

Magellan's Transport Route Lead Monitoring Program

Magellan's lead monitoring requirements

Magellan's approval to export sealed shipments of lead carbonate through Fremantle is subject to the Interim Implementation Conditions set by the Minister for Environment on 23 February 2011. Condition 8 requires implementation of an approved Health, Hygiene and Environmental Monitoring Program (Program), to monitor lead levels at sample sites along the transport route from Wiluna to, and through, the Port of Fremantle. Monitoring conducted under this condition includes soil, water, air, and static dust deposition along the 1250 kilometre long road and rail transport corridor from the company's mine site near Wiluna to the Fremantle Port and drainage sediment and benthic sediment monitoring at Fremantle Port.

Tables 9 and 11 of the Program document identify contingency actions to be undertaken by Magellan if monitoring results obtained during transport operations confirm lead levels exceed lead baseline trigger levels (see below).

Derivation of Lead Baseline Trigger Levels

Pre-transport Lead Baseline Trigger Levels

Prior to being used by Magellan, the transport corridor was used for the transport of a range of materials over many years, including leaded petrol, lead based paints and other lead products. Therefore, prior to commencing transport, systematic sampling was undertaken by Magellan along the corridor to establish pre-transport lead baseline levels at each monitoring site for each type of monitoring (see Appendix 1 of the Program). From this sampling, the highest lead level recorded at each site for each type of monitoring was adopted by Magellan as the pre-transport lead baseline trigger level.

See column headed Pre Transport Lead Baseline Trigger Level on the attached table.

Transport Route Lead Baseline Trigger Levels

Under the Program, if monitoring identifies an exceedance of the lead baseline trigger level at any site after transport operations commenced, Magellan is required to undertake isotopic testing to determine if the lead is from the Magellan mine. Isotope testing is able to differentiate Magellan lead from other sources of lead and is a process used throughout the world to identify the source of various materials.

If it is found that the lead does not come from the Magellan mine, the lead level identified then becomes the new lead baseline trigger level for that site. This process is described in Appendix 1 of the Program.

See columns headed Transport Route Lead Baseline Trigger Levels on the attached table, which include the lead baseline trigger levels as they have been amended post commencement of transport operations.

Lead Baseline Trigger Levels under the Interim Implementation Conditions

The Interim Implementation Conditions set by the Minister for Environment on 23 February 2011 set the lead baseline trigger level as the transport route lead baseline trigger levels updated at February 2011. The conditions note that these levels may continue to change as further monitoring results are received (see Condition 21).

The Interim Implementation Conditions also set a ceiling on the lead baseline trigger levels, meaning that the lead baseline trigger level is the lower of the transport route lead baseline trigger level as it is derived from time to time under the Program, or the specific value set out in the Condition 21 of the Interim Implementation Conditions.

See column headed Lead Baseline Trigger Level at February 2011 under Interim Implementation Conditions, on the attached table.

Lead Baseline Trigger Levels beyond February 2011

Changes to the lead baseline trigger levels beyond February 2011 are added to the attached table, in column headed Lead Baseline Trigger Level (date).

Sample sites

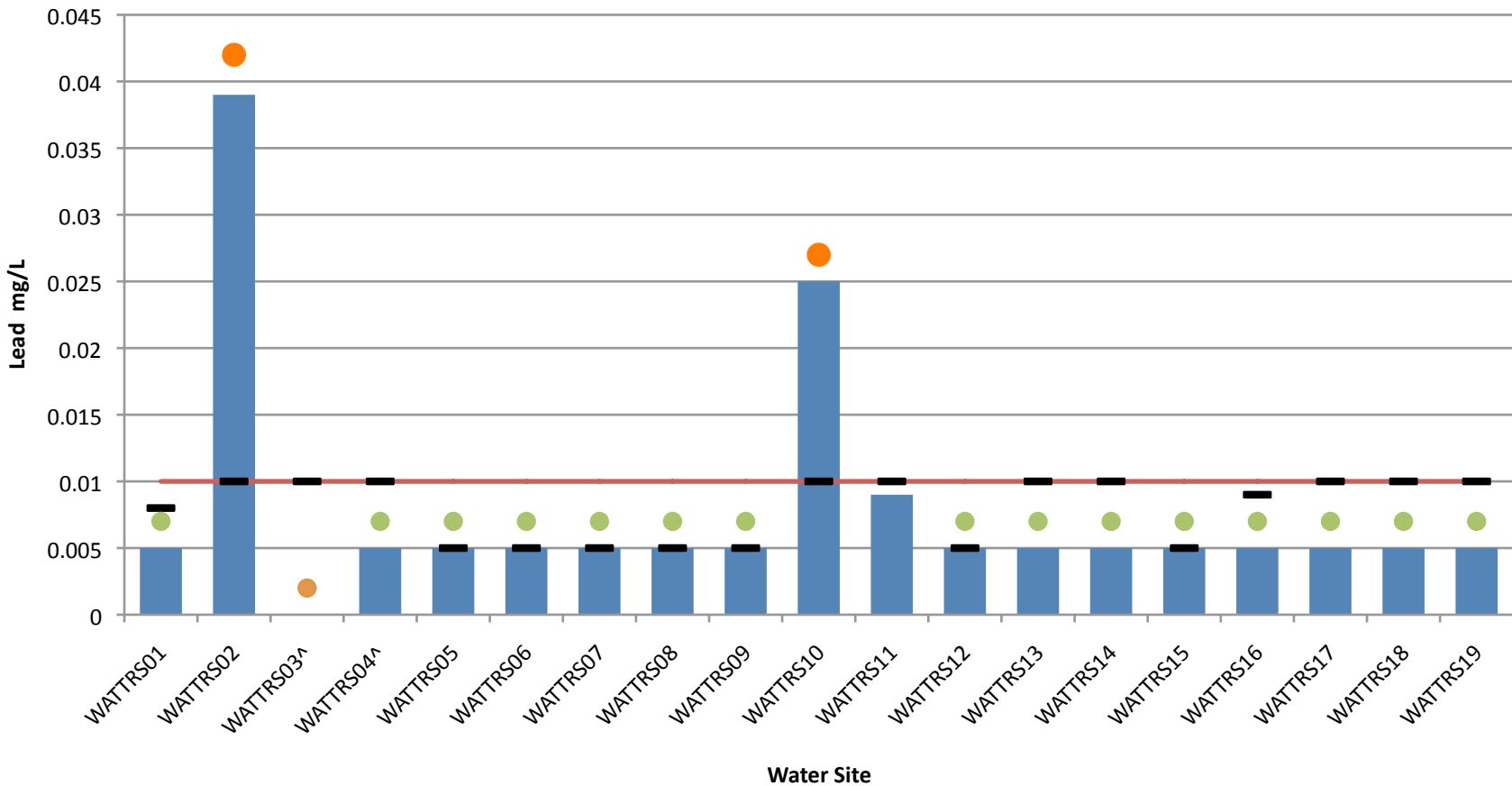
Sampling locations for operational monitoring are:

- 21 dust sampling sites along the rail corridor
- 2 air quality sampling sites at Fremantle Port
- 19 rainwater tank sites along the rail corridor
- 251 soil sites along the road and rail corridor
- 15 drainage sumps at Fremantle Port
- 20 marine sediment sites at Fremantle Port.

Air quality monitoring is also undertaken inside one per cent of containers leaving the mine site. These containers are randomly selected by the independent inspector.

For further detail on sampling sites and frequency, see the Program and the tables in this section of the website and the Interim Implementation Conditions.

Rainwater Tank Sampling July 2011



Lead mg/L

Lead Baseline Trigger Level

As per Interim Implementation Condition #21, see Rainwater Tank Sampling - Lead Baseline Trigger Levels at 17 February 2011. The maximum Lead Baseline Trigger Level for Rainwater Tank Sampling is 0.01mg/L

Limit of reporting by laboratory is 0.005 mg/L

No access to rainwater tank

This sample was isotopically analysed and has been determined not to be Magellan Metals' lead. If the result is below 0.01mg/L this then becomes the revised trigger level for the monitoring location. The maximum lead baseline trigger level is 0.01mg/L.

Rainwater Tank Sampling

Frequency of sampling: Along the transport route, baseline rainwater tank sampling was conducted on three occasions prior to the commencement of lead concentrate transportation in September 2009, then on a quarterly basis for the first 12 months, and then reduced to every six months, in January/February and July/August.

Water Site	WGS84 East	WGS84 North	Location	Pre Transport Lead Baseline Trigger Level	Transport Route Lead Monitoring					Lead Baseline Trigger Level	Transport Route Lead Monitoring
					Dec-09	Mar-10	Jun-10	Aug-10	Feb-11		Jul-11
Unit of Measurement				mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
WATTRS01	336655	6802942	Leonora	0.008	<0.005	<0.005	<0.005	<0.005	0.006	0.008	<0.005
WATTRS02	336843	6804068	Leonora	0.048	0.041	0.042	0.037	0.043	0.056#	0.01*	0.039#
WATTRS03^	352034	6596278	Kalgoorlie	<0.005	NA	<0.005	<0.005	<0.005	0.018#	0.01*	NA
WATTRS04^	352157	6596128	Kalgoorlie	0.006	<0.005	0.018#	<0.005	<0.005	0.006	0.01*	<0.005
WATTRS05	352754	6597236	Kalgoorlie	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
WATTRS06	351950	6595879	Kalgoorlie	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
WATTRS07	720719	6543688	Southern Cross	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
WATTRS08	720938	6543075	Southern Cross	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
WATTRS09	719963	6544548	Southern Cross	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
WATTRS10	621748	6516043	Merredin	0.036	0.023	0.036	0.017	0.016	0.029	0.01*	0.025#
WATTRS11	621619	6516566	Merredin	0.009	<0.005	0.019#	<0.005	<0.005	0.006	0.01*	0.009
WATTRS12	567121	6499734	Kellerberrin	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
WATTRS13	567853	6500062	Kellerberrin	0.031	<0.005	<0.005	<0.005	<0.005	<0.005	0.01*	<0.005
WATTRS14	468592	6498816	Northam	0.029	<0.005	0.009	<0.005	<0.005	0.022	0.01*	<0.005
WATTRS15	469392	6498694	Northam	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
WATTRS16	406243	6471016	Midland	<0.005	<0.005	DRY	0.009#	<0.005	DRY	0.009	<0.005
WATTRS17	404494	6470844	Midland	<0.005	<0.005	0.005	0.044#	<0.005	<0.005	0.01*	<0.005
WATTRS18	382375	6450549	South Fremantle	0.014	0.009	<0.005	<0.005	<0.005	<0.005	0.01*	<0.005
WATTRS19	382203	6454981	North Fremantle	0.020	0.012	DRY	<0.005	<0.005	0.006	0.01*	<0.005

NA = No access to rainwater tank DRY = No water in rainwater tank ^ = Surface Water Storage Area < = Limit of reporting by laboratory is 0.005 mg/L

+ This sample is currently undergoing isotopic analysis.

This sample was isotopically analysed and has been determined not to be Magellan Metals' lead. The lead reading then became Magellan Metals' revised trigger level for the monitoring location up to level 0.01mg/L.

Lead baseline trigger levels at 17 February 2011 or amended as per Appendix 1 of the Health, Hygiene and Environmental Monitoring Program June 2009.
The maximum lead baseline trigger level for Rainwater Tank Sampling is 0.01mg/L.