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**AUCKLAND HARBOUR BRIDGE
CONTRACT PSMC 003**

**Resource Consents for Discharge of
Abrasive Blast Products**

Annual Report

July 2000

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Auckland Harbour Bridge Contract PSMC 003

Resource Consents for Discharge of
Abrasive Blast Products

Annual Report

July 2000



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Appendix A Abrasive Blasting Data

Appendix B Public Relations

1 Introduction

The following report has been prepared for the Auckland Regional Council in accordance with the special conditions of consent as set out in the Resource Consents for the Auckland Harbour Bridge (AHB). This is the sixth Annual Report and covers the period 28 June 1999 to 30 June 2000.

The Resource Consents have been granted to Transit New Zealand for the discharge of abrasive blasting products from abrasive blasting of the Auckland Harbour Bridge under the following Discharge Permits:

- Discharge Permit No. 938557 for discharge to air
- Discharge Permit No. 938508 for discharge to water
- Discharge Permit No. 938862 for discharge to ground

All conditions of these discharge permits are being complied with. In accordance with the special conditions of consent the following details are discussed:

- The location and extent of blasting
- The estimated quantity of abrasive blasting products generated and likely contaminants contained within the removed paint and abrasive.
- Confirmation of the quantity of abrasive blasting products recovered and disposed of.
- The quantity and type of corrosion inhibitors used during wet blasting.
- Details of the measures undertaken to avoid, remedy or mitigate any adverse environmental effects.
- Investigations into new paint technologies and other developments which will reduce the need for dry abrasive blasting.
- Investigations into alternative paint removal techniques.
- Results of a public survey taken to assess the effectiveness of the permit conditions.

The physical works contractor responsible for the painting of the Auckland Harbour Bridge changed on 1 December 1998 from Serco to Total Bridge Services. The Total Bridge Services contract has a contract period of ten years expiring 30 November 2008. Total Bridge Services is a Joint Venture Company comprising of TBS Farnsworth Limited and Roadtech Resources. Roadtech Resources is a joint venture comprising of Fulton Hogan Limited and Opus International Consultants Limited.

2 Discharge to Land and Water

2.1 Location and Extent of Blasting

Over the past twelve months the majority of the abrasive blasting, high pressure water blasting and maintenance painting was carried out on the West Extension. No blasting was carried out above sealed public areas or in areas where discharge into the storm water systems was possible.

The areas painted include:

- West Extension Exterior Outer Cantilever, boxes 25-60.
- West Extension Exterior Inner Cantilever, boxes 25-54.
- West Extension Internal, boxes 30-78.
- East Extension Internal, boxes 32-51 and 71-78.
- East Pier Brackets and Trestle Legs
- West Pier Brackets and Trestle Legs
- Seismic Upgrade Misc. Steelwork
- Electrical Upgrade Misc. Steelwork
- Crash Barrier Installation

The total quantity of blasting media used over the past twelve months was 26,500kg. Which is a significant reduction on previous years usage.

The west extension exterior maintenance works includes the re-coating of the web and cantilever. The total area of painting was 13,400m². It comprised of the outer web plate, outer cantilever, deck plate and longitudinal trough stiffeners. The total volume of blasting media used in this work package was 13,400kg, which made up 51% of all blasting work on the bridge.

The west extension internal maintenance work included the coating of all interior box components. These include the lower flange, both webs and orthotropic deck plate. No abrasive blasting media was used for this work. The coating philosophy adopted for internal painting is based on encapsulation of the existing coating. The total area coated was 25,000m². The coating system applied was that specified in standard AHB520:1994.

The east extension internal maintenance work followed the same methodology as described above for the West Extension Internal. The total area coated was 15,900m².

The east extension pier brackets (external) and trestle legs included the coating of all external steelwork. The total painting area was 1,900m². No abrasive blasting was recorded against this item. This is due to this work following immediately after the seismic retrofitting painting. All surface

preparation activities for the east pier brackets and trestles was recorded under this Seismic Retrofit item.

The west extension pier brackets (external) and trestle legs included the coating of all external steelwork. The total painting area was 1,900m². Only the use 515kg of abrasive was recorded against this work package which made up 2% of the total blasting carried out over the past twelve months. The majority of the surface preparation for this work was recorded against the seismic retrofitting work as this work carried on immediately after the seismic retrofitting painting in these areas.

The seismic retrofitting included the painting of all new steelwork fitted to the bridge. The new steelwork included items for pier strengthening, tying the piers together, installation of bracing struts, beam seatings and linkage bolts. The total painted area was 300m². A total weight of blasting media used was 10,450kg, this made up 39% of all blasting work carried out on the bridge. As mentioned above this figure includes the surface preparation for the pier brackets and trestles.

The electrical upgrade painting was predominantly the painting of the new transformer platforms. The total surface area painted was 150m². A total of 1800kg of blasting media was used in the surface preparation, this made up 7% of all media used in the past twelve months.

At each leading edge on the arch of the original truss bridge crash cushions were installed. As part of the installation painting of some of the new components was required. The total surface area painted was 50m². A total of 250kg of blasting media was used in the surface preparation, this made up 1% of all media used in the past twelve months.

2.2 Abrasive Blasting Products and Likely Contaminants

Quantity of Abrasive Blasting Products Generated

Details of abrasive blasting carried out on the Auckland Harbour Bridge between 28 June 1999 and 30 June 2000 have been tabulated and included in Appendix A. For each day the location of the blasting, the work hours, wind speed, amounts and type of abrasive, and controls used have been recorded. Table 1 below gives the approximate amount of blasting abrasive used in each part of the Bridge by each Contractor over the past year. The period of blasting and prevailing wind direction is also given.

Table 1: Summary of Abrasive Blasting

Location of Blasting	Period	Approximate Amount of Abrasive Used (kg)	Prevailing Wind Direction
West Extension Exterior boxes 25-60 (Outboard) and boxes 25-54 (Inboard)	29 June 1999 to 30 June 2000 Discontinued between August 1999 and January 2000.	13,400kg	SW

Location of Blasting	Period	Approximate Amount of Abrasive Used (kg)	Prevailing Wind Direction
West Extension Internal Boxes 37 - 78	18 August 1999 to 21 January 2000	Nil	N/A
East Extension Internal Boxes 32 – 51 and 717-78	16 July 1999 to 31 August 1999	Nil	N/A
East Pier Brackets and Trestle Legs	27 April 2000 to 22 June 2000	Nil	SW
West Pier Brackets and Trestle Legs	1 May 2000 to 19 June 2000	515kg	SW
Seismic Upgrade	1 November 2000 to 27 April 2000	10,450kg	NE
Electrical Upgrade	2 February 2000 to 23 June 2000	1,800kg	SE
Crash Cushion Installation	29 June 1999 to 21 July 2000	250kg	NW
Total Abrasive Used		26,415kg	

Likely Contaminants in Removed Paints and Abrasives

Basalt and garnet abrasive blasting media have been used on the Auckland Harbour Bridge over the past twelve months. The basalt abrasive has been two grades Fine Blast and Min Blast. Impro Ltd supplied both these products until recently, however they no longer supply Fine Blast, which is now supplied by Industrial Minerals Ltd. Industrial Minerals Ltd supplied the garnet abrasive.

As mentioned in previous reports the basalt and garnet abrasive media do not contain any known toxic contaminants or free silica in excess of 1% and the concentrations of soluble materials are so low that they can be considered inert. The chemical and mineralogical composition of both the basalt and garnet abrasive have been given in previous reports.

The paint removed from the AHB structure over the past twelve months has been the original five coat system. The original system consisted of three coats of zinc chromate primer and two top coats of micaceous iron oxide. Particles of the original zinc spray coating system have also been removed by abrasive blasting and may be present in the discharge.

The blasting technique and type of coatings removed from the AHB structure over the past twelve months are the same as those used when the resource consent was issued in 1994. The composition of

the abrasive blasting products and concentration of contaminants will therefore be essentially the same as at that time. See Works Consultancy Services Central Laboratories Report No 93/24730 for the results of the analysis of the abrasive blasting products.

As mentioned earlier no abrasive blasting is carried out inside the extensions. Surface preparation of these areas is carried out in accordance with specification AHB 520:1994.

2.3 Recovery, Disposal of Abrasive Blast Debris and Protective Measures

As part of the seismic retrofitting contract on the Harbour Bridge this year, linkage bolt were fitted to the TN6 joint. This joint is in the northern concrete viaduct. As required under our consent we screened this area off prior to painting and advised the local affected residents of our intention. No complaints regarding abrasive discharge were received.

During the past year we trailed recycling of Garnet blasting media. Given the site conditions the collection of spent abrasive on the structure is difficult. This trial was therefore carried out on components blasted at the southern anchorage in the enclosed blasting shop. The media that was collected was then sieved and feed back into the hoppers. Approximately 500kg of media was recycled in this trial a total of 8 times, this had the affect of reducing abrasive quantities by 3,500kg. Results from the recycling were positive. It was noted by the blasting crew that some loss of cutting power was lost with each cycle, but the desired profile could be achieved. The trial took place during March and June 2000. This recycling of abrasive will continue for surface preparation of components that can be carried out off the structure.

2.4 Corrosion Inhibitors

Over the past twelve months corrosion inhibitors have not been used on the Harbour Bridge. Where a delay has occurred between surface preparation and coating application a sweep blast was used to remove rust bloom.

We are proposing the use of Chlor*rid to remove salts to low levels prior to the application of coatings. Chlor*rid is not a corrosion inhibitor, details of this product have being supplied in our application for the renewal of the resource consent.

2.5 Measure Undertaken to Avoid, Remedy or Mitigate any Adverse Environmental Effects

Total Bridge Service over the past twelve months have continued to as far as practicable avoid, remedy and mitigate adverse effects on the environment from the abrasive blasting on the Auckland Harbour Bridge. Methods used include:

- Using the more expensive garnet abrasive for blasting where possible. Using the garnet reduces the amount of abrasive dust generated when blasting. Garnet is more efficient due to its hardness and angular profile and therefore a lessor quantity is used to prepare the steel surfaces compared to basalt and glass abrasive.

- Trials of the crushed glass abrasive have not continued as the profile achieved is not satisfactory for the Moisture Cured Urethane system. Also it was found the dust generated caused a skin reaction with some of the blasting personnel.
- High pressure water blasting has continued to be used over the past twelve months to remove as much loose paint, scale and corrosion products from the surfaces as possible before abrasive blasting. Water blasting generates paint flakes rather than generating the dust associated with abrasive blasting. Following the water blasting, sweep blasting is used to obtain a surface profile for anchorage of the paint film.
- Ultra High Pressure (40,000psi) water blasting has continued to be used for crevice corrosion preparation works. This system removes all scale, corrosion products and leaves a suitable profile for filling of the crevice.
- Signage was displayed advising motorists and the public of abrasive blasting and coating operations on the Auckland Harbour Bridge.
- Surrounding businesses and residents were forwarded information relating to blasting and painting programmes at regular intervals over the past twelve months. A survey was carried out of local residents by Total Bridge Services to ensure that over the past twelve months that they were happy with the controls provided. The results are contained in appendix B.
- Screens were used where practicable to reduce the spread of debris when coating of new steel components were installed on the TN6 bearing as discussed earlier in the report.
- Investigations and trialing of alternative paint systems continued to identify those that comply with health and safety legislation in terms of VOC and toxicity levels.
- The trial of long life paint systems continued. One of the trial systems is now the main coating system applied by the contractor. Similar systems produced by other manufactures have been trialed on the bridge over the past twelve months.
- The current blasting philosophy is based on spot blasting followed by a light sweep blast. This philosophy together with the high pressure waterblasting and ultra high pressure water blasting where possible, minimises the volume of material that is generated. This philosophy has greatly reduced the volume of blasting media used from approximately 40 tonnes per year down to 26 tonnes in the past twelve months.
- Regular wash down of the steel work maximises the coating life by removing salt deposits which are detrimental to coating life. By maximising the coating life we reduce the frequency of repainting and therefore the quantities of materials discharged to the environment. This practice has continued due to the benefits stated above. The work is generally carried out when the weather conditions do not permit painting work.

3 Discharge to Air

3.1 Current Paint System Used From 1 December 1998

The current maintenance contractor Total Bridge Services nominated an alternative to the current system in the tender for the ten-year contract. The system now being applied is a Moisture Cured Urethane system.

The MCU system was selected by TBS due to its potential long life (expected to be a minimum of 15 years) and that it is an encapsulating system. The film thickness required for this system, are also greatly reduced compared to the system in use prior to 1 December 1998.

The specification for the application of this system to the original truss bridge is given below. The specifications for other parts of the structure only differ slightly from this specification. The products names shown in brackets are those supplied by Wasser. It should be noted that recorded chloride levels on the bridge steelwork have been lower than the specified level requiring the use of Chlor*rid.

Moisture Cured Urethane Specification

- Thoroughly clean all surfaces in a work area by water blasting at 5,000psi nozzle pressure to remove all loose paint, rust flakes, bird droppings, salt deposits, and other surface contaminants.
- Prepare areas of corrosion by spot blasting, to achieve an AS 1627.4 Class 2.5 standard with a surface profile of 35 - 75 microns and residual chlorides less than 100 milligrams/sqm.
- Spot prime areas of exposed steel with a 65 - 90 microns dry film thickness (DFT) of an aromatic MCU zinc-rich primer (MC-Zinc) after checking to ensure residual chloride levels are less than 100 milligrams/sqm. Where necessary surfaces shall be rinsed with potable water with a 1% solution of Chlor*Rid salt solubilising solution to assist in the removal of residual salts. In spans 5 to 7. Replace 'MC-Zinc' with a surface tolerant MCU zinc-rich primer (MC-Miozinc).
- Stripe coat by brush, all fasteners, welds, edges, crevices and zinc primed areas with 50 microns of a MIO pigmented aromatic MCU intermediate coat (Miomastic) and then spray apply a full tie coat of the same material to all surfaces. Where necessary, an accelerator (PURQuik) may be used in the zinc rich and MIO stripe, patch or tie coat to allow the intermediate coat to be applied before the cleaned surface is recontaminated and/or before the arrival of unsuitable weather conditions. Tie coat DFT to be 40 - 70 microns.
- When all patch and tie coats have been applied to the work area the surface shall be rechecked for salt contamination and where necessary rinsed with a potable water and 1% Chlor*Rid to ensure residual chloride levels are less than 75 milligrams/sqm. A full finish coat of a MIO pigmented aliphatic MCU (MC-Ferros A) shall then be applied by spray to give a DFT of between 65 - 90 microns. Colour of the finish coat to be factory tinted using milled pigments to closely match the existing colour. Minimum TDFT 200 microns with 250 microns in the areas sheltered from rain-washing.

3.2 Alternative Moisture Cured Urethane Systems

Investigations into two alternative moisture cured urethane systems are currently underway. No change in the system currently being applied is planned, as there are no conclusive results that either of these systems is superior to the Wasser MCU system.

- The first system is a Xymax MCU system supplied by Protech. An application trial of this system has been recently completed. At this stage no evaluation has been carried out comparing this system to Wasser system. The application of the primer and top coats was found to be easier than the Wasser system, however the intermediate coat solids settled out much faster which led to unsatisfactory application characteristics. The Manufacturer has been advised of this problem and they are researching solutions to overcome this.
- The second system is a MCU system supplied by International. At this stage no application trials have been undertaken and the investigation is still at the desk top stage.

3.3 Alternative Paint Systems

Paint Trials

Some 30 different paint systems are currently included in the paint trials. Of these 24 systems are the original trial systems and in June 1997 six additional system were added and include Polysiloxanes developed by Resene Ameron and Moisture Cured Urethanes developed by Wasser.

Paint systems in the trials were assessed December 1998. The performance of each system rated against its performance, application characteristics and VOC content. At this stage it appears that for large flat areas such as the extension boxes that the inorganic zinc silicates are the best performing and on the original truss bridge the zinc phosphates are the best performing.

The moisture cured urethane systems did rate highly but this was due mainly to the environmental benefits (low VOC's) and application characteristics rather than the field trial performance.

Zinc Metal Spray

In December 1994, a zinc metal spray trial was carried out on the top chord in span 3. Application of the zinc spray was relatively simple although costs were high. Over February and March 1997 three West Overarch Apexes were successfully treated with 85/15 zinc /aluminium metal spray and sealed. The underside of the Pier 1 East Extension Bracket were also treated with zinc/aluminium spray in May 1997. In May/June 1998 the West Overarch Top Face was treated with a zinc spray, sealed and top coated with a single coat of AHB 4.

No further trial applications have been carried out to date under the PSMC contract. Monitoring of the three trial areas is continuing as part of the Annual Inspection we carry out. As mentioned in previous reports the main area of breakdown of this system is at the interface with the wet coatings, where crevice corrosion is occurring.

4 Auckland Harbour Bridge Extension Resurfacing

A joint venture consortium undertakes the extension-resurfacing project with TBS Farnsworth and Blacktop Construction being the partners. Opus International Consultants undertake the contract supervision.

December 1999/January 2000 was a lay year for the resurfacing project due to the millennium celebrations and the America's Cup. The final separable portion of the resurfacing of the extensions will be undertaken in December 2000/January 2001. Abrasive blasting on this job is undertaken using captive shot blasting where the recovery rates for spent abrasive exceeds 95%. If any of the conditions on the Resource Consent currently being applied for are more onerous than the conditions stipulated in the contract documents then these will be adopted by the Contractor.

Appendix A

Abrasive Blasting Data

PSMC003 AUCKLAND HARBOUR BRIDGE

ABRASIVE BLASTING DATA 1999/2000

Date	Work Package	Work Hours		Wind Speed			Abrasive (kg)					Controls	
		From	To	0830hrs	1400hrs	Direction	Garnet	Fine Blast	Minblast	Rom	Total		Recovered
28-Jun-99	WXI-7	8:00	16:30	0	2	SE		20			20		
29-Jun-99	Crash Barrier	22:00	0:00							50	50		
29-Jun-99	WXI-7 Painting Only	8:00	16:30	0	1	SE					0		
30-Jun-99	WXI-7 Painting Only	8:00	16:30	0	2	SW					0		
1-Jul-99	WXI-7 Painting Only	8:00	16:30	0+	0+	SW					0		
1-Jul-99	WYO-7 Painting Only	8:00	16:30	0+	0+	SW					0		
2-Jul-99	WYO-7 Painting Only	8:00	14:00	2	4	NE					0		
2-Jul-99	WXI-7 Painting Only	8:00	16:30	2	4	NE					0		
3-Jul-99	Weekend										0		
4-Jul-99	Weekend										0		
5-Jul-99	EXN-2 Painting Only	8:00	12:00	4	5	SW					0		
5-Jul-99	WXI-7 Painting Only	8:00	12:30	4	5	SW					0		
5-Jul-99	WYO-8 Painting Only	8:00	17:00	4	5	SW					0		
6-Jul-99	WYO-8 Painting Only	8:00	17:00	4	6	SW					0		
6-Jul-99	WXI-7	8:00	12:30	4	6	SW		200			200		
6-Jul-99	WXI-6 Painting Only	8:00	12:00	4	6	SW					0		
6-Jul-99	WYO-6 Painting Only	8:00	16:00	4	6	SW					0		
7-Jul-99	WYO-6 Painting Only	11:00	17:00	2	3	SW					0		
7-Jul-99	WXI-6	8:00	11:00	2	3	SW		50			50		
7-Jul-99	WXI-5	8:00	13:00	2	3	SW		50			50		
7-Jul-99	WXI-7 Painting Only	8:00	11:00	2	3	SW					0		
7-Jul-99	WYO-5 Painting Only	8:00	13:00	2	3	SW					0		
7-Jul-99	WYO-8 Painting Only	11:00	18:00	2	3	SW					0		
8-Jul-99	WYO-8 Painting Only	11:00	18:00	3	5	SW					0		
8-Jul-99	WYO-5 Painting Only	8:00	13:00	3	5	SW					0		
8-Jul-99	WXI-7 Painting Only	8:00	11:00	3	5	SW					0		
8-Jul-99	WXI-6 Painting Only	8:00	11:00	3	5	SW					0		
8-Jul-99	WXI-5 Painting Only	8:00	13:00	3	5	SW					0		
8-Jul-99	WYO-6 Painting Only	11:00	17:00	3	5	SW					0		
9-Jul-99	WYO-8 Painting Only	11:00	17:00	2	3	SW					0		

PSMC003 AUCKLAND HARBOUR BRIDGE

ABRASIVE BLASTING DATA 1999/2000

Date	Work Package	Work Hours		Wind Speed			Abrasive (kg)					Controls
		From	To	0830hrs	1400hrs	Direction	Garnet	Fine Blast	Minblast	Rom	Total	
9-Jul-99	WXO-6 Painting Only	11:00	17:00	2	3	SW					0	
9-Jul-99	WXO-5 Painting Only	8:00	12:30	2	3	SW					0	
9-Jul-99	WXI-7 Painting Only	8:00	11:00	2	3	SW					0	
9-Jul-99	WXI-6 Painting Only	8:00	11:00	2	3	SW					0	
9-Jul-99	WXI-5 Painting Only	8:00	13:00	2	3	SW					0	
10-Jul-99	Weekend										0	
11-Jul-99	Weekend										0	
12-Jul-99	WXO-7 Painting Only	8:00	12:30	0	2	SE					0	
13-Jul-99	WXI-8	8:00	16:30	2	2	SE		500			500	
13-Jul-99	WXO-8	8:00	16:30	2	2	SE		1500			1500	
14-Jul-99	WXO-8 Painting Only	8:00	16:30	0	0						0	
14-Jul-99	WXI-8	8:00	16:30	0	0			1000			1000	
15-Jul-99	WXO-8 Painting Only	8:00	16:30		No Record						0	
15-Jul-99	WXI-8 Painting Only	8:00	16:30		No Record						0	
16-Jul-99	EXN-2 Painting Only	8:00	15:00	15	7.5	NE					0	
17-Jul-99	Weekend										0	
18-Jul-99	Weekend										0	
19-Jul-00	EXN-2 Painting Only	8:00	15:00	6	6	NW					0	
19-Jul-99	Crash Barrier	22:00	4:00	6	6	NW			100		100	
20-Jul-00	EXN-2 Painting Only	8:00	16:30	5	7	W					0	
20-Jul-99	Crash Barrier	22:00	0:00	5	7	W			50		50	
21-Jul-00	EXN-2 Painting Only	8:00	15:00	5	5	NW					0	
21-Jul-99	Crash Barrier	22:00	1:00	5	5	NW			50		50	
22-Jul-99	EXN-2 Painting Only	8:00	16:30	0	1	W					0	
23-Jul-99	EXN-2 Painting Only	8:00	13:00	0	0						0	
24-Jul-99	Weekend										0	
25-Jul-99	Weekend										0	
26-Jul-99	EXN-2 Painting Only	8:00	13:00	10	10	SW					0	
27-Jul-99	EXN-2 Painting Only	8:00	17:00	10	10	SW					0	
28-Jul-99	EXN-2 Painting Only	8:00	15:30	0+	0	SW					0	

PSMC003 AUCKLAND HARBOUR BRIDGE

ABRASIVE BLASTING DATA 1999/2000

Date	Work Package	Work Hours		Wind Speed			Abrasive (kg)					Controls
		From	To	0830hrs	1400hrs	Direction	Garnet	Fine Blast	Minblast	Rom	Total	
29-Jul-99	EXN-2 Painting Only	8:00	17:00	0	2	SE					0	
30-Jul-99	EXN-2 Painting Only	8:00	17:00	2	2	S					0	
31-Jul-99	Weekend										0	
1-Aug-99	Weekend										0	
2-Aug-99	EXN-2 Painting Only	8:00	15:30	10	15	NE					0	
3-Aug-99	EXN-2 Painting Only	8:00	15:00	2	2	NW					0	
4-Aug-99	EXN-2 Painting Only	8:00	16:00	2	2	W					0	
5-Aug-99	WXN-5 Painting Only	8:00	18:00	3	5	NW/W					0	
6-Aug-99	WXN-5 Painting Only	8:00	16:30	2	2	NW					0	
6-Aug-99	EXN-2 Painting Only	8:00	16:30	2	2	NW					0	
7-Aug-99	Weekend										0	
8-Aug-99	Weekend										0	
9-Aug-99	EXN-2 Painting Only	8:00	16:30	0	0						0	
10-Aug-00	EXN-2 Painting Only	8:00	16:30	0	2	E					0	
10-Aug-99	EXN-1 Painting Only	8:00	16:30	0	2	E					0	
11-Aug-99	EXN-1 Painting Only	8:00	16:30	3	5	NE					0	
12-Aug-99	EXN-1 Painting Only	8:00	16:30	5	2	SW					0	
12-Aug-99	WXN-5 Painting Only	8:00	12:30	5	2	SW					0	
13-Aug-99	EXN-1 Painting Only	8:00	16:30	4	3	NW					0	
14-Aug-99	Weekend										0	
15-Aug-99	Weekend										0	
16-Aug-99	EXN-1 Painting Only	8:00	16:30	2	5	W/SW					0	
16-Aug-99	WXN-5 Painting Only	8:00	14:00	2	5	W/SW					0	
17-Aug-00	EXN-2 Painting Only	8:00	16:30			No Record					0	
17-Aug-99	EXN-1 Painting Only	8:00	16:30			No Record					0	
18-Aug-99	WXN-5 Painting Only	8:00	16:00	4	5	SE/SW					0	
18-Aug-99	WXN-6 Painting Only	8:00	16:30	4	5	SE/SW					0	
18-Aug-99	WXI-6 Painting Only	8:00	16:30	4	5	SE/SW					0	
18-Aug-99	WXI-7 Painting Only	8:00	16:30	4	5	SE/SW					0	
19-Aug-99	WXI-7 Painting Only	8:00	14:30	2	2	SW					0	

PSMC003 AUCKLAND HARBOUR BRIDGE

ABRASIVE BLASTING DATA 1999/2000

Date	Work Package	Work Hours		Wind Speed			Abrasive (kg)					Controls	
		From	To	0830hrs	1400hrs	Direction	Garnet	Fine Blast	Minblast	Rom	Total		Recovered
19-Aug-99	WXI-6 Painting Only	8:00	16:30	2	2	SW					0		
19-Aug-99	WXN-6 Painting Only	8:00	16:00	2	2	SW					0		
20-Aug-99	EXN-1 Painting Only	8:00	14:00	2	2	NW					0		
21-Aug-99	Weekend										0		
22-Aug-99	Weekend										0		
23-Aug-99	EXN-2 Painting Only	8:00	14:30	8	5	SW					0		
23-Aug-99	EXN-1 Painting Only	8:00	16:30	8	5	SW					0		
24-Aug-99	EXN-1 Painting Only	8:00	16:30	7	10	SW					0		
25-Aug-99	EXN-1 Painting Only	8:00	16:30	5	5	SW					0		
26-Aug-99	WXN-6 Painting Only	8:00	13:50	1	0	S					0		
26-Aug-99	WXI-5 Painting Only	8:00	10:30	1	0	S					0		
26-Aug-99	EXN-1 Painting Only	8:00	16:30	1	0	S					0		
26-Aug-99	WXI-7 Painting Only	11:00	15:00	1	0	S					0		
26-Aug-99	WXI-6 Painting Only	8:00	11:00	1	0	S					0		
27-Aug-99	EXN-1 Painting Only	8:00	16:30	2	2	SW					0		
28-Aug-99	Weekend										0		
29-Aug-99	Weekend										0		
30-Aug-99	EXN-1 Painting Only	8:00	16:30	6	6	S					0		
30-Aug-99	WXN-4 Painting Only	8:00	16:30	6	6	S					0		
31-Aug-99	WXN-4 Painting Only	8:00	13:00	5	6	SW					0		
31-Aug-99	EXN-2 Painting Only	8:00	13:30	5	6	SW					0		
31-Aug-99	EXN-1 Painting Only	8:00	16:30	5	6	SW					0		
1-Sep-99	WXN-4 Painting Only	8:00	16:30	5	5	N					0		
1-Sep-99	WXN-5 Painting Only	8:00	16:30	5	5	N					0		
1-Sep-99	WXN-6 Painting Only	8:00	16:30	5	5	N					0		
2-Sep-99	WXN-6 Painting Only	8:00	16:30	3	3						0		
2-Sep-99	WXN-5 Painting Only	8:00	16:30	3	3						0		
3-Sep-99	WXN-4 Painting Only	8:00	16:00			No Record					0		
4-Sep-99	Weekend										0		
5-Sep-99	Weekend										0		

PSMC003 AUCKLAND HARBOUR BRIDGE

ABRASIVE BLASTING DATA 1999/2000

Date	Work Package	Work Hours		Wind Speed			Abrasive (kg)					Controls	
		From	To	0830hrs	1400hrs	Direction	Garnet	Fine Blast	Minblast	Rom	Total		Recovered
6-Sep-99	WXN-5 Painting Only	8:00	18:00	4	7	NE					0		
6-Sep-99	WXN-6 Painting Only	8:00	14:00	4	7	NE					0		
7-Sep-99	WXN-5 Painting Only	8:00	18:00	6	5	NE					0		
7-Sep-99	WXN-6 Painting Only	8:00	16:00	6	5	NE					0		
8-Sep-99	WXN-6 Painting Only	8:00	15:00	5	5	SE					0		
8-Sep-99	WXN-5 Painting Only	8:00	13:30	5	5	SE					0		
9-Sep-99	WXN-5 Painting Only	8:00	14:00	2	3	S					0		
9-Sep-99	WXN-6 Painting Only	8:00	13:00	2	3	S					0		
10-Sep-99	WXN-6 Painting Only	8:00	16:30	3	3	S					0		
11-Sep-99	Weekend										0		
12-Sep-99	Weekend										0		
13-Sep-99	WXN-6 Painting Only	8:00	16:30	7	5	NE					0		
14-Sep-99	WXN-6 Painting Only	8:00	16:30	1	5	NW					0		
15-Sep-99	WXN-6 Painting Only	8:00	15:00	3	4	NW					0		
15-Sep-99	WXI-8 Painting Only	8:00	16:30	3	4	NW					0		
16-Sep-99	WXN-5 Painting Only	8:00	16:00	3	2	NW					0		
16-Sep-99	WXN-6 Painting Only	8:00	16:00	3	2	NW					0		
17-Sep-99	WXN-6 Painting Only	8:00	16:00	2	0	SE					0		
18-Sep-99	Weekend										0		
19-Sep-99	Weekend										0		
20-Sep-99	WXN-5 Painting Only	8:00	16:30	8	10	SW					0		
21-Sep-99	WXN-5 Painting Only	8:00	16:30	10	10	SE					0		
22-Sep-99	WXN-5 Painting Only	8:00	16:30	2	5	SW					0		
23-Sep-99	Wash down										0		
24-Sep-99	Wash down										0		
25-Sep-99	Weekend										0		
26-Sep-99	Weekend										0		
27-Sep-99	WXN-4 Painting Only	8:00	14:30	8	10	W					0		
28-Sep-99	WXN-4 Painting Only	8:00	14:30	5	7	SW					0		
29-Sep-99	WXN-4 Painting Only	8:00	16:30	4	6	SW					0		

PSMC003 AUCKLAND HARBOUR BRIDGE

ABRASIVE BLASTING DATA 1999/2000

Date	Work Package	Work Hours		Wind Speed			Abrasive (kg)					Controls	
		From	To	0830hrs	1400hrs	Direction	Garnet	Fine Blast	Minblast	Rom	Total		Recovered
30-Sep-99	WXN-4 Painting Only	8:00	16:30	7	7	SW					0		
1-Oct-99	WXN-3 Painting Only	8:00	16:30	4	5	W					0		
2-Oct-99	Weekend										0		
3-Oct-99	Weekend										0		
4-Oct-99	WXN-3 Painting Only	8:00	16:30	0	2	N					0		
5-Oct-99	WXN-3 Painting Only	8:00	16:30	2	6	W/SW					0		
6-Oct-99	WXN-3 Painting Only	8:00	16:30	3	7	N/NE					0		
7-Oct-99	WXN-3 Painting Only	8:00	16:30	8	10	NE					0		
8-Oct-99	WXN-2 Painting Only	8:00	16:30	10	7	NE					0		
9-Oct-99	Weekend										0		
10-Oct-99	Weekend										0		
11-Oct-99	WXN-3 Painting Only	8:00	16:30	5	7	S/SE					0		
12-Oct-99	WXN-3 Painting Only	8:00	16:30	6	5	N/NW					0		
13-Oct-99	WXN-3 Painting Only	8:00	16:00	5	5	SW					0		
14-Oct-99	WXN-4 Painting Only	8:00	16:30	2	7	S					0		
14-Oct-99	WXN-5 Painting Only	8:00	16:30	2	7	S					0		
14-Oct-99	WXN-6 Painting Only	8:00	16:30	2	7	S					0		
15-Oct-99	WXN-5 Painting Only	8:00	16:30	4	6	SE/SW					0		
15-Oct-99	WXN-4 Painting Only	8:00	16:30	4	6	SE/SW					0		
15-Oct-99	WXN-3 Painting Only	8:00	16:30	4	6	SE/SW					0		
16-Oct-99	Weekend										0		
17-Oct-99	Weekend										0		
18-Oct-99	WXN-2 Painting Only	8:00	17:00	2	6	S/N					0		
18-Oct-99	WXN-3 Painting Only	8:00	16:30	2	6	S/N					0		
19-Oct-99	WXN-3 Painting Only	8:00	16:30	5	7	N					0		
19-Oct-99	WXN-2 Painting Only	8:00	17:00	5	7	N					0		
20-Oct-99	WXN-2 Painting Only	8:00	16:30	4	9	NE					0		
21-Oct-99	WXN-2 Painting Only	8:00	14:00	10	2	N					0		
22-Oct-99	WXN-2 Painting Only	8:00	15:00	6	8	SW					0		
23-Oct-99	Weekend										0		

PSMC003 AUCKLAND HARBOUR BRIDGE

ABRASIVE BLASTING DATA 1999/2000

Date	Work Package	Work Hours		Wind Speed			Abrasive (kg)					Controls	
		From	To	0830hrs	1400hrs	Direction	Garnet	Fine Blast	Minblast	Rom	Total		Recovered
24-Oct-99	Weekend										0		
25-Oct-99	Public Holiday										0		
26-Oct-99	WXN-2 Painting Only	8:00	17:00	7	10	NE					0		
27-Oct-99	WXN-2 Painting Only	8:00	16:00	10	13	NE					0		
28-Oct-99	WXN-2 Painting Only	8:00	16:00	0	0						0		
29-Oct-99	WXN-2 Painting Only	8:00	16:00	5	10	NE					0		
30-Oct-99	Weekend										0		
31-Oct-99	Weekend										0		
1-Nov-99	WXN-1 Painting Only	8:00	17:00	5	6	NE/N					0		
1-Nov-99	CA1824	8:00	11:00	5	6	NE/N	100				100		
2-Nov-99	CA1824	8:00	11:00	5	5	NE	100				100		
2-Nov-99	WXN-1 Painting Only	8:00	17:00	5	5	NE					0		
3-Nov-99	CA1824	8:00	14:00	5	10	NE	100				100		
3-Nov-99	WXN-1 Painting Only	8:00	16:00	5	10	NE					0		
4-Nov-99	CA1824	8:00	13:00	15	10	NE	100				100		
4-Nov-99	WXN-1 Painting Only	8:00	17:00	15	10	NE					0		
5-Nov-99	CA1824	8:00	13:00	7	7	NE	500				500		
5-Nov-99	WXN-1 Painting Only	8:00	16:30	7	7	NE					0		
6-Nov-99	Weekend										0		
7-Nov-99	Weekend										0		
8-Nov-99	WXN-1 Painting Only	8:00	17:30	5	6	NE					0		
8-Nov-99	CA1824	8:00	14:00	5	6	NE	1250				1250		
9-Nov-99	CA1824	8:00	17:00	7	6	N/NE	100				100		
10-Nov-99	CA1824	8:00	17:00	10	13	N	100				100		
11-Nov-99	CA1824	8:00	17:00	3	10	NW	100				100		
12-Nov-99	CA1824 Painting Only	8:00	13:00	8	10	NW					0		
12-Nov-99	WXN-1 Painting Only	8:00	13:00	8	10	NW					0		
13-Nov-99	Weekend										0		
14-Nov-99	Weekend										0		
15-Nov-99	WXN-1 Painting Only	8:00	16:00	0	3	NE					0		

PSMC003 AUCKLAND HARBOUR BRIDGE

ABRASIVE BLASTING DATA 1999/2000

Date	Work Package	Work Hours		Wind Speed			Abrasive (kg)					Controls	
		From	To	0830hrs	1400hrs	Direction	Garnet	Fine Blast	Minblast	Rom	Total		Recovered
16-Nov-99	WXN-1 Painting Only	8:00	12:00	1	7	N					0		
16-Nov-99	WXN-4 Painting Only	8:00	12:30	1	7	N					0		
16-Nov-99	WXN-6 Painting Only	8:00	12:30	1	7	N					0		
17-Nov-99	WXN-1 Painting Only	8:00	15:00	7	10	N					0		
18-Nov-99	WXN-2 Painting Only	8:00	17:00	10	6	N					0		
18-Nov-99	WXN-1 Painting Only	8:00	15:00	10	6	N					0		
18-Nov-99	WXN-3 Painting Only	8:00	17:30	10	6	N					0		
19-Nov-99	WXN-3 Painting Only	8:00	15:00	5	6	S					0		
19-Nov-99	WXN-1 Painting Only	8:00	15:00	5	6	S					0		
20-Nov-99	Weekend										0		
21-Nov-99	Weekend										0		
22-Nov-99	WXN-6 Painting Only	8:00	17:00	2	3	SW					0		
23-Nov-99	CA1824	8:00	15:00	0	5	SW	100				100		
24-Nov-99	CA1824	8:00	11:00	0	0		100				100		
25-Nov-99	WXN-5 Painting Only	8:00	13:00	2	2	NW					0		
26-Nov-99	Wash down			5	5	NE					0		
27-Nov-99	Weekend										0		
28-Nov-99	Weekend										0		
29-Nov-99	WXN-4 Painting Only	8:00	17:00	2	7	SW					0		
30-Nov-99	WXN-4 Painting Only	8:00	16:00	2	4	SE/SW					0		
1-Dec-99	WXN-3 Painting Only	8:00	16:00	0	6	SW					0		
2-Dec-99	WXN-3 Painting Only	8:00	16:00	2	6	SW					0		
3-Dec-99	WXN-3 Painting Only	8:00	17:00	7	10	SW					0		
4-Dec-99	Weekend										0		
5-Dec-99	Weekend										0		
6-Dec-99	WXN-2 Painting Only	8:00	16:30	5	5	SW					0		
7-Dec-99	WXN-2 Painting Only	8:00	16:00	4	6	SW					0		
8-Dec-99	WXN-2 Painting Only	8:00	15:00	4	5	SW					0		
9-Dec-99	CA1824	8:00	17:30	0	3	NE	100				100		
10-Dec-99	CA1824 Painting Only	8:00	18:00			No Record					0		

PSMC003 AUCKLAND HARBOUR BRIDGE

ABRASIVE BLASTING DATA 1999/2000

Date	Work Package	Work Hours		Wind Speed			Abrasive (kg)					Controls	
		From	To	0830hrs	1400hrs	Direction	Garnet	Fine Blast	Minblast	Rom	Total		Recovered
10-Dec-99	WXN-3 Painting Only	8:00	13:30	No Record							0		
10-Dec-99	WXN-1 Painting Only	8:00	17:30	No Record							0		
11-Dec-99	Weekend									0			
12-Dec-99	Weekend									0			
13-Dec-99	WXN-1 Painting Only	8:00	12:30	10	10	SW				0			
14-Dec-99	WXN-1 Painting Only	8:00	13:00	15	15	SW				0			
15-Dec-99	Wash down			No Record							0		
16-Dec-99	CA1824 Painting Only	8:00	16:00	4	4	SE				0			
16-Dec-99	WXN-2 Painting Only	8:00	14:00	4	4	SE				0			
17-Dec-99	WXN-2 Painting Only	8:00	11:30	5	5	NE				0			
18-Dec-99	Weekend									0			
19-Dec-99	Weekend									0			
20-Dec-99	WXN-3 Painting Only	8:00	17:30	5	3	SE				0			
21-Dec-99	WXN-4 Painting Only	8:00	17:30	2	6	S				0			
22-Dec-99	WXN-5 Painting Only	8:00	18:00	7	15	SW				0			
22-Dec-99	CA1824	8:00	16:30	7	15	SW	100			100			
23-Dec-99	CA1824	8:00	13:00	4		S	100			100			
23-Dec-99	WXN-2 Painting Only	8:00	13:00	4		S				0			
24-Dec-99	No work									0			
25-Dec-99	Weekend									0			
26-Dec-99	Weekend									0			
27-Dec-99	Public Holiday									0			
28-Dec-99	Public Holiday									0			
29-Dec-99	No work									0			
30-Dec-99	No work									0			
31-Dec-99	No work									0			
1-Jan-00	Weekend									0			
2-Jan-00	Weekend									0			
3-Jan-00	Public Holiday									0			
4-Jan-00	Public Holiday									0			

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ABRASIVE BLASTING DATA 1999/2000

Date	Work Package	Work Hours		Wind Speed			Abrasive (kg)					Controls	
		From	To	0830hrs	1400hrs	Direction	Garnet	Fine Blast	Minblast	Rom	Total		Recovered
5-Jan-00	CA1824	8:00	16:30	5	7	SW	1000				1000		
6-Jan-00	CA1824	8:00	16:00	1	2	SW	250				250		
7-Jan-00	CA1824	8:00	14:00	0	6	NE	100				100		
8-Jan-00	Weekend										0		
9-Jan-00	Weekend										0		
10-Jan-00	CA1824 Painting Only	8:00	15:00	7	7	NE					0		
11-Jan-00	CA1824 Painting Only	8:00	17:00	6	6	NE					0		
12-Jan-00	CA1824 Painting Only	8:00	16:30	4	6	E					0		
13-Jan-00	CA1824	8:00	17:30	10	7	E	100				100		
14-Jan-00	CA1824	8:00	17:30	0	0		100				100		
15-Jan-00	Weekend										0		
16-Jan-00	Weekend										0		
17-Jan-00	WXN-6 Painting Only	8:00	15:30	2	2	E					0		
17-Jan-00	CA1824	8:00	13:00	2	2	E	100				100		
18-Jan-00	CA1824	8:00	17:30	4	4	NE/N	100				100		
18-Jan-00	WXN-4 Painting Only	8:00	15:00	4	4	NE/N					0		
19-Jan-00	WXN-4 Painting Only	8:00	13:30			No Record					0		
19-Jan-00	WXN-5 Painting Only	8:00	17:30			No Record					0		
20-Jan-00	WXN-5 Painting Only	8:00	17:30	2	4	SW					0		
21-Jan-00	WXN-3 Painting Only	8:00	17:30	2	0	NW					0		
22-Jan-00	Weekend										0		
23-Jan-00	Weekend										0		
24-Jan-00	WXI-8 Painting Only	8:00	17:30	6	10	N					0		
24-Jan-00	WYO-8 Painting Only	8:00	17:30	6	10	N					0		
25-Jan-00	Wash down			10	10	N/NE					0		
26-Jan-00	WXI-8	8:00	17:30	5	5	SE		1000			1000		
26-Jan-00	WYO-8 Painting Only	8:00	15:30	5	5	SE					0		
26-Jan-00	WYO-9	8:00	11:30	5	5	SE	1000				1000		
27-Jan-00	WYO-9 Painting Only	8:00	17:30	3	5	NE					0		
28-Jan-00	WYO-9 Painting Only	8:00	16:30	1	1	W					0		

PSMC003 AUCKLAND HARBOUR BRIDGE

ABRASIVE BLASTING DATA 1999/2000

Date	Work Package	Work Hours		Wind Speed			Abrasive (kg)					Controls	
		From	To	0830hrs	1400hrs	Direction	Garnet	Fine Blast	Minblast	Rom	Total		Recovered
28-Jan-00	WXO-8 Painting Only	8:00	16:30	1	1	W					0		
28-Jan-00	CA1824	8:00	16:30	1	1	W	100				100		
28-Jan-00	WXI-8 Painting Only	8:00	17:30	1	1	W					0		
29-Jan-00	Weekend										0		
30-Jan-00	Weekend										0		
31-Jan-00	Public Holiday										0		
1-Feb-00	WXI-8	8:00	17:30	6	7	SW		1400			1400		
1-Feb-00	WXO-8	8:00	17:30	6	7	SW		1400			1400		
1-Feb-00	WXO-9 Painting Only	8:00	17:30	6	7	SW					0		
1-Feb-00	WXO-9 Painting Only	8:00	17:30	6	7	SW					0		
1-Feb-00	CA1824	8:00	17:30	6	7	SW	100				100		
2-Feb-00	CA1824	8:00	15:00	6	6	SW	100				100		
2-Feb-00	Cap-3	8:00	17:30	6	6	SW	500				500		
2-Feb-00	WXO-8 Painting Only	8:00	17:30	6	6	SW					0		
2-Feb-00	WXI-8 Painting Only	8:00	17:30	6	6	SW					0		
3-Feb-00	WXI-8 Painting Only	8:00	17:30	2	2	SE					0		
3-Feb-00	WXO-8 Painting Only	8:00	17:30	2	2	SE					0		
3-Feb-00	CA1824	8:00	16:30	2	2	SE	100				100		
4-Feb-00	CA1824	8:00	15:30	2	6	SW	100				100		
4-Feb-00	WXO-9 Painting Only	8:00	16:30	2	6	SW					0		
4-Feb-00	WXO-8 Painting Only	8:00	16:30	2	6	SW					0		
4-Feb-00	WXI-8 Painting Only	8:00	16:30	2	6	SW					0		
5-Feb-00	Weekend										0		
6-Feb-00	Public Holiday										0		
7-Feb-00	WXI-8 Painting Only	8:00	16:30	2	4	NW/SE					0		
7-Feb-00	WXO-8 Painting Only	8:00	16:30	2	4	NW/SE					0		
7-Feb-00	CA1824 Painting Only	8:00	16:30	2	4	NW/SE					0		
8-Feb-00	CA1824 Painting Only	8:00	16:30	6	7	SW					0		
8-Feb-00	WXO-8	8:00	16:30	6	7	SW		1000			1000		
8-Feb-00	WXO-9	8:00	17:30	6	7	SW		1000			1000		

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ABRASIVE BLASTING DATA 1999/2000

Date	Work Package	Work Hours		Wind Speed			Abrasive (kg)					Controls	
		From	To	0830hrs	1400hrs	Direction	Garnet	Fine Blast	Minblast	Rom	Total		Recovered
8-Feb-00	WXI-8	8:00	16:30	6	7	SW		500			500		
9-Feb-00	CA1824	8:00	17:30	0	0		200	200			400		
9-Feb-00	WXI-8 Painting Only	8:00	17:00	0	0						0		
10-Feb-00	CA1824 Painting Only	8:00	14:00	3	6	S					0		
11-Feb-00	CA1824 Painting Only	8:00	14:00	3	6	S					0		
12-Feb-00	Weekend										0		
13-Feb-00	Weekend										0		
14-Feb-00	WXI-8 Painting Only	8:00	16:30	7	7	NE					0		
14-Feb-00	WXO-8 Painting Only	8:00	16:30	7	7	NE					0		
15-Feb-00	WXI-8 Painting Only	8:00	16:30	7	13	NE					0		
15-Feb-00	WXO-8 Painting Only	8:00	16:30	7	13	NE					0		
16-Feb-00	WXI-8 Painting Only	8:00	16:30	0+	0+	E					0		
16-Feb-00	WXO-8 Painting Only	8:00	16:30	0+	0+	E					0		
17-Feb-00	CA1824 Painting Only	8:00	16:30	1	5	S					0		
18-Feb-00	CA1824 Painting Only	8:00	16:30	2	7	SW					0		
19-Feb-00	Weekend										0		
20-Feb-00	Weekend										0		
21-Feb-00	WXO-8 Painting Only	8:00	15:30	0	2	SW					0		
21-Feb-00	WXI-8 Painting Only	8:00	15:30	0	2	SW					0		
21-Feb-00	WXO-9 Painting Only	8:00	12:30	0	2	SW					0		
22-Feb-00	WXO-9 Painting Only	8:00	17:30	0	4						0		
22-Feb-00	WXO-8 Painting Only	8:00	17:00	0	4						0		
22-Feb-00	WXI-8 Painting Only	8:00	17:00	0	4						0		
23-Feb-00	WXO-8 Painting Only	8:00	17:00	0	2	N					0		
23-Feb-00	WXI-8 Painting Only	8:00	17:00	0	2	N					0		
23-Feb-00	WXO-9 Painting Only	8:00	12:30	0	2	N					0		
23-Feb-00	CA1824 Painting Only	8:00	14:00	0	2	N					0		
24-Feb-00	CA1824 Painting Only	8:00	14:00		No Record						0		
24-Feb-00	WXO-9 Painting Only	8:00	17:30		No Record						0		
24-Feb-00	WXO-8 Painting Only	8:00	16:30		No Record						0		

PSMC003 AUCKLAND HARBOUR BRIDGE

ABRASIVE BLASTING DATA 1999/2000

Date	Work Package	Work Hours		Wind Speed			Abrasive (kg)					Controls	
		From	To	0830hrs	1400hrs	Direction	Garnet	Fine Blast	Minblast	Rom	Total		Recovered
24-Feb-00	WXI-8 Painting Only	8:00	16:30	No Record							0		
25-Feb-00	CA1824 Painting Only	8:00	13:00	2	4	SE					0		
25-Feb-00	WXO-8 Painting Only	8:00	16:30	2	4	SE					0		
25-Feb-00	Cap-3	8:00	16:30	2	4	SE	500				500		
25-Feb-00	WXI-8 Painting Only	8:00	16:30	2	4	SE					0		
26-Feb-00	Weekend										0		
27-Feb-00	Weekend										0		
28-Feb-00	WXO-8 Painting Only	8:00	16:30	4	6	SW/S					0		
28-Feb-00	Cap-3 Painting Only	8:00	17:30	4	6	SW/S					0		
28-Feb-00	WXI-8 Painting Only	8:00	16:30	4	6	SW/S					0		
29-Feb-00	Cap-3 Painting Only	8:00	14:30	0+	4	S/NE					0		
29-Feb-00	WXO-8 Painting Only	8:00	11:30	0+	4	S/NE					0		
29-Feb-00	WXI-8 Painting Only	8:00	11:30	0+	4	S/NE					0		
1-Mar-00	WXO-8 Painting Only	8:00	16:30	3	4	E/NE					0		
1-Mar-00	WXI-8 Painting Only	8:00	16:30	3	4	E/NE					0		
1-Mar-00	CA1824 Painting Only	8:00	14:00	3	4	E/NE					0		
2-Mar-00	WXO-8 Painting Only	8:00	11:30	7	9	SE					0		
2-Mar-00	Cap-3	8:00	16:00	7	9	SE	400				400		
2-Mar-00	CA1824 Painting Only	8:00	17:00	7	9	SE					0		
2-Mar-00	WXI-8 Painting Only	8:00	11:30	7	9	SE					0		
3-Mar-00	WXI-8 Painting Only	8:00	16:30	1	5	SE					0		
4-Mar-00	Weekend										0		
5-Mar-00	Weekend										0		
6-Mar-00	Wash down										0		
7-Mar-00	Cap-3	8:00	14:00	2	5	SE	200				200		
7-Mar-00	CA1824 Painting Only	8:00	14:00	2	5	SE					0		
8-Mar-00	CA1824	8:00	16:00	2	4	SW	600				600		
8-Mar-00	Cap-3 Painting Only	8:00	18:00	2	4	SW					0		
9-Mar-00	CA1824	8:00	17:30	3	5	S/SE	200				200		
10-Mar-00	CA1824	8:00	16:30	2	4	N	100				100		

PSMC003 AUCKLAND HARBOUR BRIDGE

ABRASIVE BLASTING DATA 1999/2000

Date	Work Package	Work Hours		Wind Speed			Abrasive (kg)					Controls	
		From	To	0830hrs	1400hrs	Direction	Garnet	Fine Blast	Minblast	Rom	Total		Recovered
11-Mar-00	Weekend											0	
12-Mar-00	Weekend											0	
13-Mar-00	CA1824	8:00	12:30	5	10	W/SW	100					100	
14-Mar-00	CA1824	8:00	13:30	0	0		100					100	
15-Mar-00	CA1824 Painting Only	8:00	17:00	5	10	SW						0	
16-Mar-00	Cap-3	8:00	17:00	2	3	SE	100					100	
16-Mar-00	CA1824 Painting Only	8:00	17:30	2	3	SE						0	
17-Mar-00	CA1824	8:00	17:30	0	2	SW	450					450	Curtains
18-Mar-00	Weekend											0	
19-Mar-00	Weekend											0	
20-Mar-00	CA1824	8:00	16:30	4	4	NE	150					150	Curtains
21-Mar-00	CA1824 Painting Only	8:00	13:00	0	3	SW						0	Curtains
22-Mar-00	CA1824 Painting Only	8:00	14:00	4	4	SW						0	Curtains
23-Mar-00	CA1824 Painting Only	8:00	14:00	2	4	SW/NE						0	Curtains
24-Mar-00	CA1824 Painting Only	8:00	16:30	10	10	SE						0	
25-Mar-00	Weekend											0	
26-Mar-00	Weekend											0	
27-Mar-00	CA1824 Painting Only	8:00	16:00	4	4	SW						0	
28-Mar-00	CA1824 Painting Only	8:00	16:30	3	4	NW						0	
29-Mar-00	CA1824	8:00	16:30	0	6	NE	125					125	
30-Mar-00	Cap-3	8:00	14:30	2	7	SW	100					100	
30-Mar-00	CA1824 Painting Only	8:00	16:00	2	7	SW						0	
31-Mar-00	CA1824 Painting Only	8:00	16:00	4	4	SW/SE						0	
1-Apr-00	Weekend											0	
2-Apr-00	Weekend											0	
3-Apr-00	CA1824	8:00	16:30	4	7	NE	750					750	
4-Apr-00	CA1824	8:00	16:30	8	9	NE/N	75					75	
5-Apr-00	CA1824 Painting Only	8:00	16:00	5	7	NE						0	
6-Apr-00	CA1824 Painting Only	8:00	16:00	5	8	N						0	
7-Apr-00	CA1824 Painting Only	8:00	17:30	10	5	N						0	

PSMC003 AUCKLAND HARBOUR BRIDGE

ABRASIVE BLASTING DATA 1999/2000

Date	Work Package	Work Hours		Wind Speed			Abrasive (kg)					Controls	
		From	To	0830hrs	1400hrs	Direction	Garnet	Fine Blast	Minblast	Rom	Total		Recovered
8-Apr-00	Weekend										0		
9-Apr-00	Weekend										0		
10-Apr-00	CA1824 Painting Only	8:00	15:00	5	10	SW					0		
11-Apr-00	Wash down			2	5	SW					0		
12-Apr-00	CA1824 Painting Only	8:00	17:00	0	3	SW					0		
13-Apr-00	Wash down										0		
14-Apr-00	Wash down										0		
15-Apr-00	Weekend										0		
16-Apr-00	Weekend										0		
17-Apr-00	CA1824	8:00	18:00	1	3	E		2000			2000		
18-Apr-00	CA1824 Painting Only	8:00	18:00	3	10	NE					0		
19-Apr-00	Wash down			6	10	NE/N					0		
20-Apr-00	CA1824 Painting Only	8:00	18:00	2	3	N					0		
21-Apr-00	Public Holiday										0		
22-Apr-00	Weekend										0		
23-Apr-00	Weekend										0		
24-Apr-00	Public Holiday										0		
25-Apr-00	Public Holiday										0		
26-Apr-00	CA1824	8:00	16:00	0	7	SW		100			100		
27-Apr-00	CA1824	8:00	16:00	2	2	SW		100			100		
27-Apr-00	PE Painting Only	8:00	16:00	2	2	SW					0		
28-Apr-00	PE Painting Only	8:00	16:00	0	0						0		
29-Apr-00	Weekend										0		
30-Apr-00	Weekend										0		
1-May-00	PW Painting Only	8:00	16:30	2	3	SW					0		
1-May-00	PE Painting Only	8:00	17:00	2	3	SW					0		
2-May-00	PW Painting Only	8:00	16:00	5	7	SW/S					0		
2-May-00	PE Painting Only	8:00	17:00	5	7	SW/S					0		
3-May-00	PW Painting Only	8:00	15:00	6	7	SW					0		
3-May-00	PE Painting Only	8:00	17:00	6	7	SW					0		

PSMC003 AUCKLAND HARBOUR BRIDGE

ABRASIVE BLASTING DATA 1999/2000

Date	Work Package	Work Hours		Wind Speed			Abrasive (kg)					Controls	
		From	To	0830hrs	1400hrs	Direction	Garnet	Fine Blast	Minblast	Rom	Total		Recovered
4-May-00	PW Painting Only	8:00	16:30	3	3	NE					0		
4-May-00	PE Painting Only	8:00	17:00	3	3	NE					0		
5-May-00	PW Painting Only	8:00	16:00	4	3	SW					0		
5-May-00	PE Painting Only	8:00	17:00	4	3	SW					0		
6-May-00	Weekend										0		
7-May-00	Weekend										0		
8-May-00	Staff Training										0		
9-May-00	Staff Training										0		
10-May-00	Staff Training										0		
11-May-00	Staff Training										0		
12-May-00	Staff Training										0		
13-May-00	Weekend										0		
14-May-00	Weekend										0		
15-May-00	Wash down			3	2	NW					0		
16-May-00	PW Painting Only	8:00	16:30	5	4	W					0		
16-May-00	PE Painting Only	8:00	16:00	5	4	W					0		
17-May-00	PW Painting Only	8:00	16:30	7	7	SW					0		
17-May-00	PE Painting Only	8:00	15:00	7	7	SW					0		
18-May-00	PW Painting Only	8:00	12:00	5	5	SW					0		
18-May-00	PE Painting Only	8:00	16:00	5	5	SW					0		
19-May-00	PW	8:00	12:00	5	5	SW	125				125		
19-May-00	PE Painting Only	8:00	15:00	5	5	SW					0		
20-May-00	Weekend										0		
21-May-00	Weekend										0		
22-May-00	PW Painting Only	8:00	17:00	5	7	SW					0		
23-May-00	PE Painting Only	8:00	16:00	5	6	SW					0		
24-May-00	PE Painting Only	8:00	15:00	0	0+	NE					0		
25-May-00	PE Painting Only	8:00	16:00	0	0+	NE					0		
26-May-00	PE Painting Only	8:00	15:00	2	3	NE					0		
27-May-00	Weekend										0		

PSMC003 AUCKLAND HARBOUR BRIDGE

ABRASIVE BLASTING DATA 1999/2000

Date	Work Package	Work Hours		Wind Speed			Abrasive (kg)					Controls	
		From	To	0830hrs	1400hrs	Direction	Garnet	Fine Blast	Minblast	Rom	Total		Recovered
28-May-00	Weekend										0		
29-May-00	PW Painting Only	8:00	16:00	7		NE					0		
30-May-00	Wash down			10	4	NE					0		
31-May-00	Wash down			0	0						0		
1-Jun-00	PW Painting Only	8:00	16:30	2	3	N					0		
2-Jun-00	PW Painting Only	8:00	16:00	5	10	W					0		
3-Jun-00	Weekend										0		
4-Jun-00	Weekend										0		
5-Jun-00	Public Holiday										0		
6-Jun-00	PW	8:00	17:00	1	3	SW	390				390		
7-Jun-00	PW Painting Only	8:00	17:00	2	2	NE					0		
8-Jun-00	PE Painting Only	8:00	16:00	2	5	SE					0		
9-Jun-00	PE Painting Only	8:00	16:00	0	6	SW					0		
10-Jun-00	Weekend										0		
11-Jun-00	Weekend										0		
12-Jun-00	PW Painting Only	8:00	11:00	4	3	NE					0		
13-Jun-00	PW Painting Only	8:00	17:00		No Record						0		
14-Jun-00	PW Painting Only	8:00	17:00	0	4	SW					0		
14-Jun-00	PE Painting Only	8:00	16:00	0	4	SW					0		
15-Jun-00	PE Painting Only	8:00	16:30	2	2	S					0		
15-Jun-00	PW Painting Only	8:00	17:00	2	2	S					0		
16-Jun-00	PW Painting Only	8:00	16:30		No Record						0		
16-Jun-00	PE Painting Only	8:00	15:30		No Record						0		
17-Jun-00	Weekend										0		
18-Jun-00	Weekend										0		
19-Jun-00	PW Painting Only	8:00	17:00	5	5	SW					0		
19-Jun-00	PE Painting Only	8:00	16:30	5	5	SW					0		
20-Jun-00	PE Painting Only	8:00	16:30	0	2	SW					0		
21-Jun-00	WXO-9 Painting Only	8:00	14:30	1	2	NE/E					0		
21-Jun-00	PE Painting Only	8:00	15:30	1	2	NE/E					0		

PSMC003 AUCKLAND HARBOUR BRIDGE

ABRASIVE BLASTING DATA 1999/2000

Date	Work Package	Work Hours		Wind Speed			Abrasive (kg)					Controls
		From	To	0830hrs	1400hrs	Direction	Garnet	Fine Blast	Minblast	Rom	Total	
22-Jun-00	PE Painting Only	8:00	16:30			No Record					0	
22-Jun-00	WXI-9 Painting Only	8:00	16:30			No Record					0	
22-Jun-00	Cap-3 Painting Only	8:00	13:00			No Record					0	
23-Jun-00	WXI-9 Painting Only	8:00	16:30	0	5	E					0	
23-Jun-00	Cap-3 Painting Only	8:00	16:30	0	5	E					0	
24-Jun-00	Weekend										0	
25-Jun-00	Weekend										0	
26-Jun-00	WXI-9	8:00	16:00	6	6	E	625				625	
26-Jun-00	WYO-9	8:00	12:00	6	6	E	1000				1000	
27-Jun-00	Wash down			10	12	NE					0	
28-Jun-00	Wash down			15	15	NE					0	
29-Jun-00	WYO-9 Painting Only	8:00	15:30	0	5	NE					0	
29-Jun-00	WXI-9 Painting Only	8:00	15:30	0	5	NE					0	
29-Jun-00	WYO-10	8:00	16:30	0	5	NE			450		450	
30-Jun-00	WYO-10	8:00	16:30	0	2	NE			400		400	
30-Jun-00	WXI-9	8:00	14:00	0	2	NE			300		300	
1-Jul-00	Weekend										0	
2-Jul-00	Weekend										0	
Total							12990	12020	1150	250	26410	

EXN-1 East Extension Internal Box 71-78
 EXN-2 East Extension Internal Box 32-51
 WXN-1 West Extension Internal Box 72-78
 WXN-2 West Extension Internal Box 62-71
 WXN-3 West Extension Internal Box 52-61
 WXN-4 West Extension Internal Box 42-51
 WXN-5 West Extension Internal Box 33-41
 WXN-6 West Extension Internal Box 30-32

WXI-5 West Extension Inner Box 25-30
 WXI-6 West Extension Inner Box 31-36
 WXI-7 West Extension Inner Box 40-42
 WXI-8 West Extension Inner Box 43-44
 WXI-9 West Extension Inner Box 49-54
 PE Pier Brackets and Legs East
 PW Pier Brackets and Legs West
 CA1824 Seismic Retrofit

CAP 3 Electrical Upgrade Painting
 WYO-5 West Extension Outer Box 25-30
 WYO-6 West Extension Outer Box 31-36
 WYO-7 West Extension Outer Box 37-42
 WYO-8 West Extension Outer Box 43-48
 WYO-9 West Extension Outer Box 49-54
 WYO-10 West Extension Outer Box 55-60

Appendix B

Public Relations

A Joint Venture Company between
RoadTec Resources & TBS Group



Our Ref: PSMC 003

16 March 2000

Dear Neighbour

AUCKLAND HARBOUR BRIDGE PAINTING

Commencing on Friday 17 March 2000, we will be completing the Seismic Retrofit Corrosion Proofing on the North Viaduct. 24 March 2000 weather permitting will complete the programme.

The work will entail approximately four hours of abrasive blasting and the necessary painting at TN6 (midway between our offices and the bridge gates). Screens will contain this area and only garnet abrasive will be used, this will keep the dust fall out to a minimum. The other area of work will be at the northern end, by our offices, which will not require blasting.

We apologise for any inconvenience this will cause. Please contact our coating supervisor Mr George Wallace on s9(2)(a) if you have any comments to make.

Yours sincerely

A handwritten signature in cursive script, appearing to read "George Wallace", is written over a light-colored background.

George Wallace
Coatings Supervisor

A Joint Venture Company between
RoadTec Resources & TBS Group

Our Ref: PSMC 003/15

ENTERED
23/6/00



22 June 2000

Dear Neighbour

AUCKLAND HARBOUR BRIDGE LIGHTING MAINTENANCE

As part of our maintenance activities on Auckland Harbour Bridge over the week commencing 3 July 2000 we are intending to inspect the holding down connection on the light poles. In order to carry out this work we will require access to the rear of your property on 6 July 2000.

The work will involve a brief inspection by two staff, expected to take half an hour at the maximum. The only access equipment we will be using is a step ladder.

Could you please contact myself at our bridge offices on 481-0078 to give your permission to undertake this inspection and to discuss any other bridge related concerns you may have.

Yours sincerely


Keith Stolberger
Project Manager