

Review of Ventilation during Low Traffic Periods

ADUN-7CN5CT

Created
18 February 2008

Updated
10 October 2008

Owner
Andrew Dunn

Confidentiality Statement

Information in this document must be kept confidential as per its classification below, and the rules of disclosure.

All documents within the Transurban Group are classified in the following way. **PUBLIC** documents are intended for anyone, **COMMERCIAL IN CONFIDENCE** documents are to be kept confidential between restricted individuals within the Transurban Group and partner organisations. **COMPANY CONFIDENTIAL** documents are to be kept confidential within the Transurban Group, and used for normal business activities by the general office population, **HIGHLY CONFIDENTIAL** documents are to be kept confidential to restricted individuals within the Transurban Group.

This document is uncontrolled if printed.

© Copyright Transurban Limited ABN 96 098 143 410 and CityLink Melbourne Limited ABN 65 070 810 678. All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted in any form or by any means, electronic, mechanical, photocopying, recording or otherwise, without the written permission of The Transurban Group.

Classification

Public

Contents

Date	Version	Author	Comments (including Review History)
18 Feb 08	0.1	Andrew Dunn	Original draft.
4 Mar 08	1.1	Andrew Dunn	Revised draft.
9 May 08	2.0	Andrew Dunn	Revised draft.
29 May 08	3.0	Andrew Dunn	Final Version for Environmental Management Committee distribution.
10 Jul 08	4.0	Elena Tooley	Amendments as per comments provided at the Environmental Management Committee meeting. Final.
10 Oct 08	5.0	Elena Tooley	Amendments as per correspondence with EPA.

Contents

1	Summary	4
1	Background	5
2	The Proposal	6
2.1	Data to be collected	9
2.2	Project Schedule.	9
3	Case to Support the Trial	10
4	Constraints	10
4.1	Operational and Safety Constraints	11
4.2	Risk Assessment	11
5	Stakeholder Management and Communications	12
5.1	Project Stakeholders	12
5.2	External Consultation	12
5.3	Internal Communications	13
5.4	Internal Reporting	13
5.5	Project Contact	14
6	Reporting	14
7	Appendix A	15
8	Attachment 1 – Minutes of the Environmental Management Committee Meeting held on 18th June 2008	17
9	Attachment 2 – Notice to Residents	18

Classification

Public

For Discussion Only

This document is uncontrolled if printed.

Version 5.0

Doc ID **ADUN-7CN5CT**

Created 18 February 08

Printed 25 May 2009

Updated 10 October 08

Controller A.Dunn

Owner A.Dunn

transurban

Page 3
of 18

Domain Tunnel Review of Ventilation During Low Traffic Periods

1 Summary

Translink Operations (TLO) and CityLink Melbourne Limited wishes to trial a range of modified ventilation fan configurations for the Domain Tunnel.

It is proposed to trial a modified ventilation regime in the Domain Tunnel during periods of low traffic volumes (between 10pm and 5am). The trial is needed to:

- determine if the exhaust fans can be turned off during low traffic volume periods whilst still meeting State environment protection policy and its requirements (*Ambient Air Quality, Air Quality Management*);
- quantify energy and greenhouse gas savings from a reduced ventilation regime, and
- determine the operational requirements if such operation was to become standard operating practice.

EPA Waste Discharge Licence EA41502 Condition 1.2 requires vehicle emissions not to be discharged from the tunnel exit portals at all times. However, Condition 1.6 of the Waste Discharge licence states:

Condition 1.2 does not apply during planned maintenance work, control room operator training or testing of the smoke extraction system or other events, when conducted as specified in the latest revision of the Environmental Management Plan as approved by EPA.

Upon the advice of officers from EPA Victoria it is proposed to include this trial in the current EPA approved CityLink Environmental Management Plan (EMP). The revised EMP has been provided to the CityLink Environment Management Committee for comments and has been endorsed by its members. The EMP has been provided for approval to the EPA pending Community Consultation outcomes.

Should the trial be successful Translink Operations will apply for a licence amendment prior to adopting the reduced operating regime as standard practice.

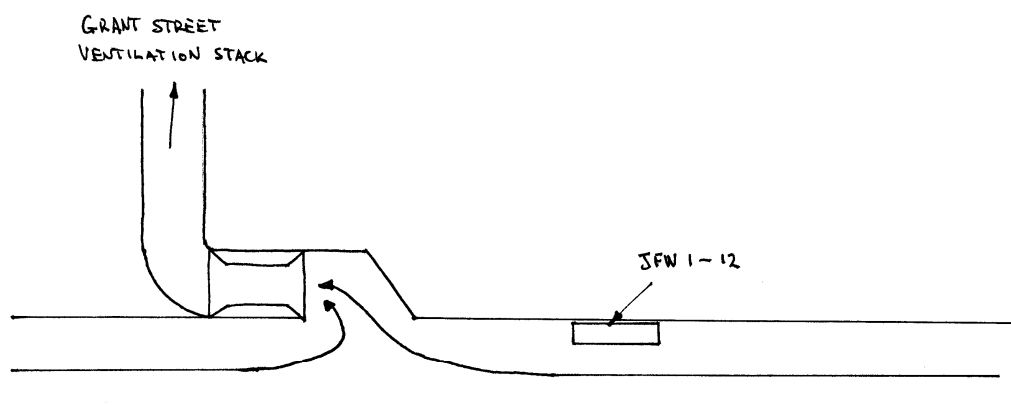
Domain Tunnel Review of Ventilation During Low Traffic Periods

1 Background

Translink Operations Pty Ltd holds EPA Waste Discharge Licence EA41502 and is contracted by Transurban Limited, the owner of the CityLink concession deed, to operate the CityLink tunnels.

The Domain Tunnel is 1.6 km long and 25m deep in the deepest section. Traffic travels from west to east (right to left) and causes air to travel longitudinally down the tunnel. This phenomenon is known as the "Piston Effect". Due to the short length of the tunnel there is more than enough piston effect to adequately ventilate the tunnel, however at times this effect is excessive and must be reduced. There are 12 reversible jet fans located within the tube to control the velocity of the air within the tunnel. Most of the time these fans operate in reverse to slow the air down.

Air is extracted from the tunnel through the Grant Street ventilation stack. Extraction is achieved using axial fans. There are five axial fans in the ventilation chamber of which four are available for use at any one time.



Control of the various fans is performed by the Ventilation control algorithm that resides within the Plant Management Control System (PMCS). This algorithm uses pollutant concentration and air velocity data from sensors within the Domain Tunnel to maintain the air quality within defined limits and also to ensure that there is a net inflow of air into the exit portal.

Condition 1.2 of the EPA licence EA 41502 states:

- 1.2 The reverse air flow at the tunnel exit portals must at all times be sufficient to ensure that vehicle emissions are not discharged from the tunnel exit portals.

Domain Tunnel Review of Ventilation During Low Traffic Periods

To achieve this requirement normal off-peak operation requires the operation of three axial fans within the ventilation stack. Each of the exhaust stack fans is rated at 210 kW, and the resultant fan energy usage is 4,967 MWhr/yr (assuming three fans with a load factor of 0.9 operating 24 hours per day 365 days per year).

If the exhaust fans can be switched off for a minimum of 3 hours per night the energy saving would equate to a greenhouse gas saving estimated at 820 t CO₂-e/yr.

Although these savings are minimal in the context of overall tunnel greenhouse gas emissions it is seen as a first step. Additional greenhouse gas savings will be achievable should the trial show that the fans can be left off longer.

2 The Proposal

The reduced ventilation regime is proposed to be operated with all exhaust fans in the Grant Street stack switched off and with a limited number of jet fans running to maintain tunnel air flow in the direction of traffic flow. The jet fans will continue to be operated to ensure that in tunnel air quality limits specified in condition 1.3 of the waste discharge licence are achieved.

Translink Operations propose to operate the Domain Tunnel with the reduced ventilation regime for 5 different sub-trial timeslots as shown below.

Test No.	Time slot	Compliance	Duration
1	10pm to 5am	Background data only	7 days
2	11pm - 2am	NO ₂ signal from portal does not exceed 0.1ppm average over 1 hour at either monitoring site. CO signal from portal not to exceed 9 ppm averaged over 8 hours and 25 ppm average over 1 hour at either monitoring site.	7 days

Domain Tunnel Review of Ventilation During Low Traffic Periods

Test No.	Time slot	Compliance	Duration
3	11pm – 3am	NO2 signal from portal does not exceed 0.1ppm average over 1 hour at either monitoring site. CO signal from portal not to exceed 9 ppm averaged over 8 hours and 25 ppm average over 1 hour at either monitoring site.	7 days
4	11pm – 4am	NO2 signal from portal does not exceed 0.1ppm average over 1 hour at either monitoring site. CO signal from portal not to exceed 9 ppm averaged over 8 hours and 25 ppm average over 1 hour at either monitoring site.	7 days
5	11pm – 5am	NO2 signal from portal does not exceed 0.1ppm average over 1 hour at either monitoring site. CO signal from portal not to exceed 9 ppm averaged over 8 hours and 25 ppm average over 1 hour at either monitoring site.	7 days

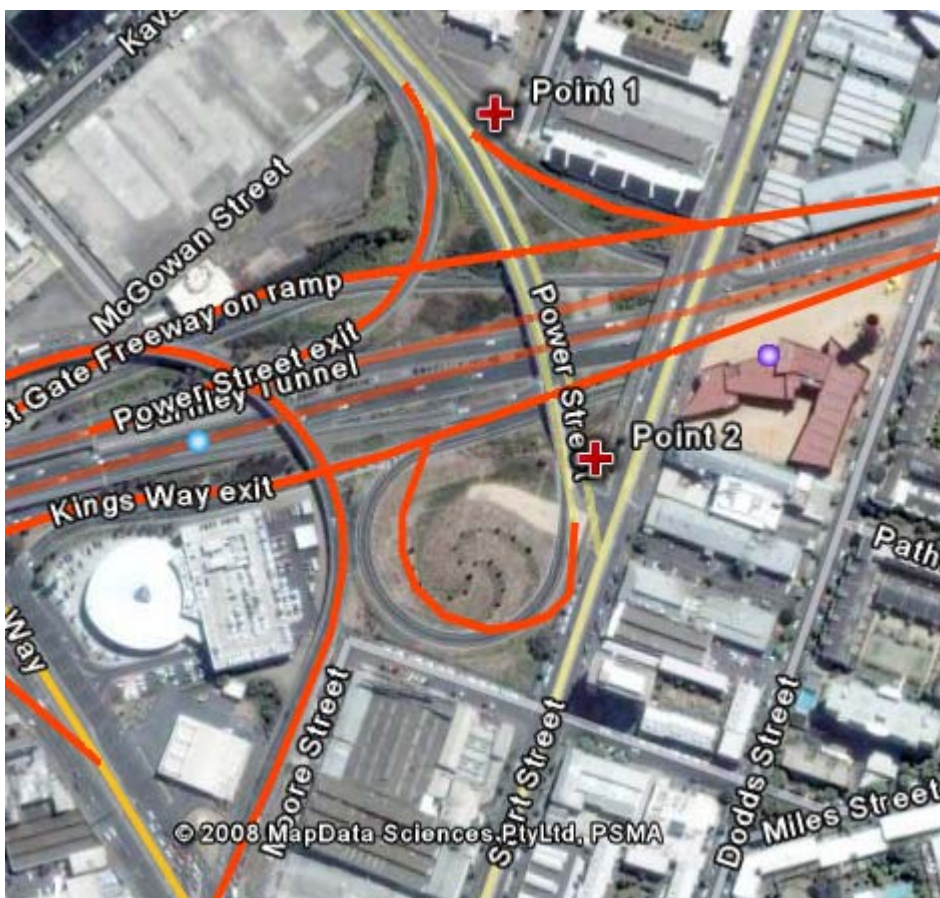
Prior to the trial commencing it is proposed to operate the monitoring equipment at both locations for 7 days under normal operating conditions to gather background data for the trial.

After each daily test the data will be verified and analysed against the background data gathered prior to the test. At the end of the week trends will be reviewed and assuming the data indicates all objectives are being met then the next test will commence.

Domain Tunnel Review of Ventilation During Low Traffic Periods

The test data will be compared against State environment protection policy (*Air Quality Management*) design criteria and State environment protection policy (*Ambient Air Quality*) criteria. Should a breach of the design criteria or ambient air quality criteria be detected Translink Operations will notify EPA and the trial will be suspended.

The locations of the monitoring points for the trial are shown below. These sites have been selected on the basis of security, proximity to the exit portal of the Domain Tunnel and the availability of power supply.



At each site EC9841 NO, NO_x and NO₂ analysers will be installed in air conditioned housings. These use the chemiluminescence method. Separate units will monitor CO and PM_{2.5} concentrations (the type of unit is yet to be confirmed). The units will be leased from a NATA accredited laboratory services provider. Data will be sent to Translink Operations via GSM modem. Details and specification of the EC9841 units are provided in Appendix A.

Domain Tunnel Review of Ventilation During Low Traffic Periods

2.1 Data to be collected

During the trial the following data will be gathered:

- Ambient weather conditions
- CO, PM2.5, NO2 and NOx at the two monitoring sites.
- Background CO, NO2 and NOx for EPA monitoring stations at Richmond and RMIT.
- In tunnel CO, NO and visibility
- Traffic volumes and vehicle mix (Heavy commercial vehicles, light commercial vehicles and cars), lane availability and speed limits.

2.2 Project Schedule.

Milestone	Success Criteria	Number of Weeks
EPA Approval of the trial	EPA approves the trial to go ahead based on CML and TLO submission	8
Community Consultation	Provide information to the Neighbouring community as per the Stakeholder Management & Communication Section	6
Establishment of pre-trial requisites	All aspects of the trial including equipment calibration and collection of external data are finalised for the trial	6
Field Trial	Data is collected and verified, any exceptions are to be managed as per temporary amended Operational Procedures	8
Trial Evaluation	Data is analysed and the trial is accepted by EPA as successful. EPA Licence is amended.	3

Domain Tunnel Review of Ventilation During Low Traffic Periods

Review of Documentation	Operational Procedures and other relevant documentation is reviewed and amended.	4
Transition to Operation	Agreed trial results are implemented as normal operation in accordance with amended Operational Procedures	8

3 Case to Support the Trial

Translink commissioned GHD to undertake a preliminary air assessment in May 2007. Dispersion modeling using Ausplume (version 6.0) was carried out. The study concluded that Nitrogen dioxide (NO₂) was the critical constituent limiting the time during which the proposed ventilation regime could be implemented.

The modeling identified that the proposed ventilation regime could operate between 11pm and 2am. However, as noted by GHD in the study these results need to be verified with a trial.

4 Constraints

The primary project constraints are as follows:

- Operate within EPA Waste discharge licence requirements.
- Trial must be undertaken during steady and consistent traffic volumes.
- Lane and road closures during the trial must be minimised and where possible kept to a minimum or consistent with average closures levels.
- Site locations for the portable air quality equipment might become unavailable and backup locations need to be arranged.
- Trial is to be carried out where possible to avoid regular Tunnel closures.

Domain Tunnel Review of Ventilation During Low Traffic Periods

- Alarm related to the In-tunnel air quality reaching 75% of the licence limit during the trial. Temporary changes to Operational Manuals will provide trigger points at which tunnel ventilation should return to normal operation.
- EPA does not approve trial and trial conditions will need to be revised and the project will have to be cancelled. Lane and road closures must be co-ordinated with other CityLink activities to maximise road availability.

4.1 Operational and Safety Constraints

Work on or near a live tollway presents multiple risks to personnel. In accordance with State and Federal legislation CityLink takes every opportunity to reduce any potential accident to both those working on/near the road as well as motorists.

The CityLink tollway road is a revenue-generating asset and as such any impact to traffic flow will lead to a potential decrease in revenue. Efforts by all parties will be applied to ensure no impact on Lane Availability.

TLO as part of ongoing Operation of the tollway assists in maximising the health and safety of all people working on/near the road as well as maximising traffic flows. The constraints listed below relate to the policy/procedures that TLO has implemented to meet these sections of the operations agreement between TU and TLO.

- TLO Safety and Supervision Requirements include a number of controls which are TLO Safety Induction course, EH&S Sub-Supplier Evaluation, Work Permit procedure and other. These controls will be used throughout the project.
- Additionally a review of OH&S requirements in regards to in-tunnel air quality will be carried out prior to the field stage of the trial.

4.2 Risk Assessment

Transurban has prepared a risk assessment for the trial in accordance with its internal Risk Management Policy.

Domain Tunnel Review of Ventilation During Low Traffic Periods

5 Stakeholder Management and Communications

5.1 Project Stakeholders

Project stakeholders are:

- EPA – Trial approval and Licence amendments if successful;
- Translink Operation – Operational Management, Licence Holder;
- CityLink Infrastructure Group – Project Management;
- CityLink Environmental Management Committee;
- CityLink Customers; and
- Ecotech – Technical Expertise and Ensuring relevant pre-requisites are met.
- Southbank Residents group;
- Transfield Services; and
- CityLink Media.

5.2 External Consultation

The key message is that CityLink is working with the EPA to look at ways to further reduce greenhouse gas emissions. Key elements of communicating this to the community include:

- Presentation to CityLink Environmental Management Committee attended by local government representatives and community representatives in June 2008 – Completed. Endorsed by the EMC Committee members as per Minutes of the meeting attached. Refer to the Attachment 1.
- Advertisements will be placed in the public announcement section of the local Newspaper and CityLink Web site advising people of the details of the trial and a contact point for further information.
- This will be supported with a Notice to local residents in the apartments surrounding the emission stacks. Notice will be distributed to each resident via mail and will also be placed on the Community Notice Board located at Sturt St. – Please see a copy of the Notice attached. Refer to Attachment 2.

Domain Tunnel Review of Ventilation During Low Traffic Periods

- Further consultation with the community groups will be considered based on the feedback received from the Notice. Refer to Attachment 2.
- If the results of the trial are positive, a media release would be drafted and local media approached to run a story stating the environmental benefits of the trial.

5.3 Internal Communications

It is essential that Communications activities include management of the information distributed to relevant internal stakeholders and is not restricted to the following:

- CityLink, Translink – Briefings and information will be provided as part of standard approval process and ongoing advice on any variations from the program.
- Transfield Services – Briefing is to be provided prior to the project commencement and ongoing information flow as part of Work Permits approval.
- CityLink Environmental Management Committee – Briefing to be provided to committee in June 2008. Completed. Trial results to be distributed to EMC Members once available.

5.4 Internal Reporting

To ensure successful delivery of the project an established suit of communication tools will be used for facilitate knowledge and information sharing within CityLink Melbourne Ltd. The tools used for this project are the following:

- **Weekly/Monthly Project Steering Committee (PSC) meetings** – a monthly meeting will be held to coordinate and prepare for the trial, followed by the weekly meetings during the field stage of the trial. PSC will oversee project activities, ensure risks, issues and exceptions are raised and managed appropriately.
- **Monthly Project Team meetings** – a monthly meeting will be held to provide advice and information on project activities, raise issues that need discussion or escalation to PSC members, ensure risks, issues and exceptions are raised and managed appropriately.

Domain Tunnel Review of Ventilation During Low Traffic Periods

- **Documentation** – documentation and emails received and generated as part of the project are to be appropriately records managed and distributed to the team members where applicable.

5.5 Project Contact

The primary contact for information relating to the project is Elena Tooley, Project Delivery Engineer on telephone (03) 9674 2119 email: tunnelventilationtrial@trunsurban.com

6 Reporting

Following the completion of the trial a report will be prepared for discussion with the EPA Victoria and to determine the next steps for future trials/operation of the tunnel.

The data will be analysed to determine if trends between portal air quality and in-tunnel air quality, traffic volumes, ambient weather conditions and ambient air quality. This will be used to determine future “operating rules” within which the reduced ventilation regime can operate as normal operating procedures within the Domain Tunnel.

All air quality monitoring data and traffic data will collected by the trial will be included with the report.

Domain Tunnel Review of Ventilation During Low Traffic Periods

7 Appendix A



EC9841A Oxides of Nitrogen Analyser

The EC9841A Oxides of Nitrogen Analyser utilises microprocessor control and chemiluminescence to measure NO, NO₂ and NO_x in the ranges of 0-50 ppb and 0-20 ppm with a detection limit of 0.4 ppb.

Improved sensitivity, noise, and zero drift are obtained through the use of superior optical technology and the introduction of a new electronics suite that provides better all round performance.



Standards

- Complies with U.S. EPA Automated Reference Method RFNA-1292-090.
- Complies with Australian standard: AS 3580.5.1-1993

Features

- Large Graphic LCD provides instrument status outputs including gas concentration, real time zero/span calibration curves and sample flow and pressure graphs.
- Menu selectable data trending graphically displays up to 100 data points.
- Auto zero routine periodically checks and corrects for background illumination, virtually eliminating zero drift.
- The micro processor facilitates external remote control and provides up to 100 channels of instrument operating parameters.
- Inbuilt data logger utilises Flash ROM to store up to 132 days of 5 minute averaged data.
- Stored data can be retrieved via RS232, USB interface or the optional Ethernet connection and uploaded to a TCP/IP network.
- Ethernet option facilitates data download from an analyser connected to the internet via a standard web interface. This feature also supports remote access to instrument parameters and the status output screen
- Optional internal pump and optional internal 12VDC power supply enables the EC9841A to be operated from a battery or solar powered source for remote or mobile applications.



Domain Tunnel Review of Ventilation During Low Traffic Periods



Specifications

Ranges:	Auto-ranging for 0-50 ppb to 0-20ppm												
Data Display:	Large Graphic LCD display, with unit selection mg/m ³ , µg/m ³ , ppm, ppb, ppt.												
Display Resolution:	User selectable (0-5 decimal points displayed).												
Analogue Out:	0 - full scale from 0 - 50 ppb to 0 - 20ppm with menu selectable offset of 0%, 5% or 10%. Auto-ranging between two user specified full-scale values												
Noise:	0.25 ppb or 0.2% of reading with Kalman filter active.												
Lower Detectable Limit:	0.5 ppb with Kalman filter active												
Linearity:	< 1% of full scale												
Precision:	0.5 ppb or 1 % of reading whichever is greater												
Zero Drift:	24 hours; < 0.4 ppb; 30 days; < 1ppb												
Span Drift:	24 hours less than 1 % of reading; 30 days less than 1 % of reading												
Temperature/Pressure Compensation:	Temperature/Pressure compensation with selectable reference temperature of 0°C, 20°C, 25°C at 101.3 kPa.												
Rise/Fall Time:	Less than 30 seconds for 95% of final reading with Kalman filter active.												
Sample Flow Rate:	0.640 SLPM (Std)												
Sample Pressure Dependence:	5% change in pressure produces less than 1% change in reading												
Temperature Range:	5°- 40 °C (U.S. EPA approval 15°C – 35°C)												
Analogue Outputs:	Menu selectable current output 0-20mA, 2-20mA, 4-20mA												
50 pin I/O PCA:	Allows for jumper selectable voltage outputs of 100 mV, 1, 5, 10 V with menu selectable zero offset of 0, 5 or 10%.												
Digital I/O DB50:	Local user DB50 I/O interface with 32 digital open collector outputs and 3 digital inputs user controls. The digital outputs are 24 status output commands, 8 status alarm conditions and 2 analogue inputs 0-5V.												
Communication Port:	Rear panel multi-drop RS232 port shared between analysers for data, status and control plus USB interface and optional. Ethernet connection to a TCP/IP network via an RJ45 connector.												
Data Logging:	Supports internal data logging capability with storage up to 132 days of 5 minute data stored in flash ROM.												
Data Storage selection:	Instantaneous data selectable period from: 1,3,5,10,30, or 60 minute intervals Average data selectable period from: 1,3,5,10,15,30 minutes, 1,4,8,12, or 24 hours.												
Power:	99-132 VAC, 198-264 VAC 47-63 HZ, 200 Watts.												
Dimensions/weight	43.2 x 17.8 x 64.8 cm (w x h x d), 24 kg												
Options:	<table border="0"> <tr> <td>Rack mount kit assembly (19")</td> <td>9800036-2</td> </tr> <tr> <td>External zero/span valve assembly (EVS)</td> <td>98300087</td> </tr> <tr> <td>External pump 115V 60 Hz</td> <td>002-033803</td> </tr> <tr> <td>External pump 220V 50/60 Hz</td> <td>002-033801</td> </tr> <tr> <td>Internal pump and 12VDC Power Supply</td> <td>98000115</td> </tr> <tr> <td>Ethernet connection to a TCP/IP network via an RJ45 connector</td> <td></td> </tr> </table>	Rack mount kit assembly (19")	9800036-2	External zero/span valve assembly (EVS)	98300087	External pump 115V 60 Hz	002-033803	External pump 220V 50/60 Hz	002-033801	Internal pump and 12VDC Power Supply	98000115	Ethernet connection to a TCP/IP network via an RJ45 connector	
Rack mount kit assembly (19")	9800036-2												
External zero/span valve assembly (EVS)	98300087												
External pump 115V 60 Hz	002-033803												
External pump 220V 50/60 Hz	002-033801												
Internal pump and 12VDC Power Supply	98000115												
Ethernet connection to a TCP/IP network via an RJ45 connector													



World Wide contact details
Ph: (+61) 1300 364 946
Fax: (+61) 1300 668 763
Email: ecotech@ecotech.com.au
Website: www.ecotech.com.au



Domain Tunnel Review of Ventilation During Low Traffic Periods

8 Attachment 1 – Minutes of the Environmental Management Committee Meeting held on 18th June 2008

Classification

Public

For Discussion Only

This document is uncontrolled if printed.

Version 5.0

Doc ID **ADUN-7CN5CT**

Printed 25 May 2009

Controller A.Dunn



Page 17
of 18

Created 18 February 08

Updated 10 October 08

Owner A.Dunn



ENVIRONMENTAL MANAGEMENT COMMITTEE

**Meeting No 20
(Period inclusive: 1 March 2007 – 29 February 2008)**

Date: 11:00, Wednesday 18 June 2008
Location: Translink Operations, Operations and Maintenance Building

MINUTES

Attendees:

Geoff McKernan (GMck)	-	Translink Operations
Nina Singh (NS)	-	Translink Operations
Naomi Oosting (NO)	-	EPA
Joe Bagnara	-	City of Melbourne (Community representative Southbank)
Morag Loh	-	City of Stonnington (Community representative Stonnington)
Peter Agwin	-	City of Stonnington
Andrew Dunn	-	CityLink Melbourne Limited
Elena Tooley	-	CityLink Melbourne Limited

Apologies

Peter Tange	-	EPA
Russell Brown (RB)	-	EPA
Silvana Predebon (SP)	-	City of Yarra

Comment	Comment	Action
1. Minutes of Previous Meeting		
Committee accepted the minutes of the previous meeting No 19. GM advised that committee meeting is now held annually.		
2. Action Items from previous meeting		
GM reviewed the action items. Minutes listed for EPA to response to action item 13 raised in '2005 CityLink air Quality Monitoring Systems Audit Report. NS advised that no response fro EPA has been received and this item is still open. NS advised that an official request (a letter) has been forwarded to EPA to response to the outstanding actions Items 18 and 22 raised in '2004 CityLink air Quality Monitoring Systems Audit Report' and action item 13 raised in '2005 CityLink air Quality Monitoring Systems Audit Report'. NO to pass this on to the appropriate personnel in EPA.	EPA NO	
3. EMP		
Review of EMP		
GM advised that the EMP has been reviewed and there are no major changes to the Environmental Management Plan. GM advised that Tunnel Ventilation System Management procedure has been updated to include 'Domain Tunnel Portal Emission Trial' as sub-section under the section '5.10.5 Ongoing Research'. This has been distributed to the EMC members as attachments for this meeting.		
4. Community Consultation		
Review of Concerns/Issues		
NS advised the committee that TLO have not received any complaints and issues from the community. AD advised no complaint have been received by CML on the tunnel ventilation system. No complaints or issues were raised by the committee members present at the meeting.		

5. Environmental Performance		
Stack Emission Results		
<p>NS tabled graphs for March 2006 to February 2008 for the stack emissions.</p> <p>All data for both the Domain and Burnley Tunnels stack emissions were well under the Licence Limits. The committee reviewed the graphs for trend analysis and comments noted in the graphs for previous periods.</p> <p>In reviewing the graphs for the Domain Tunnel PM10 and PM2.5 charts, JB questioned why the data has been removed for fire incident in the Burnley Tunnel on the 23/03/2007. GM explained that during the incident the conditions 1.1, 1.2, 1.3 and 1.4 of the EPA Waste Discharge Licence do not apply as per the Licence and the EMP. Also NS indicated that this was highlighted in the bi-annual AQM Report number 20 in the executive summary as:</p> <p><i>Note: On the 23/03/2007, the incident in the Burnley Tunnel caused activation of the tunnel smoke extraction system and smoke was expelled through the Grant Street stack. The data during this period for the Domain Stack has been removed as this event is considered an emergency incident and is exempted from conditions 1.1, 1.2, 1.3 and 1.4 of the EPA Waste Discharge Licence.</i></p> <p>GM pointed out that he will review / discuss the confidentiality of this data in regards to the coroners inquiry and if ok the graphs will be revised to include this data and reissued.</p>		
Bi-annually Air Quality Monitoring Report No. 20 & 21		
<p>NS advised that the Bi-annual AQM Reports, number 20 and 21 had been forwarded to all EPA and City Councils.</p> <p>It was agreed that the last two AQM reports, No 20 and 21 will be forwarded to Mr. Joe Bagnara (new Southbank community representative) for display on the community notice boards.</p>	NS	ASAP
6. System Performance		
Tunnel incidents affecting operation of the tunnels ventilation system		
<p>NS tabled a list showing 33 incidents in the Burnley Tunnel and 21 incidents in the Domain tunnel since the last meeting, which had resulted in Portal Emissions from the tunnels. NS advised that most of these occurrences were due to incidents in the tunnels and a small number were due to planned maintenance activities or equipment faults. These have been reported to the EPA as part of the bi-annual AQM reports 20 & 21 as in accordance to the Waste Discharge Licence and EMP.</p>		
2007 CityLink air Quality monitoring systems audit report		
<p>NS advised that the 2007 Air Water Noise, CityLink air monitoring system audit report No T129 has been submitted to the EPA. NS advised that a number of action items have been raised in this report. NS / GMcK advised that follow up meetings have been held with the subcontractors responsible for these actions. It was pointed out that 70% of the action items have already been followed up and closed out. NS advised that TLO will be following up with contractors to close the remaining outstanding action items by 30/06/08.</p>	NS	30/07/07
7. Portal Emission Project		
<p>AD presented the committee with a presentation 'Domain Tunnel Review of Ventilation During Low Traffic Periods' which highlighted the project back ground, project proposal, air monitoring during trial, project constraints, and communications with public / Southbank Residents. It was highlighted that at this stage there is no similar proposal for the Burnley Tunnel.</p> <p>At the completion of the presentation the committee was asked to their suggestions on the projects and approval. The members of the EMC, JB and ML suggested a</p>		

<p>number of communication methods including Southbank resident web page, strut street notice board, leaflets ad, ad in local paper etc. NO highlighted that EPA suggests a meeting to give the local residents an opportunity to discuss the trial. CityLink indicated that this may be an option depending on the feedback received via the information leaflets.</p> <p>Members including JB, ML, NO (EPA) highlight they were in agreement and endorsed the proposal for Domain tunnel Trial to go ahead.</p> <p>It was agreed by the committee to convene a meeting once the results of the trial are available to be discussed with the member of the EMC before further steps are undertaken.</p>		
<p>7. Other Business</p>		
<p>Nil</p>		
<p>8. Next meeting</p>		
<p>To be arranged and co-ordinated by Translink Operations, at the Operations and Maintenance Building, 49 Balston Street, Southbank.</p>		

Domain Tunnel Review of Ventilation During Low Traffic Periods

9 Attachment 2 – Notice to Residents

Classification

Public

For Discussion Only

This document is uncontrolled if printed.

Version 5.0

Doc ID **ADUN-7CN5CT**

Printed 25 May 2009

Controller A.Dunn

Created 18 February 08

Updated 10 October 08

Owner A.Dunn

transurban

Page 18
of 18

NOTICE TO RESIDENTS



January 2009

DOMAIN VENTILATION TRIAL

CityLink has been working with the EPA over the last three years at ways to further support government policies related to greenhouse gas emissions and energy efficiency.

One option identified as part of the CityLink *Greenhouse Action Plan* is to manage the ventilation system in the Domain Tunnel during periods of low traffic volumes differently, such as late at night or early hours of the morning. CityLink is aiming to start a trial of these arrangements in April 2009. While changes are in place CityLink will maintain air quality within State environment protection policy limits.

CityLink presented the proposed trial to the Environmental Management Committee (EMC) that involves community representatives from neighbouring communities of Southbank, Stonnington and City of Yarra. The proposed trial was endorsed by the Committee. Results of the trial will be provided through the community representatives in July/August 2009. CityLink has been striving towards being a sustainability leader in our industry and continues to minimise our environmental impact.

If you would like further information about the trial, please contact Elena Tooley – Project Delivery Engineer, CityLink on (03) 9674 2119. Information on the proposal is also at www.citylink.com.au.