

Lead Management Document Number – OHS-PROC-32

This document applies to the following sites:

| | | | | | |
|-------------------------|-------------------------------------|------------------|-------------------------------------|--------------------|-------------------------------------|
| All Sites | <input type="checkbox"/> | | | | |
| Rockhampton Office | <input type="checkbox"/> | Brisbane Office | <input type="checkbox"/> | Tarong Site | <input checked="" type="checkbox"/> |
| Barron Gorge Hydro PS | <input checked="" type="checkbox"/> | Kareeya Hydro PS | <input checked="" type="checkbox"/> | Mica Creek PS | <input checked="" type="checkbox"/> |
| Koombooloomba Hydro PS | <input checked="" type="checkbox"/> | Swanbank PS | <input checked="" type="checkbox"/> | Mackay Gas Turbine | <input checked="" type="checkbox"/> |
| Wivenhoe Small Hydro PS | <input type="checkbox"/> | Stanwell PS | <input checked="" type="checkbox"/> | Meandu Mine | <input type="checkbox"/> |

Table of Contents

| | | |
|-------|--|---|
| 1.0 | Purpose | 2 |
| 2.0 | Scope..... | 2 |
| 3.0 | Actions | 2 |
| 3.1 | Planning Requirements..... | 2 |
| 3.1.1 | Identification | 2 |
| 3.1.2 | Risk Assessment..... | 3 |
| 3.2 | Work Environment Requirements..... | 3 |
| 3.3 | Plant and Equipment Requirements..... | 3 |
| 3.3.1 | PPE Requirements | 3 |
| 3.4 | Safe Work Practices | 3 |
| 3.4.1 | General..... | 3 |
| 3.4.2 | Cleaning | 4 |
| 3.4.3 | Lead Risk Work | 4 |
| 3.4.4 | Notification to the Regulator | 5 |
| 3.4.5 | Lead Contaminated Waste Tracking, Transport and Disposal | 5 |
| 3.5 | Training and Competence Requirements | 5 |
| 3.6 | Records management..... | 5 |
| 4.0 | Review, Consultation and Communication..... | 5 |
| 5.0 | References (Including Information Services) | 6 |
| 6.0 | Definitions | 6 |
| 7.0 | Revision History..... | 7 |
| 8.0 | Appendices | 8 |
| 8.1 | Appendix A: Lead Management Document Flowchart | 8 |

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Doc No: OHS-PROC-32 Revision No: 0 Revision Date: 03.05.2016 Page: 1 of 8

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1.0 Purpose

This Business Procedure describes Stanwell's minimum mandatory requirements for the management of lead.

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 is eliminated, as far as reasonably practicable
- no procured goods contain lead, as far as reasonably practicable;
- all personnel who undertake lead process work are trained and competent;
- the use of lead based products or processes is risk assessed to identify potential hazards and make sure suitable risk control measures are in place;
- prior to undertaking any work that may involve exposure to lead, a competent person shall confirm whether lead is present;
- no person on site is exposed to lead above the set exposure standard; and
- lead waste is tracked in accordance with waste tracking obligations and that personnel involved in transporting and disposal of lead contaminated waste hold an appropriate Environmental Authority.

Where elimination is not practicable, the need to undertake lead processes or procurement of lead based goods shall be reduced as far as reasonably practicable.

Lead risks shall be controlled through the application of the hierarchy of controls to achieve the highest level of protection that is reasonably practicable in the circumstances.

In addition to the requirements in this Procedure, sites shall manage lead materials in accordance with *Business Procedure: Hazardous Chemicals*.

3.1 Planning Requirements

3.1.1 Identification

It shall be ensured, as far as reasonably practicable, that all lead products and processes on each site have been identified by a competent person and recorded on the site lead register.

Lead paint

All surfaces and layers of paint to be removed shall be tested to determine if the paint contains lead, lead-based paint cannot be identified by its appearance. Therefore, if the structure was built prior to 1970, sites shall have a laboratory test 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>. Commercially available test kits can be used to establish whether lead paint is present although test kits may give false results.

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

A register of lead containing hazardous substances used and identified at the workplace shall be available at each site.

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

3.1.2 Risk Assessment

It shall be ensured that a risk assessment has been undertaken for any lead processes or lead risk work carried out.

3.2 Work Environment Requirements

It shall be ensured that any area where a lead process is taking place:

- is separated from the rest of the workplace as far as practicable;
- is signed and barricaded to make sure other workers do not enter the area;
- is kept clean by methods that do not spread contamination and create a risk to the health of persons in the immediate vicinity of the area;
- is monitored to determine that airborne lead levels do not exceed the exposure standard;
- contains facilities for decontaminating workers, equipment and work items; and
- is adequately ventilated e.g. downdraft local extraction ventilation.

3.3 Plant and Equipment Requirements

It shall be ensured that powered tools are only used on lead products if adequate controls are implemented.

3.3.1 PPE Requirements

It shall be ensured that all personnel conducting lead processes are issued with suitable personal protective equipment (PPE), including as a minimum respirators, cartridges and coveralls. All PPE shall meet regulatory requirements.

It shall be ensured that all PPE used for lead processes is 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 the face. To seal properly, the face shall be cleanly shaven. If a worker has a beard, they shall wear a powered air-purifying respirator fitted with P2 or P3 filters;
- after use PPE shall be sealed in a container, decontaminated, 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 shall not be taken home to be laundered, it shall be laundered at a laundry equipped to launder lead-contaminated clothing; and
- all other reusable PPE shall be decontaminated and stored in a sealed and labelled container until it is re-used for lead process work.

3.4 Safe Work Practices

3.4.1 General

Sites are to put processes in place to ensure that workers who undertake lead-risk work:

- do not eat, drink or smoke in a lead-risk work 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 has been contaminated by lead dust.

3.4.2 Cleaning

It shall be ensured that cleaning of areas that may be contaminated with lead is to be done as frequently as necessary to ensure cleanliness and the removal of lead deposits.

Cleaning methods shall not spread lead. Acceptable methods for cleaning include regularly cleaning all lead process areas by 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 disposed of as per section 3.4.5.

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

3.4.3 Lead Risk Work

Sites shall assess each lead process carried out at their workplace to determine if lead risk work is carried out in the process.

Lead-risk work is work that 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:

- for a female of reproductive capacity $10\mu\text{g}/\text{dL}$ ($0.48\mu\text{mol}/\text{L}$); or
- in any other case $30\mu\text{g}/\text{dL}$ ($1.45\mu\text{mol}/\text{L}$).

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.
- 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.
- 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.

It shall be ensured that sites do not allow any person on site to carry out lead-risk work where work is likely to cause the blood level of the worker carrying out the work to exceed the exposure standard.

Sites shall ensure health monitoring is provided to workers both before and after commencing lead risk work. Refer to Business Procedure-Hazardous Chemicals, Appendix B for health monitoring requirements.

Where a worker is suspected to have been exposed to an excessive level of lead, the worker shall be immediately removed from the lead-risk job, and health monitoring shall 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 job.

Health monitoring shall be carried out by or under the supervision of a registered medical practitioner with experience in health monitoring.

3.4.4 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 work is lead risk work).

Notification is 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 is, or is more than:
 - 50 µg/dL (2.42 µmol/L) for females not of reproductive capacity and males
 - 20 µg/dL (0.97 µmol/L) for females of reproductive capacity; or
 - 15 µg/dL (0.72 µmol/L) for females who are pregnant or breastfeeding.
- 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.

3.4.5 Lead Contaminated Waste Tracking, Transport and Disposal

Lead and lead compounds are defined under the Environmental Protection Regulation 2008 as:

1. regulated waste; and
2. trackable waste, and therefore must be managed in accordance with Site Waste Management Procedures.

3.5 Training and Competence Requirements

Training shall be provided in accordance with Stanwell's requirements.

3.6 Records management

Records shall be kept in accordance with Stanwell's requirements, of:

- health monitoring on workers in lead-risk work – 30 years;
- air monitoring results – 30 years;
- induction and training; and
- 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.

4.0 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 Manager Health & Safety Corporate, GM Health & Safety & Environment Services and the EGM Safety & Asset Services as well as any other personnel who have an interest in the process.

Communication/Requirements after Update:

This Business Procedure will be communicated to sites by an e-mail from the Corporate HS Manager and on GenNet.

5.0 References (Including Information Services)

| Source | Reference |
|----------------------|--|
| Legislation | <ul style="list-style-type: none"> Queensland Work Health and Safety Regulation 2011, Part 7.2 Queensland Environmental Protection Regulation 2008 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 |
| 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 |

6.0 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; 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 |

| Term | Meaning |
|------------------------|---|
| | <p>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;</p> <ul style="list-style-type: none"> • 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 10µg/dL (0.48µmol/L) • in any other case 30µg/dL (1.45µmol/L). |
| Regulated waste | <p>Is defined in s65 of the Environmental Protection Regulation 2008 and is commercial or industrial waste, whether or not it has been immobilised or treated; and is of a type, or contains a constituent of a type, mentioned in schedule 7 part 1 of the Queensland Environmental Protection Regulation 2008 and includes for an element—any chemical compound containing the element; and anything that contains residues of the waste.</p> <p>(Lead and lead compounds are defined as regulated waste.)</p> |
| Trackable waste | <p>A regulated waste of a type mentioned in Schedule 2E of the Queensland Environmental Protection Regulation 2008 to which the waste tracking provisions of the Regulation apply.</p> <p>(Lead and lead compounds are defined as trackable waste.)</p> |

7.0 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 |
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8.0 Appendices

8.1 Appendix A: Lead Management Document Flowchart

