



OP 0.00.007 – Biological Monitoring

BIOLOGICAL MONITORING

Management reserves the right to change these procedures without notice in order to ensure the health & safety of any individual or situation.

OP 0.00.007

Biological Monitoring

Date Issued

Draft

Revision Status

Rev 1.0

Date Reviewed

Draft

Page

1 of 5



OP 0.00.007 – Biological Monitoring

Objective

This procedure has been developed to ensure that blood lead levels of all personnel involved in the handling, transport and clean-up of lead carbonate concentrate are monitored on a regular basis, and that appropriate actions are taken if blood lead levels exceed relevant thresholds.

Scope

The scope of this procedure includes the following:

- Sampling schedule.
- Qualifications of the sampler.
- Sampling methods.
- Analytical methods.
- Laboratory selection.
- Turnaround times.
- Quality Assurance/Quality Control.
- Reporting of results.
- Counselling.
- Blood Lead Protocol.

Accountabilities

Managing Director	Approve and endorse the requirements of this procedure at the corporate level.
General Manager (Site Operations)	Approve & endorse at a Senior Management level (Operational)
Manager - Metallurgy	Ensure sufficient resources & training are adequate for full compliance of this procedure
OSHE Manager	Establish, manage and maintain the induction, training, and monitoring databases. Co-ordinate the auditing process at the prescribed intervals.
Superintendants	Ensure compliance & training requirements are in place & directly monitor this procedure, document & report any required changes to the procedure
Supervisors	Directly supervise all operators/contractors to ensure full compliance of this procedure
Operators	Be familiar & trained & carry out this procedure as per the requirements
Contractors	Be familiar & trained & carry out this procedure as per the requirements

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OP 0.00.007

Biological Monitoring

Date Issued

Draft

Revision Status

Rev 1.0

Date Reviewed

Draft

Page

2 of 5



OP 0.00.007 – Biological Monitoring

References

Relevant Legislation

None

Relevant Guidelines and Codes

Western Australian Department of Industry and Resources – Biological Monitoring Guideline, December 1997 (ZMR774IY).

AS 2411-1993, Venous blood – determination of lead content – flame atomic absorption spectrometric method.

AS 4090-1993, Whole blood – determination of lead content – graphite furnace atomic absorption spectrometric method.

Associated Procedures

Reporting Procedure

Sample Despatch Procedure

Attachments

Blood Lead Level Management Process

MANAGEMENT ACTIONS

PROCEDURE	Compliance (Y/N)
To be audited once at the start of the project.	
1	<input type="checkbox"/>
<p>The sampler shall be a qualified, registered Occupational Health Nurse (OHN). The sampler will have extensive experience in the collection of venous samples, and will be able to demonstrate a detailed knowledge of the potential for blood samples to be contaminated with lead, and the steps that must be taken to prevent this from happening.</p> <p>The sampler will have the ability to manage the entire lead in blood program including scheduling, taking samples through to the reporting of results, counselling and making recommendations for the removal of those with elevated levels from the workplace.</p>	
2	<input type="checkbox"/>
All personnel working on the project have had a pre-commencement blood lead test.	
	<input type="checkbox"/>
The analytical laboratory has had extensive experience in the determination of lead in blood and will hold NATA (National Association of Testing Authorities) registration for the required test.	
	<input type="checkbox"/>
Employees working in the lead shed and those involved in the cleaning and maintenance of dust collection systems will be sampled at monthly intervals.	
	<input type="checkbox"/>
A Chain of Custody and Analysis Request form was sent with the samples to the laboratory. This form is returned by fax once the samples are received.	
To be audited each Thursday morning.	
9	<input type="checkbox"/>
The analytical laboratory has provided a one-day turnaround. Samples were assayed on the	

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OP 0.00.007

Biological Monitoring

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Draft

Revision Status

Rev 1.0

Date Reviewed

Draft

Page

3 of 5



OP 0.00.007 – Biological Monitoring

	day they were received, and results were reported by email no later than COB the following day. The laboratory has provided each employee's results in an individual e-mail addressed to the OHN.	
	As evidenced by the e-mail results, lead in blood has been determined, either by solvent extraction flame atomic absorption spectrometry or by graphite furnace atomic absorption spectrometry, according to the methods described in: <ul style="list-style-type: none"> • AS 2411-1993, Venous blood – determination of lead content – flame atomic absorption spectrometric method. • AS 4090-1993, Whole blood – determination of lead content – graphite furnace atomic absorption spectrometric method. 	
	Upon receipt of the e-mail results, the OHN determined which personnel required counselling by comparing their results with those detailed in the Blood Lead Level Management Process (see Attachment).	
	Actions to be taken following reporting of blood lead levels will be in accordance with the Blood Lead Level Management Process (see Attachment).	
	The OHN has reported the blood lead results to those personnel who were sampled and to the Magellan General Manager. The OHN will send all personnel an email, in addition to postal mail, that includes a copy of the locked pdf results received from the laboratory, along with any comment regarding actions to be taken in accordance with the Blood Lead Level Management Process	
	A summary of each week's results has been reported (in accordance with the Reporting Procedure) to the following: <ul style="list-style-type: none"> • Magellan General Manager. • Magellan Operations Manager. • The independent auditor. • The Department of Health - Jim Dodds, Director of Environmental Health. • Esperance Port Authority – Management. 	
	To be audited fortnightly	
	The Analytical Laboratory has reported all quality assurance/quality control (QA/QC) results to the OHN on a fortnightly basis.	

Audit Notes / Recommendations

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OP 0.00.007

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Revision Status

Rev 1.0

Date Reviewed

Draft

Page

4 of 5



OP 0.00.007 – Biological Monitoring

Procedure Audited By:		Company:	
Signature:		Date:	

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Page

5 of 5