

Explaining Operational Sampling Lead Levels

What are Magellan's lead monitoring requirements?

Magellan's approval to export sealed shipments of lead carbonate through Fremantle is subject to the implementation conditions set out in Statement 783 published on 2 February 2009 by the Minister for Environment. Condition 9-1 of Statement 783 requires implementation of a Health, Hygiene and Environmental Monitoring Program (Program). One of the key requirements is that lead monitoring results during transport operations must not exceed the baseline levels along the 1250 kilometre long road and rail corridor from the company's mine site near Wiluna to the Fremantle Port.

The approved Program to verify compliance with this condition has been designed to determine whether Magellan lead has entered the environment. The transport corridor has been used to transport a range of materials over many years. Those materials would have included many materials which would have contained lead including lead in petrol and lead based paints. Therefore, prior to commencing transport of Magellan lead, Magellan Metals carried out systematic sampling along the transport route from Wiluna to Fremantle to determine the existing levels of lead in the environment.

The pre-commencement sampling program established baseline lead trigger levels, which, if they are exceeded (once transport commences), trigger contingency measures as required under Statement 783. The monitoring undertaken includes soil, water, air, static dust deposition and benthic sediment monitoring at Fremantle Port.

Sampling program

Baseline sampling and derivation of 'trigger' levels is described under the Baseline Sampling section of this website. The trigger levels with which operational sampling (that is, samples taken after commencement of lead carbonate transport) results are compared in the tables in the Operational Sampling section are those established during baseline sampling.

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.

For sampling frequency, see the Health, Hygiene and Environmental Monitoring Program.

Trigger levels have been established at each site for each parameter monitored. In addition, air quality monitoring is being undertaken inside independently and randomly selected containers during the sealed shipments.

High-volume Air Sampling

	Passenger Terminal	Berth 12
AGD84 Easting	381755	382306
AGD84 Northing	6453509	6454502
Lead in Air (ug/m³) Trigger Level	0.560	0.890

Date of Reading	Passenger Terminal Operational Data	Berth 12 Operational Data
23-Sep-09	<0.003	<0.003
24-Sep-09	<0.003	0.004
25-Sep-09	<0.003	<0.003
26-Sep-09	0.003	0.003
27-Sep-09	0.006	<0.003
28-Sep-09	<0.003	<0.003
29-Sep-09	0.004	0.004
30-Sep-09	<0.002	0.003
1-Oct-09	<0.002	<0.003
2-Oct-09	0.004	0.004
3-Oct-09	<0.002	0.004
4-Oct-09	<0.002	<0.003
5-Oct-09	<0.002	<0.003
6-Oct-09	0.004	<0.003
7-Oct-09	<0.002	<0.002
8-Oct-09	<0.002	<0.002
9-Oct-09	<0.002	<0.002
10-Oct-09	<0.002	<0.002
11-Oct-09	<0.003	<0.003
12-Oct-09	<0.003	<0.003
13-Oct-09	<0.003	<0.003
14-Oct-09	<0.003	<0.003
15-Oct-09	0.005	0.003
16-Oct-09	0.004	0.003
17-Oct-09	0.005	0.004
18-Oct-09	0.004	0.004
19-Oct-09	<0.003	<0.003
20-Oct-09	0.003	<0.003
21-Oct-09	0.004	0.004
22-Oct-09	0.004	0.003
23-Oct-09	0.004	0.003
24-Oct-09	0.005	0.004
25-Oct-09	0.006	0.004
26-Oct-09	0.005	0.005#
27-Oct-09	0.005	0.004
28-Oct-09	0.006	0.004
29-Oct-09	0.005	0.004
30-Oct-09	0.005	0.003
31-Oct-09	0.003	<0.003
1-Nov-09	0.004	<0.003
2-Nov-09	<0.003	<0.003
3-Nov-09	0.003	<0.003
4-Nov-09	0.005	0.003
5-Nov-09	0.004	0.004
6-Nov-09	0.011#	0.005#
7-Nov-09	0.003	0.003
8-Nov-09	<0.003	0.007#
9-Nov-09	0.004	0.003
10-Nov-09	0.003	0.003
11-Nov-09	<0.003	<0.003
12-Nov-09	0.004	0.003

Date of Reading	Passenger Terminal Operational Data	Berth 12 Operational Data
13-Nov-09	<0.003	<0.003
14-Nov-09	<0.003	<0.003
15-Nov-09	<0.003	<0.003
16-Nov-09	0.003	<0.003
17-Nov-09	<0.003	<0.003
18-Nov-09	0.004	<0.003
19-Nov-09	<0.003	0.003
20-Nov-09	<0.003	<0.003
21-Nov-09	<0.003	0.004
22-Nov-09	<0.003	0.003
23-Nov-09	<0.003	0.003
24-Nov-09	0.004	0.004
25-Nov-09	0.002	<0.003
26-Nov-09	0.004	0.003
27-Nov-09	0.002	<0.003
28-Nov-09	<0.003	<0.003
29-Nov-09	<0.003	0.003
30-Nov-09	<0.003	<0.003
1-Dec-09	<0.003	<0.003
2-Dec-09	<0.003	<0.003
3-Dec-09	0.004	<0.003
4-Dec-09	<0.003	<0.003
5-Dec-09	<0.003	0.003
6-Dec-09	<0.003	<0.003
7-Dec-09	<0.003	0.004
8-Dec-09	0.003	0.004
9-Dec-09	0.003	0.003
10-Dec-09	<0.003	No air volume
11-Dec-09	<0.003	0.004
12-Dec-09	<0.003	<0.003
13-Dec-09	<0.003	0.003
14-Dec-09	0.007	0.007#
15-Dec-09	0.003	0.003
16-Dec-09	0.003	0.010#
17-Dec-09	0.003	0.007#
18-Dec-09	0.003	0.008
19-Dec-09	0.004	0.006
20-Dec-09	0.006	0.004
21-Dec-09	0.003	0.005
22-Dec-09	<0.003	0.004
23-Dec-09	0.004	0.003
24-Dec-09	0.004	0.003
25-Dec-09	<0.003	<0.003
26-Dec-09	<0.003	0.003
27-Dec-09	<0.003	0.003
28-Dec-09	0.003	0.003
29-Dec-09	0.003	0.003
30-Dec-09	0.004	0.004
31-Dec-09	<0.003	<0.003
1-Jan-10	<0.003	<0.003
2-Jan-10	<0.003	<0.003

Date of Reading	Passenger Terminal Operational Data	Berth 12 Operational Data
3-Jan-10	<0.003	<0.003
4-Jan-10	<0.003	<0.003
5-Jan-10	<0.003	<0.003
6-Jan-10	<0.020	<0.020
7-Jan-10	<0.020	<0.020
8-Jan-10	<0.020	<0.020
9-Jan-10	<0.020	<0.020
10-Jan-10	<0.020	0.15#
11-Jan-10	<0.020	0.30#
12-Jan-10	0.12#	<0.020
13-Jan-10	0.02	<0.020
14-Jan-10	<0.020	<0.020
15-Jan-10	<0.020	<0.020
16-Jan-10	<0.020	Power isolation
17-Jan-10	<0.020	Power isolation
18-Jan-10	<0.020	<0.020
19-Jan-10	<0.020	0.19#
20-Jan-10	<0.020	Power isolation
21-Jan-10	<0.020	Power isolation
22-Jan-10	<0.020	<0.020
23-Jan-10	<0.020	<0.020
24-Jan-10	0.20#	0.89#
25-Jan-10	<0.020	Power isolation
26-Jan-10	<0.020	Power isolation
27-Jan-10	<0.020	Power isolation
28-Jan-10	<0.020	<0.020
29-Jan-10	<0.020	<0.020
30-Jan-10	<0.020	<0.020
31-Jan-10	<0.020	<0.020
1-Feb-10	<0.020	<0.020
2-Feb-10	<0.020	<0.020
3-Feb-10	<0.020	<0.020
4-Feb-10	<0.020	<0.020
5-Feb-10	<0.020	<0.020
6-Feb-10	<0.020	<0.020
7-Feb-10	<0.020	<0.020
8-Feb-10	<0.020	No air volume
9-Feb-10	<0.020	<0.020
10-Feb-10	<0.020	<0.020
11-Feb-10	<0.020	<0.020
12-Feb-10	<0.020	<0.020
13-Feb-10	<0.020	<0.020
14-Feb-10	<0.020	<0.020
15-Feb-10	<0.020	<0.020
16-Feb-10	<0.020	<0.020
17-Feb-10	<0.020	<0.020
18-Feb-10	<0.020	<0.020
19-Feb-10	<0.020	<0.020
20-Feb-10	<0.020	<0.020
21-Feb-10	<0.020	<0.020
22-Feb-10	<0.020	<0.020

Date of Reading	Passenger Terminal Operational Data	Berth 12 Operational Data
23-Feb-10	<0.020	<0.020
24-Feb-10	<0.020	<0.020
25-Feb-10	<0.020	<0.020
26-Feb-10	<0.020	<0.020
27-Feb-10	<0.020	<0.020
28-Feb-10	<0.020	<0.020
1-Mar-10	<0.020	<0.020
2-Mar-10	<0.020	<0.020
3-Mar-10	<0.020	<0.020
4-Mar-10	<0.020	<0.020
5-Mar-10	<0.020	<0.020
6-Mar-10	<0.020	<0.020
7-Mar-10	<0.020	<0.020
8-Mar-10	<0.020	<0.020
9-Mar-10	<0.020	<0.020
10-Mar-10	<0.020	<0.020
11-Mar-10	<0.020	<0.020
12-Mar-10	<0.020	<0.020
13-Mar-10	<0.020	<0.020
14-Mar-10	<0.020	<0.020
15-Mar-10	<0.020	<0.020
16-Mar-10	<0.020	<0.020
17-Mar-10	<0.020	<0.020
18-Mar-10	<0.020	<0.020
19-Mar-10	<0.020	<0.020
20-Mar-10	<0.020	<0.020
21-Mar-10	<0.020	<0.020
22-Mar-10	<0.020	<0.020
23-Mar-10	<0.020	<0.020
24-Mar-10	<0.020	<0.020
25-Mar-10	<0.020	<0.020
26-Mar-10	<0.020	<0.020
27-Mar-10	<0.020	<0.020
28-Mar-10	<0.020	<0.020
29-Mar-10	<0.020	<0.020
30-Mar-10	<0.020	<0.020
31-Mar-10	<0.020	<0.020
1-Apr-10	<0.020	<0.020
2-Apr-10	<0.020	<0.020
3-Apr-10	<0.020	<0.020
4-Apr-10	<0.020	<0.020
5-Apr-10	<0.020	<0.020
6-Apr-10	<0.020	<0.020
7-Apr-10	<0.020	<0.020
8-Apr-10	<0.020	<0.020
9-Apr-10	<0.020	<0.020
10-Apr-10	<0.020	<0.020
11-Apr-10	<0.020	<0.020
12-Apr-10	<0.020	<0.020
13-Apr-10	<0.020	<0.020
14-Apr-10	<0.020	<0.020

Date of Reading	Passenger Terminal Operational Data	Berth 12 Operational Data
15-Apr-10	<0.020	<0.020
16-Apr-10	<0.020	<0.020
17-Apr-10	<0.020	<0.020
18-Apr-10	<0.020	<0.020
19-Apr-10	<0.020	<0.020
20-Apr-10	<0.020	<0.020
21-Apr-10	<0.020	<0.020
22-Apr-10	<0.020	<0.020
23-Apr-10	<0.020	<0.020
24-Apr-10	<0.020	<0.020
25-Apr-10	<0.020	<0.020
26-Apr-10	<0.020	<0.020
27-Apr-10	<0.020	<0.020
28-Apr-10	<0.020	<0.020
29-Apr-10	<0.020	<0.020
30-Apr-10	<0.020	<0.020
1-May-10	<0.020	<0.020
2-May-10	<0.020	<0.020
3-May-10	<0.020	<0.020
4-May-10	<0.020	<0.020
5-May-10	<0.020	<0.020
6-May-10	<0.020	<0.020
7-May-10	<0.020	<0.020
8-May-10	<0.020	<0.020
9-May-10	<0.020	<0.020
10-May-10	0.030	<0.020
11-May-10	0.070	<0.020
12-May-10	0.020	<0.020
13-May-10	<0.020	<0.020
14-May-10	<0.020	<0.020
15-May-10	<0.020	<0.020
16-May-10	0.020	0.020
17-May-10	0.040	<0.020
18-May-10	<0.020	<0.020
19-May-10	<0.020	<0.020
20-May-10	<0.020	<0.020
21-May-10	<0.020	<0.020
22-May-10	<0.020	<0.020
23-May-10	<0.020	<0.020
24-May-10	<0.020	<0.020
25-May-10	<0.020	Power isolation
26-May-10	<0.020	Power isolation
27-May-10	0.030	Power isolation
28-May-10	0.030	Power isolation
29-May-10	<0.020	Power isolation
30-May-10	0.020	Power isolation
31-May-10	<0.020	Power isolation
1-Jun-10	<0.020	Power isolation
2-Jun-10	<0.020	Power isolation
3-Jun-10	<0.020	Power isolation
4-Jun-10	<0.020	<0.020

Date of Reading	Passenger Terminal Operational Data	Berth 12 Operational Data
5-Jun-10	<0.020	<0.020
6-Jun-10	<0.020	<0.020
7-Jun-10	<0.020	<0.020
8-Jun-10	0.020	0.020
9-Jun-10	0.56#	0.020
10-Jun-10	0.24#	0.020
11-Jun-10	0.080	0.020
12-Jun-10	0.020	0.020
13-Jun-10	0.020	0.020
14-Jun-10	<0.020	NA
15-Jun-10	NA	<0.020
16-Jun-10	0.04	NA
18-Jun-10	NA	<0.02
21-Jun-10	0.02	NA
22-Jun-10	0.02	NA
24-Jun-10	NA	0.02
27-Jun-10	NA	0.02
28-Jun-10	0.02	NA
2-Jul-10	NA	<0.02
3-Jul-10	NA	<0.02
4-Jul-10	<0.02	NA
6-Jul-10	<0.02	NA
9-Jul-10	NA	<0.02
10-Jul-10	<0.02	NA
12-Jul-10	NA	<0.02
15-Jul-10	<0.02	NA
16-Jul-10		
17-Jul-10		
18-Jul-10		
19-Jul-10		
20-Jul-10		
21-Jul-10		
22-Jul-10		
23-Jul-10		
24-Jul-10		
25-Jul-10		
26-Jul-10		
27-Jul-10		
28-Jul-10		
29-Jul-10		
30-Jul-10		
31-Jul-10		
1-Aug-10		
2-Aug-10		
3-Aug-10		
4-Aug-10		
5-Aug-10		
6-Aug-10		
7-Aug-10		
8-Aug-10		
9-Aug-10		

This sample was isotopically analysed and has been determined not to be Magellan Metals' lead. The lead reading then becomes Magellan Metals' revised trigger level for the monitoring location.

Power isolation = power switched off due to hazard cargo operations at the port.

NA = The sampling frequency was reduced after six months on agreement with the Department of Environment and Conservation, the Department of Mines and Petroleum and the Department of Health.