

Name:	Racing Victoria
Project Description:	Construction of a waterless equine training track at Bendigo Racecourse.
Date of Report:	Monday, 3 December 2007

1. Background

Equine training tracks traditionally require large amounts of water to be applied to maintain the track and present in a condition that is suitable for training horses.

It has been established that the Bendigo Racecourse and equine training centre supports the livelihood of a significant number of people in the area.

The outcome of the Country Racing Economic and Social Impact Study completed in December 2005, has shown that Country Racing contributes \$1.046 billion annually to the Victorian state economy and provides \$808 million to regional Victoria. Of this, Country Racing contributes \$32.5 million or 1.6% of the economic activity generated in the Greater Bendigo Local Government Area.

The Bendigo Jockey Club is the major race club in the Greater Bendigo LGA and conducts 25 race meetings per season. The Club also supplies training facilities for approximately 60 professional horse trainers who in turn employ numerous staff to assist in the running of their businesses. The Bendigo Racecourse training establishment has the highest number of horses trained in the region and produces 1,500 starters per season at race meetings throughout Victoria.

Many local ancillary businesses benefit directly from the racing industry including feed merchants, farriers, saddleries, vets etc.

A crucial aspect of any equine training track is its ability to present an even going that provides horses with the right amount of support and the correct amount of resistance. Traditionally sand training tracks are saturated to present a track that is similar to wet beach sand. At Bendigo it was estimated that the sand training track required 12ML of water to be applied annually to achieve this requirement. As there are no other viable sources of water, this 12ML has in the past been sourced from the potable system.

It was proposed to use a recently developed synthetic product to replace the current surface. The product has been developed in-house within Racing Victoria to provide a surface for existing equine training and racing tracks that does not require large amounts of water to maintain in operational condition.

The synthetic track is comprised of a mixture of sand, polymer fibre and wax binder.

The surface has been developed through empirical and laboratory analysis and has been successfully trialled at a small number of other Victorian equine training centres.

2. Description of Project

The project constructed a new synthetic horse training track at the Bendigo Racecourse that replaced a training track that required daily watering to maintain its condition in a state that would facilitate equine training activities.

The track was constructed using a local contractor to prepare the base and to construct drainage. The synthetic track surface was batched together at the local asphalt batching plant using local sand and imported fibre and wax binder. About 90% of the track mixture is the local sand and the balance is the binder and fibre. The track surface itself was laid on site using the local asphalt paving contractor.

The training track is one of three training surfaces at Bendigo that provides infrastructure for the training of thoroughbred horses in the area. The other surfaces are a slow sand track and a grass track that cannot be maintained in optimum condition because of the severe water restrictions.

3. Key Activities Completed

The completed project comprised the following activities:

1. Stripping off previous water hungry sand surface using a grader – this took just 3 days.
2. Upgrading and re-profiling formation and drainage to suit new water repellent surface
3. Reinstatement of track fencing
4. Mixing and laying new synthetic track surface, over three weekends.
5. Conditioning and grading of new track using rollers and power harrows
6. Opening for operations

4. Results Achieved

The project has been completed successfully and the new track is in service and has reduced water consumption of this track to zero.

Construction works commenced on site at Bendigo with the decommissioning of the old sand track on 12th February 2007.

Construction on site took place over 10 weeks during which the civil works were completed and the receipt, batching and laying of the synthetic track material was carried out. The lead time of some of the components of the synthetic surface was approximately 12 weeks as these items were imported from overseas. Project planning had to take into account this lead time as well as the logistics involved in importing, transporting and heating the wax based binder such that it could be incorporated as liquid wax into the Bendigo asphalt batching plant as part of the track batching process.

The new track opened on 20th April 2007 and as at the date of this report will have been in operation for 200 days and has achieved real potable water savings of over 7ML. Annual potable water savings of 12ML are expected.

The track has delivered additional benefits in improved running surface for the horses which has led to greater horse utilisation and fewer training related injuries or stresses (anecdotal and not yet confirmed through data).

The track is measured for hardness and thickness in accordance with Racing Victoria's track preparation policy on a weekly basis. Regular maintenance requirements are

minimal and involve a weekly light harrow and roll. The previous sand track required daily raking and rolling. It is expected that the wax binder will need refreshing after two to three years, which will be undertaken using a spray truck and roller.

The project was completed below budget with a total out-turn cost of \$1,054,720 compared with the approved budget of \$1,200,000. The savings were achieved through careful project delivery and procurement contracts and as a result of the good condition of the pre-existing base which needed no repairs once the previous track had been removed.

Based on the final out-turn cost of \$1,054,720 for providing 12,000 sqm of track, a rate of \$88 per sqm plus GST for the project has been achieved. This rate could be repeated at other tracks providing there is no substantial shift in raw material pricing or track preparation. Note that the cost of the wax binder and polymer fibre is linked to the cost of oil as these are derivatives of the petroleum industry. Some price volatility is therefore expected and materials costs need to be verified during the project planning stage.

A detailed breakdown of project costs showing all commitments and payments to verify this project cost is attached for reference to this report.

5. Issues Arising

There were no significant issues that arose during the course of the project that had not been contemplated at the outset in the project planning phase.

6. Conclusion

The project has been a huge success for the on-going viability of training at Bendigo and there have been no recorded adverse reactions from the trainers and riders at Bendigo. The synthetic material has required no water since its laying and to date this has saved over 7ML of potable water from the highly stressed Bendigo area. Water savings will continue.

The project has provided the opportunity to test the practicality and cost basis for retrofitting synthetic waterless track technology into a rural equine environment as a swap over for existing tracks. As a result of this project, Racing Victoria Limited is confident that this project and its benefits can be replicated at most equine training centres across Australia where training activity is limited to temperatures below 30-34 degrees. Note that over these temperatures, the track softens and although does not become unuseable, will present heavier than the equivalent saturated wet sand track.

The technology has been very well received by all stakeholders including riders, trainers, owners and the Club and serves as a model for future conversions of water hungry tracks throughout Victoria and southern Australia.

Racing Victoria proposes to encourage the installation of these tracks on as wide a basis as funding and strategic directions enable and would assist other racing jurisdictions with the conversion of tracks on a case by case basis.

0607-RVL-107

Project ID: C

Supplier	Description	Approval Cost Plan	Transfers	Adjusted Cost Plan	Current Contract Sum	Pending & Forecast Variations	Forecast Final Cost	Forecast to date	Expendts. outstanding	% complete
39	VH & H&M Driveline	\$ 100,000	\$ (70,479)	\$ 29,521	\$ 29,521	\$ -	\$ 29,521	\$ -	\$ 29,521	100%
40	Coil seats including removing existing	\$ 25,000	\$ (25,000)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	100%
41	Repair soft seats in taxi	\$ 6,480	\$ 11,371	\$ 17,851	\$ 17,851	\$ -	\$ 17,851	\$ 17,851	\$ 17,851	100%
42	Dieta jobs and rail to inside	\$ 59,200	\$ -	\$ 59,200	\$ 59,200	\$ -	\$ 59,200	\$ 59,200	\$ 59,200	100%
43	Chambourne Fencing	\$ 383,000	\$ 27,000	\$ 409,000	\$ 392,944	\$ -	\$ 392,944	\$ 392,944	\$ 392,944	100%
44	Inflooring	\$ 163,000	\$ -	\$ 163,000	\$ 163,000	\$ -	\$ 163,000	\$ 163,000	\$ 163,000	100%
45	D.C. Engelbrecht	\$ 219,867	\$ 61,678	\$ 281,545	\$ 258,289	\$ -	\$ 258,289	\$ 258,289	\$ 258,289	100%
46	Boral Asphalt	\$ 35,000	\$ (12,775)	\$ 22,225	\$ 2,225	\$ -	\$ 2,225	\$ 2,225	\$ 2,225	100%
47	Inflooring	\$ 30,000	\$ (16,328)	\$ 13,672	\$ 13,672	\$ -	\$ 13,672	\$ 13,672	\$ 13,672	100%
48	Handing costs of fibre	\$ 2,540	\$ -	\$ 2,540	\$ 2,540	\$ -	\$ 2,540	\$ 2,540	\$ 2,540	100%
49	New Sitrack twister pins to outside	\$ -	\$ 16,591	\$ 16,591	\$ 16,591	\$ -	\$ 16,591	\$ 16,591	\$ 16,591	100%
50	Hobby Posist Rako	\$ -	\$ 2,099	\$ 2,099	\$ 2,099	\$ -	\$ 2,099	\$ 2,099	\$ 2,099	100%
51	Supply apple sand	\$ -	\$ 9,670	\$ 9,670	\$ 9,670	\$ -	\$ 9,670	\$ 9,670	\$ 9,670	100%
52	Supply crushed rock	\$ -	\$ 42,500	\$ 42,500	\$ 42,500	\$ -	\$ 42,500	\$ 42,500	\$ 42,500	100%
53	Install apple drain	\$ -	\$ 18,975	\$ 18,975	\$ 18,975	\$ -	\$ 18,975	\$ 18,975	\$ 18,975	100%
54	Installation of outside trailer to truck	\$ 100,000	\$ (100,000)	\$ -	\$ 0	\$ -	\$ 0	\$ -	\$ -	100%
55	Supply commitments	\$ -	\$ 2,980	\$ 2,980	\$ 2,980	\$ -	\$ 2,980	\$ 2,980	\$ 2,980	100%
56	Professional fees	\$ -	\$ 6,182	\$ 6,182	\$ 6,182	\$ -	\$ 6,182	\$ 6,182	\$ 6,182	100%
57	Administrative & Associates	\$ -	\$ 17,500	\$ 17,500	\$ 17,500	\$ -	\$ 17,500	\$ 17,500	\$ 17,500	100%
58	Essex Jockey Club	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	100%
92	D.C. Engelbrecht	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	100%
112	Fibre handling costs	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	100%
C1	Contingency account 1	\$ 100,000	\$ 6,480	\$ 106,480	\$ -	\$ -	\$ -	\$ -	\$ -	100%
C2	Contingency account 2	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	100%
R	Rounding	\$ 473	\$ -	\$ 473	\$ -	\$ -	\$ -	\$ -	\$ -	100%
Totals		\$ 4,200,000	\$ 0	\$ 4,200,000	\$ 1,054,720	\$ -	\$ 1,054,720	\$ 1,054,720	\$ 1,054,720	100%



Bendigo Racecourse Synthetic Track project

The completed track, also showing the outside berm area.



Bendigo Racecourse Synthetic Track project

Cleaning the old track off and grading the surface



Mixing the synthetic track material in the asphalt batch plant



Bendigo Racecourse Synthetic Track project

Adding the fibre to the mixture



The loading area, with fibre pallets stored



Bendigo Racecourse Synthetic Track project

The Bendigo asphalt plant where the track was mixed



The track is laid using a road paving machine and crew



Bendigo Racecourse Synthetic Track project

Conditioning the freshly laid track - half way around!



Completing the first lap - the surface is laid on to a conventional road base

