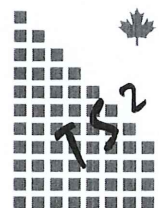


**CROWN CAPITAL ENTERPRISE
LIMITED**

WANCHAI, HONG KONG

**Demonstration of RJSeal™
Jing Zhu Highway, Xing Xiang, Henan,
Peoples Republic of China**

October 2003



**TS² Consulting Inc.
Lamma, Hong Kong**

TS² CONSULTING INC. <

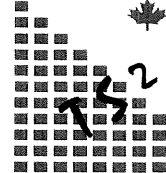
(British Virgin Islands Incorporated) website: <http://ts2.stormloader.com>

Hong Kong

2/F 81 Po Wah Yuen.
Lamma Island, Hong Kong
Phone (85-2)-2982-4131
Fax: (85-2)-2390-5465
Cellular: (85-2)-9157-6693
Email: speed_cny@yahoo.co.uk

Canada (Liaison Office)

1016 Cannock Road S.W.
Calgary, Alberta
Canada, T2W IM5
Phone: (403)-281-3043
Fax: (403)-281-3043
Email: speed_cny@yahoo.co.uk



December 29, 2003

Crown Capital Enterprise Limited
B5, Centre Point Building
181 – 185 Gloucester Road,
Wanchai, Hong Kong.
Attn: Charence Chiang
General Manager

Dear Charence

Re: Demonstration of RJSeal™ on the Jing Zhu Highway, Henan.

This is the final report on the demonstration of RJSeal™ on the Jing Zhu Highway, immediate to the city of Xing Xiang, Henan Province. This demonstration was undertaken on October 18 and encompassed two segments, each 416 metres long, on the southbound slow lane (adjoining the shoulder) and the paved shoulder of this four lane, divided highway. The principal interest of Xing Xiang Expressway Maintenance & Engineering Inc. was restoration of the asphalt pavement's ductility, as well as an improvement of the resistance to water penetration. Initial indications are that these requirements have been readily met.

Yours Sincerely

Anthony G. Speed, P.Eng. (Ontario, Canada)

Crown Capital Enterprise Limited.

RejuvaSeal Demo

Jing Zhu Hwy, Xing Xiang, Henan

Date of Work 18-Oct-03

Prepared by A.G. Speed

Updated by A.G. Speed

Updated 7-Feb-04

Assumptions

Locale	Length	Width	Area
Km 225/622	416	6.0	2496
Km 222/619	416	6.0	2496
	832	12.0	4992

Conversion Factors

US Gallon=	3.78	Litres	
Sq Metre=	10.76	Sq Feet	
Sq Metre=	1.20	Sq Yds	
One Litre	1.04	kgs	
One Full Drum	208	Litres	
One Full Drum	55	US Gallon	
90% full drum	50	US Gallon	

Crew Consist

	No
Desco Op	1
Desco Help	2
Labourers	10
Truck Driver	2
Supervisor	3
Total	18

Weather Conditions

Temperature	20 Celsius
Humidity	40%
Cloud Cover	Cloudy

Work Schedule	Work Time	Work Time	Test Length (m)	Total Area m ²	Total Area yd ²	RejuvaSeal Applied			Application Rate				18 Man Crew	
						US gals	litres	kilograms	USGal /yd ²	Litres/m ²	m ² /Litre	m ² /Kg	m ² /man hr	yd ² /man hr
am/pm														
18-Oct-03	08.30-10.30	2.0	416.0	2,496	2,984	159	600	624	0.053	0.24	4.16	4.00	69.3	82.9
18-Oct-03	11.00-12.30	1.5	416.0	2,496	2,984	159	600	624	0.053	0.24	4.16	4.00	92.4	110.5
Totals		3.5	832.0	4,992.0	5,967.3	317.5	1,200.0	1,248.0	0.053	0.24	4.16	4.00	79.2	94.7

Note: Drying time 3 hours

bbls 6

FlowMeter Readings

Time (sec)	Location
Time	Location

CROWN CAPITAL ENTERPRISE LIMITED

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Jing Zhu Highway, Xing Xiang, Henan,
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APPENDICES

<u>No.</u>	<u>Description</u>
A	RJSeal™ – Descriptive Literature
B	Desco D200 Sprayer Technical Specifications



**TS² Consulting Inc.
Lamma, Hong Kong**

CROWN CAPITAL ENTERPRISE LIMITED

Demonstration of RJSeal™ Jing Zhu Highway, Xing Xiang, Henan Peoples Republic of China

October 2003

1.0 INTRODUCTION

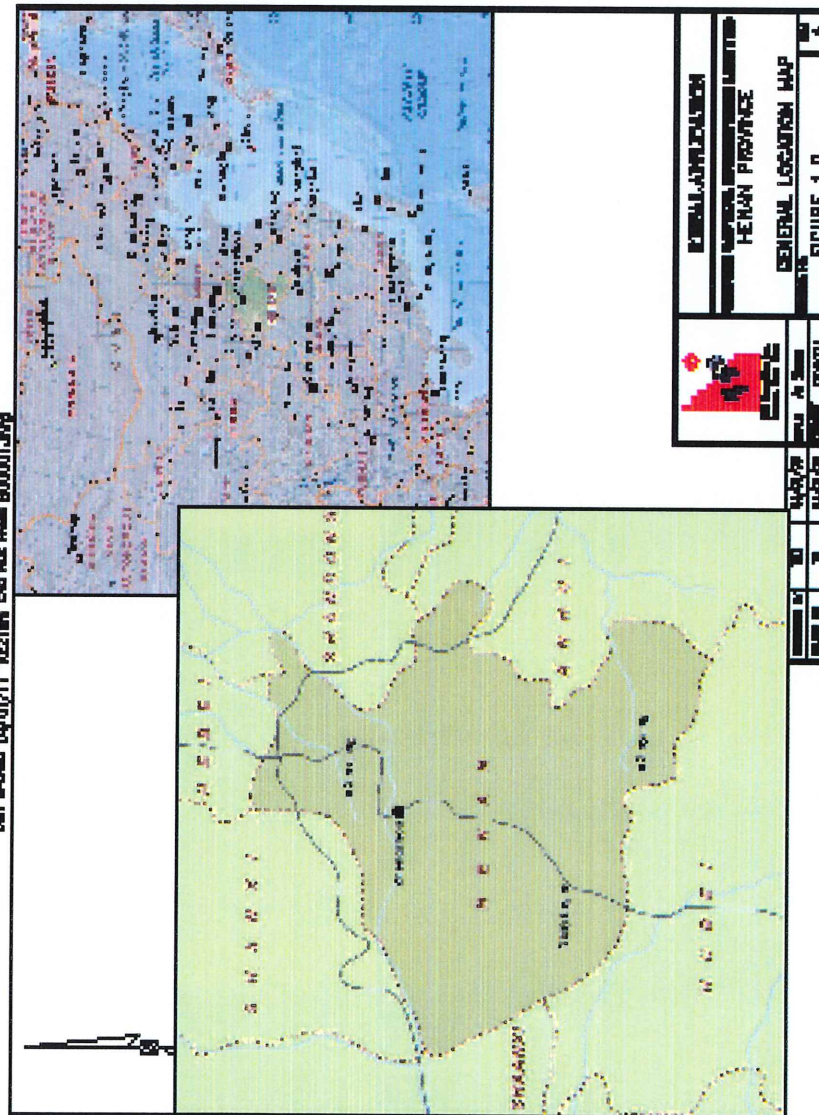
Crown Capital Enterprise Limited of Hong Kong entered into an arrangement with Xing Xiang Expressway Maintenance & Engineering Inc. of Henan Province, China in September 2003. This arrangement calls for the analysis of the performance of RJSeal™, a sealer/rejuvenator for asphalt pavement on highways within the Xing Xiang Expressway Maintenance & Engineering Inc's administrative district.

Henan Province is situated astraddle the Yellow River (HuangHe) although the major portion is south of the Yellow River and hence it's name: "South of the River". The Province is generally quite flat and this is attributable to being on the flood plain of the Yellow River, which has moved various times throughout it's life. The Province has a dubious reputation of being caused innumerable grief due to major flooding, following bursting or overtopping of dykes along the river that has occurred 1500 times during a recorded history of 3000 years. Zhengzhou has a population of approximately 3 million, is the capital city and a major manufacturing city in China.. Zhengzhou was believed to be a city of note some 3000 years ago and possibly the capital of the Shang Dynasty. Henan has seen a major growth in the highway system, in recent years, due to the central government's drive to build national highways linking Beijing with major cities in the adjoining provinces and the massive increase in the world export trade. Xing Xiang, lies some 65 kms north of Zhengzhou and some 300 kilometres southwest of Beijing. See figure 1.0 for a map showing the location of Xing Xiang and Henan Province. The majority of the area lies at 60 to 70 metres in elevation, on the extensive plain that borders the Yellow River. The regions' latitude (33 degrees north), mean that there are four seasons, with temperatures ranging from 45 Celsius in the long, hot summer to minus 10 Celsius in the short winter. There is no rainy season per-se, just thunderstorms and these occur primarily in June thru August, but can extend into September.

In the immediate area surrounding Xing Xiang, a significant unconsolidated sedimentary sequence predominates and this is due to the site adjoining the flood plain of the Yellow River. The silt from the flooding has occurred over several millennium and now obscures all outcrops. Drainage channels feeding into the Yellow River also afford no opportunities to see the bedrock. The asphalt in the area is manufactured from imported materials, which is comprised of crushed and screened sandstone and diorites hauled in from quarries elsewhere in Henan Province, as well as washed gravels from the

various rivers. The bitumen binder for the asphalt is sourced from various locations. Since Henan Province borders Shandong province and hence the Sea of Bohai, the possibility of bitumen being sourced from offshore is a distinct possibility so refineries in Singapore and the like should not be forgotten.

UNIT NUMBER 04/00/11 7027100 000 000 000 000001.000



		GENERAL LOCATION MAP HENAN PROVINCE CHINA	
04/00/11 7027100 000 000 000 000001.000		FIGURE 1.0	

2.0 CO-OPERATIVE PROGRAM

The intent of the arrangement with Xing Xiang Expressway Maintenance & Engineering Inc. of Henan Province is to demonstrate RJSeal™ at different locations selected by the Highways Administration Bureau. The demonstration will subsequently allow analysis of the performance of RJSeal™ on a variety of asphalt surfaces. A demonstration was undertaken at two different locations on the Jing Zhu Highway, near the city of Xing Xiang, on October 18, 2003. These two portions of the highway that were treated was of mid-2000 vintage. No details are known about the subgrade. Knowing construction techniques in highways in China in general, minimal gravel would be used for an immediate coarse base, beneath the asphalt pavement. The surface of the asphalt was quite rough and concern had been expressed about water percolating through the porous texture of the asphalt pavement and softening the sub-grade.

3.0 RJSEAL™

RJSeal™ is a proprietary product that is supplied by Crown Capital Enterprise Limited of Wanchai, Hong Kong. RJSeal™ has been proven in numerous applications in North and South America to rejuvenate asphalt pavement at various stages of its life and economically extend the life of the pavement. RJSeal™ is a three component, asphalt sealer rejuvenator that is comprised of Coal Tar, Coal Tar Oils and Petroleum Solvents.

3.1 PRIOR EXPERIENCE

Refer to Appendix A for a copy of the brochure prepared by Crown Capital Enterprise Limited. This outlines the experience with RJSeal™ at various locations in China, North America and South America. Further information is available from Crown Capital Enterprise Limited. RJSeal™ has been used at numerous airports in North and South America, as well as highways in Alberta, Canada; Cearo State, Brazil and North Dakota and Texas, as well as other locations in the U.S.A. Since 2000, RJSeal™ has been demonstrated successfully at over thirty two (32) locations in China and fourteen (14) commercial-scale applications have taken place at various locations, including Shanghai and Kunming.

4.0 TEST PROGRAM

Since Henan Province is located in a semi-tropical climate (Latitude: 33 North) at a low altitude (50 to 70 metres), it's a demanding setting for asphalt, given the year round warm climate (extremes of 45 Celsius in summer and minus 10 Celsius in the winter) and intense exposure to ultraviolet radiation, all which contribute to the oxidation and breakdown of the asphalt binder.

Henan has the significant concentration of highways in China with some 5,000 kms of National and Provincial highway. Xing Xiang Expressway Maintenance & Engineering Inc. is responsible for 200 kilometres of National Highway, and 800 kilometres of Provincial Highway, within it's jurisdiction (distances as of year-end 2000).

In view of this extensive network of roads and the relatively short life of the asphalt surface, Henan is definitely interested in determining how to economically extend the life of the asphalt road surface. To this end, Xing Xiang has agreed to try RJSeal™ on the Jing Zhu Highway, near the city of Xing Xiang. See Figure 4.0, showing the location of this highway with respect to Xing Xiang and Henan

On October 18, one test strip at kilometre marker 622 (also designated as engineering marker 225+00) in the southbound slow lane of the Jing Zhu Highway (four lane, divided highway with paved shoulders) was treated with RJSeal™. This test strip was at the following geographic location:

Table 4.1 Kilometre 622 Test Strip	Geographic Location of Test Strip Site	
System	Northing	Easting
Geographic (deg, min)		
Universal Transverse Mercator Grid (50S) (metres)		

Furthermore a second test strip was undertaken on the Jing Zhu Highway at Kilometre marker 625 (also designated as engineering marker 222+00). This latter test strip was at the following geographic location:

Table 4.2 Kilometre 625 Test Strip	Geographic Location of Test Strip Site	
System	Northing	Easting
Geographic (deg, min)		
Universal Transverse Mercator Grid (50S) (metres)		

See Figure No 4.1 for a photo showing the test strip as implemented. Inspection of the test strip, showed that the application rate of 4 m²/kilogram was appropriate for the asphalt pavement at this location and could be used as a guide for other locations with similar physical characteristics.

The initial demonstration section at kilometre marker 622 (engineering location 225+00) was on the southbound slow lane and paved shoulder of this four lane divided highway and covered 416 metres. The second demonstration section was at kilometre marker 625 (engineering location 222+00) covered 416 metres also and similarly was on the southbound slow lane and paved shoulder of this four lane divided highway. See figure 4.0, which follows, for a location of the general locale.

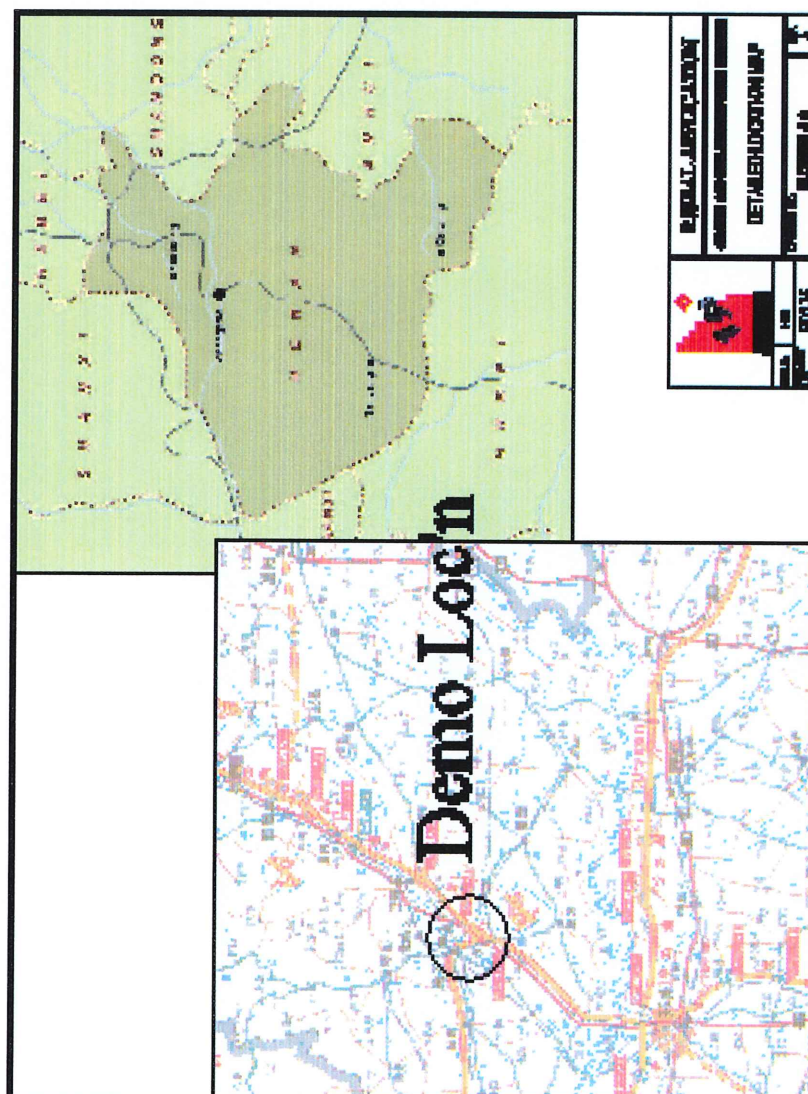




Figure 4.1 Test Strip, Jing Chu Highway.



Work commenced on the demonstration section at 8:00 am on October 16, on a sunny day, where the mid-day temperature reached 25 Celsius. An initial section, 416 metres long, on the southbound slow lane and paved shoulder of this four-lane highway were treated and the application rate selected was 4 m²/Kg. This initial section is located on a straight section with is a slight camber to the road, which causes water to run-off toward the shoulder, rather than puddle on the road. No significant oil spills were observed, just the occasional drop of transmission oil, crankcase oil or hydraulic fluid. The asphalt pavement surface was not appreciably worn with no rutting due to traffic wear. There was some aging and oxidation of the bitumen, which extended to a depth of several millimetres. The entire portion of the treated highway had an asphalt underlay that was purportedly 15 centimetres thick and underlain by a gravel base, which was on a compacted silty-clay, sub-grade. The asphalt surface on the section treated was reputedly a 2 years old. RJSeal™ was applied using a Desco D200 Sprayer and technical specifications for this unit are contained in Appendix B. This initial section dried in approximately 3 hours

A demonstration of RJSeal™ was also undertaken on a second section on October 18 and covered some 416 metres. Work commenced around 11:00 am and was completed by 12:30 pm. The same specifics, as to asphalt pavement for the initial section are applicable. Similarly, the application rate was 4.0 m²/kg. Mid-afternoon temperatures were in the 25 degree Celsius Range. This second section dried in approximately 3 hours.

Details of the application are summarized in the table that follows:

Table 4.3				Details of RJSeal™ Demonstration Sections on Jing Zhu Highway							
Date Sept	Work Schedule	Work Time	Test Length	Total Area m ²	RJSeal Applied			Application Rate			
	am/pm	(hrs)	(m)		US gals	litres	Kilo grams	USGal /yd ²	Litres /m ²	m ² /Litre	m ² /Kg
18	08:30- 10:30	2.00	416.0	2,496	150	567	624	0.050	0.23	4.40	4.00
18	11:00- 12:30	1.50	416.0	2,496	150	567	624	0.050	0.23	4.40	4.00

Photos showing the test application of RJSeal™ follow in figures 4.2, 4.3 and 4.4. on the following pages.

The site was visited on October 19 around 9:15 am and a difference was readily perceived between the RJSeal™ treated sections and the adjoining untreated lane. A screwdriver was used to dig two small holes in the asphalt pavement, to a depth of 3 centimetres, some 100 metres south of the extreme north end of the demonstration section, to determine the

penetration of the RJSeal™. This was one day after the application of RJSeal™ and at this location, the newly rejuvenated surface was evident, by the black resilient surface layer, which was now approximately 1 millimetre thick. Below that depth, the grey, oxidized layer of asphalt was evident.

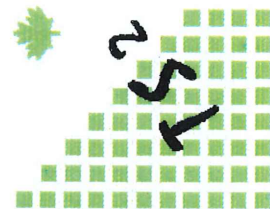


Figure 4.2 Typical Application Procedure.



Figure 4.3 Finished Surface.
Southbound Lane - Km 622

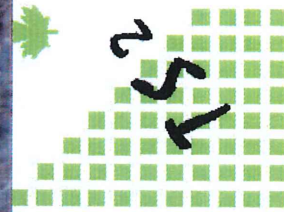
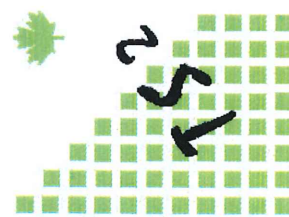




Figure 4.4 Finished Surface
Southbound Lane - Km 625



4.1 RJSeal™ Testing

To date the comparison of the asphalt treated with RJSeal™ has been compared on a subjective basis over a very short period at the test site on Jing Zhu Highway. Testing equipment will be brought to the site for comparison on a more disciplined, objective basis in the future, and to this end, the following tests will be undertaken.

- Water Dissipation (Hydroplaning Susceptibility)
- Water Penetration
- Fuel Resistance Comparison
- Ductility Testing

4.2 Water Dissipation

An “Outflow Meter” manufactured in the U.S.A. by Humble Equipment Company of Ruston, Louisiana and sold under the trademark “Outflow Meter” (see figure 4.5) will be used to measure the asphalt pavement’s capability to dissipate water, as concern has been expressed about hydroplaning on the RJSeal™ treated surface, versus the untreated surface. The Outflow Meter gives readings in seconds for the dissipation of a known quantity of water. It is suggested that any readings between 3 and 10 seconds are satisfactory results for an asphalt surface, if hydroplaning is to be minimized.

4.3 Water Penetration

Water penetration into the asphalt pavement is minimized by the application of RJSeal™ and a testing device to measure the flow of water from a graduated column into the pavement will be undertaken at a later date.

4.4 Fuel Resistance Comparison

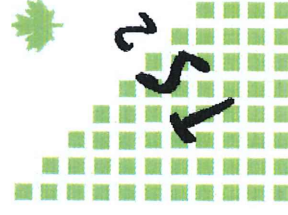
Fuel Resistance Comparison will be undertaken on several sections of the untreated and RJSeal™ treated sections in close proximity to the Outflow meter tests in the near future. This comparison will consist of pouring about a cupful of diesel fuel onto the road surface and then later checking the penetration of the fuel. If the fuel readily penetrated the asphalt pavement surface, then resistance to this form of chemical attack was presumed to be lower than if the fuel pooled on the surface of the asphalt pavement and slowly evaporated.

4.5 Ductility/Pentration/Viscosity Testing

This aspect of the testing requires specialized laboratory equipment and is beyond the capabilities of both Crown Capital Enterprise Limited and RJSeal™ personnel and as such, external assistance has been sought from outside experts in the field of Asphalt Testing. To this end, Xing Xiang Expressway Maintenance & Engineering Inc. has contacted an independent laboratory for advise on asphalt pavement testing.



Figure 4.5
Humble Equipment Co. Outflow Meter



5.0 Test Completion Schedule

Technicians from the independent testing agency will be dispatched to undertake further testing on the trial sections in the following winter. The projected completion of this testing is scheduled as shown in the following chart.

Figure 5.0 Project Completion Schedule

ID	Task Name	Duration	Start	er															
				Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep			
1	Travel to ZhengZhou and inspect Jing Zhu Highway	1d	Tue 9/30/03																
2	Hiatus	13d	Wed 10/1/03																
3	Application of RJSeal to Jing Zhu Hwy near Xing Xian	1d	Sat 10/18/03																
4	Inspection of Demo Section	1d	Sun 10/19/03																
5	Hiatus	50d	Mon 10/20/03																
6	Prepare draft report on RJSeal Demo and Testing	5d	Mon 12/29/03																
7	Hiatus	50d	Mon 1/5/04																
8	Inspection of Demo Section	1d	Mon 3/15/04																
9	Insitu Testing	1d	Tue 3/16/04																
10	Hiatus	10d	Wed 3/17/04																
11	Prepare final report	4d	Wed 3/31/04																
12	Submit final report	1d	Tue 4/6/04																

Project: Xing Xiang Sched

Date: Sat 2/28/04

Task

Progress

Milestone

Summary

Rolled Up Task

Rolled Up Milestone

Rolled Up Progress

6.0 Qualifications

STATEMENT OF QUALIFICATIONS

I, Anthony G. Speed of Hong Kong in the Special Administrative Region of China, DO HEREBY CERTIFY.

- I. THAT I am a Consulting Engineer, with offices at 2/F, 81 Po Wah Yuen, Lamma Island, Hong Kong
- II. THAT I am a 1968 graduate of the University of Saskatchewan, Canada with a Bachelor of Science Degree in Mining Engineering.
- III. THAT I am currently registered and in good standing as a Professional Engineer with the Association of Professional Engineers of Ontario, and New Brunswick, Canada
- IV. THAT my 30 years of continuous experience in mining, major civil engineering works (earth moving, highway and mining construction) has exposed me to a broad knowledge of mining and heavy civil engineering construction and allowed considerable familiarization with road construction and asphalt pavement.
- V. THAT this report is based on my collation of data and a visit on September 30, 2003 to Xing Xiang in Henan Province to view the Jing Zhu Highway as described in this report and details of the application as recorded by John Qu, who was the project supervisor for Crown Capital Enterprise Limited

Dated at Hong Kong, this _____ day of December, 2003



Anthony G. Speed, P.Eng. (Ontario and New Brunswick, Canada)

CROWN CAPITAL ENTERPRISE LIMITED

WANCHAI, HONG KONG

**Demonstration of RJSeal™
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October 2003

APPENDICES

No.	Description
A	RJSeal™ – Descriptive Literature
B	Desco D200 Technical Specifications



**TS² Consulting Inc.
Lamma, Hong Kong**

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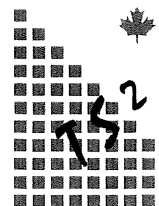
WANCHAI, HONG KONG

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Appendix A

RJSeal™ – Descriptive Literature



**TS² Consulting Inc.
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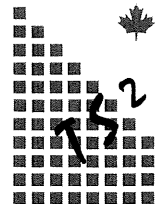
WANCHAI, HONG KONG

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Appendix B

**Desco D200 Sprayer
Technical Specifications**



**TS² Consulting Inc.
Lamma, Hong Kong**