



TSP EXCEEDANCE REPORT

MONITORING PERIOD

13 – 14 FEBRUARY 2011

Revision	Prepared	Reviewed	Approved	Date	Description
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1. INTRODUCTION

On the 23rd of February 2011, the Esperance Port Sea and Land (ESPL) 'became aware' of laboratory results from MPL Laboratories detailing dust (TSP) exceedences (refer to Table 1). This report is being submitted to DEC (on 04th of March 2011) within the seven working days following becoming aware of the exceedance, which is consistent with the latest amended Licence (L5099/1974/12) requirement of Condition 7.

Table 1: Emission Concentration Targets from DEC Licence Number L5099/1974/12 issued to EPSL on 6 January 2009.

Emission	Ambient concentration target
Nickel in air	0.14 µg/m ³
Dust as PM ₁₀	50 µg/m ³
Dust as TSP	90 µg/m ³
Silica in air	5 µg/m ³

This exceedance was recorded at Site 1 for the **monitoring period of 1254hrs 13th of February 2011 to 1230hrs on 14th of February 2011.**

2. INVESTIGATION

2.1 Date, time and location of exceedance

The recorded TSP concentration above the emission concentration target (**Table 1**) according to the Licence L5099/1974/12 for the monitoring period of **1254 hours 13th February 2011 to 1230 hours 14th February** is as follows:

- Site 1: 110.0 µg/m³

Site 1 is located downwind of berths 1 and 2 in a south easterly wind but downwind of berth 3 in an easterly wind (**Figure 1**).

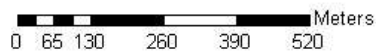


Disclaimer: This map consists of shape files generated by EPSL (2011) and Landgate (2010). This map is not to be used for navigational purposes. Positional accuracy should be considered as approximate.



Title: Location of HVAS/TEOM monitoring sites 1 to 4, HVAS community monitoring site 5, E-Sampler 5 to 8 (EP5-EP8) and EP7 - Meteorological station

Scale: 1:10,000



Date: 5 January 2011

Map no.

Figure 1: Location of air quality monitoring stations.

2.2 Port Activities

The following Port activities occurred during the monitoring period:

- Bogasary MV was along side Berth 1 being loaded with wheat between 1049 hours 14th of February 2011 to 1550 hours 16th of February 2011.
- 26, 583 tonnes of iron ore averaged across 3 trains
- 123 tonnes of nickel concentrate across 3 trucks

2.3 Meteorological Activities

The wind directions for the 24 hour period are in the wind arc from ENE to ESE (**Figure 2**). The maximum hourly average wind speed of 14.2 m/s (51.1 km/hr) was recorded from the ESE at 1600 on the 13th of January 2011. The 'Beaufort Wind Force Scale' is a measure of understanding wind speeds in descriptive terminology. A wind speed of 14.2 m/s is described as a 'near gale' (BOM, 2011).

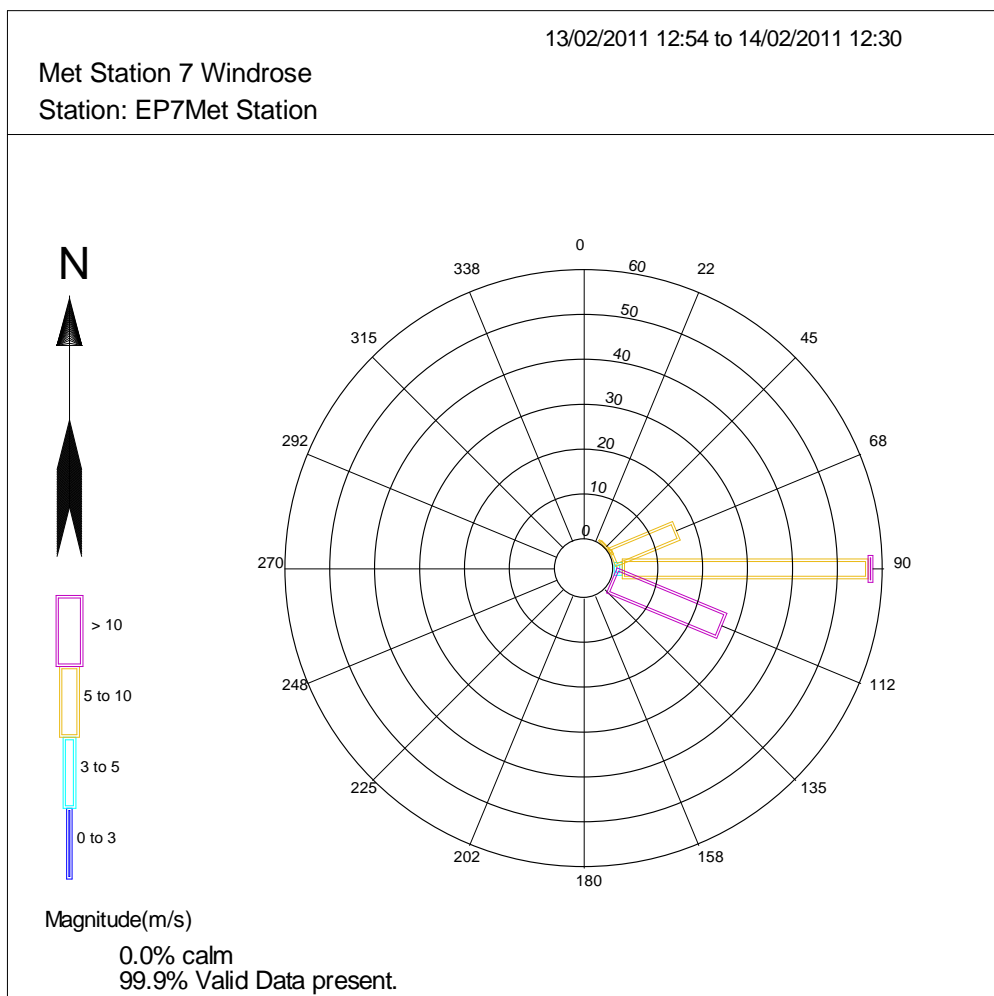


Figure 2 Windrose for the monitoring period 1254 hrs 13/02/2011 to 1230 hrs 14/02/2011. Raw data source: EP7 monitoring station, Berth 3.

2.4 TSP Dust Levels (24 hour period)

The likely source of TSP for site 1 accounting for the value of $110 \mu\text{g}/\text{m}^3$ is strong wind: 27% of the time ESE Wind gusted with a speed greater than 10 Km/h; 58% of the time E wind blew with a speed between 5 and 10 Km/h (see Figure 2). No significant shipping activities were carried on during the monitoring period, since the grain ship was on berth only during the last two hours of the sampling period which makes grain loading activity unlikely source of dust for the sampling period considered.

EPSL uses a dust binding agent to reduce its dust emissions from unsealed areas surrounding iron sheds 1, 2, 3 and 4. Iron ore and nickel concentrates did not contribute significantly to TSP exceedance at Site 1 given:

- Fe 0.67% of total TSP and
- Nickel less than laboratory detection limit.

3. CONCLUSIONS

The TSP dust exceedance at site 1 (1254hr 13/02/2011 to 1230 14/02/2011) is likely to be due to near gale winds conditions mobilising TSP from the Esperance Port beach.

3.1 Corrective Action

No action required.

APPENDIX A MPL LABORATORY REPORTS



Part of the EnviroLab Group



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CERTIFICATE OF ANALYSIS 109050

Client:

Esperance Ports - Sea and Land
 PO Box 35
 Esperance
 WA 6450

Attention: C Magana

Sample log in details:

Your Reference:
 No. of samples:
 Date samples received:
 Date completed instructions received:
 Location:

Dust Analysis
 24 High Volume Filters
 15/02/11
 15/02/11

Analysis Details:

Please refer to the following pages for results, methodology summary and quality control data.
 Samples were analysed as received from the client. Results relate specifically to the samples as received.

Please refer to the last page of this report for any comments relating to the results.

Report Details:

Date results requested by: 22/02/11
 Date of Preliminary Report: Not issued
 Issue Date: 21/02/11

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 This document is issued in accordance with NATA's accreditation requirements.
 Accredited for compliance with ISO/IEC 17025.

Tests not covered by NATA are denoted with *.

Results Approved By:


 Dr Monika Berger
 Supervisor - Micro, Asbestos, Dust

Client Reference: Dust Analysis

Metals in High Volume Filters							
Our Reference:	UNITS	PQL	109050-1	109050-2	109050-3	109050-4	109050-5
Your Reference:	--	--	EAP801	EAP802	EAP803	EAP804	EAP805
Location	--	--	Site 4	Site 3	Site 2	Site 1	Site 5
Date Sampled			10/02/11	10/02/11	10/02/11	10/02/11	10/02/11
Dust	mg/filter	0.1	30	32	50	42	28
Dust in Air	µg/m ³	0.1	20	21	33	28	18
Iron	µg/filter	20	720	450	1,700	740	460
Iron in Air	µg/m ³	0.01	0.47	0.30	1.1	0.49	0.30
Nickel	µg/filter	5	<5.0	<5.0	7.2	9.4	<5.0
Nickel in Air	µg/m ³	0.002	<0.002	<0.002	<0.002	0.010	<0.002
Lead	µg/filter	5	<5.0	<5.0	<5.0	<5.0	<5.0
Lead in Air	µg/m ³	0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Lithium	µg/filter	5	<5.0	<5.0	<5.0	<5.0	<5.0
Lithium in Air	µg/m ³	0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Sulfur	µg/filter	50	1,100	870	1,900	2,800	1,900
Sulfur in Air	µg/m ³	0.03	0.71	0.58	1.2	1.8	1.3
Zinc	µg/filter	5	215	173	214	197	195
Zinc Oxide in Air	µg/m ³	0.001	0.18	0.14	0.18	0.18	0.18

Metals in High Volume Filters							
Our Reference:	UNITS	PQL	109050-6	109050-7	109050-8	109050-9	109050-10
Your Reference:	--	--	EAP806	EAP807	EAP808	EAP809	EAP810
Location	--	--	Blank	Site 4	Site 3	Site 2	Site 1
Date Sampled				11/02/11	11/02/11	11/02/11	11/02/11
Dust	mg/filter	0.1	3.2	50	72	82	86
Dust in Air	µg/m ³	0.1	[NA]	31	44	51	53
Iron	µg/filter	20	120	910	880	1,500	1,000
Iron in Air	µg/m ³	0.01	[NA]	0.56	0.54	0.95	0.64
Nickel	µg/filter	5	<5.0	<5.0	9.5	22	15
Nickel in Air	µg/m ³	0.002	[NA]	<0.002	0.010	0.010	0.010
Lead	µg/filter	5	<5.0	<5.0	<5.0	<5.0	<5.0
Lead in Air	µg/m ³	0.003	[NA]	<0.003	<0.003	<0.003	<0.003
Lithium	µg/filter	5	<5.0	<5.0	<5.0	<5.0	<5.0
Lithium in Air	µg/m ³	0.002	[NA]	<0.002	<0.002	<0.002	<0.002
Sulfur	µg/filter	50	510	2,000	3,800	5,300	5,100
Sulfur in Air	µg/m ³	0.03	[NA]	1.2	2.3	3.3	3.1
Zinc	µg/filter	5	168	197	175	203	159
Zinc Oxide in Air	µg/m ³	0.001	[NA]	0.15	0.13	0.18	0.12

Client Reference: Dust Analysis

Metals in High Volume Filters	UNITS	PQL	109050-11	109050-12	109050-13	109050-14	109050-15
Our Reference:	--	--	EAP611	EAP612	EAP613	EAP614	EAP615
Your Reference	--	--	Site 5	Blank	Site 4	Site 3	Site 2
Location	--	--	Site 5	Blank	Site 4	Site 3	Site 2
Date Sampled			11/02/11		12/02/11	12/02/11	12/02/11
Dust	mg/filter	0.1	33	1.8	83	90	80
Dust In Air	µg/m ³	0.1	20	[NA]	53	57	51
Iron	µg/filter	20	240	49	2,000	2,600	1,600
Iron In Air	µg/m ³	0.01	0.14	[NA]	1.3	1.7	1.0
Nickel	µg/filter	5	<5.0	<5.0	5.9	9.7	13
Nickel In Air	µg/m ³	0.002	<0.002	[NA]	<0.002	0.010	0.010
Lead	µg/filter	5	<5.0	<5.0	<5.0	<5.0	<5.0
Lead In Air	µg/m ³	0.003	<0.003	[NA]	<0.003	<0.003	<0.003
Lithium	µg/filter	5	<5.0	<5.0	<5.0	<5.0	<5.0
Lithium In Air	µg/m ³	0.002	<0.002	[NA]	<0.002	<0.002	<0.002
Sulfur	µg/filter	50	890	180	1,300	3,000	2,800
Sulfur In Air	µg/m ³	0.03	0.55	[NA]	0.85	1.9	1.8
Zinc	µg/filter	5	524	199	546	647	553
Zinc Oxide In Air	µg/m ³	0.001	0.40	[NA]	0.44	0.51	0.44

Metals in High Volume Filters	UNITS	PQL	109050-16	109050-17	109050-18	109050-19	109050-20
Our Reference:	--	--	EAP616	EAP617	EAP618	EAP619	EAP620
Your Reference	--	--	Site 1	Site 5	Blank	Site 4	Site 3
Location	--	--	Site 1	Site 5	Blank	Site 4	Site 3
Date Sampled			12/02/11	12/02/11		13/02/11	13/02/11
Dust	mg/filter	0.1	120	45	3.0	96	84
Dust In Air	µg/m ³	0.1	75	29	[NA]	63	55
Iron	µg/filter	20	1,300	210	130	1,800	1,600
Iron In Air	µg/m ³	0.01	0.84	0.13	[NA]	1.2	1.0
Nickel	µg/filter	5	7.7	<5.0	<5.0	6.2	7.0
Nickel In Air	µg/m ³	0.002	<0.002	<0.002	[NA]	<0.002	<0.002
Lead	µg/filter	5	<5.0	<5.0	<5.0	<5.0	<5.0
Lead In Air	µg/m ³	0.003	<0.003	<0.003	[NA]	<0.003	<0.003
Lithium	µg/filter	5	<5.0	<5.0	<5.0	<5.0	<5.0
Lithium In Air	µg/m ³	0.002	<0.002	<0.002	[NA]	<0.002	<0.002
Sulfur	µg/filter	50	2,900	1,100	520	1,100	1,800
Sulfur In Air	µg/m ³	0.03	1.9	0.70	[NA]	0.73	1.2
Zinc	µg/filter	5	552	603	536	534	569
Zinc Oxide In Air	µg/m ³	0.001	0.44	0.48	[NA]	0.43	0.46

Client Reference: Dust Analysis

Metals in High Volume Filters	UNITS	PQL	109050-21	109050-22	109050-23	109050-24	109050-25
Our Reference:	--	--	EAP621	EAP622	EAP623	EAP624	La Blank
Your Reference	--	--	Site 2	Site 1	Site 5	Blank	
Location	--	--	Site 2	Site 1	Site 5	Blank	
Date Sampled			13/02/11	13/02/11	13/02/11		
Dust	mg/filter	0.1	70	170	52	2.9	[NA]
Dust In Air	µg/m ³	0.1	45	110	33	[NA]	[NA]
Iron	µg/filter	20	1,200	1,000	280	100	150
Iron In Air	µg/m ³	0.01	0.75	0.67	0.18	[NA]	[NA]
Nickel	µg/filter	5	9.8	<5.0	<5.0	<5.0	<5.0
Nickel In Air	µg/m ³	0.002	0.010	<0.002	<0.002	[NA]	[NA]
Lead	µg/filter	5	<5.0	<5.0	<5.0	<5.0	<5.0
Lead In Air	µg/m ³	0.003	<0.003	<0.003	<0.003	[NA]	[NA]
Lithium	µg/filter	5	<5.0	<5.0	<5.0	<5.0	<5.0
Lithium In Air	µg/m ³	0.002	<0.002	<0.002	<0.002	[NA]	[NA]
Sulfur	µg/filter	50	1,200	1,300	1,300	480	610
Sulfur In Air	µg/m ³	0.03	0.76	0.81	0.82	[NA]	[NA]
Zinc	µg/filter	5	561	543	657	487	168
Zinc Oxide In Air	µg/m ³	0.001	0.45	0.44	0.53	[NA]	[NA]

Client Reference: Dust Analysis

Method ID	Methodology Summary
WILAB 4	Airborne samples analysed according to AS 2985 for Respirable Dust or AS 3640 for Inhalable Dust. Sample results based on volume data supplied by client. Samples tested as received, accreditation does not cover sampling.
WILAB 17	Metals in soil and water by ICP-OES.

Client Reference: Dust Analysis

Report Comments:

INS: Insufficient sample for this test; NT: Not tested; PQL: Practical Quantitation Limit; <: Less than; >: Greater than
 RPD: Relative Percent Difference; NA: Test not required; LCS: Laboratory Control Sample; NR: Not requested
 NS: Not specified; NEPM: National Environmental Protection Measure
 DOL: Sample rejected due to particulate overload

Quality Control Definitions

Blank: This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.

Duplicate: This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.

Matrix Spike: A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.

LCS (Laboratory Control Sample): This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.

Surrogate Spike: Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.

Laboratory Acceptance Criteria

Duplicate sample and matrix spike recoveries may not be reported on smaller jobs, however were analysed at a frequency to meet or exceed NEPM requirements. All samples are tested in batches of 20. The duplicate sample RPD a matrix spike recoveries for the sample batch were within laboratory acceptance criteria.

Duplicates: <5xPQL - any RPD is acceptable; >5xPQL - 0-50% RPD is acceptable.

Matrix Spike and LCS: Generally 70-130% for inorganics/metals; 60-140% for organics and 10-140% for SVOC and Speciated Phenols is acceptable.

Surrogates: 60-140% is acceptable for general organics and 10-140% for SVOC and Speciated Phenols.