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CETANZ
Civil Engineering Testing Association of New Zealand

CETANewZ

The official newsletter of the Civil Engineering Testing association of NZ

Issue 22, December 2014

In this issue...

From the Editor...

Welcome to the final issue of CETANewZ for the year. December certainly came around quick! A little too quick for some of us in the industry, now facing a mad rush to finish before Christmas. It's the same every year, we stress and panic up until just a couple of days before Christmas, then think to ourselves "Oh well, it can wait until next year" as we are distracted by thoughts of fishing, relaxing on beaches and eating too much Christmas ham. If you like fishing too, be sure to check out Danny's soft baiting article, it has some great tips!

It has been a while since our last newsletter and a few things have changed here at CETANZ. In the follow up from the 2014 Conference we have had a number of fresh faces become members of the CETANZ Committee, for example a charming new editor by the name of John King has taken over from Michael McGlynn.
Michael did a great job of writing our newsletter over the last four years and we appreciate the hard work he has put in, thank you Michael!

Speaking of the conference — it was a huge success, with a great turnout of CETANZ members and people working in our industry.
I was particularly excited for the opportunity to travel for work (even though it was in Hamilton), it turned out to be a great venue and I really enjoyed it.
The conference ran very smoothly and the presentations were top notch! Read on to find out who was the winner of the coveted John Evans' award.

2014 has been a big year, I hope you all enjoy your well deserved summer holidays.
Remember to apply sunscreen regularly and drive safe!

Merry Christmas and a Happy New Year.
Yours Sincerely,

John King
Editor

Introducing…

We're happy to welcome some fresh (and not so fresh) faces to the CETANZ committee, it's great to have them on board and we value their contribution to the association. See below for a bit of an introduction on who these characters are and what they're about! They all seem to like fishing which explains a lot about the next article.

Danny Wyatt

Danny became a committee member in 2014, and has been a member of CETANZ since its humble beginnings .
For the last 4 years, Danny has been working with Winstone Aggregates, having taken on the role of Lab manager to the many nationwide labs in recent years.

Danny plays touch rugby and enjoys spending time with his family.
He also likes hunting, and as you will see on the following page — Danny dabbles in fishing just a little bit.

Curwin Boltman

Curwin joined the committee this year and is a member of the technical Group. He has been a member of CETANZ since 2010.
He is the Laboratory Manager for Fulton Hogan Auckland and has over 10 years experience. With extensive experience in testing Asphalt, Aggregates, Bitumen & Emulsion and onsite construction testing, Curwin has worked on a number of major projects for Fulton Hogan. He is passionate about Science and the technical aspects of Quality Assurance Testing
While working for Fulton Hogan Curwin completed a BE in Computer and Electronic Engineering.

In his spare time Curwin likes to go fishing and spends most of his time with his wife and two young children.

John King

John came aboard the CETANZ committee in 2014, he currently works with Geotechnics in Auckland supplying laboratory, and field testing equipment to Engineers and Geotechnical groups around New Zealand and the Pacific.

In his spare time, John partakes in a range of sports such as football, cricket snowboarding and mountain biking. He also enjoys spending time outdoors tramping and fishing.

The Red Bus!

When I first read about soft baiting for snapper I was sceptical, when talking to the guys at the fishing shops they were promoting braid, new rods and fluorocarbon leaders. How much was I going to have to spend on an outfit just to get started? To add to that, the first 'fish' that I caught with a soft bait was an octopus!

Never the less, I was determined to make it work and become successful at using this technique.

It took many hours of trial and error but I'd like to think that I have a bit of a formula for catching large snapper in the depths of 1-15m with a way that is very rewarding with exciting takes and fights.

Gear:

Any reel in the 4000 series with a smooth drag, spinning reels essentially. I have caught several beauties on a $4.50 reel secured from trademe. I use a 4- 6kg backing of monofilament with 100 – 150m of 8-10lb braid. Braid is classed by line diameter not actual breaking strength so in reality 10lb braid has a similar breaking strain to 10kg monofilament. Though this weight braid might be slightly heavier than others use, the terrain that you are forced to fight these fish in is unforgiving so you apply some good drag pressure in to get the upper hand.

Rods - a medium action rod around 6'6" to 7' is required here, it is essential to hit fish hard and drive the hook home when they take. This can be easier said than done in a large snappers jaw or through their tough armour like scales. Lifting power is also required so you want good strength in the bottom third of your rod also.

Leader, Knots and Hooks- fluorocarbon is actually pretty handy here, I don't think for the invisibility that it is marketed for, but for its durability and abrasion resistance. 20lb fluorocarbon is the go, remember the fish are 99% mouth hooked so the leader is rarely actually in the teeth area. There are many knots around but the two that I have had very good success with are the ALBRIGHT KNOT for braid to leader and the UNI KNOT for the 4m leader to hook. We work in quality control people – test your knots!! Fluro and braid a notoriously difficult to tie knots in. For this type of fishing I use 5/8ths of an ounce Nitro jig heads with 5/0 hooks (this size is similar to your conventional 7/0)

Baits:

As we are targeting trophy sized fish here, I like to use larger sized baits. 7inch Gulps in the jerkshad style have worked well for me in Nuclear chicken, Curried Chicken, New Penny, Lime Tiger and Camo, as have the Zman baits in Bleeding banana. Even a bright green colour made by Slam! Pretty simple selection but they work. In hard times the Gulps work best but this fishing triggers an aggressive reaction rather than a sniff and bite so scent is not essential. The Zman has excellent longevity and is resistant to leather jackets; I caught 27 snaps including a 21 and 11 pounder with the same Zman at one stage.

Technique:

Now Rodney holder has caught his fair share of snapper with soft baits drifting out the back of the boat, but this technique requires you to be actively casting forward in the direction that the boat is moving. Use a drogue (sea anchor) that is matched for the size of your boat and secure it from both the bow and the stern. This slows the drift and allows you to stay in the hot zones for longer. Areas to work are oceanic headlands or patches of foul, kelpy ground in bays. Polarised glasses are a must and I know that this goes against all conventional wisdom but the higher the sun is in the sky, the better success I have had. I think it is because it allows me see and place my casts more accurately in suitable under water guts or right in close to rock ledges. Don't be afraid to cast right into white-water created by the shore. This is where the kelpies and bigger fish are. Here, work your bait fast or you will get snagged. Point your rod in the direction you cast and beat it like a drum stick and wind at the same time then rest and again. Too fast and the lure is too close to the surface, but too slow and a Leather jacket will come and snip the end of your bait off and you will need to start again – they are a plague. Braid is different to cast and to avoid nasty birds nest try to roll your cast instead of whipping it or flicking it. Big snapper smash it mid water- hang on for the ride, these scraps can be hostile. The day I landed my PB snapper, the bait had only just touched the water and not long after, it exploded with piper! This wasn't from the bait hitting the water disturbing them; it was from old man snap rising up to dominate the food coming into his area. From my time spear fishing, I know that these fish love to idle in a gut waiting for something to ambush swim past above them. Snapper are far more predatory than people give them credit for, they are used to attacking from below – think about where their eyes are situated.

The fight:

These fights are brutal; the fish hammer the bait really hard and react immediately when the hook is set. We are set to react quickly when this occurs as any hesitation can mean that the fish you have worked so hard to hook will have you in the bricks in no time. The motor is started and the fish is followed slowly. You still need to keep the angle on the line though as I have found if you get over the top of them too quickly you can shift the direction the hook is pulling in the fishes mouth and it will pop out!! This is devastating after a 10- 15 minute scrap with a good fish. Sometimes, despite all best intentions, a fish will wrap you around some kelp. This is where braid can be good as it can saw through the kelp if worked carefully enough and you are back in business fighting your fish again. Should braid touch a rock however - fish wins!

That's about it folks, don't panic at the boat and lunge with the net. Let the angler guide the head of the fish to the net – 'slows for pros'. Take photos, weigh/ measure the fish (I always calibrate my fish scales with my lab scales) and if it's your first – they do smoke up well. However, do remember that these are the best of the breeding stock. The Big Old Fecund Female (BOFF) hypothesis theorises that older female fishes produce significantly more, stronger offspring, this means that by trophy fishing, potential future fish stocks are damaged at a greater rate than if taking smaller members of the species for the table (e.g., for New Zealand Snapper 1x 12.5kg female fish holds the same reproductive potential as 212, 1.2kg female fish) (Pilditch, 2013).

Danny

Danny with his PB, a nice 23 Pounder

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A Connexis Laboratory qualification Assessor workshop was recently held in Wellington, and the calibre of the assessor for these qualifications is excellent.

There was some good discussion around assessment practice, and around the resources that the qualifications are based on. As a result of these discussions, the resources are soon going to be available in an electronic format to allow candidates to enter their answers on the computer.

All the qualifications on the NZQA framework are under review at the moment, and this includes the Laboratory ones. The qualifications, as they are now, have been submitted to NZQA for approval to develop and are waiting to be assigned an analyst.

There is an opportunity for feedback on the qualifications, the unit standards and the resources so if you have any comments that you would like to make, please go to the following link on the Connexis website http://www.connexis.org.nz/troq/troq-feedback and this will get passed onto whoever will be managing the TRoQ (Targeted Review of Qualifications) process.

John Evans Award,

The papers and presentations given at the 2014 CETANZ conference were fantastic. I was blown away by the wide range of interesting content and ideas that were explored.
It was a great way to gain insight into what the presenters have been doing and what has been happening within our industry.

I don't think I could decide which was best, but thankfully there were a number of CETANZ members in the audience—watching, listening and silently judging the presenters to discern which of them the esteemed John Evans award would be bestowed upon.

The John Evans award was first presented to Paul Burton for best paper at the 2012 conference. It is in remembrance of John Evans, a founding member of CETANZ who was integral in advancing the association to where it is today. The award pays tribute to his vast knowledge and commitment to the industry, particularly in encouraging the development of young staff.

The 2014 John Evans Award went to Chapa Jayalath who had an extremely well presented paper on Overlay testing as a means to assessing thin overlays. I have heard that Chapa practiced the presentation many times in the lead up to the conference, this was evident in the clarity of delivery and in her knowledge of the material. Congratulations Chapa!

The John Evans award being presented by Dave Hotham, a long time friend and colleague of John Evans

This was a very successful conference and it must be noted that a large part of this success was due to the enthusiasm and commitment of our conveners Michael McGlynn and Sarah Amoore.

I know that a tremendous amount of work was put in and it is easy to forget just how much preparation is required to make a successful conference. So big thanks to Michael and Sarah.

Written by John King

Winstone's M2PP Site Lab has International Flavour

With 10 staff from more than five countries, the Winstone Aggregates site-based laboratory for the MacKays to Peka Peka roading project has a particularly cosmopolitan feel to it.
The recently accredited lab was set up to handle the daily requirements of this large infrastructure project and the team's workload includes the testing of soils, aggregate and concrete, as well as an extensive amount of fieldwork.

The Laboratory Manager, Portly Griffiths is a Welshman who came to the project via The Pilabara and Queensland's railways. While colleagues Jason, Ken, and Armaveer are from Ireland, Alaska and India respectively. Meanwhile, staff member Jaden has strong Iwi links in Huntly and Waihau Bay. In three short years with Winstone's, Jaden has diligently worked his way up to become an IANZ signatory.

The MacKays to Peka Peka project is a $630million, 18km stretch of four lane highway. It forms part of the Wellington Northern Corridor project which runs from Wellington Airport to Levin and is one of the government's seven 'Roads of National Significance' projects. It is also the major enabling works for the Transmission Gully project.
The lab team's combined experience comes from overseas, but also from most major roading projects here in New Zealand in recent years including the Northern Gateway, Te Rapa, The Taupo Eastern Link, Tauranga's routes PJK, Ngaruawahia and Rangiriri bypasses.
Their combined breadth of experience means they are well prepared for just about any eventuality.

WINSTONE AGGREGATES

Faces of the Industry

In this issue, we have an industry profile of Kuli and Alistair from Coffey Geotech. They are technicians in Auckland and deal with a lot of testing procedures. Read on to learn more about that makes them tick.

Kuli Faletau

Who do you work for and what is your role?

I work for Coffey Geotechnics in Auckland I am mainly in the lab doing PI tests and learning specialty testing, I sometimes go to site when we get busy

What is the most enjoyable part of your role?

After joining Coffey from another lab it is good to be able to go home at a decent time and the team I work with are great.

What is the best piece of advice you've ever been given?

Just go with the flow, do not rush into anything as you may regret it later on.

What do you enjoy doing outside of work?

I love spending time with my wife and three kids, they keep me busy at weekends which does not give me time for much more

If you won the lotto next Saturday what would you do?

I will give some to my workmates and buy a big house, have more kids, (Don't tell the wife I said this) then continue with my job with Coffey,

Alistair Brown

Who do you work for and what is your role?

I work for Coffey Geotechnics in Auckland I am mainly on site doing fill control but occasionally in the lab learning other tests.

What is the most enjoyable part of your role?

I finding that interacting with all different clients from different parts of the world every day makes my job more satisfying

What is the best piece of advice you've ever been given?

Work in a way that if you are ever asked if you are proud and happy with what you have done, the answer is always YES

What do you enjoy doing outside of work?

Meeting up with friends and just relaxing, pool, board games, things like that

If you won the lotto next Saturday what would you do?

Probably very little, it would take a while to sink in, but probably just invest in a house

Ground Penetrating Radar (GPR)

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- Measuring pavement thickness
- Measuring concrete slab thickness
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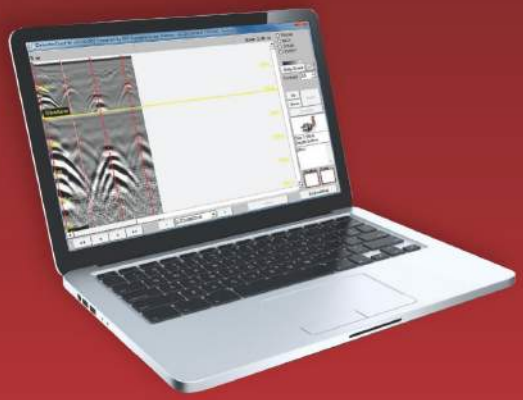

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In order to raise awareness of Health and Safety in the workplace, CETANZ is publishing Safety Alerts. These reports cover in detail serious incidents that occur. The following injury was sustained at a lab where guarding was in place on many of the machines, but unfortunately these things do still happen and this serves as a reminder that we need to stay vigilant and always consider the safety of ourselves and our co-workers. Please see the first CETANZ safety alert below:

CETANZ

ENVIRONMENT & SAFETY ALERT

SAFETY ALERT # 001

Employee's hand caught in rotating drum of Soil Processor Machine

Actual consequence: Significant Injury - Cut to right hand, requiring hospital treatment

Potential consequence: Potential restricted use of fingers through tendon damage

What Happened

- Employee was sieving out soil using the soil processor machine
- Employee noticed soil deposited on crossbar underneath the rotating drum of machine
- Used hand to reach under machine to remove deposited soils from bar
- Hand was caught between stationary cross bar and the bar on the rotating drum (see photos below)

Initial Determination of the Root Causes

- Inadequate guarding of underside of machine
- Rushing to get job completed by end of day
- Failure to comply with safe operating procedures

Immediate Actions

- Employee received medical treatment at local A & E, followed by treatment at hospital to check, clean and suture wound.
- Incident investigated by a team of employees from business and independently investigated by Worksafe New Zealand.

Immediate risks / learnings / corrective actions

- Soil Processor machine requires additional guarding.
- Need to carry out a risk assessment of all machinery used in the lab and implement controls around the unguarded equipment.
- Complete program to ensure that all machinery is guarded to the AS/NZ 4024 standard.
- WorkSafe issued prohibition notice for Soil Processor Machine.

WorkSafe NZ Investigation outcome / learnings / recommendations

- Laboratory had almost completed a major guarding project, the soil processor was assessed to be low risk and was last on the list. The Laboratory had substantial EHS systems and a high level of staff participation.
- Training records were not completed at the time of training and direct supervision was not provided until sign off.
- WorkSafe decided not to prosecute in this case due to the substantial recent improvements at this Laboratory.
- WorkSafe issued an Improvement Notice that suggested the following:
  1. Complete Risk Assessment of all equipment and tasks.
  2. Complete guarding program
  2. Improve staff training in Hazard ID
  3. Improve policy statement in regards to who can train and when the technician can be signed off.

Completed Soil Processing Machine Guarding

- Once Worksafe approved Soil Processing Machine guarding plan, prohibition was lifted and Lab was able to use the machine again.

Other Information

- Incident occurred on the 10th of September 2014 and the prohibition notice was lifted on the 21st of November 2014.

Written by Jayden Ellis

That's a big concrete cylinder..

The University of Illinois Urbana-Champaign hosts an annual Engineering Open House day. One of their activities involves crushing a 45cm wide, 91cm high concrete cylinder. Using the biggest compression machine I have ever seen.

See the full video here: http://youtu.be/cfVvzjVzeE0
The cylinder fails at 725,747.8 kg of force for anyone that prefers metric, or (7,119,585 N).
The size of this machine is pretty ridiculous, as shown in the images below.

Internal Vacancy

Lab Technician- Nelson

- Full time salaried position and with other company benefits
- Beautiful part of the country- great lifestyle, plenty to see and do

The role;

This is a varied position with great prospects. Our lab based in Nelson specialises in asphalt, aggregates and soil testing. Due to the materials that will be tested this can be a physically demanding role.

- Asphalt and bituminous materials along with some aggregate and soils testing
- Field work as required

About you;

- Previous experience in materials testing is preferred but not essential as on the job training will be provided.
- A full class 1 licence is essential.
- You will have a strong focus on accuracy and you will be keen to increase your technical knowledge.
- You will be deadline driven
- Computer literate and excellent communication skills.

Apply online today with your CV and cover letter. For more information, please contact Katie Berry on 03 336 5107. Successful applicants will be required to pass a pre-employment medical and drugs screen. Please be advised the office is closed from the 19th Dec- 12th January.

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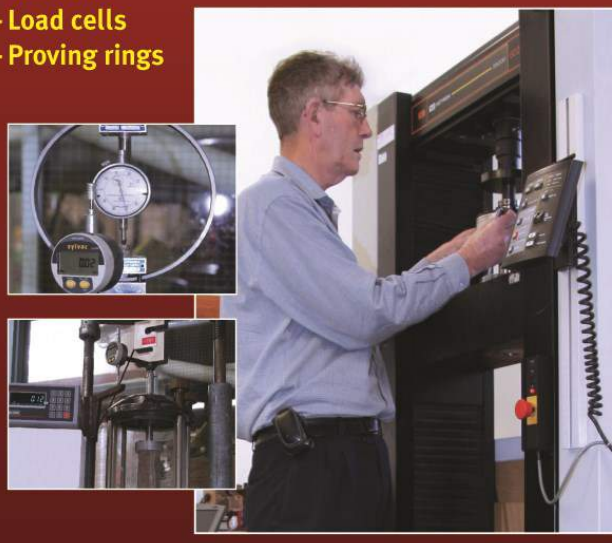

Civil Testing Equipment

Nuclear Density Meters, Shear Vanes, Impact Testers, Concrete Airmeters, Schmidt Hammers, Measuring Wheels, Scala Penetrometers, Skid Resistance Testers and more...

Metrology and Lab Testing Equipment

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