SAFE WORK METHOD STATEMENT (SWMS)

Project Name: **Location:** **Date of Issue:** **Prepared By:**	**Company Details:** **Company Name: CONCEPT BOILER SYSTEMS** **ABN:** 73 449 559 176 **Address:** 1/4 Elsum Avenue, Bayswater North VIC 3153 **Phone:** (03) 9729 9122 **Emergency Contact:** Andrew Gillespie
Approval: **Name (Print):** **Signature:** **Date:**	**Distribution:** 1. Site Supervisor: 2. Principal Contractor:

Declaration:

I, the undersigned, confirm that the attached Safe Work Method Statement has been developed in consultation with workers who are performing the task. Workers have been provided with appropriate training, instruction, and information regarding the content of this SWMS and associated hazards and controls. All workers are required to adhere to the processes outlined within this SWMS.

BOILER SERVICE AND STRIP DOWN

Removal and Replacement of Graphite Stem Packings, Gauge Glasses and Cone Rubbers		
Inherent Risk	**EXTREME**	
Residual Risk	**LOW**	
Hazards and Risks	**Control Measures**	**Person(s) Responsible**
Burns from Steam, hot metal surfaces, boiling water.	Always wear correct PPE.	Technician
Cuts from shattered or broken glass, sharp steel edges.	Ensure boiler is de-pressurized and pressure gauge reads 0 kPa.	
Hand and finger crushes from tool slipping.		

Cleaning Liquid Level Probes and Probe Pot		
Inherent Risk	**EXTREME**	
Residual Risk	**LOW**	
Hazards and Risks	**Control Measures**	**Person(s) Responsible**

Cleaning Liquid Level Probes and Probe Pot		
Burns from Steam, hot metal surfaces, boiling water.	Always wear correct PPE.	Technician
	Assess boiler and area for hazards.	
	Remove or Isolate hazards before starting work.	
	Ensure boiler is de-pressurized and pressure gauge reads 0 kPa.	
Falls from ladder.	Ensure stable footing of ladders on ground, and maintain at least 2 points of contact at all times.	
	Maximize time from boiler being shut off, to service commencing.	
Electrocution from exposed live wiring.	Ensure power supply to boiler is off using isolator on side of switchboard, or from adjacent circuit breakers before boiler switchboard.	
	Probes, lugs and wiring to be refreshed ad hoc to ensure proper reading of signal and function of pump.	
	Any holes in probe pot must be adequately stoked and cleared to ensure correct level reading.	
Hand and finger crushes from tool slipping.	Ensure tool is in proper contact with material before engaging. Use correct size tool for fixings.	

Cleaning "Y" Strainer and Draining Feedwater Tank		
Inherent Risk	**HIGH**	
Residual Risk	**LOW**	
Hazards and Risks	**Control Measures**	**Person(s) Responsible**
Burns from water supply of feedwater	Always wear correct PPE.	Technician

Cleaning "Y" Strainer and Draining Feedwater Tank		
tank due to heated condensate return, and/or tank pre heat system.	Ensure power supply to boiler is off using isolator on side of switchboard, or from adjacent circuit breakers before boiler switchboard.	
	Use isolation valves at tank and before Y strainer, if none provided, tank would need to be drained.	

Reconditioning Safety Pressure Relief Valve		
Inherent Risk	**EXTREME**	
Residual Risk	**LOW**	
Hazards and Risks	**Control Measures**	**Person(s) Responsible**
Failure to set release pressure accurately and precisely can contribute or result in meltdown of boiler due to over pressurization.	Always wear correct PPE.	Technician
	Pressure test bucket pump and manifold to be checked for failure during each use.	
	Pressure gauge used for calibration must be zeroed correctly and changed out intermittently.	
	Seats of valve are to be monitored annually. If pitting is unable to be lapped out, valve must be replaced.	

Replacing or Recondition Blowdown Feedwater and Main Steam Valves	
Inherent Risk	**HIGH**
Residual Risk	**LOW**

Replacing or Recondition Blowdown Feedwater and Main Steam Valves		
Hazards and Risks	**Control Measures**	**Person(s) Responsible**
Burns from Steam, hot metal surfaces, boiling water.	Always wear correct PPE.	Technician
Hand and finger crushes from tool slipping.	Ensure boiler is de-pressurized and pressure gauge reads 0 kPa.	
Passing blowdown.	Ensure stable footing of ladders on ground, and maintain at least 2 points of contact at all times.	
Water supply overfilling boiler, causing increased steam hammer in steam lines.	Assess boiler and area for hazards.	
Passing of steam into steam line when isolation is required.	Remove or Isolate hazards before starting work.	
	Test after replacement.	

Removing Scale Washing Boiler and Blowdown Vessel Innards		
Inherent Risk	**EXTREME**	
Residual Risk	**LOW**	
Hazards and Risks	**Control Measures**	**Person(s) Responsible**
Electrocution.	Always wear correct PPE.	Technician
Knocks, bumps, skin abrasions.	Ensure all power leads are off ground, and safe for use.	

Removing Scale Washing Boiler and Blowdown Vessel Innards		
Contact with Caustic boiler chemical.	Do not allow vacuum to encounter water.	
	Minimalize water splashing and amount spilled from water side of boiler.	
	Isolate chemical dosing inlet at valve.	
	Ensure vacuum is functioning correctly before use.	
	Ensure hose is not split and fittings do not leak.	

Testing Boiler Operation		
Inherent Risk	**HIGH**	
Residual Risk	**LOW**	
Hazards and Risks	**Control Measures**	**Person(s) Responsible**
Cuts from shattered or broken glass, sharp steel edges.	Always wear correct PPE.	Technician
Burns from Steam, hot metal surfaces, boiling water.	Ensure stable footing of ladders on ground, and maintain at least 2 points of contact at all times.	
Glass and Debris in eyes.	Assess boiler and area for hazards.	
Falls from ladder.	Remove or Isolate hazards before starting work.	
Electrocution from exposed live wiring.	Do not leave boiler unattended as it is firing up and building steam pressure.	

Testing Boiler Operation		
	Maintain constant attention to valves, fittings, and piping for leaks.	
	Tighten loose fittings only if it is safe to do so, if not, drain boiler and depressurize before removing the fitting.	
	Ensure gauge glass mount covers are placed back on before test firing.	

USE OF ELEVATED WORK PLATFORM (EWP)/FORKLIFT

Use of Elevated Work Platform		
Inherent Risk	**EXTREME**	
Residual Risk	**MEDIUM**	
Hazards and Risks	**Control Measures**	**Person(s) Responsible**
Falling from heights.	Always wear correct PPE.	EWP Operator
Dropping tools, equipment, and materials from platform.	All operators to hold up-to-date EWP license.	
Tipping EWP.	Dedicated spotter to be assigned.	EWP Spotter
Hydraulic failure.	Assess ground for inclines, steps, and other differentials in level terrain.	
Hitting Person or Objects.	Use of barricades, flags, witch's hats, signs, tape, bollards to form exclusion zone around EWP work area.	
	Run through pre-start check list of EWP safeguards, functions, and capacities prior to operation.	

Use of Elevated Work Platform		
	Harness to be checked for faults before each use, and always worn whilst in operation.	
	Adhere to weight limits and maximum personal limits of each EWP.	
	Working at Heights permit to be filled out.	

Use of Forklift		
Inherent Risk	**EXTREME**	
Residual Risk	**MEDIUM**	
Hazards and Risks	**Control Measures**	**Person(s) Responsible**
Tipping of load.	Always wear correct PPE.	Forklift Driver
Hydraulic failure in forklift.	All operators to hold up-to-date Forklift license.	
Hitting Person or Objects with forklift.	Assess ground for inclines, steps, and other differentials in level terrain during forklift operations.	Forklift Spotter
	Use of barricades, flags, witch's hats, signs, tape, bollards to form exclusion zone around Forklift work area.	
	Run through pre-start check list of Forklift safeguards, functions, and capacities prior to operation.	

Use of Forklift		
	Wear seatbelt always when operating a forklift.	
	Any lifting device used with forklift is to comply with relative standards, and only used in accordance with manufacturer permits and guidelines.	
	Slings and chains to be checked for damage before use with forklift, and rated for load.	
	Use spotter if needed	

WELDING, GRINDING & CUTTING, OXY/ACETYLENE TORCH

Welding		
Inherent Risk	**HIGH**	
Residual Risk	**NEGLIGIBLE**	
Hazards and Risks	**Control Measures**	**Person(s) Responsible**
Burns from sparks, weld pool.	Always wear correct PPE.	Welder
Burns from heated materials and welding torches.	Fill out Hot Works Permit before welding.	
Welding arc UV radiation damage to skin.	Set up designated welding area with screens.	
Arc flash (Visual exposure to welding rays).	Use extraction fan during welding.	
Welding fumes.	Secure all gas bottles during welding.	
Material falling from vice, bench, etc.	Check site for flammable materials prior to welding.	
Gas bottles falling over.	Store recently welded materials safely and inform nearby persons.	
Ignition of flammable sources during welding.	Perform regular operational checks and tests of welding equipment.	
Damaging surrounding structure or personnel.	Only trained personnel to operate welding machines.	
	Ensure materials/objects are securely fastened or supported during welding.	

Grinding, Cutting, Cleaning, and Prepping, Use of Oxy Torch		
Inherent Risk	**HIGH**	
Residual Risk	**NEGLIGIBLE**	
Hazards and Risks	**Control Measures**	**Person(s) Responsible**
Burns from sparks, recently cut material, and recently used blades/disks.	Fill out Hot Works Permit before grinding/cutting.	Person performing works
Ignition of flammable sources during grinding/cutting.	Gas bottles stored away from cut area; hoses placed off ground and away from spark zone.	
Cuts and abrasions from grinder disks and wheels, saw blades.	Operational checks/tests of tools, leads, hoses, regulators, and bottles at regular intervals.	
Cuts from sharp edges and corners.	Set up isolated designated area for grinding/cutting work.	
Eye and Ear Damage.	Check site for flammable materials before grinding/cutting.	
Fume and dust inhalation.	Store recently cut and prepped materials safely; inform nearby persons.	
Material falling from vice, bench, rollers, hangers, clamps, mounting.	Secure materials/objects during grinding/cutting.	
Grinding/cutting attachment coming loose.	Properly install and secure disks and wheels using correct tools.	
Disks jamming or breaking.	Discard cutting wheels or grinding disks with damage.	
Damaging surrounding structure, equipment or personnel during grinding/cutting.	Cover delicate surroundings with flame-resistant covering during grinding/cutting.	

USE OF CORDED AND BATTERY POWER TOOLS

For the sake of brevity and to prevent repetition, it is to be assumed that all leads and corded tools are tested, tagged up to date, and have been visually inspected for splits and exposed wiring prior to use.

Drilling of Metals, Masonry, Timber and Concrete		
Inherent Risk	**EXTREME**	
Residual Risk	**NEGLIGIBLE**	
Hazards and Risks	**Control Measures**	**Person(s) Responsible**
Cuts from burs and sharp materials during drilling.	Always wear correct PPE and Respirators for drilling.	Drill operator
Debris in eyes during drilling.	Maintain a 90° drilling angle.	
Breaks, crushes, and sprains from drill bit catching.	Avoid using a drill at face height.	
Spinning of material caught on drill bit into body and face.	Use pilot hole and incrementally increase drill bit size.	
Falling cutouts from ceiling or roof during drilling.	Determine material thickness and set drill depth marker.	
Drilling into pipes, cables, and unintended materials.	Clear back end space and use a spotter when drilling.	Drill Spotter
Drilling all the way through surfaces without awareness.	Check wiring and pipework diagrams before drilling.	

Drilling of Metals, Masonry, Timber and Concrete		
Drilling near or into loose structural materials causing falling debris.	Create an exclusion zone and use a spotter for potential falling cutouts.	
Inhalation of dust during drilling.	Check and remove any loose debris or materials in the drilling area.	

Use of Bench Grinder		
Inherent Risk	**MEDIUM**	
Residual Risk	**NEGLIGIBLE**	
Hazards and Risks	**Control Measures**	**Person(s) Responsible**
Cuts and abrasions from a bench grinder.	Operational checks/tests of tools, leads, hoses, regulators, and bottles at regular intervals.	Grinder Operator
Burns from heated material on a bench grinder.	Only trained personnel to operate welding machines.	
Loose clothing catching in bench grinder wheels.	Ensure materials/objects are securely fastened or supported during welding.	
Vibration causing a bench grinder to fall.	Cover delicate surroundings with welding blankets or other flame-resistant covering during welding.	

Use of Bench Grinder		
Eye damage from a bench grinder.	Fill out Hot Works Permit before grinding/cutting.	
	Gas bottles stored away from cut area; hoses placed off ground and away from spark zone.	

Use of Pipe Threaders		
Inherent Risk	**HIGH**	
Residual Risk	**LOW**	
Hazards and Risks	**Control Measures**	**Person(s) Responsible**
Catching fingers on a pipe threader.	Wear PPE, avoid loose gloves when using pipe threader.	Pipe Threader Operator
Dies breaking off during threading.	Keep oil reservoir and can full for the pipe threader.	
Pipes coming free from pipe threader.	Secure pipes firmly before threading.	
Hot metal components from pipe threader.	Use a cooling bucket for pipe threader.	

Use of Pipe Threaders		
Threading oil spills from pipe threader.	Remove/tuck in any loose clothing when using pipe threader.	
Airborne burrs and metal debris from pipe threader.		
Loose clothing catching in threader.		
Eye damage from pipe threader.		
Cuts and abrasions from pipe threader.		

Use of Vacuum Cleaners and Air Compressors		
Inherent Risk	**HIGH**	
Residual Risk	**LOW**	
Hazards and Risks	**Control Measures**	**Person(s) Responsible**
Hoses and fittings from vacuum cleaners and air compressors splitting or loosening.	Ensure vacuum doesn't encounter water.	Vacuum and Air Compressor Operator

Use of Vacuum Cleaners and Air Compressors		
Over-pressurization of air compressor.	Minimize water splashing from compressor.	
Blockages in vacuum inlet.	Ensure regulators are set correctly for air compressors.	
Compressor rupturing.	Bleed compressor tank often.	
	Depressurize compressor for transport.	
	Ensure inspection of compressor.	

HANGING, MOUNTING, FASTENING

If working at heights is applicable, refer to EWP and Forklift section for additional information.
Refer to drilling section in USE OF CORDED AND BATTERY POWER TOOLS if applicable.

Mounting of Brackets, Channels and Posts		
Inherent Risk	**EXTREME**	
Residual Risk	**NEGLIGIBLE**	
Hazards and Risks	**Control Measures**	**Person(s) Responsible**
Loose fastenings and bolts during mounting.	Use correctly sized fasteners for mounting.	Installer
Overloading ratings during mounting.	Ensure material sizes and thicknesses are suitable for mounting.	Driver
Posts or stands toppling during mounting.	Use appropriate materials for conditions during mounting.	Operator
Anchors pulling free during mounting.	Ensure Dyna bolts and anchors are inserted properly during mounting.	
Falling pipework and valves during mounting.	Check site drawings before mounting.	

Mounting of Brackets, Channels and Posts		
Obstructing walkways during mounting.	Properly remove sharp edges after cutting for mounting.	
Crushing people from mounting.	Use only rated lifting devices for mounting.	
Cuts from sharp edges during mounting.	Ensure all nuts are tight before finalizing mounting.	
Sharp exposed rod ends during mounting.	Install permanent signage for mounting.	

LIFTING, HANDLING, POSITIONING, LOADING/UNLOADING

Manual Lifting and Handling		
Inherent Risk	**EXTREME**	
Residual Risk	**NEGLIGIBLE**	
Hazards and Risks	**Control Measures**	**Person(s) Responsible**

Manual Lifting and Handling		
Damaging bones and muscles from manual lifting.	Use correctly sized fasteners for mounting.	Installer
Trips and falls from manual lifting.	Ensure material sizes and thicknesses are suitable for mounting.	Driver
	Use appropriate materials for conditions during mounting.	Operator
	Ensure Dyna bolts and anchors are inserted properly during mounting.	
	Check site drawings before mounting.	
	Properly remove sharp edges after cutting for mounting.	
	Ensure all nuts are tight before finalizing mounting.	
	Use only rated lifting devices for mounting.	

Manual Lifting and Handling		
	Install permanent signage for mounting.	

Machine Assisted Lifting		
Inherent Risk	**EXTREME**	
Residual Risk	**LOW**	
Hazards and Risks	**Control Measures**	**Person(s) Responsible**
Trips and falls from machine assisted lifting.	Visual inspection of machine assisted lifting devices.	Operator
Loads tipping from machine assisted lifting.	Use devices within weight ratings.	
Devices falling from machine assisted lifting.	Replace and dispose of damaged slings.	
Straps breaking during machine assisted lifting.	Use wheeled devices on level surfaces.	

Machine Assisted Lifting		
Hydraulics lowering without warning during machine assisted lifting.	Ensure mountings are secured before machine assisted lifting.	

NOTES AND ADDITIONAL INFORMATION

PPE USED

Safety glasses, Face shields, Welding Helmets, Ear buds, Earmuffs, Long sleeves, Work pants, Steel capped boots, Dust masks, Respirators, Welding jackets, Welding gloves, Riggers gloves, Nitrile gloves, Hardhats, High-Visibility, Polypropylene coveralls, Oxy goggles, Harnesses,

TOOLS USED

MIG and TIG Welding machines, Angle grinders, Drills (Hammer, Magnetic), Impact Drivers, Saws (Drop, Circular, Reciprocating, Jig), Crimping Tools, Bench Grinders Pipe threaders, Radios, Battery Chargers, Air compressors, Vacuum cleaners, Torches, Lights, High pressure cleaners, Di Grinders, Sanders, Planers, Routers.

All corded tools and power leads to be up to date with test and tags prior to use and visually inspected regularly for splits or faults. Not to be used out of recommended parameters or with non-compatible consumables or devices.

LEGISLATION

AS 1228 Pressure Equipment - Boilers
AS 2593 Boilers - Safety Management and Supervision Systems
AS 3873 Pressure equipment—Operation and maintenance

OTHER

- Zero Tolerance Drug and Alcohol policy.
- Acceptable hygiene is to be maintained at all times.
- Public Liability $20,000,000

Fatigue management is implemented. 10 Hour break minimum between shifts. Not to work more than 6 days of 12-hour shifts in a row. A 24-hour break period must be had after the 6th 12-hour shift.