

Vault ID #	Task/Area where hazards exists	Hazard – what can cause harm	Potential outcome – what can happen	Likelihood	Consequences	Risk Rating (Inherent)	Required Control Measures List the control measures required to eliminate or minimise the risk of illness or injury for each hazard identified	Frequency of Monitoring or Action Date	Personnel Responsible The person required to action the control measure	Eliminate	Type Minimisation Controls	Likelihood	Consequences	Risk Rating (Residual)
Assumptions: Provisions of the Approved Code of Practise will apply to all operations as the minimum required standard and will not be re-visited in the control plans below (inclusive of PPE, emergency items, standard operating procedures, maintenance of plant & equipment to manufacturers specifications, training and supervision practices).										High Risk After Controls: Operational Manager approval required. High risk with new controls GM Approval required.				
4212	Driving <u>inside</u> Forest LVs, or other All (ref code 6451 for HV)	Drivers Terrain Trees Animals Fatigue Mechanical Failure	Head on Rollover Stuck/stranded Fatality Serious-Minor Injury Asset damage	B	5	E	- PP forest road condition (build/maintain) Eng standards - PP forest GIS mapping available (app) - PP contractor pre-qualification, induction & monitoring - PP driving standards & critical rules 50km speed limit - Seat belt worn at all times - Able to stop in ½ the visible distance - RT & road position call outs - Lights on - PP vehicle purchasing & maintenance standards - Forests competency checks - Hands free mobile device & policy - Fatigue management guidelines & policy, max work hours or min break - Traffic Management practises as per the BPG for private Forestry Roads - Monitoring devices in vehicles, actively managed - Monitoring devices in vehicles	All times	Pan Pac Pan Pac Pan Pac Pan Pac / entrants Pan Pac / staff Pan Pac / staff Pan Pac / staff Pan Pac/contractor Pan Pac/contractor Pan Pac Contractor	X	A A A A Eng A A A A A A	D	5	M
5212	Driving <u>outside</u> Forest LVs or other All (ref code 6452 for HV)	3 rd Party Drivers Road conditions Traffic Management Fatigue Mechanical Failure	Head on Rollover Stuck/stranded Fatality Serious-Minor Injury Asset damage	B	5	E	- PP vehicle purchasing & maintenance standards (4wd LVs) - Forests competency check - Hands free mobile device & policy - Drive within the law, adhering to road code - Fatigue management guidelines & policy, max work hours or min break - Traffic Management practises as per the NZ Roding Authority - Monitoring devices in vehicles, actively managed - Monitoring devices in vehicles	All times	Pan Pac / staff Pan Pac / staff Pan Pac / staff Pan Pac/contractor Pan Pac/contractor Pan Pac/contractor Pan Pac Contractor	X	Eng A Eng A A A A A	D	5	M
5215	Environs (hazards) in forests All tasks Plotting PP Planning Monitoring (HS, Env)	Environs (hazards) in forests Steep terrain, Bluffs, cliffs Ground depressions, tomos Undergrowth - gorse, nettle, blackberry Insects Animals	Health impact Infection Anaphylaxis Strain, Sprain Fracture	B	3	H	- PP forest GIS mapping available (app), slope mapping provided - Forestry staff training - Forestry hydration/nutrition training - Assess the path of travel - PPE (sturdy footwear, chaps, gorse capes, gators or other) - Notify Manager, supervisor, foreman of allergies, plan for emergencies - Carry epi pen	All times As required	Pan Pac Pan Pac All entrants All entrants Pan Pac/contractor Entrants Entrants	X	A A A A A A	C	2	M
5216	Unauthorised access Security All	Unauthorised access Unsavoury or aggressive persons Fire arms Fires	Interference Violence – acute or long lasting injury Theft Asset damage	D	4	M	- Gates with e-locks (transition) - Gates with keys, key issuing practises (transition) - Induction & authorisation to enter practises - Security patrols (2 up), security trained with body armour & cameras - Landowner agreements, risk mgmt., access practises (exclusion during operating hours) - Hunting permit system (PP forests) - Iwi hunting permit system (lease forests)	All times	Pan Pac Pan Pac Pan Pac Pan Pac/contractor Pan Pac / owner Pan Pac Iwi	X	I, A I, A A A A A A	D	5	M
5218	Weather Security All	Adverse Weather Wind Isolation Road conditions Trees	Fatality, hit by object Serious-Minor Injury, heat stroke, hypothermia, hyperthermia Asset damage	C	3	H	- Weather monitoring & awareness, use of Apps and advisories - Adverse Weather Procedure (FOR-PRO-HS13) - Forest full or part closure - Work & vehicle location – move to protected area - All workers empowered to stop work, reassess	All times As required As required As required	Pan Pac / entrants Pan Pac / entrants Contractors Entrants	X	A A A I I	D	3	M
5220	Operating Quad bikes / ATV	ATV & trailer - tip, rollover, loss of control Mechanical failure Steep or unstable terrain Animals	Head on Rollover Stuck/stranded Fire Fatality Serious-Minor Injury Asset damage	C	5	H	- PP forest road condition (build/maintain) Eng standards - PP forest GIS mapping available (app) - Pan Pac competency check - Trailer design with twin axle, braked and maintained - ATV with rollover protection, fail to safe seat belts fitted, helmets supplied - Daily pre-start check - Operate to the conditions & terrain, remain on forestry roads or track as able - Maintain safe working limits, load capacity - Regular cleaning and removal of fine debris - Fire extinguisher fitted, annual checks - PP driving standards & critical rules - Seat belt worn at all times - Able to stop in ½ the visible distance - RT & road position call outs on active roads - Lights on	All times	Pan Pac Pan Pac Pan Pac Pan Pac/contractor Pan Pac/contractor Operator Operator Operator Operator Operator Operator Operator	X	Eng A A Eng Eng A A A A A A Eng	D	5	M

5221	All	Alcohol & other substances -workers under the influence	Fatality Serious-Minor Injury Asset damage	C	5	H	- Pan Pac policy, procedure - PP staff education - Pre-employment, Random testing and detection program - Post incident testing	All times As required All times As required	Pan Pac Pan Pac staff Entrants Entrants	X	A A A A	D	5	M
5222	All	Stress & Fatigue	Injury Illness Environmental damage Asset damage	B	3	H	- Fatigue management procedure, maximum work hours 13 per day, 70 per week - Employee assistance program - Plan & prioritise workload - Maintain sleep, fitness, recreation as per Forestry training - Maintain Hydration, nutrition as per Forestry training - Report, adjust start times as required	All times As required As required All times All times As required	Pan Pac/contractor Pan Pac/staff Pan Pac /staff Entrant Entrant Entrant	X	A A A A A A	D	1	L
5223		Animals/insects merged into environs of forest												
5224	All	External Environment UV light Dust Pollens Weather	Heat stress or stroke, Hypothermia/hyperthermia, Dehydration, Respiratory infections, Melanoma/sun burn, Eye injuries	A	3	H	- First aid kit available - Trained first aiders - Maintain hydration & nutrition as per Forestry training - Wear appropriate clothing & protective gear, carry spares as required - Minor allergies to be treated as needed - Annual skin checks as per PP segregation groups	All times	Pan Pac/contractor Pan Pac/contractor Entrant Entrant Entrant Pan Pac & staff	X	A A A A A	D	1	L
5225	Operating Chainsaws (not otherwise identified)	Incorrect technique - kickback Poor maintenance Untrained Rotating parts Noise Vibration Hazardous Substances Lithium batteries (Fire)	Amputations Lacerations Hearing loss Eye Injuries Nerve damage Fire Asset damage	A	3	H	- Trained operator (NZQA 6916, 6917, 23411) - SBOs completed 6 monthly - Maintain minimum approach distances applicable to the type of use - Chain break applied when idling, moving through the forest - Spark arrestor fitted and tested - SDS's on hand and understood - LIPO bags, lithium fire blankets - Anti-vibration gloves highly recommended	All times	Pan Pac/contractor Pan Pac/contractor Contractor/operator Operator Operator Pan Pac/contractor Pan Pac/contractor Pan Pac/contractor	X	A A A Eng A A A A	D	2	L
5226	Operating Hand Tools Planting, Pruning, Plotting Security Maintenance Vehicle rescue	Hand Tools & batteries (ie slashers, spades, winches, shovels, machetes, water blasters, grinders, grease guns, drills...)	Lacerations Bruises Strains & sprains Fire	C	2	M	- Tool selection for safety, maintained and used as manufactured - Daily checks - Sharp blades protected when carrying, transporting (cut resistant pouches as available) - Maintain minimum approach distances (MADs) of 2-5m during use - LIPO bags, lithium fire blankets	All times	Pan Pac/contractor Operator Operator Operator Pan Pac/contractor	X	A A A, I I A	D	2	L
5227	All	Working Alone or Remote	Fatality Serious-Minor Injury Ill health Unsavory interactions	D	4	M	- No working alone, or - Working alone procedure with check in times 2 forms of reliable communication - Carry e-perb, in reach - GPS installed in vehicles and monitored	All times	Contractor Pan Pac / contractor Pan Pac / contractor Entrant Pan Pac / contractor	E	A A Eng Eng, A	D	4	M
5228	Fences – use and installation	Electricity Barb wire Heavy lifting Augers	Electrocution Loss of limb Infection Strain or sprain Eye Injury	C	1	L	- Use gates or stiles, maintain 3 pts of contact - TMP in place when installing or maintaining within 1 tree length of active forestry road - Use all machinery/tools as intended, no working alone with augers - Fit for work, 2 person or mechanised lifting - Situational awareness and judgement - PPE: safety glasses when wire straining	All times	Entrant Contractor Contractor/operator Contractor/operator Entrant Entrant	E	A A A A A	C	1	L
5232	Skid Rehabilitation	Unstable terrain Ridges Loose stumps & debris Slash	Destabilised machinery Rollover Serious – minor injuries Fracture Asset Damage	C	5	H	- PP contractor pre-qualification, induction & monitoring - Pre-operational hazard id, risk assessment, control plan - Machinery protective structures certified (Ops, ROPs, COPs) - Doors/guards closed in operations - Seat belt and/or 4pt harness maintained and in use - Emergency exits clear and able to be used - Warning signage in place for active forestry roads (speed restriction as req) - Mobile diesel units with auto dispensing & signage	All times	Pan Pac Contractor Contractor Contractor/operator Operator Operator Contractor/operator Contractor	X	A A Eng Eng Eng, A Eng, A A Eng, A	D	5	M
5233	Slash Raking (cutover rehab)	Steep slopes Unstable terrain Ridges Loose stumps & debris Slash Hazardous Substances Waterways Wetlands	Serious – minor injuries Fracture Asset Damage	C	5	H	- PP contractor pre-qualification, induction & monitoring - GIS Mapping and slope class maps provided - Pre-operational hazard id, risk assessment, control plan - Machinery protective structures certified (Ops, ROPs, COPs) - Doors/guards closed in operations - Seat belt and/or 4pt harness maintained and in use - Emergency exits clear and able to be used - Hydraulic controls, fail to safe - No boom swing over waterways/wetlands - Warning signage in place for active forestry roads (speed restriction as req) - Contour slash raking at bottom of the hill - Mobile diesel units with auto dispensing & signage	All times	Pan Pac Pan Pac Contractor Contractor Operator Contractor/operator Contractor/operator Contractor/operator Contractor Operator Operator Contractor	X	A A A E E E, A E, A E, A A A A Eng, A	D	5	M

5234	Road Maintenance (restore)	Traffic active forestry road, Unauthorised entrants	Engulfment Crash	C	5	H	PP contractor pre-qualification, induction & monitoring	All times	Pan Pac Pan Pac	X	A A	D	5	M
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Type of Minimisation Controls Key: (S = Substitution, E = Engineering, I = Isolation, A = Administration, PPE = Personal Protective Equipment, **X** = latest amendment)
General Manager Forests

		Unstable terrain above or below Unstable material/trees above or below Hazardous Substances Fire	Rollover Serious – minor injuries Fracture Fire (from sparks) Asset Damage				- Pre-operational hazard id, risk assessment, control plan - Machinery protective structures certified (Ops, ROPs, COPs) - Seat belt and/or 4pt harness maintained and in use - TMP in place (operations warning, 30km restriction) - Mobile diesel units with auto dispensing & signage - Fire Codes to be applied to all operations (no grading from code orange) - RT comms on forest channel		Contractor Contractor/operator Contractor Contractor Pan Pac/contractor/operator Operator		Eng Eng, A I, A A Eng, A A				
5238	Overlapping Duties Other operations (working with or in close proximity)	Traffic Machine on person Machine on machine, Dislodged material Hazardous Substances Unauthorised entry	Fatality Serious-Minor Injury (acute or chronic) Unsavoury interactions	C	5	H	- PP contractor pre-qualification, induction & monitoring - PP scheduling and notification - Pre-operational hazard id, risk assessment, control plan - Job planning between crew foremen, operators, PP staff, with agreed control and communication plan, noted in daily tailgate - TMP in place as required - Rule: 2 tree length minimum approach distance for all tree felling	All times	Pan Pac Pan Pac Contractor Pan Pac/contractors Contractors All	X	A A A A A A	D	5	M	
5239	Forestry Fire Response All	Fire Smoke Heat Stability of terrain Heat impact/fracturing of rocks Trees	Fatality Serious-Minor Injury Crush Smoke Inhalation Burns Hypothermia Asset damage	B	5	E	- FENZ & PP fire plan & fire codes - Authorised persons - Fire Dams in place & maintained - Powerline corridors in place & maintained (MADs - transmission 30m, 4m approach) - PP Fire maps - PP Emergency response instructions - Rapid response equipment & personnel - Fire equipment standards & annual checks, Forestry equipment monthly checks - Machinery turbo or spark arrestors. Deluge fire systems when fitted. - High risk work permitting & restrictions - Training US3285 - Ground crew trained, experienced & equipped - Annual fire response drills	Annual All times All times All times All times As required All times All times Annual	Pan Pac Pan Pac Pan Pac Pan Pac Pan Pac Pan Pac/contractor Pan Pac/contractor Pan Pac/contractor Pan Pac/contractor Pan Pac/contractor PanPac/contractor PanPac/contractor	X	A A Eng Eng A Eng, A Eng Eng A A A A	D	3	M	
5240	Towing trailers	Trailer operation and security Liquid/live load Insecure loads Hazardous Substances Terrain/road conditions	Loss of control (vehicle/trailer) Roll over Spill Asset damage	C	5	H	- Trailer engineered with trailer brakes and security chain fitted - Daily pre-start check - Loads secured - Hazardous substance controls in place (SDS, fire extinguisher, signage as required) - Drive to the conditions (see 4212/5212), identify suitable turn arounds	All times	Pan Pac/contractors Pan Pac/contractors Operators Pan Pac/contractors/operators Operators	X	Eng A Eng A A	C	2	L	
5244	Quarrying – vehicles & loading	Vehicles and Plant Product Stockpiles Benches (stability)	Collapse Engulfment Serious – minor injuries Fracture Asset Damage	C	4	H	- PP contractor pre-qualification, induction & monitoring - Quarry formation and management as per Regulations for Mining Operations - Purchase order and approval to be issued before pick up (Forestry) - Dump gate security and operation checked before entry - RT comms when entering working floor - Co-ordinate activities - Obey all hazard signage and instruction - Remain in cab or designated safe zone during loading - Load acceptance	All times	Pan Pac Contractor Pan Pac Operator Operators Operators Operator Operator Operator	X	A Eng, A Eng, A A A A I, A A	C	3	M	
5253	Helicopter Operations (for aerial spraying see also Hazardous Substance Hazard)	Helicopter – blades, rotor wash Obstructions Power lines Suspended pipes, wires Suspended loads Noise Loose material dust Cold environment	Fatality Serious Injury Eye injury Hearing loss temp or permanent Hypothermia Asset damage	B	5	E	- PP contractor pre-qualification, induction & monitoring - Pre-flight planning, mapping - PP planning, segregation of operations, TMP ‘No person present’ in spray area - CAA Certified Safety Management System - Pre-operational hazard id, risk assessment, control plan - Pre-flight briefing, communications, fly over, spotter as required - Pilot controls the operation, (US423 Working with Helicopters applies), experienced ground crew - PPE to include eye protection & grade 5 hearing protection	All times	Pan Pac Pan Pac Pan Pac Pan Pac Contractor Pan Pac/contractor Pan Pac/contractor Contractor All	X	A A A, I A A A A A A A	E	5	M	
5258	Roadside felling General contractor Thin to Waste Prod Thinning	Other persons present Tree fall Terrain Undergrowth Bank height (above/below)	Fatality Serious-Minor Injury Crush Asset Damage	B	5	E	- PP contractor pre-qualification, induction & monitoring - Pre-operational hazard id, risk assessment, control plan - TMP as per the BPG Private Forestry Road, faller or crew foreman controls the entry point - Tree faller lvl 3 for thinning - General experience (trees under d 10cm) - Pole saw with body strap, maintained - Rule: Minimum approach distance 2 tree lengths	All times	Pan Pac Pan Pac/contractor Contractor/operator Contractor/operator Contractor/operator Contractor/operator Contractor/operator	X	A A A A A A A A A	E	5	M	
5265	Tree felling or Pruning near Powerlines <u>Energised</u>	Electrocution Arc Flash Fire Incorrect technique - kickback Poor maintenance Untrained Rotating parts Noise Vibration Hazardous Substances	Fatality Serious Injury Burns Asset Damage	B	5	E	- Maintain power line corridors free of vegetation - PP contractor pre-qualification, induction & monitoring - PP forest GIS mapping available (app) + location specific mapping with power lines and control point identified - Vegetation clearance by approved arborist as required - Close approach permit approved and active - Emergency response plan in place - Minimum approach distances – 4m 110kV or 6m >110kV for people, plant & any vegetation. - Pre-operational hazard id, risk assessment, control plan	All times	Pan Pac Pan Pac Pan Pac Pan Pac Pan Pac/contractor Pan Pac/contractor Contractor Contractor	X	I A A I A A A A A	E	5	M	
5265	Tree felling or Pruning near Powerlines	Electrocution from test pulse	Serious Injury Burns	D	3	H	- Maintain power line corridors free of vegetation - PP contractor pre-qualification, induction & monitoring	All times	Pan Pac Pan Pac	X	I A				

	De-energised	Incorrect technique - kickback Poor maintenance Untrained Rotating parts Noise Vibration Hazardous Substances	Asset Damage				- PP forest GIS mapping available (app) + location specific mapping with power lines and control point identified - Vegetation clearance by approved arborist as required - Close approach permit approved, and active - Phone power provider and confirm control, job start & stop - Minimum approach distances – 4m 110kV or 6m >110kV for people, plant & any vegetation. - TMP as required		Pan Pac Pan Pac Pan Pac/contractor Contractor Contractor/operator Contractor		A I A A I A			
5267	Pruning - lopper	Ladder Fall from Heights Falling debris Undergrowth	Serious-Minor Injury Eye injuries	B	4	H	- PP contractor pre-qualification, induction & monitoring - PP forest GIS mapping available (app) - Pre-operational hazard id, risk assessment, control plan & tailgate - Ladder (work positioning devices) as per BPG to AS/NZS 1892.1, maintained - Operator training, experience with SBOs in place	All times	Pan Pac Pan Pac Pan Pac/contractor Contractor Contractor	X	A A Eng A A A	E	4	L
5268	Pruning - chainsaw	Ladder Chainsaw Fall from Heights Falling debris Noise Vibration Terrain Undergrowth	Serious-Minor Injury Amputations Hearing loss Eye injuries	B	4	H	- PP contractor pre-qualification, induction & monitoring - PP forest GIS mapping available (app) - Pre-operational hazard id, risk assessment, control plan & tailgate - Ladder (work positioning devices) as per BPG, maintained - Chainsaw maintained with pruning bar guard in place - Spark arrestor fitted and tested - Operator training (US6949, 9672-3, 23411) experience with SBOs in place - PPE to include visor & first aid kit required	All times	Pan Pac Pan Pac Pan Pac/contractor Contractor Contractor/operator Contractor/operator Contractor Contractor/operator	X	A A A A E E A A	D	2	L
5269	Planting	Planter box Manual Handling Terrain Undergrowth	Minor Injuries Strain or sprain	C	2	M	- PP contractor pre-qualification, induction & monitoring - PP forest GIS mapping available (app) - Pre-operational hazard id, risk assessment, control plan & tailgate - Apply minimum approach distances for powerlines, waterways, wetlands as required - Carry frame with waist belt, fit for purpose (limit 4 boxes) - Planting spade fit for purpose & maintained - Identify & apply minimum approach distances from hazard, terrain, bluffs, drop outs 2-5m or more as needed - Pre & post work stretching	All times	Pan Pac Pan Pac Pan Pac/contractor Pan Pac/contractor Contractor Contractor Contractor/operator	X	A A A A Eng Eng I A	D	2	L
5270	Spot Spraying Releasing E-thinning	Hazardous Substances (use & transport) Terrain Manual Handling	Health impact (acute/chronic) Minor injuries Skin or eye irritation	B	2	M	- PP contractor pre-qualification, induction & monitoring - PP forest GIS mapping available (app) - Pre-operational hazard id, risk assessment, control plan & tailgate - Identify & apply minimum approach distances from hazard, terrain, bluffs, drop outs 2-5m or more as needed - Spray or dosing unit fit for purpose - Growsafe training for applicator and decanting - SDS on hand - Substances secured in transit, subject to maximum limits - Spill response kit and residual spray container present - Health monitoring in place - PPE includes skin, inhalation, decanting protection as per SDS on hand	All times	Pan Pac Pan Pac Pan Pac/contractor Pan Pac/contractor/operator Contractor Contractor Contractor Contractor Contractor Contractor/operator	X	A A A I Eng A A A A A A	D	2	L
5279	Tree Felling Mechanical Prod. Thinning	Machinery Tree Terrain Maintenance Fire	Fatality Serious-Minor Injury Crush Asset damage	A	5	E	- PP contractor pre-qualification, induction & monitoring - PP forest GIS mapping with slope characteristics available (app) - Pre-operational hazard id, risk assessment, control plan & tailgate - Machinery with protective structures ROPs/FOP/COPs, certified, fit for purpose & maintained - Seat belts must be worn (4pt harness) - Communicate when exiting machine on felling face - Machinery maintenance requires lock out, de-energisation - Rule: minimum approach distance 2 tree length - Rule: minimum approach distance 70m chain shot when processing	All times	Pan Pac Pan Pac Pan Pac/contractor Contractor Contractor/operator Operator Contractor Contractor/operator Contractor/operator	X	A A A Eng Eng Eng, A A A A A	D	5	M
5286	Extraction – ground based (forwarder)	Machinery Terrain Maintenance Fire	Fatality Serious-Minor Injury Crush Asset damage	B	5	E	- PP contractor pre-qualification, induction & monitoring - PP forest GIS mapping with slope characteristics available (app) - Pre-operational haz id, risk assessment, control plan & tailgate - Machinery with protective structures ROPs/FOPs, certified, fit for purpose & maintained - Seat belts must be worn (4pt harness) - Communicate when exiting machine on felling face - Machinery maintenance requires lock out, de-energisation - Work within forwarder load limits, maintain load heights under bolster or headboard - Minimum approach distance; 1 tree length during loading/unloading of forwarder	All times	Pan Pac Pan Pac Pan Pac/contractor Contractor Contractor/operator Operator Contractor Contractor Contractor	X	A A A E E A A A A	D	5	M

6459	Roadside spraying (mobile plant)	Hazardous Substances Terrain Manual Handling	Health impact Minor injuries Skin or eye irritation	B	2	M	- PP contractor pre-qualification, induction & monitoring - PP forest GIS mapping available (app) - Pre-operational hazard id, risk assessment, control plan & tailgate - Spray Certification - Vehicle, boom and spray unit fit for purpose, maintained - Growsafe training - SDS on hand - Substances secured in transit, subject to maximum transport limits - Spill response kit and residual spray container present - Health monitoring in place - PPE includes skin, inhalation, decanting protection as per SDS on hand	All times	Pan Pac Pan Pac Pan Pac/contractor Contractor Contractor Contractor Contractor Contractor Contractor Contractor/operator	X	A A A Eng Eng A A A A A A	D	2	L
	Roadside debris removal – high risk All	Trees under tension Slope instability above windblown trees with rootballs above or over felling area suspended & loaded	Tree roll, rebound Fatality Serious-Minor Injury Crush	B	5	E	- PP Manager approval required - Mechanised removal required as first options - Pre-operational falling hazard id, risk assessment, control plan & tailgate - Forest protective structures (ROPs, FOPs &/or cab protection - TMP for temporary roadside felling in place - Qualified experienced felling operator with observer. - Spark arrestor fitted and tested	All times	Pan Pac Pan Pac/contractor Contractor Contractor Contractor Contractor/operator Operator	X	A Eng A Eng A A Eng	E	5	H
	Roadside debris removal – medium risk All	Trees perched, not loaded Not under large amounts of tension or suspended F	Fatality Serious-Minor Injury Crush	B	3	H	- Take 5 hazard id, risk assessment & tailgate - Saw or chainsaw maintained and fit for purpose - TMP for temporary roadside felling in place - Operator experienced with chainsaw, previously held PP approval to fell - Cut to manageable size pieces, able to tow to the water table - Work on safe side, uphill - Spark arrestor fitted and tested	All times	Pan Pac/contractor Contractor Contractor Contractor Contractor/operator Contractor/operator Operator	X	A A A A A A Eng	D	3	M
	Roadside debris removal – low risk All	Trees not perched or loaded	Serious-Minor Injury Crush	B	2	M	- Take 5 haz id, risk assessment & tailgate - Silki saw maintained - TMP - Cut the top off or to manageable size pieces, able to tow to the water table - Work on safe side, uphill	All times	Pan Pac/contractor Contractor/operator Contractor/operator Contractor/operator Contractor/operator	X	A A A A A	D	2	L
5290	Loading Logs Production Thinning	Logs & chains Machine failure Loss of control Chain throwing strain Other persons nearby	Fatality Serious-Minor Injury Crushing Fractures	B	5	E	- Skid plan, segregation of log stacks - Self loading trucks - Boom maintained, certified with ticket on hand - Stabilising arms engaged during loading - Minimum approach distance 6m - Minimum approach distance 2 tree length to active felling operations	All times	Contractor Contractor Contractor Operator Operator Contractor/operator	X	A E E, A E	D	5	H
6319	Pest Control	Hazardous Substances (drop or bait stations)	Long lasting or acute health impact Chemical burns Environmental damage	B	4	H	- PP planning, segregation of operations. - Bait stations in use - Locked, banded storage, annual inspections - Poison operation notifications - Growsafe trained staff and operators - Substances secured in transit, subject to maximum transport limits - SDS available, understood, suitable PPE worn - Mobile diesel units with auto dispensing & signage	All times	Pan Pac Pan Pac Pan Pac Pan Pac/contractor Pan Pac/contractor Pan Pac/contractor/ entrants Contractor Contractor	X	A Eng I A A I A Eng	B	2	M
6457	Pest Control	Fire Arms (self or others)	Fatality Serious-Minor Injury	B	5	E	- PP planning, segregation of operations - Licensed and trained hunters (Fire Arms Safety Act) - Firearms unloaded & secured in transit on public roads - Hours of work (isolated) - TMP/warning signage (full exclusion zone) as required	All times As required	Pan Pac Contractor Contractor Contractor Contractor	X	A A I A	E	5	M
6387	UAV (drone) use	Airplane flight paths, Environ – water, roads, sun strike, bird contact Craft signal decomposition/loss Contact with powerlines Competence/distraction Fire	Moderate to Minor Injury Asset Loss Breach of regulatory air space	C	3	H	- Engineered fail-to-safes; low battery return to home, auto warning low temperature, low battery or high sunlight, CSC command to kill, over charge protection - Operators CAA 101 certified, compliant with 101 conditions - Flight Planning to include max hight 400ft AGL, airspace, NOTAMs, LFZs, powerlines, notification to roading authority when operating near or over roads 1:1 charging with surge protection - LIPO bags, Lithium fire blankets and ABE extinguisher in place	Manufacture + pre-start All times All times All times All times	Pan Pac Pan Pac/operators Operator Operators Pan Pac Pan Pac/operators	X	E A A E A	D	3	M
6398	Tree Felling - manual Thin to Waste	Tree Fall Risk: Hit by object	Fatality Crushing, puncture Amputations Eye injury Hearing loss Burns Environmental damage	A	5	E	- PP contractor pre-qualification, induction & monitoring - Rule: dead or wind thrown trees to be passed by - PP Certified faller with unit standards (lvl 3) - Site specific hazard id, risk control and tailgates 5 step felling plan adhered to - Minimum approach distance: 2 tree length	Bi annual All times All times All times, 6mth All times All times	Pan Pac Pan Pac/contractor Pan Pac/contractor Contractor Operator Operator, all others	X	A A A, I A A A	D	5	M

6429	Operations Moving crew support and storage containers Prod Thinning	Container	Fatality Serious-Minor Injury Asset Damage	B	4	H	- Use only engineered lifting points with certified lifting devices and equipment - Cabin lifting points have a maintenance programme in place - Pre-start inspections - Minimum approach distance 1.5 times height of container and load, 6m clear zone	Manufacture + as req As required Pre-operational All times	Contractor Contractor Contractor Contractor/all persons		E A A I	E	4	L
6438	All	Interpersonal Interactions - Bullying - Harassment	Acute or long term impact mental health Medical treatment Time off Resignation Hospitalisation	C	3	H	- Training and awareness programmes - Well-being Programme & Co-ordinator - Workplace Culture and Policies, ‘the way we work’ - Workplace HS&E committees with HSRs - Workplace support programmes & peer support - RT protocols	Bi-annual, refresher All times All times Monthly/Quarterly All times All times	Pan Pac Pan Pac Pan Pac Pan Pac Pan Pac Staff/all entrants	X	A A A A A A	D	3	M
6449	E-Thinning	Hazardous Substances (use & transport) Terrain Manual Handling	Health impact (acute/chronic) Minor injuries Skin or eye irritation	B	2	M	- PP contractor pre-qualification, induction & monitoring - PP forest GIS mapping available (app) - Pre-operational hazard id, risk assessment, control plan & tailgate - Identify & apply minimum approach distances from hazard, terrain, bluffs, drop outs 2-5m or more as needed - Dosing unit fit for purpose - Growsafe training for applicator and decanting - SDS on hand - Substances secured in transit, subject to maximum limits - Spill response kit and residual spray container present - Health monitoring in place - PPE includes skin, inhalation, decanting protection as per SDS on hand, chemical resistant gloves	All times	Pan Pac Pan Pac Pan Pac/contractor Pan Pac/contractor/operator Contractor Contractor Contractor Contractor Contractor Contractor/operator	X	A A A I Eng A A A A A A	D	2	L
6458	Vehicle Rescue	People in vicinity Vehicles Terrain	Fatality Crushing Loss of control Rollover Asset damage	B	4	H	- Take 5, operational plan - Rescue controller agreed and in charge - Equipment suitable for the task; tow vehicle heavier than vehicle being rescued - Rated strops, dampening ropes (bag) in place - Identify chain shot area and apply minimum approach distances (segregation of personnel) - TMP as required by the location	Pre-operation Pre-operation Pre-operation Pre-operation All times As required	Contractor Contractor Contractor/operator Contractor/operator Operator All persons Operator	X	A A E E I I	D	4	M
Environmental														
6435	Engineering & Production Thinning Operations Maintenance	Hazardous Substances (storage, transportation, decanting, mixing)	Soil, water, air contamination Consent breach Social License	B	2	H	- ESRA risk assessments - Isolate from sensitive sites. Minimum approach distances (MADs); - Waterways >3m buffer 3m, <3m buffer 5m - Empherial streams 5m - Wetlands 10m - Waterways – 10m all hazardous Substances (decanting, mixing, storage) - Container storage with bunding (as able), isolated site, annual inspection - Environmental Monitoring - Maintain consent and/or permit conditions - Env Management Plan for business or task - Substitution as available - Store only in compliant containment (signage, extinguishment & bunding) away from drains, water courses, all containers labelled. - Trained personnel, with correct controls & PPE (all) - SDS’s available and understood - Emergency planning and equipment available - spill/first aid kits, fire equipment	All times All times Annual All times All times All times As required All times All times All times All times	Pan Pac Pan Pac, Contractor Pan Pac Pan Pac Pan Pac, Contractor Contractor Pan Pac, Contractor Contractor Pan Pac, Contractor Pan Pac, Contractor Pan Pac, Contractor	X	Eng A A I I, Eng, A A A A S A A A A	B	2	M
6436	Tree Felling – manual or machine	Tree fall Machine tracking Shovelling Line drag Slash mobilisation Soil mobilisation/sediment Rubbish	NES-CF breach Consent breach Loss of containment Eco system damage Blocked waterways Archaeological damage Native flora and fauna damage Loss of social license	B	3	H	- Forest Afforestation planning - Retirement procedure - Consent applications - Harvest planning inclcs; identification of specifics of the site & PP required controls - GIS Maps identify known items - Job prescription with monitoring - Slash & sediment traps (permanent/temporary) - Post harvest audit - Env. Management Plan for business or task - Felling Plans and tailgates include Environmental matters - Minimum approach distances (MADs); - Wetlands 5m - Waterways >3m buffer 3m, <3m buffer 5m - PP additional buffer zone 5m - Slash/debris removal practises - cutover minimum minimum 10cmx2.4m SED, - landing minimum size 10cmx1m SED - waterway & flood plain MAD 1:20yr zone - Benches - Environmental training	All times All times As required All times All times All times All times All times All times All times All times As required As required As required All times	Pan Pac Pan Pac Pan Pac Pan Pac Pan Pac Pan Pac Pan Pac, Contractor Pan Pac, Contractor Contractor Contractor All Contractor Contractor All	X	A Elim A A A A A Eng A A A I A Eng A	D	3	M
6437	All Operations	Weather related: Debris or soil mobilisation, windthrow	NES-CF breach Consent breach	B	4	H	- Forest Afforestation planning - Retirement procedure	All times As required	Pan Pac Forestry Pan Pac	X	A Elim	D	4	M

			Loss of containment Eco system damage Blocked waterways Archaeological damage Native flora and fauna damage Loss of social license				- Consent applications - GIS Maps identify known items - Job prescription with monitoring - Slash & sediment traps (permanent/temporary) - Env. Management Plan for business or task - Minimum approach distances (MADs); - Wetlands 5m - Waterways >3m buffer 3m, <3m buffer 5m - PP additional buffer zone 5m - Slash/debris removal practises; - cutover minimum minimum 10cmx2.4m SED, - landing minimum size 10cmx1m SED - waterway & flood plain MAD 1:20yr zone - Benches - Skid & cutover rehabilitation completed - E dosing of trees in sensitive areas - Environmental training - Complaints & Disputes procedure	As required All times All times All times All times All times	Pan Pac Pan Pac Pan Pac, Contractor Pan Pac Contractor Contractor/All		A A A A Eng I				
6460	Forest Log Storage	Dust Fire risk Fuel Build up of logs Sediment Mobilisation	NES-CF breach Consent breach Loss of containment Eco system damage (freshwater) Blocked waterways Damage to infrastructure Disturbance to neighbours Loss of social license	B	2	H	- Harvest planning incls; identification of specifics of the site & PP required controls - GIS Maps identify known ecosystems, waterways - Job prescription with monitoring - Post harvest audit - Env. Management Plan for business or task - Felling Plans and tailgates include Environmental matters - Log storage braced as required (posted) - Complaints & Disputes procedure	All times As required As required	Pan Pac, Contractor Pan Pac Pan Pac Pan Pac Pan Pac, Contractor Contractor Contractor Pan Pac	X	A A A A A Eng A	D	2	M	
6461	Travel in & outside Forest	Dust Debris Sediment (fords & river crossing)	NES-CF breach Disturbance to neighbours Eco system damage (freshwater) Loss of social license	B	2	H	- Ford design incls; Consent conditions and monitoring - Maximum axle crossings (20 per day) or consent application must be approved - Crossing formation, requires metalled approaches - Forest & county road speed limits - Log truck debris check before entry to public roads - Truck wash - Dust suppression agents	All times All times All times All times All times As required As required	Pan Pac Pan Pac Pan Pac All Log Cartage Pan Pac, Log Cartage Pan Pac	X	A Eng A A Eng Eng Eng	D	2	M	
6465	Mechanical Land Prep	Machine Unstable terrain Slash Debris Piles Ground Disturbance Sediment Hazardous Substances	NES-CF breach Damage to ecosystem, waterways Damage to native flora, fauna Damage to down stream infrastructure Public & Social license	B	4	H	- Retirement procedure - GIS Maps identify known items - Job prescription with monitoring - Job planning avoids nesting seasons, applies ESC - Slash & sediment traps (permanent/temporary) - Env. Management Plan for business or task - SOP requires tracking parallel to the land contour - Minimum approach distances (MADs); - Wetlands 10m - Waterways >3m buffer 3m, <3m buffer 5m - PP additional buffer zone 5m - Falcon nests 200m buffer - Waterways – 10m all hazardous Substances (decanting, mixing, storage) - Slash/debris removal practises; - cutover minimum minimum 10cmx2.4m SED, - landing minimum size 10cmx1m SED, - waterway & flood plain MAD 1:20yr zone - Environmental training - Complaints & Disputes procedure	As required All times All times All times All times All times All times As required As required All times As required	Pan Pac Pan Pac Pan Pac Pan Pac Pan Pac, Contractor Contractor Contractor/All Contractor/All Contractor Pan Pac, Contractor Pan Pac	X	A A A A Eng A A I A A A	D	4	M	
6466	Earthworks & Road Development	Machines Unstable or steep terrain Slash Debris Piles Ground Disturbance Stream bed, bank disturbance Sediment Failure of fill or berms Hazardous Substances	NES-CF breach Damage to ecosystem, waterways Damage to native flora, fauna Interrupted fish passage Damage to downstream infrastructure Public & Social license	B	5	H	- GIS Maps identify known items - Job prescription with monitoring - Job planning avoids nesting seasons, applies ESC - Slash & sediment traps (permanent/temporary) - Env. Management Plan for business or task - Earthworks Management Planning includes design of culverts, bridges, crossings, timing, fish passage - Minimum approach distances (MADs); - Wetlands 10m - Waterways >3m buffer 3m, <3m buffer 5m - PP additional buffer zone 5m - Falcon nests 200m buffer - Waterways – 10m all hazardous Substances (decanting, mixing, storage) - Hazardous substances spill management practises & spill kits - Stablising grasses, matting, compacting - Survey reporting and notifications for flora and fauna sighting - Environmental training - Complaints & Disputes procedure	All times All times All times All times All times All times All times All times All times As required As required As required All times All times As required	Pan Pac Pan Pac Pan Pac Pan Pac Contractor Contractor Contractor Contractor Contractor/All Contractor Contractor Pan Pac, Contractor Pan Pac, Contractor Pan Pac	X	A A A Eng A A A Eng A A A	C	5	H	
6469	Temporary Crossings	Machines Unstable or steep terrain Metal	NES-CF breach Damage to ecosystem, waterways Damage to native flora, fauna	B	4	H	- GIS Maps identify known items, temporary crossings added and identified - Job planning minimises environmental impacts, identifies need for consent (or has a max duration of 2 months)	All times All times	Pan Pac Pan Pac	X	A A	D	4	M	

		Dust Noise Debris Sediment Hazardous Substances	Interrupted fish passage Damage to downstream infrastructure Public & Social license				• Job prescription with monitoring • Job planning avoids nesting seasons, applies ESC • Slash & sediment traps (permanent/temporary) • Env. Management Plan for business or task • Stream Crossing Management Plan for consented crossings • Minimum approach distances (MADs); ◦ Wetlands 10m ◦ Waterways >3m buffer 3m, <3m buffer 5m ◦ Waterways – 10m all hazardous Substances (decanting, mixing, storage) • Hazardous substances spill management practises & spill kit • Stablising grasses, matting, compacting • Environmental training • Complaints & Disputes procedure	All times All times All times All times All times As required As required	Pan Pac Pan Pac Contractor Contractor Contractor Contractor/All		A Eng A A A I			
6470	Permanent Crossings	Machines Unstable or steep terrain Metal Dust Noise Debris Sediment Hazardous Substances	NES-CF breach Damage to ecosystem, waterways Damage to native flora, fauna Interrupted fish passage Damage to downstream infrastructure Public & Social license	B	5	H	• GIS Maps identify known items, temporary crossings added and identified • Job planning minimises environmental impacts, identifies need for consent (or has a max duration of 2 months) • Job prescription with monitoring • Job planning avoids nesting seasons, applies ESC • Slash & sediment traps (permanent/temporary) • Env. Management Plan for business or task • Stream Crossing Management Plan for culvert installs >450mm • Minimum approach distances (MADs); ◦ Wetlands 10m ◦ Waterways >3m buffer 3m, <3m buffer 5m ◦ Waterways – 10m all hazardous Substances (decanting, mixing, storage) • Hazardous substances spill management practises & spill kit • Stablising grasses, matting, compacting • Environmental training • Complaints & Disputes procedure	All times All times All times All times All times All times As required As required As required As required All times All times	Pan Pac Pan Pac Pan Pac Pan Pac Contractor Contractor Contractor Contractor/All Contractor Contractor Pan Pac, Contractor Pan Pac	X	A A A Eng A A A I A Eng A A	D	4	M