

JANUARY 2002

trenchtalk

MAKING PIPELINES EASIER

HUMES PIPELINE SYSTEMS

A FLETCHER CONCRETE & INFRASTRUCTURE LIMITED BUSINESS



Project Manukau moving towards completion



This aerial shot, taken from a “blimp”, features Watercare’s long running project to upgrade Manukau’s Mangere Wastewater Treatment Plant. The Humes Titan pipes visible are 1600 diameter in-wall skid ring joint pipes, which were supplied for the contract along with numerous other Humes “pipeline products”. This \$400 million project has approximately 18 months until completion and has been a challenging infrastructure project that Humes is proud to be part of.

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Happy New Year, and welcome to a new edition of 'Trenchtalk'.

In this issue of 'Trenchtalk', we feature several significant infrastructure projects that Humes and our customers have been involved with.

We also outline further Humes product innovation, with the new Titan VCP concrete pipe, the E2 watermain valve, and our Series II fire hydrant.

Without doubt, 2001 was another tough year for our industry – with the added challenges of adverse weather and project delays in the North Island over recent months.

Despite the relative uncertainty presently surrounding the pipeline and roading sectors, Humes Pipeline Systems is very well positioned for 2002, with our strong product and service offering, and a clear understanding of our customers' needs.

The recent opening of our Whangarei Sales Centre now gives Humes a nationwide coverage from Northland to Invercargill of 20 sales centres – each offering the complete pipeline systems package for our civil/infrastructure and rural customers.

Thank you for your business and support over the past year, and we look forward to working with all our customers to meet the challenges of the year ahead. I trust you will enjoy reading this edition of Trenchtalk.

John Williamson
General Manager

Major Christchurch sewer mains upgrade breaking new ground

Christchurch City works project sees many firsts in the South Island.

One of the Christchurch City Council's biggest capital works projects in 2001 – the upgrade of the central sewer main from Locarno Street to Bass Street saw Humes win the contract for pressure pipe supply. Humes provided 1790m of 750 diameter concrete pressure pipe, together with ductile iron fittings for the 2km installation.

Work on Stage 1 of the project began midway through 2001, with Humes working closely with March Construction, one of Christchurch's most experienced contractors who have installed pressure pipe systems throughout New Zealand. March Construction, established over three decades ago, has had a long working history with Humes, who Project Manager Andrew March says, "can

always be depended upon to provide quality product, design solutions and reliable service."

The job, estimated to reach completion in March 2002, has

presented some challenges, as it took place amongst some of the busiest roads in the city. The new pipeline will travel underneath a major railway crossing and beneath a main traffic intersection at Ferry Road.

All pipes being used in the job are being produced at Humes'

Christchurch plant. Plant Manager Brent Taylor has been overseeing production and testing. "We're producing 740 pipes for the job (which is a reasonably sizeable order) at the rate of six a day," he explains.

"Concrete pressure pipes for a project of this size require extra-heavy duty reinforcement, steam curing, steel

"It's great to have been involved in such an important works project, and to ensure that we have provided the very best product solutions for the installation."



spurring and a slightly different mix in the make-up of the concrete. Every pipe produced is pressure-tested to 400kPa. Our testing equipment had to be re-installed and upgraded especially for this project. Council engineers were invited into the Humes plant to observe pipe pressure tests on-site so they could see first-hand the rigorous processes the pipes are put through."

City Council Engineer Tony Borkus says the mains upgrade is timely as the old pipes have been in use for 77 years, and at 375mm diameter their ability to cope with demand was seriously restricted. "The new sewer mains route runs between two pumping stations which are about to be upgraded, and the pipeline needed extra capacity for when this happens," he explains. "When the



new system reaches the area beneath Ferry Road the pipe will run through a 1.4m diameter brick barrel stormwater pipe. We had to need to construct a junction between the two pipes and build a manhole – all the while working at night to ensure there was minimal disruption to road traffic."

pipe, which was then pushed through inside. Installing the pipeline though the stormwater pipe and beneath the section of rail track presented a host of challenges for the March Construction team. "We had to bring our drilling rig down from the North Island for these parts of the job, whereas for the rest of it we used an open trench method," explains Andrew March. "I don't think anyone has drilled to insert a pipe (750mm diameter) this size before in Christchurch, although we have completed drilling contracts in the North Island of a similar size. Our experienced pipe-laying team led by Steve Triggs ensured the pipes were absolutely secure and the ring jointing correct, as there was no room for mistakes. In fact, the whole project required everything to be absolutely 'spot on'."

Eight months after beginning the job, Humes Christchurch Sales Representative Phil Forrest is looking forward to a close partnership with March Construction through to completion. "It's great to have been involved in such an important works project," he says, "and to ensure that we have provided the very best product solutions for the installation."

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Top right: The 750 diameter valve (2.1m in height) being lifted into the trench.

Above: The project continues amongst the busy Ferry Road traffic.

Left: 750 diameter pressure pipes being individually tested at Humes Christchurch testing facility by production team member Ariva Ngaata.

Installing the sewer mains under the railway line between Brougham and Ensors Roads was also a bit of a logistical undertaking. A steel pipe was jacked under the tracks with a diameter 50mm larger than the new

The Humes R & D team have recently launched the new E2 valve and the Series II Tall and Squat Hydrants.

The development of the E2 valve Series II Hydrants has been underpinned by Humes' focus on standards, quality, continuous improvement and product feedback from customers and specifiers.

The E2 valve is manufactured in accordance with AS 2638.2.1999. Manufacturing to the standard allows Humes to benchmark against the best in the world and ensures that Humes' customers have high quality products and peace of mind when installing Humes products into infrastructure systems.

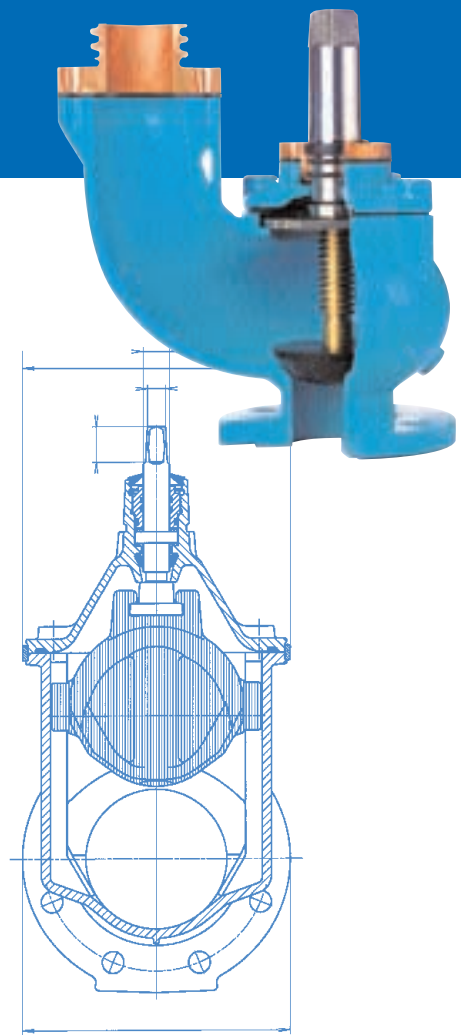
The main benefits of the E2 Valve are:

- acetyl wedge guides to reduce wear and opening/closing torque
- encapsulated fittings for maximum life
- o-rings can be replaced under pressure (this was illustrated at the

2001 New Zealand Water and Waste Conference – Contractor Competition where contractors from around the country were asked to replace the o-rings under pressure – most completed the task very well!)

The Series II Tall and Squat Hydrants have been developed to improve durability and provide greater assurance when installing Humes products into infrastructural systems. The main change to the Series II is the "4 Bolt System" which is consistent throughout. Durability is further improved through the gunmetal gland with four 8mm bolts, the acetyl washer and the nitrile rubber gasket.

For more information please contact your nearest Humes Sales Centre.



Innovation and teamwork on the new Dunrobin water scheme



Left: MDPE pipe on a specially constructed Marley coiler being pulled by a D6 bulldozer and assisted by a 20 tonne excavator.

good, there weren't any major hold-ups or problems, and the installation method kept labour costs down. It was a unique working environment – coming across wild pigs and deer were all part of a day's work! But despite the unusual conditions, both the budget and schedule were on target."

The 23 farmers in the region now receiving the new water supply are delighted. Pumps are no longer required and the pipeline provides an efficient 24 hour supply delivering

Safety and upskilling the industry are the goals but there's also a lighter side to diggers

Humes will continue its gold sponsorship of the Excavator Operator Championships at both national and regional levels

The Excavator Operator Championships attracts a huge following and a large audience is always guaranteed at Field Days finals. For eight months regional competitions are held around New Zealand, usually as a part of a local AMP Show or Field Days. These are already well underway with Napier and Canterbury's finals a proven success. Excavator operators from all facets of contracting backgrounds vie for the right to represent their area. In common amongst all competitors is a passion for excavator operating.

Twelve finalists will compete in 15 separate skill challenges over two days at the National Championships 15th and 16th March 2002. The activities test precision, technical

abilities, judgement, and experience. There is also a range of novelty events which challenge operators to use the digger bucket to pour cups of tea, paint 124, drop balls through a narrow pipe (slamdunk). "The whole event is about safety and upskilling the industry," explains Malcolm Abernethy of the Contractors Federation. "Huge weights are often being lifted and safety is a major issue. We're looking at fostering the best possible skills for meeting challenges in undertaking difficult tasks." Humes have been involved with both the regional and national competition for nearly ten years. "The whole championship couldn't take place without Humes'



Above: Magic Johnson eat your heart out! The Humes slam dunk.

involvement and their support through the regional branches," says Malcolm Abernethy.

2002 Calendar of Events

Otago	3rd February
Taranaki	16th February
Wellington	23rd February
Manawatu	24th February
Southland	27-28th February
Auckland	3rd March

15 kilometres of pipeline help strengthen Humes position in the rural water supply market.

Humes were selected in 2001 to supply 15 km of polyethylene pipe to Steven Beeby of Beeby Construction for installation at the Dunrobin Water Scheme Extension. Designed by Duffill, Watts and King Ltd.

Situated 20km inland from Oamaru, Dunrobin is an isolated rural settlement. The water supply to farms in the Five Forks/Kauru Hills area, previously provided by the Kakanui River, was becoming unreliable and required several pumping stations. Farmers clearly needed a more efficient supply system. The new scheme was designed to transport water from a previously untapped source at the top of Mt Dasher – an ex-volcano 4,500m above sea level – down into the surrounding properties. The pipeline needed to stretch through a 15km route in rugged terrain starting 1,100m above its destination. Humes provided the total pipeline package – pipes, air release valves, valve chambers, lids and 75mm and 50mm

ball valves. The MDPE was supplied on large drums (coilers); eight in total, each holding 2 km of pipe in 90 and 63 mm sizes. The rough nature of the terrain called for a customised style of installation - pipes were supplied on the large and specially constructed Marley coilers were mole ploughed into the ground at set depths. No reinstatement was needed. "Constructing and then transporting the pipes and coilers from the factory to the site was quite a logistical exercise," explains Steve Sharpe, Marley's Christchurch Sales Representative. "The total height of the load on the truck reached 4.25m, and there were a lot of obstacles such as bridges on the 300km journey from Christchurch to Dunrobin. But together with the Humes team, we were able to come up with good joint solutions." Beeby Construction Operations Manager, Beau Jenkins oversaw the installation. "We were really happy with the way the job progressed," he says. "The Humes product was very



Above: Bulldozer, excavator and pipes in the very isolated area of Dunrobin.

water at 2.5 litres per second. "The Dunrobin project has enabled Humes to become even more recognised in the rural water supply market," Steve Sharpe explains. "With river water levels lowering and the continuing El Nino weather pattern in the South Island, these type of water schemes will be increasingly in demand and we'll be seeing a lot more of them in the future."

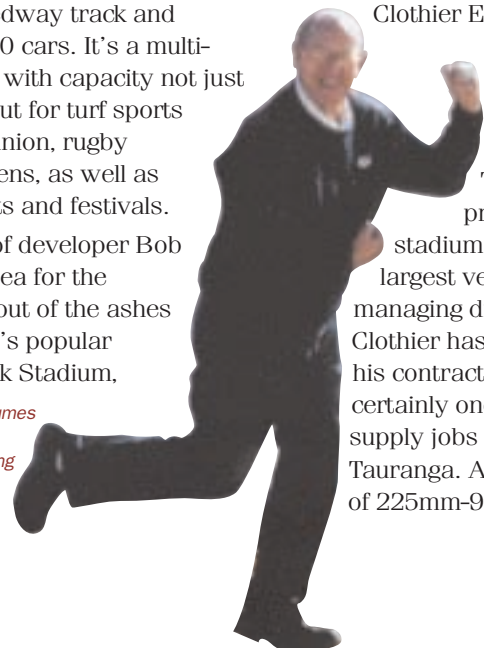
Two milestone projects in Tauranga – Todd and Pollock Baypark Speedway and the Bayfair shopping centre extension



Humes products and service play a key role in two unique projects.

The Bay of Plenty now boasts one of the most comprehensive sports and entertainment centres in the country – the Todd & Pollock Baypark Speedway. This major new stadium located on the Te Maunga/ State Highway 2 intersection began construction mid 2001 and opened at Labour Weekend 2001. The complex offers full-scale facilities – seating for 17,500, including corporate boxes, a 470m long speedway track and parking for 4000 cars. It's a multi-purpose venue, with capacity not just for speedway but for turf sports such as rugby union, rugby league and Sevens, as well as outdoor concerts and festivals. The brainchild of developer Bob Clarkson, the idea for the complex arose out of the ashes of the Tauranga's popular original Baypark Stadium,

Right: Tony Wilson, Humes Tauranga sales representative providing some muscle.



dismantled in 1996 to make way for a housing development. After five years of planning and searching for a suitable site, an interesting property was finally secured at Te Maunga, halfway between Mount Manganui and Papamoa. The massive contract to supply the majority of the earthworks and all the drainage was won by leading local contractor Clothier Drainage Limited and Clothier Earthworks Limited, and Humes was selected to supply all pipe products for the project. The earthworks project for Baypark stadium is one of the largest ventures Clothier managing director Grant Clothier has ever undertaken in his contracting career, and certainly one of the biggest supply jobs for Humes Tauranga. Around 1000 metres of 225mm-900mm Titan

concrete pipes, some 60 manholes and cesspits, together with PVC sewer pipes and fittings were provided.

"This was a unique project to be involved in," says Humes Tauranga Sales Representative Tony Wilson. "The speed of progress in construction has been remarkable.

In excess of 100,000 cubic metres of fill material was brought in for the carpark, and a similar amount for the stadium site.

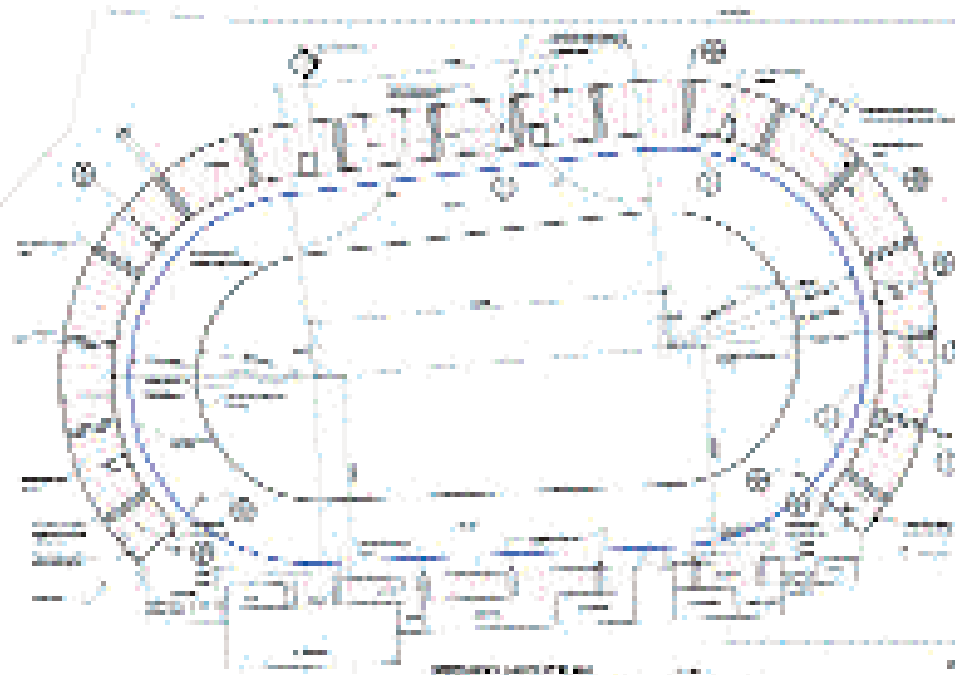
"In terms the amount of pipeworks and fill material required, this has been a giant job," explains Grant Clothier. "We filled the site area with sand – 37,000 cubic metres in the

track and facilities area alone – compacted it with fill, and then trenched through the rubble layer to lay the pipes on top of the sand. We've created a stormwater mainline to run alongside the highway, and constructed 845m of piping to take water from the pits area."

Humes and Clothiers have also joined forces on another exciting local development, the extension to the Bayfair Shopping Centre at Mount Manganui. Bayfair is set to be one of the largest shopping plazas in New Zealand, both in terms its size and the variety of shops available under one roof.

Following the demolition of the Bayfair Tavern on the corner of Manganui and Girvan Roads, preparation began for a new three-storey carpark and a retail area. This required extensive soil compacting and pipeline installation. Humes was selected to supply all PVC sewer and watermain pipes and fittings, concrete pipes, manholes and cesspits as well as polyethylene pipes and fittings for special stormwater requirements.

"There were a large number of sub-contractors and equipment involved



We've had to be very flexible in meeting supply needs and have worked very closely day-to-day with the Clothier Group of Companies." Special preparations were required to ensure a suitable surface to withstand the rigours of the speedway track, grandstand and carpark. The low-lying ground on the site was filled with a sand/rubble mix and compacted for a firm base to bring the earth level up to the required position.

Top left: The Baypark Speedway stadium during construction.

*Above: The plan for the Baypark Speedway Stadium
 Right and far right: Preparation for the Bayfair carpark and the retail stores.*



"This was a unique project to be involved in. The speed of progress in construction has been remarkable."

in this job, and as work progressed we needed to co-ordinate work carefully," says Tony Wilson. "Access was often difficult, and deliveries tended to become smaller and more frequent as the project developed. We had to maintain good relationships with all contractors on site, not the least our own customer. Although there were a large number of construction companies involved, the project progressed smoothly and all drainage systems are now in place. Visit The Todd and Pollock Baypark Speedway website on www.baypark.co.nz.

[trenchtalk](http://trenchtalk.co.nz)



New Faces



Geoff Billing
 Technical Sales Representative,
 Penrose

Geoff services the South Auckland region. One of Geoff's major objectives is to develop and grow smaller areas of the market. Geoff completed his NZCE Civil 18 months ago and has worked on utilities contracts in Gisborne. Since the move north, he has become very familiar with Auckland road maps!



Andrew Price
 Rural Sales Representative,
 Waikato/Bay of Plenty

Andrew brings a wealth of experience with him to this new role. Most recently, Andrew worked as a Rural Sales Representative with Marley and before that was a dairy farmer for 18 years.



Glen Cooley
 Sales Centre Manager, Thorndon

Glen started with Humes after 17 years in the tyre industry.

"With the huge number of items we supply and the various demands associated with the role, I am certainly keeping busy in this new industry," says Glenn.



Glyn Thomas
 National Sales Manager

Glyn comes to Humes from Firth Industries where he spent the past 14 months as Marketing Manager. Before that role, he spent 11 years in Australia in general management roles for various industries. Glyn's plans for the new role include "increasing Humes' market share in the supply of all pipelines."



Martin Storey
 Technical Sales Representative,
 Auckland

Martin comes from a "poly jointing" equipment company which he says "has really helped with my knowledge in the areas of Concrete, Valves and Watermain Fittings." Based at Humes Albany Sales Centre, Martin services Auckland North and most recently he has taken on the responsibility for the Northland market. Martin was instrumental along with Kevin McMillan in establishing the new Humes Sales Centre in Whangarei.



Adam Clark
 Technical Sales Representative,
 Wellington

Adam is an ex-Hutt City engineer who joined Humes in October. Adam is keen to continue strengthening current customer relationships through improved services and better communication, and says this will happen through a 'team' (Together Everyone Achieves More) effort.



Kent Smith
 Technical Sales Representative,
 Wellington

Kent started at Humes after finishing with Fletcher Steel. With qualifications including a B.Com, NZ DipBus and Dip Mgt, he is well qualified for his role. Kent plans to improve local knowledge of e-commerce business solutions and to also improve quoting and communication procedures.



Jayne Sikanen
 Sales Centre Manager, Penrose

Jayne comes to Humes from positions of Branch Manager and sales within the equipment hire industry. With her strong background in sales and operational management combined with her expertise in heavy equipment hireage, Jayne is more than qualified for the job. Jayne's plans for the role include "improving the level of service to existing customers and reaching out to new customers."



Gary Aitchison
 Sales Representative, Auckland

After 10 years in the RNZAF as an Aircraft Technician Gary worked for Marley NZ first as a Sales Rep in plumbing & drainage for the Auckland and Bay Of Plenty regions, finishing as Market Manager Plumbing & Rural for the North Island. Gary is looking forward to his role at Humes and will be concentrating on the South Auckland Drainage and Watermain market, and Export Sales into the Pacific.

Double insurance provided in Riflerange Road



Left: Special handling was required for the Duracem manufactured pipes.

the pipes require special handling while laying," Humes Hastings plant manager Ross Baker explains. Ross complimented Riflerange Road contractors Brown Drainage Limited on their efforts in getting the pipes laid. "They did a really good job, and took the extra care needed to make sure the pipes were put together correctly." As well as achieving job objectives with the use of an excellent product, the project was completed in approximately seven weeks, well within the 26 week contract period.

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Above: Brown Drainage Limited taking extra care to get the job right.

Understanding the project requirements and delivering the right solution are key to winning this Hamilton job.

Humes' ability to come up with creative, workable solutions once again proved invaluable, this time for the Hamilton City Council. The Council needed to duplicate a 30-year-old wastewater pipeline in Riflerange Road, Hamilton. The existing pipeline was experiencing the usual problems associated with aging infra-structure, including hydrogen sulphide attack and groundwater infiltration. The main problem, however, was insufficient capacity due to the nearby hospital and continuing development of this residential and industrial area. During periods of heavy rain the capacity was further reduced due to increased infiltration.

"They found the Humes option, proposing a pipe with 'double insurance' to prevent damage from hydrogen sulphide attack very attractive."

Preliminary discussions at design stage with the Council revealed that staff were seeking a pipe suitable to withstand domestic and industrial sewage attack during the expected design life of the pipe. Humes were able to offer the ideal solution – winning the contract with an 825 diameter rubber ring jointed pipe with Duracem cement and a sacrificial layer. Council staff were looking extensively into the types of pipes to be used. They found the Humes option, proposing a pipe with 'double insurance' to prevent damage from hydrogen sulphide attack very attractive. Humes were able to be competitive with their offer and were picked to supply the materials for the job. "Because of the Duracem additive,



The right products, people and solutions reflect Humes' commitment to the rural market.

Over the past three years, Humes has developed and implemented a rural strategy built around rural distribution channels, focused sales people, strong customer relationships, supply partners and offering appropriate products.

In a very competitive market, Humes has marked its position with a range of products and the use of value added services in the distribution channel.

Humes has gained ground by manufacturing and supplying water tanks, stock underpasses, well liners, concrete culvert pipes and the new and innovative Stock Stop™ (cattle stop). In providing total solutions for customers, Humes has chosen suppliers who provide products that compliment

our range, focus on technical innovations and support our sales team. Humes is achieving success through the employment of irrigation and reticulation design specialists. Supported by an effective network of sales and production staff, the designers have been able to discuss solutions on-farm, giving Humes the opportunity to further understand purchasing



"Humes has developed and implemented a rural strategy built around rural distribution channels, focused sales people, strong customer relationships, supply partners and offering appropriate products."

decisions and to profile Humes' range directly to customers. This valuable contact, coupled with effective customer service through the Humes Sales Centres and the frequency of the rural advertising and promotions, has given Humes a high rural profile. National Field Days are another useful tool for Humes. Knowledge gained from direct contact with rural customers at the Central District Field Days at Fielding, the South Island Field Days at Lincoln and Mystery Creek, have resulted in several product development opportunities which will be launched in the near future. Look out for the Humes' site at the Waimumu (SI) Field Days 27th & 28th February 2002, Northland Field Days – Dargaville 28th February-2nd March 2002 and CD Field Days – Fielding, 14th-16th March 2002.

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Above left: Humes troughs are specially designed for maximum performance.

Below: The Humes stand at the Rural Field Days.

Mercer Long Swamp motorway extension overcomes some soggy challenges



Challenging project calls for unique drainage solutions.

The first section of the new Waikato Expressway between Mercer and Long Swamp (a major Transit New Zealand project), saw Humes win the contract to supply PVC, PE, concrete pipes along with Titan manholes. Stage 1 entailed completing the enabling works, which included all the ground preparation needs for the initial sections of this significant upgrade of State Highway 1. The entire roading network, which is planned to take at least fifteen years, will ultimately improve safety and traffic flow between Auckland and Cambridge. New expressway extensions are planned, original segments realigned and in some cases hills shifted. In all a major design, requiring substantial pipelines and drainage.

For Stage 1 Humes supplied 1 km of Titan concrete pipes (300 diameter to 1800 diameter), manholes (1050 diameter, 1200 diameter, 1350 diameter and 1800 diameter), of which one measured 2.5m square by 4.0m deep. The latter manhole forms the transition between an existing pipeline running beneath the current state highway to a new 1800 diameter pipeline now running across the new highway in development.

Site Engineer Mark Fenton, from W. Stevenson & Sons, oversaw the drain installation and preloading.

"This project has presented many challenges," he comments. "The enabling works have been constructed in a peat swamp – the motorway will essentially 'float' on top of it – the timeframe has been tight and the weather conditions difficult. Because of the porous, watery nature of the soil we needed to undertake a special preparation process involving laying down a layer of sand, inserting wick drains, and then covering the lot with a huge amount of preload. We then laid the concrete pipes to join into the existing pipes or create new structures. Torrential rain at the beginning of May (65 ml of rain fell in a few days) and then short drying periods meant work had to be halted for the whole month. Our day-to-day product requirements were often specified on short notice, but Humes were always able to meet our needs – they really provided an awesome service."

Humes Hamilton Sales Centre Manager Mike McKeown explains about some of the products needed for the initial earthworks. "As well as the concrete product we supplied around 15 km of HDPE subsoil pipeline ranging in sizes of 65 mm, 110 mm and 150 mm, and associated filter sock. The 25 special manholes we provided were needed to accommodate sensitive equipment to

monitor the settlement of the massive preload used in this project. The job had a lot of specific product needs and we developed strong ongoing communication with Stevensons to ensure the right materials were delivered on time and in spec as required."

Footnote:

The Mercer-Long Swamp extension has been deferred indefinitely due to project cost restraints and difficult ground conditions as experienced on the pre-load section.

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Above left: The new upgrade will improve safety and traffic flow between Auckland and Cambridge.

Above: A variety of Titan concrete pipes were used to complete Stage 1 of the project.

Novel product design for walkway underpass – a New Zealand first!

For the first time in New Zealand Humes, supplied product for a culvert jacking project while trains continued to run overhead.

Humes' expertise came to the fore recently in a unique extension to a pedestrian walkway in Tauranga.

The Tauranga District Council were creating a path through the Matua Saltmarsh, an attractive scenic reserve where native vegetation and birdlife are being regenerated.



The two kilometre track linking the suburbs of Otumoetai and Matua passed through a busy major intersection of railway line, and an underpass was necessary to avoid safety problems.

The project presented a number of challenges – the need to work around an operating rail track, the presence of a large fibre optic cable one metre below the base of the tracks, the tidal levels of the ground, and the need to come up with a solution that would meet the requirements of the Council and Tranzrail. Tauranga District Council proposed installing a series of linked box culverts to be jacked into the soil to create a ten metre tunnel to run under the line. The idea was accepted, resulting in the first ever



Above: The boxes being "craned" into position. Note the one meter distance from the track to the culvert. Box jacking underway.

culvert jacking project of this type in the country.

All preparation and contract documentation for the underpass was undertaken by the Tauranga District Council in-house. Instead of using outside consultation, all initial investigations, methodology and negotiation with other parties was carried out by Council staff. "We had to ensure that the underpass would meet Tranzrail's prerequisites, as well as Council concerns about the uncertain ground conditions and protecting the saltmarsh environment," says TDC engineer Jos Nagel.

"The option we took – a specially tailored one – was to thrust six Humes 2x2m square culverts into the embankment and to then join them with post-tensioned stressing cables (not Reid bars as is traditionally used). These custom made steel cables are able to withstand 6,525 psi or 45 mpa. The joining method ensured that the culverts locked as a solid unit into a sort of bridge under the railway and gave the whole structure increased strength. During construction, a welded steel shield was created to attach to the first culvert jacked in, and each end unit had flared edges made specially for the underpass entrance ways. So this was in many ways a complex job, but Humes' expertise and solutions helped satisfy all the parties involved."



Above: A real success – throughout the project railway use continued. Here a train makes its way from the Port of Tauranga to Auckland.

The whole project had to be managed very closely, entailing much consultation between all those involved, and Humes had to provide design loadings to satisfy Tranzrail specifications. In a four week period, the custom designed culverts and end units were manufactured at Humes' Papakura plant. "The end units for the box culverts were pre-cast in three stages to create the specially designed tapered ends," explains Production Supervisor, Dennis Crosby. "These were the first of their kind at Papakura – it was a really worthwhile project to work on."

Experienced local contracting firm, Armadillo Holdings, was selected to install the underpass. "I've had a lot of involvement in pipe jacking and thrusting, but this was my first box culvert jacking job," says Managing Director, John Dohnt. "We used a hydraulic jacking machine exerting 350 tonnes of force, but had to work to a very shallow depth between the culvert and the track. We had no upper support, so the culverts had to be able to carry the weight of a train on the line straight away. Because of the heavy line usage, the track had to stay in operation throughout the construction period. Tranzrail agreed to reduce the speed of trains passing

over us, but it made for interesting working conditions at times!"

Despite the unique requirements of the Matua Saltmarsh Underpass, and the novel design solution reached, the job was highly successful, taking only a month to complete!

"We had some tight deadlines, but everyone did their utmost to progress this job. The whole project went according to plan, was on budget and on time," says Jos Nagel. "In fact, Humes delivered the units a few days early! We now have an

"We had to ensure that the underpass would meet Tranzrail's prerequisites, as well as Council concerns about the uncertain ground conditions and protecting the saltmarsh environment."

extremely attractive underpass decorated with a beautiful mural by the students of Otumoetai Intermediate and College art departments. The Matua Saltmarsh walkway and underpass is now one of the most used in the city."

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Below: The finished project is the most used walkway underpass in Tauranga. The mural on the culverts was painted by Otumoetai College and intermediate students and is protected by graffiti paint. It is an underpass that the community can be proud of.



Top: The custom designed boxes on site ready for installation.

Above: John Dohnt, Managing Director of Armadillo Holdings Limited inspects progress as the "leading shield" pulls the box culvert through the underpass.

Right: Jacking continues with post-tensioned stressing cables to hold and secure boxes in place.



Humes Whangarei Sales Centre – now open for business

In November 2001, Humes opened its 20th sales centre - in Whangarei



Fletcher EasySteel and will offer a full range of pipeline, fittings, watermain and precast products.

The new Sales Centre Manager is Kevin McMillan who is most definitely a local, being born and bred in Whangarei. Kevin has a diverse background in customer services, technical support and manufacturing. This background includes nine years with Firth Industries and for a local concrete precast firm that



manufactured tanks, pipes and a range of rural products. Kevin is committed to delivering superior customer service and this, teamed with his experience, will ensure the success of the new sales centre. Martin Storey, Humes' technical sales representative, will provide front line sales support and expert technical advice.

In addition to the new base in Whangarei, Humes has an established reseller network through Firth operations in Kaitaia, Puketuna, Kawakawa and Kauri – each of which can supply the core range of Humes products in their respective areas.

Humes now has 20 sales centres and two mobile sales centres, nationwide from Whangarei to Invercargill.

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The opening is an important move for Humes, as the Northland area population has grown at almost twice the rate of New Zealand's total population over the past 20 years. Northland is experiencing growth in key industry sectors that require a local presence and increased face-to-face contact.

The Humes Whangarei Sales Centre is situated on the busy main port route – Rewarewa Rd, to the rear of

New concrete pipe for the South island

TITAN VCP has been successfully launched into the South Island, with pipes supplied to Nelson, Christchurch, Timaru and Dunedin.

This innovative pipe, manufactured at the Humes Plant in Alexandra, is the first concrete pipe development in the South Island for 25 years!

Titan VCP pipes are manufactured in a process that combines existing vertical plant technology with a new innovative joint and rubber ring jointing system. This "D" ring gives positive jointing as the ring rolls back past 180 degrees pulling the joint home and locking it in place – thus minimising ring roll back.

VCP has met the relevant approval standards from City Councils and has been well received by Humes' customers. Townsend Contracting has



recently used Titan VCP in an industrial subdivision (Mary Muller Drive Industrial Estate – Woolston) in Christchurch, where contractors were able to see first hand how the innovative joint made pipe laying quick and effective.

Brent Cooper, foreman of Townsend Excavating Ltd (Christchurch) says the new "D" rubber ring, made for fast jointing in the wet conditions he faced

while installing 50 metres of Titan VCP for the main stormwater line. Titan VCP is available in 225 diameter only, can be installed into all infrastructure applications and is manufactured to NZS 3107:1978.

Contact your nearest South Island Humes Sales Centre for more information. [trenchtalk](#)

Above: The new Titan VCP pipe.

Wood stormwater upgrade



A major stormwater upgrade in one of Nelson's oldest areas presented Humes and contractors Fulton Hogan and Ching Contractors Ltd with some extra challenges.

Extraordinarily high rainfall in Nelson in October 2001 (235% higher than average!) meant there was plenty of water around to further complicate this stormwater upgrade.

"The site has traditionally been a low lying area," explains John Bannock, Fulton Hogan's project manager for the Wood stormwater project, "and the high ground water is always a challenge. It didn't help that November then had 181% more rain as well!"

"We just had to work around the water," adds Steve Radcliffe, Humes Sales Representative for Nelson. "Pumps were going most of the time we worked on the job".

Previously a city landfill, strict resource consent requirements meant that all excavated material had to be removed from the area. Fulton Hogan were required to build a temporary truck tyre washbasin to ensure dirt and landfill materials were not deposited on public roads.

As the pipeline is a pressure stormwater line, Humes were required to manufacture 250x1200 diameter pressure pipe, 120 metres

of 900 diameter pipe, 1200 pressure bends (concrete) along with 84 box culverts all supplied from the Christchurch plant.

At maximum flow the pipeline will move 6.7 cubic litres per second, so all pipes supplied by Humes were individually pressure tested to 10 metres of head. Careful installation was essential, due to the fact that pressure pipes are manufactured with no lifting eyes.

Delivery of the pipes was also carefully managed - at one stage there were seven trucks arriving for the project carrying 36x1200 diameter pipes and 18 box culverts! Prompt arrival of the pipes and culverts was crucial and John Bannock was pleased with the way TNL Freighting and Humes worked to ensure this was achieved on schedule. At the project's start, sub contractors Ching Contracting Ltd.



had to lay the twin line of 1200s through the main highway, which was also done on schedule in one night! The trench required to lay this twin line of pipes was large - three metres deep by three metres wide.

Unanticipated problems arose when the 1200 line crossed the path of a 450 AC watermain which feeds Port Nelson, Sealord Fisheries and Amatel Fisheries. A rising sewer main was also directly in the path of the new pipeline. This was overcome by building a concrete structure to support the watermain, while the 1200s were laid beneath it. Another problem was the existence of a leachate gas pipeline in the vicinity.

Designed as a three stage job, stage one had a 26 week time frame, which meant a tight schedule with little room for delays. "This was a fairly big job", says Steve Radcliffe, "it's certainly the biggest box culvert job our Sales Centre has been involved with."

With Stage 1 almost finished, Stage 2 looks set to start around April 2002.

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Above left: The twin line of the 1200 diameter Titan concrete pressure pipes under construction.

Above: The first of the Humes box culverts arrive on site.

Left: Fulton Hogan's engineers inspect the installation of the Humes box culverts.

New treatment plant for Samoa

In an effort to reduce sewerage problems for several government buildings in downtown Apia, Samoa, the National Provident Fund and various government agencies sponsored a new sewerage treatment plant.

The project was a design build venture between Fletcher Construction South Pacific and Terraviva, the parent company of Subsurface Technologies (Humes Customer).

A total of 14 Humes concrete water tanks were used in the project. 1050 diameter risers were used as pump stations collecting effluent from septic tanks around Apia. A further nine tanks have been used to house core treatment processes at the plant itself. The primary treatment process is a 5m high trickling filter constructed using two Humes 1800 diameter risers filled with hanging Sessil treatment media. This is followed by 2.5 diameter and 2.0 diameter thin wall concrete tanks housing aeration, clarifier and sludge tanks. The final water quality is achieved with a Works Filter Systems Sand Filter and ultraviolet light disinfection. Terraviva project engineer Matt Riddell said that "Humes tanks were selected for the project for their robust nature and because they could be substantially preinstalled at Humes in Papakura prior to shipping to Samoa. Our special thanks go to Denis Crosby and the team at Humes Papakura for their assistance in helping meet some tight deadlines."

The project was completed ahead of schedule and is running successfully.



Above: The Terraviva Project Team on site in Samoa.

Top right: The Humes concrete water tanks fully installed.



Last word

Everyone is entitled to their "15 seconds of fame".

Humes Thorndon Sales Centre recently featured in Toyota NZ's advertising campaign for the new release "2WD Hilux". The Humes

site was chosen to depict typical applications for the new Hilux ute.



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DISCLAIMER: Buyers and Users must make their own assessment of our products under their own conditions of use. All queries regarding product suitability of purpose or installation should be directed to the nearest Humes office for advice and assistance.

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