

Lead Management Document Number – OHS-PROC-32

This document applies to the following sites:

Brisbane Office	<input checked="" type="checkbox"/>	CQ Hydrogen	<input checked="" type="checkbox"/>	FEITH	<input checked="" type="checkbox"/>
Iron Flow Battery SPS	<input checked="" type="checkbox"/>	Meandu Mine	<input type="checkbox"/>	Non-Operational Land	<input checked="" type="checkbox"/>
SAMCo	<input checked="" type="checkbox"/>	Stanwell Battery	<input checked="" type="checkbox"/>	Stanwell PS	<input checked="" type="checkbox"/>
Tarong Battery	<input checked="" type="checkbox"/>	Tarong Site	<input checked="" type="checkbox"/>	Wambo Wind Farm	<input checked="" type="checkbox"/>
Wivenhoe Pipeline	<input checked="" type="checkbox"/>				

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1.0 Purpose

This Business Procedure describes Stanwell's minimum mandatory requirements for the management of lead, including for:

- **lead processes** that expose a person to lead dust or fume particulates, or as defined in *Work Health and Safety Regulation 2011 s392*; and
- **lead risk work** that is reasonably likely to cause the blood lead level of the person conducting the activity to reach or exceed 0.24µmol/L (5µg/dL) for a female with reproductive capacity or 0.97µmol/L (20µg/dL) for anyone else.

Exposure to lead has the potential to cause both immediate and long-term adverse health effects to exposed workers. High levels of lead in the body can cause loss of appetite, constipation, diarrhoea, weight loss, headaches, tiredness, irritability, nausea, and abdominal pains. Continued exposure can cause anaemia, kidney damage, and nerve and brain damage.

2.0 Scope

This Business Procedure applies throughout Stanwell, all its sites and all activities under Stanwell's control. It applies to all Stanwell employees and contractors, including visitors to Stanwell workplaces.

3.0 Actions

It shall be ensured that:

- the requirement to undertake lead processes or procure lead-based goods is eliminated, or where elimination is not practicable, reduced as far as reasonably practicable;
- lead products and processes on each site have been identified by a competent person and recorded on a site lead register as far as reasonably practicable;
- the use of lead-based products or undertaking of lead processes are risk assessed to identify potential hazards and ensure suitable risk control measures are implemented prior to the work being undertaken;
- all persons who undertake lead processes are trained and competent;
- information on the health risks and toxic effects associated with exposure to lead are provided to persons before commencing a lead process;
- exposure to lead-containing hazardous substances is prevented or controlled so as to minimise lead exposure to as low as is practicable, and no person is exposed above the workplace exposure standard;
- persons who are pregnant or breastfeeding are excluded from undertaking lead risk work;
- health monitoring is provided to workers both before and after commencing lead risk work; and
- lead waste is tracked in accordance with waste tracking obligations and personnel involved in transporting and disposal of lead contaminated waste hold an appropriate Environmental Authority.

Lead risks must be controlled through the application of the hierarchy of controls to achieve the highest level of protection that is reasonably practicable in the circumstances, taking into consideration the health, safety, and psychosocial wellbeing of workers.

In addition to the requirements in this Business Procedure, lead materials must be managed in accordance with the *Stanwell Business Procedure: Hazardous Chemicals (OHS-PROC-108)*.

4.0 Planning Requirements

4.1 Identification

Lead products and processes on each site must be identified by a competent person and recorded on the site lead register, as far as reasonably practicable.

The site lead register must be readily accessible to any worker involved in using, handling, or storing of lead, and anyone else who is likely to be affected by lead at the workplace.

Where hazardous chemicals containing lead are used or stored onsite, the relevant Safety Data Sheet (SDS) must be available and current and be correctly labelled.

Lead Paint

Lead-based paint cannot be identified by its appearance. All surfaces or layers of paint suspected of containing lead must be tested prior to being disturbed or removed.

An infield lead test kit can be used in accordance with the manufacturer's instructions to determine the indicative presence of lead-based paint, however, may provide false readings. Therefore, if the structure is known to be constructed prior to 1970, a laboratory test must be undertaken to confirm negative results. Laboratories accredited for lead testing of paint can be found on the National Association of Testing Authorities (NATA) Australia website at <http://www.nata.com.au/nata/orgs-and-facilities>.

When the presence of lead is found to be unevenly distributed and the lead containing sections cannot be isolated, the entire structure shall be assessed as containing lead.

Sites should place a warning label or sticker to identify the presence of identified lead-based paint on a structure.

4.2 Risk Assessment

A risk assessment must be undertaken for any lead processes or lead risk work carried out and must consider the effectiveness of control measures in place when the assessment was undertaken.

The risk assessment should consider the likely possible routes of entry of lead when considering methods to control lead exposure, such as particles being inhaled into the lungs or ingested through the mouth.

Any measures implemented to control health risks from exposure to lead must be reviewed and, as necessary, revised, including for the circumstances outlined in *Work Health and Safety Regulation 2011 s401*.

5.0 Work Environment Requirements

Any area where a lead process is taking place must:

- be separated from the rest of the workplace as far as practicable;
- be signed and barricaded to ensure other workers do not enter the area;
- contain facilities for decontaminating workers, equipment, and work items.

Where there is a risk of persons being exposed to a potentially hazardous level of lead, monitoring must be conducted to determine airborne lead levels do not exceed the workplace exposure standard.

A lead process work area must be kept clean as far as is reasonably practicable. Methods used to clean a lead process area must not create a risk to the health of persons in the immediate vicinity and must not have the potential to spread the contamination of lead.

Acceptable methods for cleaning include using a vacuum cleaner fitted with a high efficiency particulate air (HEPA) filter or by using wet cleaning methods (such as mopping and wet wiping), ensuring that contaminated water is poured into a strong, securely sealed container. Drains must be protected from lead contaminated wastewater.

Compressed air, compressed gas, hosing, or dry sweeping methods are not to be used for cleaning.

6.0 Plant and Equipment Requirements

Powered tools must only be used on lead products when adequate controls to reduce potential exposure to lead are implemented.

6.1 PPE Requirements

All personnel undertaking lead processes must be issued with suitable personal protective equipment (PPE), including as a minimum respirators, filters, and coveralls. All PPE shall meet regulatory requirements.

All PPE used for lead processes must be correctly selected, used and handled:

- particulate respirators are to be selected in accordance with *AS/NZS 1716:2012 Respiratory protective devices*;
- respirators are required to be correctly fitted to ensure they seal to the face. To ensure a proper seal; the face must be cleanly shaven, and respirator fit tested. If a worker has a beard, they must wear a powered air-purifying respirator fitted with a P2 filter;
- after use, PPE must be sealed in a container, labelled, and correctly disposed of at a site equipped to accept lead-contaminated equipment;
- as far as reasonably practicable, disposable clothing is to be worn. Where non-disposable clothing is worn, it must not be taken home to be laundered, it shall be laundered at a laundry equipped to clean lead-contaminated clothing; and
- all other reusable PPE must be decontaminated and stored in a sealed and labelled container until it is re-used for lead process work.

7.0 Safe Work Practices

7.1 General

Processes must be implemented to ensure workers:

- do not eat, drink, chew gum, smoke or carry materials used for smoking in a lead process area;
- do not take lead contaminated clothing home for laundering; and
- shower and wash hair as soon as possible after finishing lead risk work.

This may be achieved by providing an eating and drinking area that cannot be contaminated by lead; providing changing and washing facilities at the workplace; and arranging for laundering of protective clothing that is or is likely to be contaminated by lead.

7.2 Lead-Based Paint Removal

Lead-based paint may be determined as requiring removal, including in instances where the paint is deemed to be in poor condition (flaking or chalking) or prior to the partial removal of a structure coated in lead-based paint (e.g. handrail removal).

Where lead-based paint is required to be removed from surfaces or structures, safe methods of removal may include:

- wet scraping;
- chemical strippers;
- wet hand sanding; or
- low-temperature heat processes.

Further guidance on the risks and controls of each removal method can be found on the Work Safe website at <https://www.worksafe.qld.gov.au/safety-and-prevention/hazards/hazardous-exposures/lead/working-with-lead-based-paint>.

8.0 Lead Risk Work

Each lead process carried out at the workplace must be assessed to determine if lead risk work is carried out in the process (refer to *Work Health and Safety Regulation 2011 s402* for information on assessing a lead risk work process). The assessment must not take into account the effect of using personal protective equipment on the health and safety of workers.

Lead risk work is that which is carried out in a lead process that is likely to cause the blood lead level of a worker carrying out the work to exceed:

- 5µg/dL (0.24µmol/L) for a female of reproductive capacity; or
- 20µg/dL (0.97µmol/L) in any other case.

Lead risk work at Stanwell sites may include, but is not limited to:

- removal of lead paint from surfaces by dry sanding, heat, or grit blasting, refer to *AS 4361.1-1995 Guide to lead paint management, Part 1: Industrial applications*, for further information;
- handling of lead compounds causing lead dust or fumes e.g. from dry lead pigments;
- spray painting with lead paint (>1% lead by dry weight);
- dry machine grinding, discing, buffing, or cutting of lead; or
- demolition involving oxy-cutting of structural steel primed with lead paint.

If the site is unable to determine whether lead risk work is carried out in a lead process, the process is taken to include lead risk work until it has been determined that lead risk work is not carried out in the process.

8.1 Health Monitoring

Health monitoring must be provided to workers both before and one month after commencing lead risk work. Refer to *Stanwell Business Procedure: Hazardous Chemicals (OHS-PROC-108), Appendix B* for health monitoring and frequency requirements.

Where a worker is suspected to have been exposed to an excessive level of lead, the worker must be immediately removed from the lead risk work, and health monitoring be carried out on the worker as soon as possible (but no later than seven days), after the worker has been removed from the lead risk work.

Health monitoring must be carried out by or under the supervision of a registered medical practitioner with experience in health monitoring who will be selected in consultation with the worker.

8.2 Notification to the Regulator

Notification to the regulator is required, in the approved form, when lead risk work is undertaken at a workplace (within seven days of determination that the work is lead risk work).

Notification is also required, as soon as reasonably practicable, if a worker is removed from carrying out lead risk work following health monitoring where any of the following applies:

- biological monitoring shows the worker's blood lead level has reached or exceeded:
 - 30µg/dL (1.45µmol/L) for females not of reproductive capacity and males; or
 - 10µg/dL (0.48µmol/L) for females of reproductive capacity.
- the registered medical practitioner recommends that the worker be removed from carrying out lead risk work; and
- there is an indication that a risk control measure has failed and as a result, the worker's blood lead level is likely to reach the relevant level for the worker to be removed from carrying out lead risk work.

The regulator must be given written notice of any change in the information provided in the original notice before the change or as soon as practicable after being aware of the change.

9.0 Lead Contaminated Waste Tracking, Transport and Disposal

Lead and lead compounds are defined under the *Environmental Protection Regulation 2019* as:

- regulated waste; and
- trackable waste,

and therefore, must be managed in accordance with Site Waste Management Procedures.

Personnel involved in transporting and disposal of lead contaminated waste must hold an appropriate Environmental Authority.

10.0 Training and Competence Requirements

All personnel must be trained and competent prior to undertaking lead processes. For Stanwell employees, competency includes the completion of *Stanwell Lead Management Awareness (HS097)*. Contractors are responsible for the provision of appropriate lead information and training for their personnel.

11.0 Records Management

Records shall be kept in accordance with the below:

- health monitoring on workers in lead-risk work – 30 years;
- air monitoring results – 30 years;
- notices given to the regulator about lead risk work – for the period the lead risk work is carried out.

Sites where lead risk work is carried out shall ensure air and health monitoring records and/or notices to the regulator are readily accessible to a worker who is likely to be exposed to lead, and the worker's health and safety representative (where applicable).

Sites shall maintain confidentiality of workers' medical records in accordance with Stanwell's requirements.

12.0 Review, Consultation and Communication

Review:

This Document is required to be reviewed, as a minimum, every 5 year/s.

Consultation:

Personnel consulted during the review of this document include the General Manager Health, Safety and Environment as well as any other personnel who have an interest in the process.

Communication/Requirements after Update:

This Business Procedure will be available on the Stanwell Intranet.

13.0 References

Source	Reference
Legislation	<ul style="list-style-type: none"> Queensland Work Health and Safety Regulation 2011, Part 7.2 Queensland Environmental Protection Regulation 2019 Queensland Environmental Protection (Waste Management) Regulation 2000 National Code of Practice for the Control and Safe Use of Inorganic Lead at Work [NOHSC:2015 (1994)]
Australian Standards	<ul style="list-style-type: none"> AS/NZS 1716:2012 Respiratory Protective Devices AS/NZS 4361.1:2017 Guide to hazardous paint management, Part 1: Lead and other hazardous metallic pigments in industrial applications.
Guidance Material	<ul style="list-style-type: none"> Safe Work Australia: Health monitoring guide for lead (inorganic) 2002
Business Procedures	<ul style="list-style-type: none"> Hazardous Chemicals OHS-PROC-108
Stay Safe	<ul style="list-style-type: none"> Lead Management OHS-PROC-32A
Tools	<ul style="list-style-type: none"> Nil

14.0 Definitions

Term	Meaning
Lead Process	<p>A lead process consists of any of the following carried out at a workplace:</p> <ul style="list-style-type: none"> work that exposes a person to lead dust or lead fumes arising from the manufacture or handling of dry lead compounds; work in connection with the manufacture, assembly, handling or repair of, or parts of, batteries containing lead that involves the manipulation of dry lead compounds, or pasting or casting lead; breaking up or dismantling batteries containing lead, or sorting, packing, and handling plates or other parts containing lead that are removed or recovered from the batteries; spraying molten lead metal or alloys containing more than 5% by weight of lead metal; melting or casting lead alloys containing more than 5% by weight of lead metal in which the temperature of the molten material exceeds 450°C; recovering lead from its ores, oxides, or other compounds by thermal reduction process; dry machine grinding, discing, buffing, or cutting by power tools alloys containing more than 5% by weight of lead metal; machine sanding or buffing surfaces coated with paint containing more than 1% by dry weight of lead; a process by which electric arc, oxyacetylene, oxy gas, plasma arc or a flame is applied for welding, cutting, or cleaning, to the surface of metal coated with lead or paint containing more than 1% by dry weight of lead metal; radiator repairs that may cause exposure to lead dust or lead fumes; fire assays if lead, lead compounds or lead alloys are used; hand grinding and finishing lead or alloys containing more than 50% by dry weight of lead;

Term	Meaning
	<ul style="list-style-type: none"> • spray painting with lead paint containing more than 1% by dry weight of lead; • melting lead metal or alloys containing more than 50% by weight of lead metal if the exposed surface area of the molten material exceeds 0.1m² and the temperature of the molten material does not exceed 450°C; • using a power tool, including abrasive blasting and high-pressure water jets, to remove a surface coated with paint containing more than 1% by dry weight of lead and handling waste containing lead resulting from the removal; • a process that exposes a person to lead dust or lead fumes arising from manufacturing or testing detonators or other explosives that contain lead; • foundry processes involving: <ul style="list-style-type: none"> ○ melting or casting lead alloys containing more than 1% by weight of lead metal in which the temperature of the molten material exceeds 450°C; ○ dry machine grinding, discing, buffing, or cutting by power tools lead alloys containing more than 1% by weight of lead metal; and • a process decided by the regulator to be a lead process under section 393 of the Queensland Work Health and Safety Regulations 2011.
Lead Risk Work	<p>Work carried out in a lead process that is likely to cause the blood lead level of a worker carrying out the work to exceed:</p> <ul style="list-style-type: none"> • for a female of reproductive capacity 5µg/dL (0.24µmol/L) • in any other case 20µg/dL (0.97µmol/L).
Lead Workplace Exposure Standard	<p>The workplace exposure standard for the atmospheric concentration of inorganic lead (eight-hour time weighted average) is 0.05mg/m³.</p>
Regulated waste	<p>Is commercial or industrial waste of a type, or containing a constituent of a type, listed in Schedule 9, Part 1, Column 1 of the <i>Environmental Protection Regulation 2019</i>.</p> <p>Regulated waste includes:</p> <ol style="list-style-type: none"> a) for an element – any chemical compound containing the element; and b) anything that contains residues of the waste, for example a container contaminated with the waste. <p>(Lead and lead compounds are defined as regulated waste.)</p>
Trackable waste	<p>A regulated waste of a type mentioned in Schedule 11 of the <i>Queensland Environmental Protection Regulation 2019</i> to which the waste tracking provisions of the Regulation apply.</p> <p>(Lead and lead compounds are defined as trackable waste.)</p>

15.0 Revision History

Rev. No.	Rev. Date	Revision Description	Written by	Endorse by	Approved by
0	03.05.2016	Document issued as part of the consolidation of legacy documentation.	Jan Fullard	Michael Joy / Trevor Hooper	Ian Gilbar
1	28.11.2017	Review undertaken and document updated to further align with information in Work Health and Safety Regulation 2011.	Jan Fullard	Owen Bevan	Michael Joy
	09.06.2023	Review Due Date Extended: <i>Document review due date extended from 28.11.2022 to 30.11.2023 as document to be updated after the audit is completed in May that will help determine system gaps. With actions implemented and available resources. Refer email request 23/65494.</i>	Requested by Carl Rothman. Actioned by Shannon Scott.		
2	06.06.2024	Scheduled periodic review including update to blood lead levels which trigger action, clarification on the workplace exposure standard, inclusion of lead-based paint removal guidance, updating of competency requirements, and inclusion of lead exposure health effects.	Jayde Smith	Carl Rothman	Kriss Ussher

16.0 Appendices

16.1 Appendix A: Lead Management Document Flowchart

