
1	Very Unlikely	1	Minor injury, no lost time, no damage
2	Unlikely	2	Minor injury, up to 7 days lost time, minor damage
3	Likely	3	Reportable injury, 7+ days lost time, temporary disruption to operations
4	Very Likely	4	Major injury, damage, theft
5	Certain	5	Fatality, major damage, industry disruption
Risk Rating (RR) = Likelihood (L) x Severity (S)			

Key to Risk Rating		Severity (S)				
		1	2	3	4	5
Likelihood (L)	1	1	2	3	4	5
	2	2	4	6	8	10
	3	3	6	9	12	15
	4	4	8	12	16	20
	5	5	10	15	20	25

Green	This level of risk is workable with care and attention.
Amber	This level of risk may be workable with care and attention, but the company and the operator shall strive to find and implement further controls.
Red	This level of risk is not acceptable. Work must not commence until further controls have been put in place.

This risk assessment must be read alongside the following guidance from the HSE

The guidance specifies the current best practice for the operation, and it is the expectation of this company that all operations shall be undertaken as described wherever reasonably practicable to do so

Ref.	Title
FISA 704	Excavators in Tree Work
FISA 802	Emergency Planning
FISA 804	Electricity at Work: Forestry and Arboriculture
FISA 805	Training and Certification
UKAS	National Highways Sector Scheme 18

Identified Hazard	Level of Risk prior to control			Persons at Risk	Control Measures	Level of risk following control		
	L	S	RR			L	S	RR
Potential to cause harm to people, plant, reputation, product, or the environment.	L	S	RR	Operators, visitors, bystanders, travelling public	To be implemented on site prior to work. Work must not commence until these controls are in place.	L	S	RR
Competence Operator not familiar with the equipment or operation may cause injury or damage	3	5	15	Operator, bystanders, and adjacent property	All operators must have received appropriate training from a competent person	1	5	5

Working in the tree work environment. • Environmental damage • Injury to members of the public • Large wounds • Contamination with fuel and oil	3	5	15	Operator, bystanders, and adjacent property	• A site-specific risk assessment must be undertaken in order to make the machine operator aware of aspects of the local environment that could cause harm or be damaged by the proposed operations. • The site-specific risk assessment shall also highlight the presence of adjacent property or rights of way etc where special care needs to be exercised. • The following PPE shall be used: ○ Safety helmet (complying with EN 397) when the risk assessment identifies that it is needed. ○ Suitable hearing protection (complying with EN 352) where the noise level exceeds 80 dB(A) (see INDG363 Protect your hearing or lose it!). ○ Suitable protective gloves when handling materials such as fuel, ropes or chemicals. ○ Protective boots with good grip and ankle support (complying with EN ISO 20345). ○ Non-slag outer clothing appropriate to the prevailing weather conditions. ○ High-visibility clothing (complying with EN 471) should be worn when the risk assessment identifies that it is needed. • A suitable first-aid kit, including a large wound dressing, should be available in the base vehicle (see HSE leaflet INDG214 First aid at work: Your questions answered). • Hand-cleaning material such as waterless skin cleanser or soap, water and paper towels should be readily available. • You should have available and know how to use an emergency kit for spills of fuel, oil or chemicals.	1	5	5
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General	3	4	12	All bystanders and staff aiding the driver as banksmen	• All risk zones specified by the machine manufacturer must be clearly and prominently marked on all machines. This will normally be twice the maximum reach of the boom. • A sign warning against working in the vicinity of overhead electric power lines must be prominently displayed in all machines, together with the maximum height of the machine and the maximum height in the recommended (non-operational) travelling position. • When the machine is used in a lifting operation the Lifting Operations and Lifting Equipment Regulations 1998 (LOLER) will apply. In some cases (e.g. cable crane operations or lowering culvert pipes) the excavator may need to have a current certificate of thorough examination in accordance with the Regulations (see HSE Information sheet AIS29 LOLER: How the Regulations apply to forestry). • The machine operator is at particular risk from falls during onsite maintenance and refuelling operations. Ensure suitable means of access and safe working positions have been established.	1	4	4
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The machine	3	5	15	Operator	• Before work starts, an assessment should be carried out to identify the suitability of the machine in relation to the site and the task to be undertaken. • The features of the machine to be considered should include: ○ Stability and floatation – track length and width ○ Traction – grouser height and frequency ○ Ground clearance – raised undercarriage ○ Machine guarding – to prevent damage to pipework / components during the operation ○ Poor light conditions – adequate lighting must be fitted ○ Excavator Tracks – Rubber blocks to be fitted if machine to be used on trackway in wet conditions. • The risk assessment should identify what levels of operator protection are required on the machine. Consider: ○ Operator protective structures (OPS) – in the form of guarding (e.g. bars / mesh / polycarbonate glazing), to prevent harvesting residues etc entering the cab ○ Falling object protective structures (FOPS) – in the form of a frame / deflectors surrounding the cab to prevent falling objects striking and entering the cab ○ Rollover protective structures (ROPS) – where there is a risk of the machine overturning.	1	5	5
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Preparing to work	3	5	15	All bystanders and staff aiding the driver as banksmen	• Ensure information has been provided about all worksite hazards identified in the risk assessment, and the control measures are fully understood. • Check the worksite for underground and overhead hazards and services, e.g. electricity cables, phone lines, water, and gas mains. Where present, ensure they are clearly marked and provide suitable crossing points if necessary. • Many excavator operations involve working in isolation. • This must be addressed as part of the site risk assessment and an agreed lone-working procedure followed, e.g. a call-in or buddy system. • Select routes that are within the machine's and driver's capabilities. When using walking excavators also consider: • Identifying suitable access and egress points before work starts • Identifying potential obstructions and hazards, e.g. harvesting residue that may need treatment before work starts • Identifying any shallow soil, loose ground surfaces or large obstacles that can affect machine stability • Assessing and controlling the risk of objects being disturbed by the walking excavator and rolling downhill onto any work/access routes/footpaths etc below the worksite	1	5	5
Struck by the machine • Injury to persons as a result of direct contact by the machine when it is moving from a position of rest to a position of work.	3	5	15	All bystanders and staff aiding the driver as banksmen	• All staff and visitors on the work site shall maintain an exclusion zone of the stationary machine unless the machine has had all power shut down and they have made direct line of sight contact with the driver.	1	5	5

Operation	3	5	15	Operator and bystanders in the proximity	• Carry out pre-start checks in accordance with the manufacturer's handbook. Ensure safety guards and attachments are securely fixed in position. • Use the steps and handholds provided to enter and leave the machine. • Ensure nobody is in the immediate vicinity when the equipment is started. • Before operating the travel levers, ensure you know in which direction the machine is pointing. • Use extreme caution when reversing or slewing. Be sure there is a clear path around the machine. • Keep any attachment as close as possible to the ground. • A different approach to safety distances is required during extraction by cable crane, mechanical harvesting or mechanical roadside processing (see relevant AFAG leaflets). • When using walking excavators, ensure the wheels and legs are set as wide as possible to maintain stability. The cab should be kept as level as possible. • Be aware that the weather conditions may affect the machine handling characteristics. • Be aware of the limitations of the machine on slopes, soft ground and other major obstacles. • Wherever possible, localised obstacles such as harvesting residue, stumps, rocks etc should be moved or avoided to allow safe operation and travel. • On steep ground do not allow this material to roll where it may be hazardous to anyone below. • If the machine begins to slide or becomes unstable, lower the attachment onto the ground as quickly as possible.	1	5	5
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Use of the machine to load branches, logs, and stumps - Material falls from the grab and damages the truck - Material falls from the grab and strikes personnel	3	5	15	Operator and bystanders in the proximity	- The operator must ensure that all site personnel and bystanders remain outside of the exclusion zone while the machine is working. - Consideration must be given to marking out the exclusion zone with signs, cones, and barrier tape in areas of public presence. - The operator must not try to grab too much material so that a full strong grip can be made on the material being lifted. - Large sections of material must be broken down prior to lifting to ensure a good grip within the capabilities of the machine.	1	5	5
Contact with energised cables or installations	3	5	15	Operator and bystanders in the proximity	- Do not operate the machine if any part of it, or its load, can come within 15 m of overhead electric power lines unless it has been established that the line voltage does not exceed 33 kV, in which case this distance may be reduced to 9 m (see FISA leaflet 8o4 Electricity at work: Forestry and arboriculture). - The operator must always maintain visual contact with the grab.	1	5	5
Spillage of oil or similar fluid	3	4	12	Local environment and infrastructure	- All hoses and pipes shall be guarded to a level that is reasonably practicable. - A spill kit must be carried on the vehicle at all times. - See also the environmental aspects and impacts risk assessment.	1	4	4
Parking the machine	3	4	12	Operator and bystanders in the proximity	Before leaving the operator's seat: - Lower all implements and attachments to a safe position - Check you have locked out all control systems - Shut down the engine and remove the keys	1	4	4

Machine maintenance	3	4	12	Operator, plant fitter and bystanders in the proximity	• Maintenance shall be carried out by a competent person, in accordance with the manufacturer's handbook, and shall meet the requirements of the Provision and Use of Work Equipment Regulations 1998 • A level site with good footing shall be selected for maintenance • The machine must be fully stopped, and the ignition key must be removed. If appropriate, the electrical system shall be isolated. • All parts that could move or fall must be secured • Only the appropriate tools and techniques shall be employed • Where bolts have to be replaced they must be replaced by the same grade and type of bolt. • Do not use your hand to check for hydraulic fuel leaks – use a piece of paper or cardboard. Hydraulic fluid under pressure can penetrate the skin. If such contamination occurs seek medical attention at once. • No procedure should be attempted for which the operator has not been trained. • Where there is a risk of falling from the machine, appropriate measures shall be taken to ensure operator safety. This can include the use of fall-arrest systems where appropriate. • Do not attempt to operate a double-acting ram that has a broken pipe. Use other controls to lower the boom to a safe position and release the load if required. • Ensure all hydraulic pressure in the systems to be maintained or repaired is released before work starts. Where this is not possible, ease the residual pressure by careful slackening of joints. • Two spanners shall be used to refit a pipe or hose to avoid twisting the hose • Maintenance record shall be kept	1	4	4
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Machine transport	3	4	12	Operator loading the machine and bystanders in the proximity	- Know the machine's width, height, length and weight and ensure the transport vehicle is suitable. - Make sure the trailer is parked on firm, level ground before loading or unloading. - When loading and unloading the machine, travel at the slowest speed possible. The ramp surface should be clean and free of mud, grease etc which may cause the machine to slide. - If slewing is necessary when the machine is on the trailer, do this as slowly as possible, making sure other people are at a safe distance. - Engage the slew lock and secure the machine to the trailer.	1	4	4
Emergency procedures					- Ensure a designated and responsible person knows the daily work programme and agree with them a suitable emergency contact procedure. Where reasonably practicable, use a mobile phone or radio and a pre-arranged call-in system. - Ensure the operators can provide the emergency services with enough detail for them to be found if there is an accident, e.g. the grid reference, distance from the main road, type of access (suitable for car/four-wheel-drive/emergency service vehicles). - Know the location details before they are needed in an emergency (also see FISA leaflet 802 Emergency planning). - Do not attempt to jump clear of an overturning machine – sit tight and stop the engine.			
Monitoring and review					This risk assessment shall be reviewed: - Annually - Following any change in any aspect of the method of work - Following any modification to the machines - Following any incident			

Risk Assessment for a 360° Excavator with a Mulching Head

Scope:

This risk assessment shall include all foreseeable hazards resulting from the use of a 360° excavator with a mulching head. Following assessment, controls shall be specified and implemented to ensure the health and safety of all staff and others including the travelling public that might be affected by the operations.

Likelihood (L)		Severity (S)	
1	Very Unlikely	1	Minor injury, no lost time, no damage
2	Unlikely	2	Minor injury, up to 7 days lost time, minor damage
3	Likely	3	Reportable injury, 7+ days lost time, temporary disruption to operations
4	Very Likely	4	Major injury, damage, theft
5	Certain	5	Fatality, major damage, industry disruption
Risk Rating (RR) = Likelihood (L) x Severity (S)			

Key to Risk Rating		Severity (S)				
		1	2	3	4	5
Likelihood (L)	1	1	2	3	4	5
	2	2	4	6	8	10
	3	3	6	9	12	15
	4	4	8	12	16	20
	5	5	10	15	20	25

Green	This level of risk is workable with care and attention.
Amber	This level of risk may be workable with care and attention, but the company and the operator shall strive to find and implement further controls.
Red	This level of risk is not acceptable. Work must not commence until further controls have been put in place.

This risk assessment must be read alongside the following guidance from the HSE

The guidance specifies the current best practice for the operation and it is the expectation of this company that all operations shall be undertaken as described wherever reasonably practicable to do so

Ref.	Title
FISA 204	Flails and Mulchers in Tree Work
FISA 704	Excavators in Tree Work
FISA 802	Emergency Planning
FISA 804	Electricity at Work: Forestry and Arboriculture
FISA 805	Training and Certification
INDG259	An Introduction to Health and Safety
INDG214	First Aid at Work: Your Questions Answered
INDG229	Using Work Equipment Safely
INDG362	Noise at Work
INDG363	Protect Your Hearing or Lose It

Identified Hazard	Level of Risk prior to control			Persons at Risk	Control Measures	Level of risk following control		
	L	S	RR			L	S	RR
Potential to cause harm to people, plant, reputation, product, or the environment.				Operators, visitors, bystanders, travelling public	To be implemented on site prior to work. Work must not commence until these controls are in place.			
Competence Operator not familiar with the equipment or operation may cause injury or damage	5	5	25	Operator, bystanders and adjacent property.	All operators must have received appropriate training from a competent person	1	5	5
Struck by the Machine Injury to persons as a result of direct contact by the machine when it is moving from a position of rest to a position of work.	3	5	15	All staff and bystanders in the proximity of the machine.	- All staff and visitors on the work site shall maintain a 15m exclusion zone of the stationary machine unless the machine has had all power shut down and they have made direct line of sight contact with the driver. - The Banksman will use a remote horn or a 'back to back' radio system to attract the attention of the driver.	1	5	5

Struck by Debris Injury to persons as a result of contact with debris that has been picked up and flung by the mulching head.	3	5	15	All staff and bystanders in the proximity of the machine.	- All staff and bystanders close to the worksite shall maintain a minimum of 25m exclusion zone of the working machine. - All persons on site up to 125m from the working machine are to wear appropriate head protection. - The Banksman shall signal to the machine operator to indicate when he/she is at a safe distance using a remote horn or the 'back to back' radio system. - No person is to approach the working machine until they have made direct line of sight communication with the driver and the machine has been placed in a state of rest. - If it seen or suspected that a member of the public has wandered into the danger zone, the machine must be stopped, and the person instructed that they are in a danger area. No work shall commence until the visitor has moved to a place of safety. - The risk assessment shall note adjacent public areas in order that extra vigilance can be exercised during the work in those areas. - The Banksman must wear a forestry type helmet with ear and eye protection. - The operator must always maintain visual contact with the mulching head. - Dense ground covering vegetation must be broken down in layers in order to more accurately judge the proximity of the ground..	5	5	
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Damage to Property Damage to adjacent property as a result of contact with debris that has been picked up and flung by the mulching head.	3	5	15	Adjacent property.	- The vegetation area close to property shall be avoided, marked onto the live survey and undertaken at later date by a manual crew if the operator/ES or Machine Controller considers that there is a risk of damage to property. - Factors such as the topography of the ground, vegetation type and ground debris should be considered when making this decision. - When working alongside property within 50m, lateral movement of the head must be achieved by movement of the machine up and down track, never by slewing the machine. Slewing the machine will bring adjacent property into the danger area. - The operator must always maintain visual contact with the mulching head. - Dense ground covering vegetation must be broken down in layers in order to more accurately judge the proximity of the ground. <i>See the safe distances diagram.</i>	1	5	5
Damage to Features Hidden by Vegetation Mulching head contact with non-vegetation items such as wire, fences, installations, scrap communication infrastructure.	3	5	15	Hidden features.	- When non-vegetation items are observed, the machine operator must maintain a safe distance of at least 1 meter from them. - If the Banksman observes such items during the walked site assessment, he/she must clearly mark their location with appropriate signs, cones, hazard marker tape or high visibility paint and/or verbally communicate their presence and location to the operator and add them to the list of hazards on the daily job sheet/site specific risk assessment. - The operator must always maintain visual contact with the mulching head. - Dense ground covering vegetation must be broken down in layers in order to more accurately judge the proximity of the ground.	1	5	5

Contact with Energised Cables or Installations Mulching head contact with energised cables or installations.	3	5	15	Machine operator and any person in the vicinity which could be struck by broken cables.	- Machine operation must always be supervised by an authorised Banksman. - All guidelines contained in the publications G55 and GS6 must always be strictly adhered to. - The operator must always maintain visual contact with the mulching head. - Dense ground covering vegetation must be broken down in layers in order to more accurately judge the proximity of the ground.	1	5	5
Spillage of oil or similar fluid	3	4	12	Local environment and infrastructure	All hoses and pipes shall be guarded to a level that is reasonably practicable. A spill kit must be carried on the vehicle at all times. See also the environmental aspects and impacts risk assessment.	1	4	4
Ergonomics and Manual Handling: - Heavy equipment - Operation in an awkward position	3	4	12	Operator	All staff must have received job role specific manual handling training.	1	4	4
Monitoring and review					This risk assessment shall be reviewed: - Annually - Following any change in any aspect of the method of work - Following any modification to the machines - Following any incident			

Diagram to show the danger areas, safe distances and positions of safety when the 360° mulching machine is in operation. It must be borne in mind that these danger areas move as the machine moves so a **minimum** safe distance should be considered as **75m** along the track from the machine.

Risk Assessment for Chainsaw Operations

Scope:

This risk assessment shall include all foreseeable hazards resulting from the use of a chainsaw. Following assessment, controls shall be specified and implemented to ensure the health and safety of all staff and others including the travelling public that might be affected by the operations.

Likelihood (L)		Severity (S)	
1	Very Unlikely	1	Minor injury, no lost time, no damage
2	Unlikely	2	Minor injury, up to 7 days lost time, minor damage
3	Likely	3	Reportable injury, 7+ days lost time, temporary disruption to operations
4	Very Likely	4	Major injury, damage, theft
5	Certain	5	Fatality, major damage, industry disruption
Risk Rating (RR) = Likelihood (L) x Severity (S)			

Key to Risk Rating		Severity (S)				
		1	2	3	4	5
Likelihood (L)	1	1	2	3	4	5
	2	2	4	6	8	10
	3	3	6	9	12	15
	4	4	8	12	16	20
	5	5	10	15	20	25

	Green	This level of risk is workable with care and attention.
	Amber	This level of risk may be workable with care and attention, but the company and the operator shall strive to find and implement further controls.
	Red	This level of risk is not acceptable. Work must not commence until further controls have been put in place.

This risk assessment must be read alongside the following guidance from the HSE

The guidance specifies the current best practice for the operation and it is the expectation of this company that all operations shall be undertaken as described wherever reasonably practicable to do so

Ref.	Title
FISA 301	Using Petrol Driven Chainsaws
FISA 302	Basic Chainsaw Felling and Manual Takedown
FISA 304	Chainsaw Cross Cutting and Manual Stacking
FISA 306	Chainsaw Clearance of Windblow
FISA 307	Chainsaw Felling of Large Trees
AFAG 308	Top Handled Chainsaws
FISA 802	Emergency Planning
INDG214	First Aid at Work: Your Questions Answered
INDG229	Using Work Equipment Safely
INDG362	Noise at Work
INDG363	Protect Your Hearing or Lose It
INDG175	Control the Risks form Hand-Arm Vibration
INDG296	Hand-Arm Vibration – Advice for Employees
INDG145	Watch Your Back – avoiding back strain in timber handling and chainsaw at work
INDG317	Chainsaws at Work

Identified Hazard and Risk	Level of Risk prior to control			Persons at Risk	Control Measures	Level of risk following control		
	L	S	RR			L	S	RR
Potential to cause harm to people, plant, reputation, product, or the environment.				Operators, visitors, bystanders, travelling public	To be implemented on site prior to work. Work must not commence until these controls are in place.			
Maintenance of a chainsaw: - Cuts from chain - Oils and fuel contact with skin	4	2	8	Operator	- All operators are trained and certified - Workshop maintenance is the most desirable situation as the saw can be held in a vice whilst the chain is sharpened - Gloves shall be worn whilst sharpening and to avoid skin contact with oils and fuel - Hands must be washed with soap and warm water following skin contact with oils and fuel - A first aid kit must be available	2	1	2

Use of a petrol driven chainsaw on the ground: • Cut injury and kick back injury • Noise induced hearing loss • Vibration injury • Injury arising from working in the proximity of chainsaw operators	5	5	25	Operator and other persons in the proximity	• All operators must be trained and certified. • All operators must wear full chainsaw PPE: ○ Safety helmet (complying with EN 397) ○ Eye protection (mesh visor complying with EN 1731 or safety glasses to EN 166). ○ Hearing protection (complying with EN 352) ○ Gloves. * The type of glove will depend on a risk assessment of the task and the machine. Consider the need for protection from cuts from the chainsaw, thorny material, and cold/wet conditions. Where chainsaw gloves are required, these should comply with EN 381-7. ○ Leg protection* incorporating chain-clogging material (complying with EN 381-5). ○ Protective boots* with good grip and protective guarding at front vamp and instep (complying with BS EN 20345). ○ Non-sag outer clothing. The use of high-visibility clothing may also be appropriate. • Staff must maintain a safe distance of 5m from anyone using a chainsaw. If staff need to work within 5m of a chainsaw operator, the following controls must be in place: ○ The chainsaw operator must be using a chainsaw with an appropriate length of guidebar rather than a bar of excessive length. ○ The chainsaw operator must be made aware of their presence. ○ Persons working within 5m must be wearing type C chainsaw trousers. • All other persons must be made aware of the hazards and instructed to remain clear of the work area. • A first aid kit must be available. • Reference must be made to the vibration risk assessment.	1	4	4
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Injury to the back of the hands: - Chain snapping - Contact with brambles and other undergrowth - Abrasion from tree bark	4	3	12	Operator	Chainsaw operators working on the ground must wear appropriate gloves. Whilst a leather general work glove or a close-fitting rubber coated glove are acceptable for the purpose of grip, keeping the hands warm, protecting from brambles and for reducing the effects of vibration, chainsaw protective gloves complying to EN381-7 shall be worn by staff operating a chainsaw on the ground under the following circumstances: - When using a large chainsaw where if the chain snaps it is of sufficient length to whip around and cause injury to the back of the left hand - When using a chain that has been filed incorrectly and into the drive links - On sites where there is a risk of contacting materials such as fencing wire or shrapnel with the chain Chainsaw operators working from a rope and harness may wear gloves if they wish but it shall be acceptable to not wear gloves to increase dexterity when tying knots. Gloves will also provide protection from abrasion from tree bark and from minor cuts from a hand saw.	2	1	2
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Use of a chainsaw from a rope and harness: - Cut injury and kick back injury - Cutting the work positioning system leading to a swing or fall which may cause injury	4	5	20	Operator	- All operators must be trained and certified - All operators must wear appropriate chainsaw PPE - Chainsaw gloves need not be worn by the climber (see above) - All other persons must be made aware of the hazards and instructed to remain clear of the work area - Ropes must be kept well clear of the cutting area and the climber must always employ the use of a secondary attachment system unless the specific risk assessment dictates otherwise - Two hands must be used on the top handled saw at all times other than when working at the extreme tips of branches and one hand is required to maintain balance or position - Top handled chainsaws must never be used on the ground, but it is acceptable for ground staff to start and warm the saw prior to passing it to the climber - Consideration shall be given to the support of larger saws using a separate tool line - A first aid kit must be available	1	4	4
Use of large chainsaws: - Cut injury and kick back injury - Muscular strain and back injury - Ergonomics and manual handling - Vibration	4	5	20	Operator and other persons in the proximity	- All operators must be trained and certified - All operators must wear full chainsaw PPE - All other persons must be made aware of the hazards and instructed to remain clear of the work area - A first aid kit must be available	1	4	4
Use of pole chainsaws: - Cut injury and kick back injury - Muscular strain and back injury - Contact with energised utility cables - Arising branch material falling on the operator	4	5	20	Operator and other persons in the proximity	- All operators must be trained and certified - All operators must wear chainsaw PPE as appropriate - All other persons must be made aware of the hazards and instructed to remain clear of the work area - All cables shall be considered to be energised unless there is written confirmation of isolation from the utility supply company - Branches shall be removed in small sections allowing the operator to position themselves out of the drop zone - A first aid kit must be available	1	4	4

Struck by: - Material falling from the crowns of adjacent trees - The falling stem once the felling cuts have been made	3	5	15	Operator and other persons in the proximity	- The operator shall ensure that all persons in the vicinity are alerted prior to the felling cuts being made - If deemed necessary on the site-specific risk assessment, the operator shall appoint a sentry to keep watch for other persons in the work area - The operator and other operators in the team shall carry whistles to use for warning each other and others of imminent activity - The operator shall be vigilant to the possibility of material falling from the crowns of adjacent trees by looking carefully at the crowns and identifying dead wood and hanging branches - The operator shall use the system of felling cuts as described in industry guidance - The operator shall retreat into his / her planned escape route once the stem has started to move in the felling direction - A first aid kit shall be available - All persons on site to wear an appropriate safety helmet	2	2	4
Snedding / de-limbing operations: - Tension and compression - Rolling timber - Springing branches - Slips, trips and falls	3	4	12	Operator and other persons in the proximity	- The operator shall carefully assess the tension and compression in the stem and branches continually throughout the operation - The operator shall remain vigilant at all times for signs of movement in the felled stem and in the branches - If appropriate, a winch shall be used to prevent the stem from rolling - The operator shall use approved branch removal techniques	2	2	4
Directional Felling: Due to weight, shape, and site factors the tree may favour a particular felling direction which is not the desired felling direction - The tree may sit back and trap the saw - The tree may fall onto adjacent targets - Injury to operator or bystanders - Falls onto a path or roadway	4	5	20	Operator and other persons in the proximity Adjacent targets, paths and roadways	- Wedges shall be used to prevent the saw becoming trapped in the felling cut and to influence the direction of fall - A suitable cable / rope and an appropriate means of pulling shall be used to prevent the tree from sitting back and to ensure the correct direction of fall. A suitable means of pulling could be man power, a block and tackle, a hand winch, a powered winch or a tractor - A tracked chipper must not be used as a tractor	1	5	5

Vibration - Work related upper limb disorder - Vibration white finger	4	3	12	Operator	- Reference must be made to the specific risk assessment for vibration and to the health and safety policy which specifies controls relating to vibration - Machinery selected for use shall be fitted with anti-vibration systems - Individual machines shall be assessed for their operational vibration levels and the operators briefed upon the maximum duration of use - Machinery shall be rigorously maintained ensuring that vibration is not exacerbated and the effective functioning of all vibration dampening systems - The Team Leader shall monitor work systems and ensure that operations are shared around the team	2	2	4
Ergonomics and Manual Handling: - Heavy equipment - Operation in an awkward position	3	3	9	Operator	- Large chainsaws are heavy, so the operator must take advantage of the timber dogs and the wood being cut to support much of the weight of the saw. - The operator must let the saw cut at its own rate rather than levering too hard and defeating the anti-vibration features on the saw.	2	2	4
Refuelling petrol driven tools: - Fire and explosion - Spillage - Fuel contact with skin and eyes	4	3	12	All persons on site	- Purpose designed 'combi-cans' with anti-spill spouts shall be used - Operators shall not smoke near to fuel or whilst using petrol driven equipment - Operators shall wait a few minutes for tools to cool before refuelling and shall exercise care not to allow fuel to contact hot exhaust areas - Fuel cans must be placed on a spill tray - A spill kit must be available - Hand wipes and eye wash must be available	3	1	3
Monitoring and review					This risk assessment shall be reviewed: - Annually - Following any change in any aspect of the method of work - Following any modification to the machines - Following any incident			

Risk Assessment for Tractor Mounted Equipment and Operations

Scope:

This risk assessment shall include all foreseeable hazards resulting from a tractor mounted equipment and operations. Following assessment, controls shall be specified and implemented to ensure the health and safety of all staff and others including the travelling public that might be affected by the operations.

Likelihood (L)		Severity (S)	
1	Very Unlikely	1	Minor injury, no lost time, no damage
2	Unlikely	2	Minor injury, up to 7 days lost time, minor damage
3	Likely	3	Reportable injury, 7+ days lost time, temporary disruption to operations
4	Very Likely	4	Major injury, damage, theft
5	Certain	5	Fatality, major damage, industry disruption
Risk Rating (RR) = Likelihood (L) x Severity (S)			

Key to Risk Rating		Severity (S)				
		1	2	3	4	5
Likelihood (L)	1	1	2	3	4	5
	2	2	4	6	8	10
	3	3	6	9	12	15
	4	4	8	12	16	20
	5	5	10	15	20	25

Green	This level of risk is workable with care and attention.
Amber	This level of risk may be workable with care and attention, but the company and the operator shall strive to find and implement further controls.
Red	This level of risk is not acceptable. Work must not commence until further controls have been put in place.

This risk assessment must be read alongside the following guidance from the HSE

The guidance specifies the current best practice for the operation and it is the expectation of this company that all operations shall be undertaken as described wherever reasonably practicable to do so

Ref.	Title
FISA 204	Flails and Mulchers in Tree Work
FISA 702	All-Terrain Vehicles
FISA 704	Excavators in Tree Work
FISA 802	Emergency Planning
FISA 804	Electricity at Work: Forestry and Arboriculture
FISA 805	Training and Certification
INDG229	Using Work Equipment Safely
INDG185	Using Tractors Safely
AIS40	Power take offs and power take off drive shafts

Identified Hazard and Risk	Level of Risk prior to control			Persons at Risk	Control Measures	Level of risk following control		
	L	S	RR			L	S	RR
Potential to cause harm to people, plant, reputation, product, or the environment.	L	S	RR	Operators, visitors, bystanders, travelling public	To be implemented on site prior to work. Work must not commence until these controls are in place.	L	S	RR
Competence Operator not familiar with the equipment or operation may cause injury or damage	3	5	15	Operator, bystanders and adjacent property	All operators must have received appropriate training from a competent person	1	1	1
Maintenance - Injuries from moving parts - Crush / trap injuries - Cuts, bruises, and contamination	4	4	16	Operator	- All operators shall receive training prior to undertaking maintenance operations - Reference shall be made to the manufacturers maintenance manual - PPE shall be provided and used where appropriate - All power take off shafts shall be guarded	2	2	4
Road traffic accident	3	5	15	Operator, bystanders and adjacent property	- Appropriate driver training - Use of lights and flashing beacons whilst in transit - Driving with due courtesy to other highway users - Pulling over frequently to allow the build up of traffic to pass - Driver must check for other vehicles making irrational overtaking manoeuvres before turning right	1	5	5
Operators Head or Body strikes inner cab controls on rough terrain - Operator jolted whilst driving over uneven terrain - Sprain / strain / back injury - Operator slips / trips entering / leaving cab	4	2	8	Operator	- Restraining belts used if fitted - Appropriate speed selected for the terrain - Cab to be kept clear of debris and mud	3	1	3

Struck by tractor and unit • Manoeuvring • Overturning on slopes • Runaway while in operation or parked • Unauthorised entry & starting of tractor (trespassers / vandals)	3	5	15	Operator, bystanders and adjacent property	• Site assessments / ongoing operational assessments • Parking on level ground where possible • Keys removed, and cabs locked when not in use	1	4	4
Power take off shafts • Entanglement and dismemberment 	3	5	15	Operator	• Power take off shafts must be guarded • The guard must be in good condition • The guard must be prevented from rotating using a chain • If maintenance is required the operator must completely shut down the tractor, remove the key and take the key with them. 	1	5	5

Mulching / Flail Attachment • Mulching head is slewed into the carriageway • Operator caught in moving parts • Tractor overturns on slope • Tractor runs away / skids on slope • Material picked up by the cutting head and thrown • The flail head will destroy any litter currently held within the subject vegetation and could discharge stones, shards of steel or aluminium cans and pieces of broken glass • The operation produces mechanical noise and dust	4	5	20	Operator, bystanders and adjacent property	• A banksman shall be used where appropriate: ○ A banksman must supervise all operations ○ The banksman must supervise from a position outside of the exclusion zone ○ The banksman must maintain contact with the machine operator and the communication system shall be specified on the site-specific risk assessment ○ The banksman must wear high visibility outerwear appropriate to the site • Appropriate machinery shall be selected for the proposed task • The head shall not be slewed into the carriageway and special care shall be taken when manoeuvring the tractor unit when working adjacent to a highway • Pre-start checks shall be undertaken in line with the maintenance and inspection guidance from the manufacturer • Controls shall be kept clear of debris and mud • Persons on site shall maintain a safe distance from the working machine as advised by the operator or banksman • Persons on site shall wear sufficient PPE as identified by the site / task specific risk assessment completed prior to commencing work on the day • Persons on side shall maintain a safe distance from the working machine as advised by the operator • The site shall be checked for hazardous debris prior to work	2	2	4
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Backhoe	4	5	20	Operator, bystanders and adjacent property	- Carry out pre-start checks in accordance with the manufacturer's handbook. Ensure safety guards and attachments are securely fixed in position. - Ensure nobody is in the immediate vicinity when the equipment is started. - Do not operate the machine if any part of it, or its load, can come within 15 m of overhead electric power lines. - The ground must be checked for underground services before excavation work. A permit to dig may be required by the site manager. - Be aware of the limitations of the machine on slopes, soft ground and other major obstacles. - If the machine begins to slide or becomes unstable, lower the attachment onto the ground as quickly as possible.	1	5	5
Vehicle fire	3	4	12	Operator and adjacent environment	A fire extinguisher shall be mounted the tractor cab	1	4	4
Noise	3	3	9	Operator and others in the proximity	- Machinery shall be rigorously maintained ensuring that noise characteristics are not exacerbated - Hearing protection shall be provided where appropriate	1	3	3
Contamination - Hydraulic hose failure - High pressure penetration injury - Risk to sensitive wildlife sites including water courses	3	4	12	Operator, bystanders and adjacent property	- An exclusion zone must be established - The banksman must not enter the exclusion zone unless confirmed contact has been made with the operator and the machine has been shut down. - The banksman must ensure that no person approaches the machine and work area until the machine has been shut down. - Site environmental assessment - Emergency spillage procedures and supply of absorbent materials - Removal of waste materials in line with company policy	2	2	4

Re-fuelling Fire or explosion	2	5	10	Operator	- No smoking / fire danger zone to be enforced - A fire extinguisher shall be mounted in the tractor cab - All ignition sources shall be excluded from the maintenance area - Approved fuel storage containers shall be used - Storage of fuel shall be out of direct sunlight - Spill kits shall be provided and used where appropriate	1	3	3
Monitoring and review					This risk assessment shall be reviewed: - Annually - Following any change in any aspect of the method of work - Following any modification to the machines - Following any incident			

Risk Assessment - Tree Shear

Scope:

This risk assessment shall include all foreseeable hazards resulting from dismantling trees using a tree shear. Following assessment, controls shall be specified and implemented to ensure the health and safety of all staff and others including the travelling public that might be affected by the operations.

Likelihood (L)		Severity (S)	
1	Very Unlikely	1	Minor injury, no lost time, no damage
2	Unlikely	2	Minor injury, up to 7 days lost time, minor damage
3	Likely	3	Reportable injury, 7+ days lost time, temporary disruption to operations
4	Very Likely	4	Major injury, damage, theft
5	Certain	5	Fatality, major damage, industry disruption
Risk Rating (RR) = Likelihood (L) x Severity (S)			

Key to Risk Rating		Severity (S)				
		1	2	3	4	5
Likelihood (L)	1	1	2	3	4	5
	2	2	4	6	8	10
	3	3	6	9	12	15
	4	4	8	12	16	20
	5	5	10	15	20	25

Green	This level of risk is workable with care and attention.
Amber	This level of risk may be workable with care and attention, but the company and the operator shall strive to find and implement further controls.
Red	This level of risk is not acceptable. Work must not commence until further controls have been put in place.

This risk assessment must be read alongside the following guidance from the HSE

The guidance specifies the current best practice for the operation, and it is the expectation of this company that all operations shall be undertaken as described wherever reasonably practicable to do so

Ref.	Title
FISA 704	Excavators in Tree Work
FISA 802	Emergency Planning
FISA 804	Electricity at Work: Forestry and Arboriculture
FISA 805	Training and Certification
INDG229	Using Work Equipment Safely
UKAS	National Highways Sector Scheme 18

Identified Hazard and Risk	Level of Risk prior to control			Persons at Risk	Control Measures	Level of risk following control		
	L	S	RR			L	S	RR
Potential to cause harm to people, plant, reputation, product, or the environment.				Operators, visitors, bystanders, travelling public	To be implemented on site prior to work. Work must not commence until these controls are in place.			
Competence Operator not familiar with the equipment or operation may cause injury or damage	3	4	12	All persons on site	All operators must have received appropriate training from a competent person	1	1	1
Struck by Debris - Injury to persons as a result of contact with debris snapped from the tree. - Damage to adjacent property as a result of snapping or falling branch material.	3	3	9	All persons on site Adjacent property or other targets	- All staff and bystanders close to the worksite shall maintain a 25m exclusion zone of the working machine. - If there is a significant risk of persons entering the danger area, a Banksman must be used. - No person is to approach the working machine until they have made direct line of sight communication with the driver and the machine has been placed in a state of rest. - If it seen or suspected that a member of the public has wandered into the danger zone, the machine must be stopped, and the person instructed that they are in a danger area. No work shall commence until the visitor has moved to a place of safety. - The area beneath and surrounding the tree shall be inspected for hidden features prior to the start of operations. - The site risk assessment shall include a note of adjacent public areas in order that extra vigilance can be exercised during the work in those areas. - The operator must maintain visual contact with the shear head at all times. - The vegetation area close to property shall be avoided if there is a risk of damage to property. - Factors such as the topography of the ground, vegetation type and ground debris should be considered when making this decision.	2	1	2

Shear head contact with non-vegetation items such as cables, fences, installations, and scrap - Head damage - Incorrect function - Debris thrown by the shear head - Damage to retained features	3	4	12	All persons on site	- When non-vegetation items are observed, the machine operator must maintain a safe from them. - If the driver or banksman observes such items during the risk assessment and work planning phase, he/she must clearly mark their location with appropriate signs, cones, hazard marker tape or high visibility paint and/or verbally communicate their presence and location to the operator and add them to the list of hazards on the briefing form.	2	2	4
Contact with energised cables or installations - Electrocution - Damage to the infrastructure	3	5	15	Operator and any person in the vicinity which could be struck by broken cables	- The operator must maintain visual contact with the shear head at all times. - The shear operation must not ever come within 2.5 tree lengths of any cable unless written confirmation of power shut down has been received from the electricity supply company.	1	5	5
Machine overturning	3	5	15	Operator and others on site	- Terrain and topography must be included as factors in the site-specific risk assessment. - Weather conditions must be included as factors in the site-specific risk assessment. - The operator must only remove branch sections which are within the capability of the machine at the reach of the arm. - Initial sections shall be deliberately small so that the operator can judge the weight and condition of the timber.	1	4	4
Spillage of oil or similar fluid	3	4	12	Local environment and infrastructure	- All hoses and pipes shall be guarded to a level that is reasonably practicable. - A spill kit must be carried on the vehicle or support vehicle at all times.	2	2	4
Monitoring and review					This risk assessment shall be reviewed: - Annually - Following any change in any aspect of the method of work - Following any modification to the machines - Following any incident			

Risk Assessment – Wood Chipping Operations

Scope:

This risk assessment shall include all foreseeable hazards resulting from Wood Chipping Operations. Following assessment, controls shall be specified and implemented to ensure the health and safety of all staff and others including the travelling public that might be affected by the operations.

Likelihood (L)		Severity (S)	
1	Very Unlikely	1	Minor injury, no lost time, no damage
2	Unlikely	2	Minor injury, up to 7 days lost time, minor damage
3	Likely	3	Reportable injury, 7+ days lost time, temporary disruption to operations
4	Very Likely	4	Major injury, damage, theft
5	Certain	5	Fatality, major damage, industry disruption
Risk Rating (RR) = Likelihood (L) x Severity (S)			

Key to Risk Rating		Severity (S)				
		1	2	3	4	5
Likelihood (L)	1	1	2	3	4	5
	2	2	4	6	8	10
	3	3	6	9	12	15
	4	4	8	12	16	20
	5	5	10	15	20	25

Green	This level of risk is workable with care and attention.
Amber	This level of risk may be workable with care and attention, but the company and the operator shall strive to find and implement further controls.
Red	This level of risk is not acceptable. Work must not commence until further controls have been put in place.

This risk assessment must be read alongside the following guidance from the HSE

The guidance specifies the current best practice for the operation, and it is the expectation of this company that all operations shall be undertaken as described wherever reasonably practicable to do so

Ref.	Title
FISA 604	Wood Chippers
FISA 702	All-Terrain Vehicles
FISA 802	Emergency Planning
FISA 805	Training and Certification
INDG229	Using Work Equipment Safely
INDG362	Noise at Work
INDG363	Protect Your Hearing or Lose It

Identified Hazard and Risk	Level of Risk prior to control			Persons at Risk	Control Measures	Level of risk following control		
	L	S	RR			L	S	RR
Potential to cause harm to people, plant, reputation, product, or the environment.	L	S	RR	Operators, visitors, bystanders, travelling public	To be implemented on site prior to work. Work must not commence until these controls are in place.	L	S	RR
Competence Operator not familiar with the equipment or operation may cause injury or damage	3	4	12	Operator, bystanders and adjacent property	All operators shall hold a certificate of competence in wood chipping operations and be familiar with arboriculture / forestry groundwork	1	1	1

Operation of the wood chipping machine - Staff feeding the chipper may be struck by material either thrashing around in the feed hopper or by material ejected from the feed rollers - Inappropriate methods used for feeding of the machine may cause serious injury or death	4	4	16	Operator	- Operations shall strictly adhere to the guidelines contained in AFAG leaflet 604 - Operators must wear PPE as specified in AFAG 604: - A safety helmet, complying with EN 397 - Eye protection (a mesh visor complying with EN 1731 or safety glasses to EN 166) - Hearing protection (complying with EN 352) - Gloves with long, close-fitting cuffs that can be tucked into sleeves - Safety boots with good grip and ankle support (complying with EN 345-1) - Non-slag outer clothing appropriate to the prevailing weather conditions - High-visibility clothing if required by the site conditions - Operators must feed the chipper from a position to the side of the in-feed chute - Operators must never place any part of their body within the in-feed chute - Operators must never use their hands or feed to push material into the in-feed chute - Operators must prepare and use a stick for pushing material into the feed rollers	2	1	2
Tracking the machine to its working position. - Collision with persons and property - Overturning - Damage to underground services	3	3	9	Operator, persons and property that come within the 5m exclusion zone	- Only the operator shall ride the machine to the worksite and only if there is a stand plate fitted to the machine - The operator shall also undertake the role of banksman to ensure that no persons enter a 5m exclusion zone - The operator shall remain vigilant to the proximity of property that may be damaged including underground services and overhead cables - The track system is solely for the purpose of transporting the chipping unit to the worksite. The machine is not a tractor and must not be used to pull or tow anything.	1	2	2

Crane fed machines Contact with energised cables or installations	3	4	12	Operator	- Operators to maintain a 25m safe zone from crane fed wood chipping operations where the crane / winch is fitted to the chipper - Operators to maintain a safe zone as required by the timber crane if a separate crane unit / forwarder is used to feed the chipper - The team leader must agree the means to connect the timber to the cable and the procedure to be used for uncoupling - Do not operate the machine if any part of it, or its load, can come within 15 m of overhead electric power lines unless it has been established that the line voltage does not exceed 33 kV, in which case this distance may be reduced to 9 m (see FISA leaflet 8o4 Electricity at work: Forestry and arboriculture). The operator must always maintain visual contact with the grab.	1	2	2
Working on embankments - Slips, trips and falls - Material or equipment rolling - Engineered ground liable to subsidence	4	3	12	Operator, bystanders and adjacent property	- Ground conditions and trip hazards shall be identified, noted, and briefed by the Team Leader prior to commencing work - Tracked chipper with variable track width to be used	1	3	3
Working in close proximity to overhead power lines and phone masts Use of Tether	3	3	9	Operator	Operators to ensure that when working in a close proximity to overhead powerlines and phone masts to use a tether.	2	1	2

Biological hazards Illness as a result of contact with: - Animal bi-products - Noxious weeds - Human effluent - Clinical sharps	4	3	12	Operator, bystanders and adjacent property	- Biological hazards shall be identified, noted, and briefed by the Team Leader prior to commencing work - The location of clinical sharps shall be marked and reported to the client for specialist removal - The location of noxious weeds shall be marked, and the location reported to the client - Reference must be made to the sharp's procedure - Hand washing material must be available - Operators must wash their hands following contact	1	1	1
Contamination of the material to be chipped - Material left over from previous construction activity that may damage the machine - Fencing wire / barbed wire from old fencing	3	4	12	Operator, bystanders and adjacent property	Such hazards shall be identified, noted and briefed by the Team Leader or cleared prior to commencing work	1	4	4
Noise and dust - High levels of noise (>110db) - Dust created by the chipping process	5	4	20	Operator, bystanders and adjacent property	- Respiratory protection shall be worn where specific risk assessment identifies a hazard - The client shall be advised of the possibility of dust and noise - Where reasonably practicable, all surrounding properties shall be advised of the possibility of dust and noise	2	1	2
Climbing ropes become entangled in chipper	3	5	15	Tree Climber	- Ground staff must be vigilant for the position of the climbers ropes especially when gathering bundles of twiggy brush - Bright coloured climbing ropes shall used	1	5	5

Ergonomics and Manual Handling: - Feeding material into the chipper - Loading / hitching the chipper to a vehicle	4	3	12	Operator	- Hitching a trailed chipper to a vehicle is not a one-person task. At least two people should assist in hitching the chipper to a vehicle - Feeding material into the chipper might require lifting in an awkward position. Operators must: - Prepare the material to be manageable and without snags - Seek assistance with long / heavy branch and stem sections	2	1	2
Monitoring and review					This risk assessment shall be reviewed: - Annually - Following any change in any aspect of the method of work - Following any modification to the machines - Following any incident			