

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

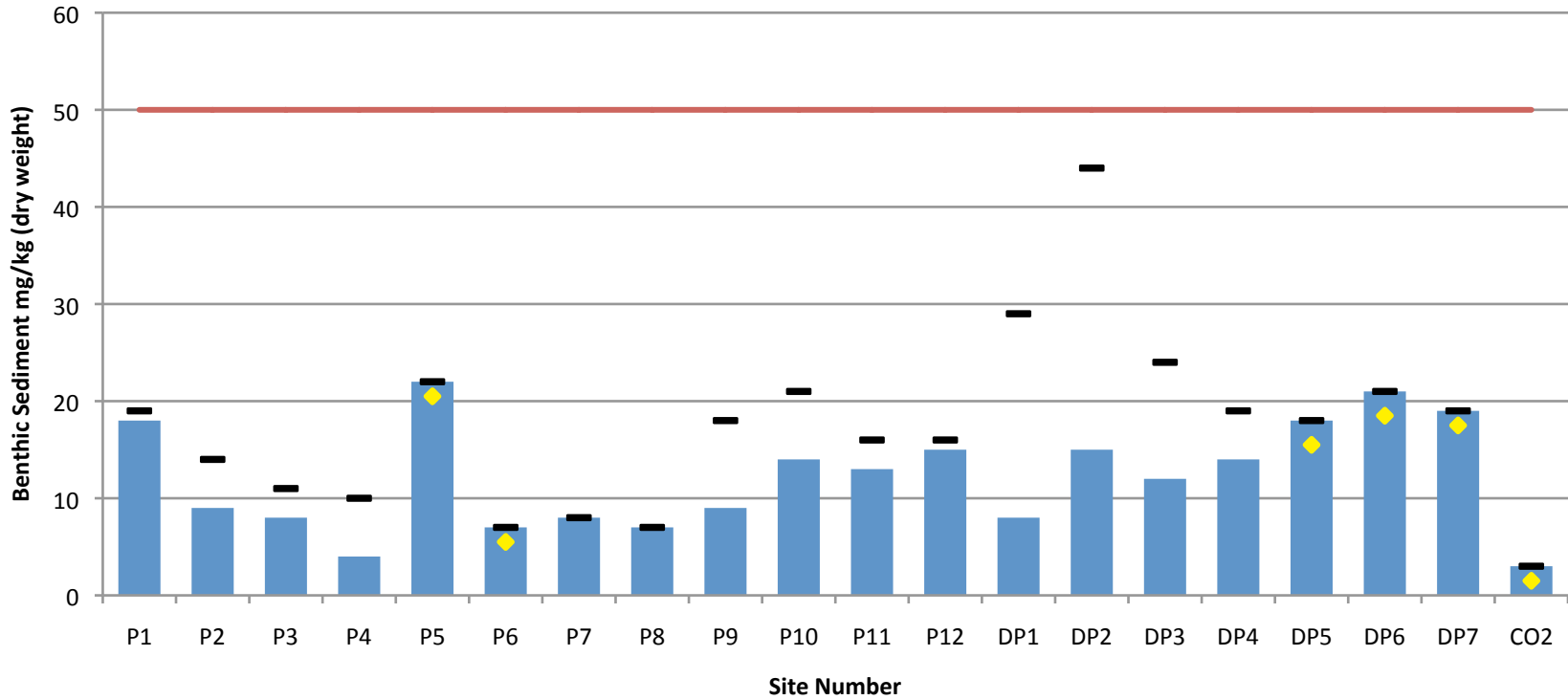
Sampling locations for operational monitoring are:

- 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.

Benthic Sediment Sampling July 2011



■ Benthic Sediment mg/kg (dry weight)

◆ 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.

— Lead Baseline Trigger Level

— As per Interim Implementation Condition #21, see Benthic Sediment Sampling - Lead Baseline Trigger Levels 17 February 2011. The maximum Lead Baseline Trigger Level for Benthic Sediment Sampling is 50mg/kg (dry weight).

Benthic Sediment Sampling

Frequency of sampling: Benthic sediment sampling was conducted once at the Fremantle Port prior to the commencement of sealed lead concentrate transportation, in September 2009. Subsequent marine sediment sampling was deferred until after completion of Phase 2 of the Fremantle Ports dredging program. Sampling is now undertaken on a six monthly basis in January/February and July/August.

Site Number	AGD84 Easting	AGD84 Northing	Pre Transport Lead Baseline Trigger Level	Transport Route Lead Monitoring	Lead Baseline Trigger Level	Transport Route Lead Monitoring
				Feb-11		Jul-11
Unit of Measurement			mg/kg (dry weight)	mg/kg (dry weight)	mg/kg (dry weight)	mg/kg (dry weight)
P1	381834	6454392	9	19#	19	18
P2	381739	6454292	12	14#	14	9
P3	381710	6454249	8	11#	11	8
P4	381692	6454234	7	10#	10	4
P5	381620	6454134	9	3	22	22#
P6	381578	6454075	3	2	7	7#
P7	381517	6454014	8	5	8	8
P8	381481	6453980	6	7#	7	7
P9	381478	6453942	4	18#	18	9
P10	381416	6453892	7	21#	21	14
P11	381357	6453810	10	16#	16	13
P12	381350	6453802	14	16#	16	15
DP1	381285	6453743	29	24	29	8
DP2	381271	6453707	44	23	44	15
DP3	381237	6453671	22	24#	24	12
DP4	381228	6453626	12	19#	19	14
DP5	381115	6453515	13	17#	18	18#
DP6	381021	6453418	12	20#	21	21#
DP7	381076	6453460	11	16#	19	19#
CO2	381078	6454402	2	2	3	3#

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.

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 Benthic Sediment Sampling is 50mg/kg (dry weight).