

Project	Hydro Kurri Kurri Site Redevelopment Project	From	Sonya Pascoe
Subject	Community Reference Group Meeting	Tel	1800 066 243
Venue/Date/Time	Thursday 21 October 2021 MS Teams video conference 6.03pm – 7.47pm	Job No	2218982
Copies to	All committee members		
Attendees	<p>Mr Richard Brown – Managing Director, Hydro Kurri Kurri (RB)</p> <p>Mr Andrew Walker – Hydro Kurri Kurri Project Manager (AW)</p> <p>Mr Kerry McNaughton – Environmental Officer, Hydro Kurri Kurri (KM)</p> <p>Mr Andrew Neil – Manager Strategic Planning, Maitland City Council (AN)</p> <p>Mr Toby Thomas – Community representative, Towns with Heart (TT)</p> <p>Mr Iain Rush – Cessnock City Council (attending for Martin Johnson) (IR)</p> <p>Mr Alan Gray – Community representative - Retired Mineworkers (AG)</p> <p>Cr Darrin Gray – Cessnock City Council (DG)</p> <p>Mr Michael Ulph – CRG Chair, GHD (MU)</p> <p>Ms Sonya Pascoe – Minutes, GHD (SP)</p>		
Guests/observers	NA		
Apologies	Rod Doherty and Bill Metcalfe		
Not present	<p>Ms Tara Dever – CEO Mindaribba Local Aboriginal Land Council (TD)</p> <p>Mr Brad Wood – Community representative (BW)</p> <p>Ms Debra Ford - Community representative (DF)</p>		



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1 Welcome and Acknowledgement of Country

Meeting commenced at 6.03pm

Michael Ulph (Chair) (MU)

Acknowledgement of country.

Sonya Pascoe from GHD taking minutes.

2 Meeting agenda

- Demolition / remediation update
 - Approvals, rezoning and other items
 - CRG questions and answers
-

3 Welcome and meeting opening

MU welcomed attendees, acknowledgement of country and noted apologies.

MU asked those present to declare any pecuniary interests.

4 Last meeting minutes

AG moved the minutes.

TT seconded the minutes.

5 Project Update

RB: So, like last meeting we'll kick off with a Covid update, and it was only a matter of time I think we might've said a few meetings in the past before we came face to face with it and in fact in the last few weeks we've had a positive case on site, which as things turn out probably was as good as we could hope for in terms of the response. There were four people who were considered close contacts of the positive and there were a bunch of others who were considered casual and low risk, so they were primarily driven by vaccination status and as you're probably aware, that now determines quite significantly what you are considered, in terms of your proximity to the close contacts or to the positive person.

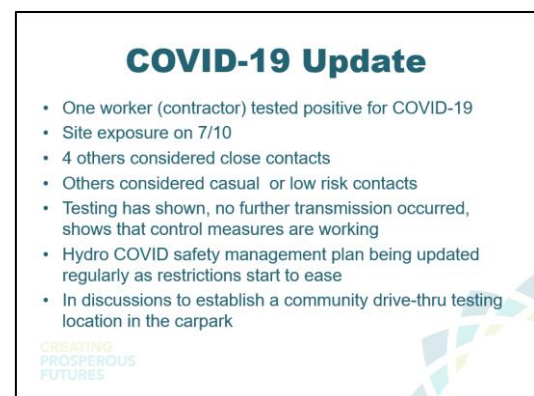
That all said, that period of two weeks has passed today, and there have been no further transmissions from the close contacts or from the casual ones, so that is good. That means all of the safety measures that have been put in place by the project team and contractors have been effective which is great.

Of course, we are now moving forward in terms of easing the restrictions. We're adopting the easings as things go and it's quite frequent as you well know. We've had a Covid plan last week and another this week and they are different, and we're starting to bring more people back on site. It's still a voluntary thing but we'll probably find that most of us will end up back on site very shortly. I can speak personally that I've been waiting for the kids to go back in school which is effectively next week and I'll be back in the office from next week.

Something related to Covid is that I've been in discussions with one of the private pathology companies in looking to set up a new drive thru testing centre on site. The expectation is that you know over the next few months, now as the society opens up a bit more there's likely to be more transmission so they're looking to establish more locations for this, they are looking to set up in our carpark. They approached us and we said sure, if you can manage the traffic there appropriately then we are more than happy to help. That could be something that gets set up in the next couple of weeks.

And that's it, that is our Covid update. We will touch a little bit in the end of the meeting in terms of these meetings going forward in the next meeting at least and I'll hand over to Andrew.

MU: Any questions for Richard first before going forward? Thanks Andrew.



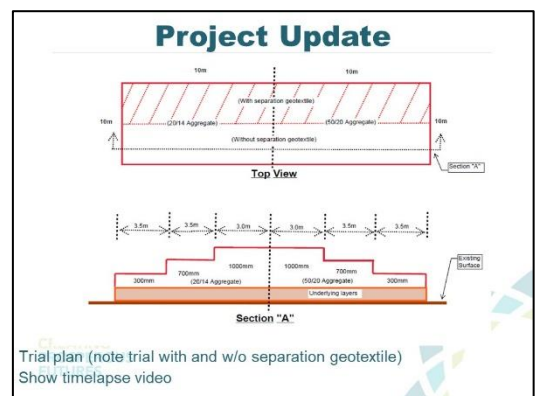
AW: Thanks Richard. So, I'll give a bit of a project update. Last meeting I mentioned that we did a field trial to simulate the lining of the floor of the cell and there is another field trial coming up to simulate the side wall of the cell, specifically the soil confinement layer that is to protect the side wall from the waste. I'll just switch to a video, we've got a timelapse of that field trial. There's no sound, it's just the timelapse. And then once you see it, it will probably make more sense and then I'll explain it.

So this is the secondary barrier going in followed by a 300 mm sand layer and they're tracking equipment over the sand and then exposing the sand to look at any damage exposed to the HDPE and then they're replacing the sand and they're placing the primary liners so GCL, HDPE, protection geotextile, and then 300 mm of drainage aggregate and in some areas the aggregate was 700 mm thick and a metre thick and then after the equipment was tracked over the drainage aggregate they then peel it back and then expose the liner to see if there's any damage caused to the liner from the contractors methodology (the type of equipment and the way it's used). So we actually ended up doing two field trials. The first one wasn't successful. The second field trial was successful.

So this is the plan of the first field trial so there are different thicknesses of drainage aggregate. 300 mm which is the standard thickness on the floor of the cell, 700 mm, and 1000 mm, and one side was the finer aggregate (left side) which was 14 to 20 mm and the other side was the coarser aggregate 20 to 50 mm. The reason that there's two different types of aggregate was, we weren't able to get all of one type from the quarry. This rounded stone is difficult to source so we ended up taking two-thirds of it as the 20/14 size fraction and one third is the 50/20 size fraction and there was lab testing done which shows the 20/14 puts less strain on the liner than the 50/20 so that's why we wanted to compare the two. The other thing that we did in this trial was, both the lining contractor and the company that does all the testing of the liner materials (TRI) which is a US company with a lab on the Gold Coast, they recommended that we have an extra layer of separation geotextile above the secondary HDPE, between the secondary HDPE and the sand layer, to reduce the amount of scratching. So we did a trial with and without separation geotextile at that location.

So these are just a few photos of the field trial so this is the GCL, HDPE, and protection geotextile on top of the sand layer.

This is marking it out with the different types of aggregate and the different thicknesses.



And that's a view from our drone.

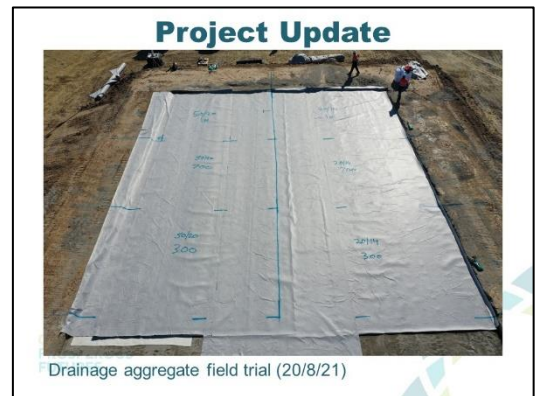


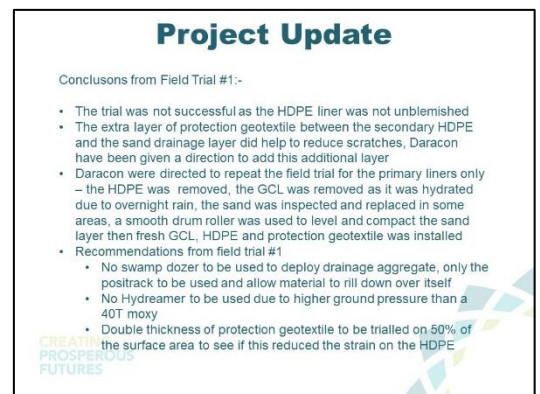
And then after the placement of the aggregate and then tracking the different types of machines over the aggregate. Daracon then carefully removed the protection geotextile and the aggregate after having already removed a lot of it with manual labour, shovels and so on.

If you look at a close up in this shot here, there were some blemishes on the plastic caused by the drainage aggregate because of the machines putting too much pressure on them so it was both on the 20/14 side and the 50/20 side.

Previous photo was 20/14, this was the 50/20 being removed, and the blemishes were slightly worse, like dimpling of the plastic.

You can see it here, quite noticeable. SMEC, our independent engineer was involved in this field trial and they had a surface roughness instrument that they were using for measuring the depths of scratches and the depth of these dimples and that's being used in this photo here.





Also, the lining contractor, Ecoline were doing ARC testing so this was a test using high voltage. You have an electrode in the ground just nearby. It's at ground potential negative and then the instrument that the operator's holding is the positive electrode and you're measuring if there's any current leakage caused by even a small hole, like holes that are not even visible to the human eye, this instrument will pick it up and they'll hear it sparking through the hole on the plastic and they'll know that there's a defect.

Just conclusions from field trial number one, so the trial was not successful because the HDPE lining was not unblemished. The extra layer of protection geotextile between the secondary HDPE and the sand did help to reduce scratches from the sand and so we've given Daracon a direction to use that additional layer, the geotextile in the field. Daracon were directed to repeat the field trial just for the primary liners above the sand layer and they had to remove the HDPE. They had to remove the GCL because it was hydrated due to some rain. The sand was then inspected and some of it had to be replaced where it was too wet. Most of it was ok. And then they ran a smooth drum roller over it to level and compact that sand layer, and then they placed a fresh layer of GCL, HDPE and protection geotextile. So the recommendations in field trial number one, we suspected the swamp dozer was the main issue because we noticed when it was deploying the drainage aggregate, because it's a pushing motion, it was like pushing it out, there was a bow wave that was visible in the liners ahead of the drainage aggregate. We think the positrack is a much better machine to use because you can just tilt the bucket and just let the material rill over itself from a maximum height of 300 mm which can't be done with a dozer so we think that it's a much better machine to use also it has rubber tracks not steel tracks so it's a lot more gentle on the lining material but you've got

to have at least 300 mm of aggregate before you drive over. You don't drive any machines directly over the liners. There was a machine called a Hydreamer which is like a small dump truck, I think it's a 4 wheeled dump truck but it actually has a higher ground pressure than a dump truck (a 40T moxy) so we decided that they shouldn't use that Hydreamer. So we told Daracon not to use that. For the next trial we asked them to try double thickness of the protection geotextile over 50% of the surface area to see if that reduced the strain on the HDPE. So we wanted to do everything that we possibly could to make sure we got a good result on the second trial.

So this is a plan of the second trial, so it shows once again the 20/14 aggregate on the east side, the 50/20 on the west side, the double layer protection geotextile on the outer extremities and a single layer in the centre. So we're testing all conditions. So that's the plan view and an elevation view. At the very Northern end, they were placing directly with an excavator onto the liner just very gently to stimulate what would be happening in the sumps. The next section here, they were tracking the Posi-track over 300 mm of drainage aggregate and then in the 1 m thick section, they had an area where they were tracking a fully loaded 40 tonne dump truck and each time they ran across it, 10 return trips fully loaded, and then at the very southern end, the 3 m section. This is where they had the 300 mm layer placed by the Posi-track underneath where they were dumping with the 40 tonne dump truck, dumping the drainage aggregate on top of the 300 mm layer to test that out as well.

And this is after exposing the plastic on the 20/14 side. It was unblemished, with none of those dimples at all. So, we're pretty happy with that result and there was no difference really between single layer or double layer protection geotextile and not really any difference noticeable with different types of equipment.

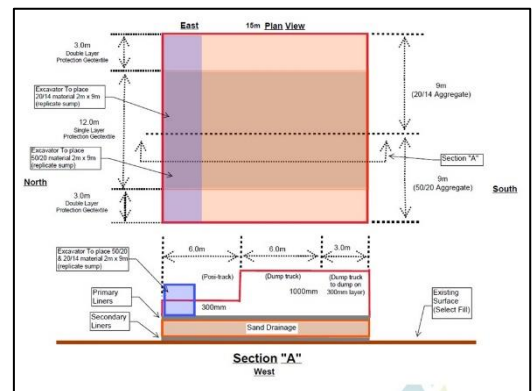
The other side, I don't have a photo of the 50/20 but it was also okay but maybe not as good as the 20/14, there was a few very slight marks.

MU: Andrew you mentioned that the GCL, that the geo composite layer was hydrated which I think is engineering jargon for 'it got wet' right.

AW: Yeah, it got wet.

MU: So is that an issue for this experiment or is it also an issue for the final cell construction and why?

AW: Yeah, so it is an issue if it happens during construction, so as it gets wet, it expands. You need to have confining pressure, so



Project Update

Conclusions from field trial #2:-

- The positrack was used successfully on 300mm of aggregate – no blemishes
- The 40T moxy (fully loaded) was used successfully on 1,000mm of drainage aggregate – no blemishes
- The 20/14 drainage aggregate induced less strain than the 50/20 aggregate (lab results confirmed)
- The double layer of protection geotextile did not make much difference but is recommended for high traffic areas and places where dump trucks will be dumping aggregate
- There is sufficient quantity of the 20/14 drainage aggregate for the 300mm layer on the entire floor of the cell and in critical areas of the sumps
- Use 50/20 drainage aggregate above the 20/14 drainage aggregate in the sumps and at the bottom of the four access ramps
- Deploy the drainage aggregate using a positrack with rubber tracks (not steel) and allow the material to roll down over itself from no higher than 300mm
- Swamp dozer (steel tracks) is not to be used – pushing action creates a bow wave in front of the placed material that stresses the liners
- Hydreamer has a higher contact pressure than the 40T moxy (both fully loaded) – so it is not to be used
- 40T moxy (fully loaded) to be tracked on a minimum thickness of 1,000mm of drainage aggregate, however tipping of a 40T moxy can be done on a minimum thickness of 300mm of drainage aggregate
- A small (15T) excavator can be used to carefully place drainage aggregate in the sumps

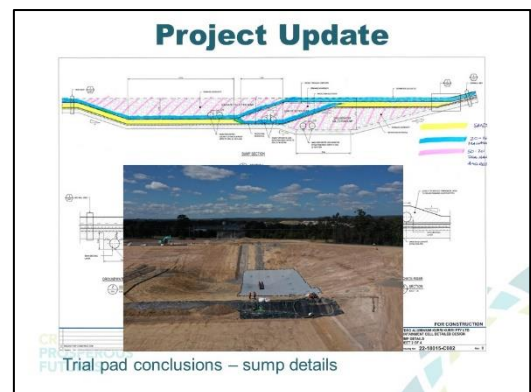


Hydro

as soon as you lay the GCL and I've got a photograph of what all of these pictures look like coming up. On the same shift you need to cover it up with HDPE which stops any moisture getting through to it, and then you need to have confining pressure on it before it gets wet. So eventually, once we place the waste or the drainage aggregate in the case of the floor, that will give it the confining pressure because eventually, it will start to hydrate from moisture that comes up from underneath if say for example the lower and the secondary liners. If there was any ground water present that could potentially hydrate that GCL. You need to have weight on it, you need to basically compress it to get a good impermeable barrier. That is my understanding of how it works. So if it's allowed to get wet before that confining pressure is placed on it, then you don't get as good a barrier. So in our case, just summing up, it's the drainage aggregate on the floor that gives confining pressure to the floor and on the side walls, it's the soil confining layer and the waste that provides the confining pressure. You'll see in the photos coming up that we've already started lining the side walls. Because they're covered with plastic and they're fully welded, I'll run through all the QA on how it's sealed. It can't get wet, so it's protected from underneath and above. So the conclusions from this second field trial was that the Posi-track works well, and was successful on 300 mm of aggregate, with no blemishes.

The 40T Moxy was also quite okay, providing it was tracking over a metre layer of drainage aggregate. The 20/14 drainage aggregate induced less strain than the 50/20 aggregate and that confirmed the previous lab results that were done by TRI so the special test they do up there, the certain apparatus. The double layer of protection geotextile didn't make much difference but we're still going to use it in high traffic areas like where they're doing a lot of trafficking of equipment or they're placing stockpiles of aggregate to move it out on the floor and the base of the four access ramps into the cell. We did a check using the 3D model from GHD and there's enough of the 20/14 aggregate to cover the whole floor with a 300 mm thick layer and 50/20 aggregate will be used above that on those areas I mentioned like the base of the four ramps and in the two sumps above the 300 mm layer which, I'll get to that in a minute, I've got a diagram that explains that.

The rubber tracked machine is better than a steel tracked machine and the swamp dozer is not to be used because as I said, the pushing action creates a bow wave in front of the placed material that stresses the liners and the Hydreamer won't be used as the wheel loads were too high. The Moxy was okay and we tested tipping on the 300 mm thick layer that was already placed and that appeared to be fine, no blemishes and a small 15 tonne



excavator which was used in the trial can be used in placing the aggregate in the sumps.

AW: So just moving on now to the sumps. This was a photo that was taken in September and you can see here, so the sump is actually in three compartments so at this stage here, Daracon had placed what they call the groundwater collection and riser pipes which are here and that corresponds to this part of the sump here, these two pipes. The next part of the sump is called the leak-detection sump and those two pipes go into this trench which has been dug into the side wall here and then the next section of the sump is the leachate collection sump and those pipes will sit here above the side wall. So what I mean by using the 300 mm, 20/14 aggregate, so in this cross section, anything that's blue is the 20/14 so we were placing that on top of the liners in these locations shown here in blue because we know it performed better in the field trial and is less likely to damage the HDPE liner. The pink is the 50/20 drainage aggregate so it can go here in the groundwater collection sump no problem because it's basically just sitting on the ground with a layer of separation geotextile as you can see it has been placed here in the photo and held in place with sandbags. In the leak detection sump it can go in above the 300 mm layer of the 20/14 and in the leachate collection sump also can go above the 20/14, so that dimension there is 2.7 metres so 2.7 metres of drainage aggregate to go in. It's quite a bit.

AW: As well as the covid issue which shut everything down for about a week, we've had a lot of rain obviously and we've had a lot of rain in August and I think we had about, one day we had about 75 mm in 24 hours and this was the photo that was taken immediately afterwards so the two sumps had filled up with water. All the water running around these perimeter drains which flow through an open drain and into a culvert under the perimeter road that filled this sed basin 1 here and likewise on the southern side of here filled up sed basin 2. The rains been causing quite a bit of an issue for us, a lot of delays.

AW: Whenever it does rain, Daracon need to empty the sed basins, samples are taken of the stormwater so this is a photo of a Hydro person taking samples on the 30th August. This was prior to flocculation, so flocculation involves adding a chemical to the water, calcium chloride which causes the sediment to drop out to the bottom much like the people who have swimming pools would know what I'm talking about. If you get cloudiness in your pool you add a flocculant which causes all the dust to settle to the bottom of the pool and you can vacuum it up to clean your pool. The



same principles apply here. But this was done prior to flocculation and Daracon have a permit for emptying stormwater and they have to check the pH is within the tolerance. The pH has to be within 6.5-8.5 and total suspended solids have to be less than 50mg/L and has to be free from oil and grease.

The EPA asked us to also analyse for aluminium, cadmium, fluoride and cyanide which were some contaminants of concern that were found way back in 2015 when we did the remediation of the clay borrow pit and there were some refractory bricks and packing coke that would account for some of the fluoride and aluminium but I don't know how cadmium was found but there were traces of cadmium as well which may have come from some other source. We've done three campaigns now of discharging these sed basins and we'll write it up as a report and send that through to the EPA and request that we no longer need to analyse those four elements until we start putting waste in the cell because it doesn't really make any sense until we start adding waste, but Daracon will continue to sample and test for pH and total dissolved solids and total suspended solids. If the pH is out of spec and has been found to be a bit low on occasion which means its acidic, we think that's from the clay. We've been adding swimming pool buffer (sodium bicarbonate) to bring the pH up within the limits.

AW: This next photo is the leachate pond next to the cell getting filled back in with clay because of damage caused by the rain and it had to be re-cut and they had to put an excavator and a dozer back in there and re cut it. I think they've had two or three goes at getting that done and it should be getting lined soon I believe.

This is the North sump. It also got very wet and they had to dig it out and then replace it with the wet clay with dry material and reshape it.

AW: So Daracon have had quite a few issues with repairing damage caused by rain. These are a few photos showing the riser pipes being welded together. So this is the groundwater riser pipes I showed earlier getting assembled.

AW: This apparatus is a butt welding machine. Darren is probably familiar with welding of steel, welding of HDPE pipes is very similar. This is a fusion welding process using a large heating platen which sits between the two ends of the pipe and then after it gets to a certain temperature the heating platen is removed and then the two clamps holding the pipes together are forced together with hydraulic pressure. Hydraulic cylinders which force the plastic together that makes it a really neat weld. They machine the face on each end of the pipe before they heat it up and join it.



They also machine the inside face of the pipe to remove that weld bead so we don't have any problems in the future getting the pipe in and out of a sucker truck or a pump to pump leachate out of the cell.

AW: This is the end of the pipe which will be in the sump so there's a cap at the end stopping big stuff from getting sucked in and the holes have been drilled as you can see here. They are 8 mm diameter holes at 100 mm spacings every 60 degrees around the circumference for about four and a half metres.

Project Update



Heating platen for butt welding of HDPE pipes (6/9/21)

AW: That is that heating platen I was speaking about that's used to heat up the ends of the pipes.

AW: This is the southern sump so Daracon installed a temporary stormwater bund using clay to cover it with builder's plastic and that's for in case it rains, water will build up on the outside of these bunds in this corner here and there's a pump set up there to pump the water out to the drain outside to the cell near the road which leads to the sed basins.

AW: This is the subgrade being prepared on the Western batter. They had already done all of this with a grader about a month earlier but because of the rain, it had to be redone. They used a combination of graders and Posi-tracks and smooth drum rollers and they also use a crusher dust to patch up any small holes and then they inspect it for any small rocks. The idea is that you don't want any sort of sharp rocks that can damage the liner and you don't want any holes where a liner can bridge over a gap, which puts strain on the liner. So if there's any depressions they need to be filled in with that crusher dust but only up to a certain thickness. They also put a smear of crusher dust over the whole

Project Update



Butt welding of HDPE pipes. End cap installed (6/9/21)

Project Update



ECC Works – temporary stormwater bunds at south sump (6/9/21)

Project Update



ECC Works – subgrade preparation on western batter (8/9/21)

Project Update



South sump – groundwater riser pipes installed (8/9/21)

surface which tends to get embedded into the clay and makes it a lot firmer and more solid. SMEC are happy with the subgrade and are saying that our clay is very good quality, a lot better than a lot of jobs they're dealing with like at Port Macquarie and out at Moree. The clay is not as good a quality as what we have so they're very happy and Ecoline are happy too.

AW: This is the southern sump now with the ground water pumps installed and the separation geotextile. And just looking from south to north.

AW: This is looking south this is the other end of the pipes and the anchor trench has just been cut in. The anchor trench is used to restrain the liners at the top of the cell. It's a 500 deep by 500 wide anchor trench. And there's a trench for the secondary liners, and there will be another trench further out for the primary liners and once the liners are installed they backfill the anchor trench with clay and then compact it in 150mm lifts from memory and they compact it with an attachment on the excavator like a roller and that holds the liners intact because in high winds you obviously don't want the top of the liners getting pulled out from that anchor trench especially with our 132kV power lines nearby we don't want the plastic coming lose and wrapping around the powerlines. That would be disastrous so that has to be very carefully monitored to make sure that it's done correctly.

AW: This is another view of the southern sump.



AW: This was what I was talking about so the three liners that we're currently installing, the first layer is the GCD which stands for geonet composite drainage so it's a plastic HDPE, high density polyethylene geonet drain with two layers of separation geotextile, one above, one below. And that's placed directly on that subgrade

and that's there for drainage of groundwater and that will make its way down into that groundwater sump where it can then be extracted to those riser pipes and pumped out of the cell. We don't think we'll have a problem with groundwater, we think the groundwater is 4 to 5 metres below the cell but if we did, we have the ability to pump it out if it starts to build up because we don't want that. Sort of like your backyard swimming pool you've got a hydrostatic valve there which will release if you get too much pressure from groundwater. You don't want your swimming pool lifting up in your backyard and that's the same thing here we don't want groundwater pressure at the bottom of the cell building up.

This is the GCL, geosynthetic clay liner so it's a very heavy geotextile that is impregnated with bentonite clay and it has a very heavy coating on the sides so when it overlaps it will bond itself, one sheet will bond itself to the next sheet once it starts to hydrate. At the ends they have to overlap it 500 mm and they paint it with a bentonite paste to join one layer to the next so for example on the batters they're going to join that GCL to the GCL on the floor they'll paint that with bentonite paste to join it. And then finally we have the HDPE, the photo is the textured which is mainly going on the side walls and it's textured for the reason that it's better for grip for the installers, they're walking up and down the sidewalls which have a one in four batter. If it was smooth and if there's heavy dew it gets very slippery and you could slip and hurt yourself so we're using the textured on the side wall and the smooth on the floor. But the textured is smooth on the edge of the wall so when you're joining one wall to the next you're actually welding smooth to smooth in most cases anyway.

You might remember a couple of years ago we did testing down at the laboratory in Melbourne with a company called Excelplas and we actually tested the HDPE liner with our leachate from the capped waste stockpile and we found that the smooth HDPE has a longer life than the textured, a marginally longer life so for that reason also we want to use smooth on the floor of the cell and in the sump we don't want to use textured there because of the shorter lifecycle. There's only like a couple of percent difference but still just to be extra cautious, we're using smooth anywhere there may be leachate.

AW: This is a photo of the western batter getting lined, this was the GCD, geonet composite drainage so that's actually joined together with cable ties every metre and that is to join the geonet, the plastic part together. The upper layer of geotextile is joined using a hot air gun so it is bonded with heat and is joined together and is quite a good secure joint.



AW: Then they lay GCL and HDPE so here, this is a couple days later, this is the HDPE going in and this is the anchor trench - as you can see it is being held there with sandbags. And as you can see, once the HDPE is deployed, they start backfilling the anchor trench and compacting the clay.

AW: This was a few days later, this was a bit further along, we inspected the subgrade and here the contractor was putting down more of the GCD.

AW: This was a view taken with our drone so this is all HDPE here and this is GCD here. I know this because the GCD roll is slightly narrower than the HDPE and there is a lot of blue paint here which is all the QA markings which I'll talk about in a minute.



AW: So here this is once again HDPE on the left and GCD on the right getting joined.

AW: this is the GCL which goes in between the two, which is a white material. And they actually put a thin layer of builders plastic down as a slip sheet. They put that between the GCD and GCL just to reduce the friction as they're deploying the GCL. They find that works a lot better. And then that slip sheet is removed once the GCL is deployed.

AW: it's quite a lot of manual labour so it takes up to five guys to pull the roll. The roll is actually being held above the anchor trench so it's done that way for safety. If one of those chains snapped, the roll would just drop into the anchor trench and it won't go anywhere. Obviously you wouldn't want that to go rolling down the



hill and onto those guys so that's something from a safety perspective that has to be carefully monitored and that lifting equipment has to be inspected.

It takes about five guys to pull that GCL down the hill its quite heavy and it also gives off a fair bit of dust so you can see some dust there coming off the roll, so they have to wear masks. It's not good to breathe in that dust because it's got silica in it.

AW: This is now a few days later, this is the GCD going onto the batters of the southern sump. When they go around the corners, they have to get a bit creative and cut various shapes so cutting triangles here to get that last bit in at the top. They do a good job these guys. It's quite challenging I think and very physical work.

AW: This is now a bit later on, the 23rd of September so all the HDPE is in on the southern batter in the southern part of the sump and this is GCD being installed in the rest of the sump.



AW: And here, this guy is seaming the GCD so he's using a heat gun. It's already had the cable ties put in, he's using a heat gun to join it.

AW: This is now the GCL going in on top of that GCD, just that white material is GCL.

AW: This is a photo of the northern sump. What they're trying to do is to get Ecoline to progress the northern sump but it's probably a couple of weeks behind the southern sump and the



Ecoline crews sort of swap from one to the other and Daracon alternate with them because they have work to do with placement of drainage aggregate and sand. Here you can see, so that's the groundwater riser pipe and this was the trench for the leak detection riser pipe so the northern sump is opposite hand, a mirror image of the southern sump so that drawing I showed earlier was for the southern sump - in the northern sump, it's the other way round.

AW: So there's ground water, leak detection and then leachate collection. Another set of pipes right here for leachate collection.

AW: This was now the 2 mm double-sided smooth HDPE being installed in the southern sump and that looks like the welding machine there they use for joining the plastic.



AW: This is the northern sump being lined so that's the GCD, GCL, and HDPE there back on the 28th of September. Also they put the groundwater drainage aggregate in above the groundwater sump and that will then be covered with the secondary liner. So those three liners there, that liner system will extend out onto the floor of the sump and cover that drainage aggregate and will extend out and around. You might have noticed, I didn't point it out but there's a temporary anchor trench on the inside of that stormwater bund so the secondary liner will be secured by that temporary anchor trench and the primary liner will be welded to the secondary using extrusion welding and later on once the floor is completed they will be joining the liners on the floor to the liners in the sump but that's probably a few months



away.

AW: This is the southern sump now, this is all waterproof, so any rain we get, even a millimetre of rain will start to collect, as you can see some water is in here and Daracon has to pump it out periodically. This is the sand starting to be deployed in and above that drainage aggregate in that sump and a layer of separation geotextile between the two. This photo was taken probably around midday and you can notice a lot of wrinkling of the plastic and that's because the plastic expands a lot because it heats up and because its black it absorbs a lot of heat from the sun quite readily so on a normal 25 degree day the plastic can get to 40 degrees very quickly, and in our summer it can get to above 60 degrees and 60 degrees is the limit for welding of the plastic. So very soon Ecoline will be moving onto night shift so that they can weld the plastic in the cool of the night. Also Daracon we had to stop them from putting sand and gravel in because we were worried about this wrinkling and we actually got them to do it on night shift a couple of weeks ago. You'll see soon, they actually put the sand and gravel in on night shift.

This is the northern sump on the 6th October so you can see that they've progressed a bit further, they've got all this GCD in here.

AW: This is back on the southern sump.

I just wanted to mention so where they have three panels intersecting, the standard practice is to cut a circular hole and weld in a circular patch using extrusion welding so along these seams here is what they call the dual wedge fusion welding process and its done with a special machine and you actually get two welded seams but it's very difficult to join three liners together with no leaks so the standard procedure in the industry is to cut a circular hole and then weld this in place using extrusion welding.

You'll see a lot of notations have been written on the liner by Ecoline. A lot of this has to do with the QA. The dual wedge fusion welding, one of the QA procedures, it's a non-destructive test is to actually pressurise the seam with air pressure. They do the test for five minutes so they actually pressurise the seam at 9:48 and its got to hold pressure for five minutes. It is started at 240 kpa and five minutes later it was at 240 kpa and that's the date and the signature.

Every weld is pressure tested and on these extrusion welds they can't do these tests but they have another test they use which is a vacuum box so they put the vacuum box over the weld and they spray soapy water on it and if any air leaks up from underneath through the weld, they'll see bubbles forming in the soapy water



and that's the QA procedure for the extrusion weld. On top of that they do the arc testing so the southern sump has all been arc tested prior to placement of sand and drainage aggregate and then once the sand and drainage aggregate is placed, they do another non-destructive test called a dipole test which is very similar to the arc test instead its at a much higher voltage because its got to get through 300 mm of sand and gravel to pick up any leaks. Obviously, if it's not leaking before Daracon places the sand and the gravel is leaking after, then the contractors know well it was okay when I handed it over to you Daracon so it's up to you Daracon to pay us to fix any leaks that you've caused, which is quite interesting.

MU: Does anyone feel that they're not confident to defend the rigour of this process. I've sort of got my head around what the plan was but to actually see this happening, the amount of work involved and all the layers and that sort of thing its quite astonishing to me.

AW: Yeah I'm amazed myself.

MU: Put your hand up if you think you'll have trouble defending this process. Yeah it's pretty thorough. The other thing I think in our Christmas meeting we might have to have a trivia quiz where we ask what GCL stands for and all the other things - HDPE and so on. So pay attention.

AW: Okay, so this is the dual hot wedge fusion welding machine. This is the one that has two hot wedges and has a motor so it actually pulls itself along and joins the HDPE together and you end up with two seams with a gap in the middle which can then be pressure tested.

And this is an example of extrusion welding so it's similar to braising with an oxy acetylene torch using silver solder. Darren will know what I'm talking about there. That's what's happening here so the filler rod is actually the same material as the liner so it actually comes from the same supplier Solmax and from the same batch of resin that was used to make the liner.

AW: The other thing that happens is every 150 metres of welding, they actually cut a section out and do a destructive test at TRI in their laboratory on the Gold Coast.

AW: So for example, say this was a welded seam they actually cut a section out. It's about 1.2 metres long and they section it into three pieces about 400-450 mm long. One piece is given to us, Hydro to keep if we ever wanted to get our own testing down. Second piece is given to SMEC as our independent engineer, or CQA engineer, they then get it tested by TRI. The third piece is

Project Update



▶ 1:55
Dual hot wedge fusion welding of HDPE



▶ Extrusion welding of HDPE using a filler rod

CREATING PROSPEROUS FUTURES

Project Update



TESTING, RESEARCH, CONSULTING AND FIELD SERVICES

20 September 2021 Accredited for compliance with ISO/IEC 17025 - Testing

Mail To:
Levi Cook
SMEC
74 Hunter Street
Newcastle, NSW, 2300
Email: levi.cook@smec.com

Dear Mr. Cook,
Thank you for consulting TRI Australasia (TRI) for your geosynthetics testing needs. TRI is pleased to submit this final report for laboratory testing.

Project: Kurri Kurri
TRI Log Number: A21-303
Material(s) Tested: 2.0mm HDPE Geomembrane Seam(s)
Test(s) Requested: 3. Seam Strength (ASTM D6392 - Peel & Shear)

Typical DT – destructive test result sheet

Project Update




▶ 1:55
Dual hot wedge fusion welding of HDPE



▶ Extrusion welding of HDPE using a filler rod

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tested by Ecoline, they have their own tensiometer machine in the field, they can get a tensile test done straight away. So if there's any problem with the welding, because this test is done every 150 metres, if there was a problem found they would then go and cut more samples in between the two original samples. If they then failed, they would then reweld that whole section using this extrusion welding process to weld a patch over the whole section.

AW: So this is just the typical test report from TRI so this was actually the first three destructive tests which were on the western batter and they've called up this ASTM method which stands for American Society for Testing and Materials, it's a test method from the USA for what they call peel strength and shear strength.

AW: So peel strength is actually pulling the two seams apart to see if they delaminate and the shear strength is actually a transverse tensile strength across the weld so that weld it seemed of those two weld beads put into a tensile testing machine and stretched apart. So the specification from GHD the minimum peel strength is 530 kilograms force (kgf) and for shear strength the minimum is 701 kgf. So you can see here for this, this is destructive test sample number 3. The average of the test is 713.

RB: Remember those numbers, they could be in the test.

AW: So 713 and 677 for the peel strength is above the 530 and they're also reporting standard deviations here and for any statistical analysis, your average should be at least three standard deviations above your minimum which these are and then the shear strength, the average is about 910 which is well above the average of 701 minimum. So it's like 6 standard deviations above the minimum so the welds have all passed so far, there hasn't been any problems.

I also should mention that every morning each welder has to do a weld qualification test which Darren's probably familiar with like what's done with welding of steel. Each welder has to do a weld qualification test in accordance with a weld procedure and it has to pass to be qualified to do the weld. The same principal applies to the welding of this HDPE the welder has to pass the test every morning and if it doesn't pass it could be a problem with his technique or with the machine. So that's where we're up to with the cell.

AW: So we are also now getting Daracon to remediate some areas on site so one of those areas is the Western Surge pond. Originally in our remedial action plan, there was a note on the west surge pond is that it may have to be remediated due to fluoride. We have tested it for fluoride and it was actually okay, it

Project Update

PARAMETER	TEST REPLICATE NUMBER					MEAN	STD. DEV.
	1	2	3	4	5		
HDPE Seam Strength (ASTM D6392 - Peel & Shear) 50mm/min							
Sample ID:	DT_3						
Seam No:	17						
Weld:	Dual Hot wedge						
							Peel A
Peel Strength (N/25mm)	698.2	722.8	749.9	713.4	679.4		713 26.1
Peel Strength (N/mm)	27.9	28.9	30.0	28.5	27.2		28 1.0
Peel Incursion (%)	0	0	0	0	0		
Peel Locus of Failure Code	SE1	SE1	SE1	SE1	SE1		
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB		
							Peel B
Peel Strength (N/25mm)	680.9	667.3	697.2	680.5	669.8		677 15.8
Peel Strength (N/mm)	26.4	26.7	27.9	27.6	26.8		27 0.6
Peel Incursion (%)	0	0	0	0	0		
Peel Locus of Failure Code	SE1	SE1	SE1	SE1	SE1		
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB		
							Shear
Shear Strength (N/25mm)	902.9	916.4	911.0	924.7	923.5		916 9.1
Shear Strength (N/mm)	36.1	36.7	36.4	37.0	36.9		37 0.4
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50		

PROSPEROUS
Minimum peel strength = 530 kgf, minimum shear strength = 701 kgf



didn't need to be done but you recall a few meetings ago, we talked about the fact that we had a fire training ground in the south-western corner of the site where firefighting foams were used which contain PFAS. Due to the water draining from that area into this western surge pond we have had some PFAS contamination of the sediments in the western surge pond and we've been in discussions with the EPA. The sediments themselves are fine, like the limit is 140 micrograms per kilogram and we're down around 5 on average but the issue is the water. What we believe is happening, Ramboll's theory is that the PFAS in the sediments is actually contaminating the water and it's the water that's above the limit for the ecological limit for PFAS so we can't allow this water to overflow into the unnamed creek and there is a weir here. We've been managing this water level ever since it because a wet area of this PFAS issue and we send it to our northern dams that's irrigated to the irrigation paddock so we don't want it overflowing to the creek so we are now remediating this pond to get rid of this PFAS problem so that there's no issues for McCloys in the future when they take over the site.

DG: Andrew, sorry to interrupt, that would contaminate the other. So you're pumping the water from there, wouldn't that be contaminating?

AW: We've tested the northern dams and they're okay.

The sediments in the northern dams are okay because I guess the sediment drops out in the western surge pond and its only the water pumping across and if there's nothing in the water to contaminate the sediment in the northern dams and the irrigation area it's okay but it's mainly this western surge pond that's the main area that needs to be remediated. Not the northern dams. The levels are so low that it's not required. We've had some challenges, so first of all Daracon tried coming in from the western haul road just backing trucks in.

AW: We've got an excavator there on a spot that he actually dug down to the original clay to get a firm base but the trucks kept getting bogged so they're actually now coming in from the southern end and we've had to use a bit of our crushed concrete to make an access ramp.

AW: Because when this photo was taken, I was there the truck got bogged and an excavator had to push it out of the bog.

AW: Also the drainage sediment, we've been putting it in the SPL sheds for obvious reasons. We don't want the water leaking out into our site stormwater system. Even though it does all report to the northern dams and eventually end up in irrigation area. We



just didn't want to have it out in the open, so we've be storing it in the sheds. Because it is all waterlogged, it's just sort of oozing out on the floor here. We realise that that's not going to work so we've decided that we're going to start adding cement to it and we've been doing trials and eventually we started at 2% out was okay but wasn't great so we've ended up at 4% and that's actually working very well, and it has virtually no slump and is able to be pushed up once it cures, so we can utilise the volume of the sheds.

The SPL sheds are a good design because the floors all drain to a central drainage point which flows out into a tank because they were designed for the storage of the SPL, no water can escape from the shed and get outside. Anything that drains into those leachate tanks later on we will pump it out and put it through our water treatment plant which we're going to have set up on site.

AW: This is the vee drain that connects the fire training ground to the western surge pond. We've even gone to the extent of removing the concrete and we've tested the sediment under the concrete and even that had some PFAS in it. Only small amounts but this stuff is so mobile that it really surprised me that we would find it there but we did and under the concrete, we're also going to be testing that and making sure it's clean before we decide what we're going to do with the concrete.

AW: This is the 2% cement trial that we did so it sat up a bit better but it's still not what we wanted so we've now gone to 4%.

Project Update



West Surge Pond – cement mixing bay #1 (28/9/21)

AW: We've set up two mixing areas. So this was the first one we set up and this is now the access point into the western surge point into the southern end and that's the drain that leads in and the fire training ground is up here. This is one area where we're

Project Update



West Surge Pond – vee drain remediation (23/9/21)

Project Update



West Surge Pond sediment – 2% cement trial (23/9/21)

Project Update



West Surge Pond – mixing bay #2 adding 4% cement (28/9/21)

Project Update



West Surge Pond sediment with 4% cement (1/10/21)

mixing the cement in with the PFAS sediment.

AW: This is the other area which is actually part of the western haul road. We just put a clay bund along the edge of it and returned it here so no water could seep out back into the pond and here, this excavator is mixing the cement so we're buying it in bulker bags, one tonne bulker bags and just mixing it in at a ratio of 4% cement to the sediment. And here you can see there's the 4% material which is sitting up quite nicely in the shed which is about 4 metres high and not slumping so that's working well for us.

AW: This is Kirsty from Ramboll. We were debating whether we should take out all of the sediment. We tested it for fluorides as I mentioned but with the PFAS we only took samples in the top 200 mm using push tubes but we haven't gone the full depth of the sediment. In this case here, it's 1.5 m deep and Kirsty took samples at like half a metre, 1 metre, 1.5, in two different locations but it wasn't conclusive. This cross section of sediment is like a history of the smelter over the last 30 years and we did actually find the PFAS even in the sediment at the bottom it wasn't a good correlation of the concentration. Plus this stuff is like jelly on a plate so if I were to remove half a metre it wouldn't be practical so we found that this clay here is fine, it doesn't have any PFAS so as long as we remove the grey coloured sediment which is probably mostly alumina from 30 years of pot room operation in the case of line 3 (which was the closest potline), longer in the case of line 1 and line 2, then we are okay, were fine and the excavator can track on this clay, no problem.

RB: Andrew, I'm going to interject for a second there. Before we were looking at this and I think to Michael's point before the extent to which we're going to clean the site up here is I think exemplified here. So in the end I think we'll excavate about 10 thousand tonnes of sediment from the west surge pond and in that ten thousand tonnes we're removing 50 grams of PFAS. Fifty. Five zero, a Mars bar.

MU: That sounds pretty thorough.

AW: The next piece of work, this is an interesting one. Daracon was digging an access track to the Dickson Road north stockpiling area. If you remember that it's a stockpile we created when we did the early works of remediation, like the municipal landfill and other places in our buffer zone, and we got Daracon to make an access track so we could get that material from there across to the cell when the cell's going to be ready to receive it. We've found this black material which is actually lead slag from Pasminco smelter and there was an old cricket pitch and we believe it was built out



of the lead slag, maybe they had some of this material left over from line 3 project. Anyway they made a cricket pitch out of it for people to play cricket at lunchtime and by coincidence Liberty Industrial are actually remediating the switchyard for McCloy's at the moment and Kirsty from Ramboll is assisting with the site validation for the switchyard and just by accident they've ended up using a different laboratory to test this material. We have tested it back in 2017 because we found it on our site at one of the electrical substations. It was used there as a bedding material for the high voltage power cables and we tested it just using a normal contaminated lands laboratory and they did pick up some lead but it was well below the industrial criteria so it was deemed that it could remain there and we left it and we found it later on when CMA were removing some of the stormwater and foreign domestic water pipes so a lot of that infrastructure that was in that 1.5 metre zone below ground level. We knew it was there, but we thought it was all okay. But the samples that were taken in the switchyard were tested by a different laboratory, which was actually a metallurgical laboratory that uses acid digestion and they found much higher readings for lead and so that prompted us to then go back and we tested a sample in Roller Park. We got a sample from that cricket pitch which we tested it at that same metallurgical laboratory and it came back high for lead and then we decided okay we better go and check on site and we started digging some of this material up and testing it and we found that putting it through that acid digestion process in the metallurgical laboratory, it was too high in lead so we've now decided to go back and remove it and so we've had Daracon doing this. It wasn't in their original scope so it's a variation and these are just a few photos I've taken showing you the work that's happening. This is early days, this bucket was actually too wide so we've been getting them to use a narrower bucket where required but it stands out, it's quite easy to pick.

AW: and this is getting stockpiled on site next to what we call the 60C contaminated stockpile, which is all the soil from the carbon plant that was high in coal tar pitch and hydraulic oil and at the end of each day, they cover it with that less contaminated material because we don't want that lead slag blowing around the site because that lead dust is not good to breathe in.

AW: We knew that this stormwater drainage infrastructure was left behind and we actually decided to leave it for the developer to assist them with the surface drainage on site. This is a stormwater pit.

AW: And this is the same pit being pulled out with 300 mm



diameter stormwater lines.

AW: This is actually having to dig through the Daracon haul road that had already been built to remove the lead slag. This is the leachate pipe which goes from the cell over to the leachate pond near to where the temporary water treatment plant is going so we had to deal with all of that too.

AW: This is a good example so the line 3 contractor that did the stormwater drainage, he must've had plenty of this lead slag from Pasmenco, because it looks like he's just dug a trench and in some cases where the pipe is deep, he's just used it completely above the pipe as backfill and in other cases to get the pipe closer to the surface, he's got like 1/ 1.5 metres of lead slag under the pipe so yeah we've been dealing with all of that over the last month or so.

AW: This is a drain.

MU: I guess he got good rates for it Andrew.

AW: He must have been getting it from Pasmenco yeah, probably almost free. This is a big stormwater pit that transitions from 1350 mm diameter to 1500mm and then it goes straight into the western surge pond.



AW: This is a few days later, that 1350 mm diameter pipe, we found a lot of lead slag there because there's other pipes that

drained the roadway going in at 45 degrees. This is on the west side of line 3 and this would've drained all the surface water from potline 2 and potline 3.

There was also sheet piling used in places either side of the pipe which was heavily corroded and we did try pulling it out with a vibropile but that wasn't successful because that was so badly rusted but the contractors been digging either side of the sheet piling and we've been successful in getting the lead slag out and we just bend the sheet piling over which you'll see later.

AW: This is the contaminated stockpile being covered.

AW: And that was the sheet piling I was talking about so they dug in between and on either side to get rid of the lead slag and then they're just bending it over.

AW: This is once again the stockpiling area. These are all the pipes so they've made a bit of a turkey's nest here and we're going to wash the pipes to remove any lead slag and then put them aside, probably have to test them and if they're okay they can probably be crushed up to be re-used on site as crushed concrete backfill. If not then we'll have to maybe look at putting them in the cell, I'm not sure yet.

AW: This is just the other day, getting towards the end of it though now we've probably finished as much as we can do in the next two weeks.



AW: And then there's just one last section that we'll need to do that is actually underneath some of the drainage aggregate stockpiles. And these were just a few more photos that were taken with the drone. This was after a rain event and they're pumping





Hydro

water out again from that southern sump across to the drains that lead to the sed basins.

AW: And these are just, the drone actually, we've got a program in it that just goes to the same six locations so later on we can do like a montage of all of those shots to show how the cell has progressed over the next two years. But it's really taking shape now.





Project Update

AW: the Gypsum delivery is nearly finished now, so now we're nearly at 20,000 tonnes and by the end of this month we will have reached our target so that's 6,000 tonnes of regyp (recycled gyprock) and the other 14,000 tonnes is mined gyprock, much of it comes from South Australia.

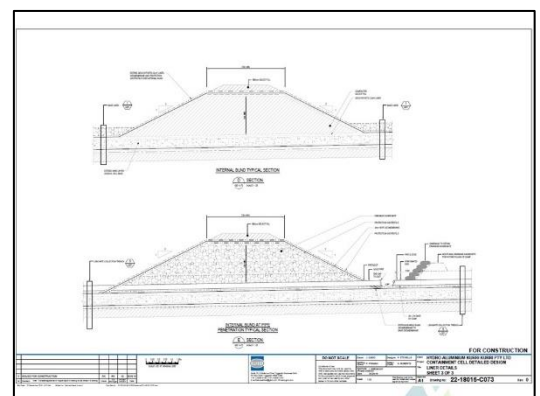
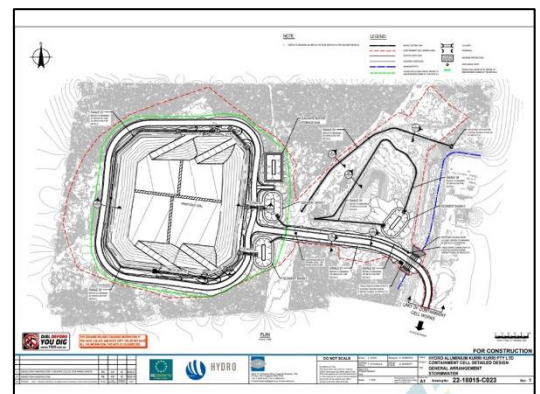
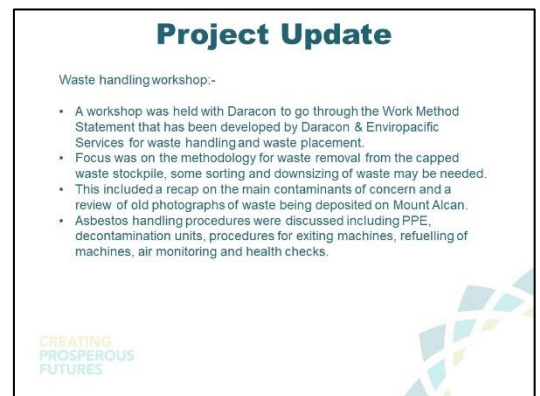
AW: And that's all stored in three of the SPL sheds that have been emptied by Regain. The other thing we did was a workshop on the waste handling methodology that's been proposed by Daracon and their subcontractor Enviropacific Services. So the focus was on the methodology of the waste removal on the capped waste stockpile, talking about how we're going to sort and downsize some of the waste if required because we definitely don't want to do anything that's going to damage those liners in the cell. There was a recap on the main contaminants of concern that's in the waste and a lot of focus on the asbestos handling procedures including the types of PPE they need to use, the decontamination units to be used, procedures for getting in and out of the machines, refuelling machines, air monitoring that's going to be done and health checks of their workers.

AW: We talked also about how we're going to fill the cell to try and minimise leachate so I'll just point out, so you'll probably recall there's these bunds and these cells got four compartments with four access ramps so Daracon are actually going to fill these two eastern cells first and then the western cells second and the reason for that is in the GHD design these leachate pipes actually run through those bunds so that would be this bund here, I'll just go back. If you were standing here looking at this bund here, looking south. If you have waste here, if we get rain, any rain that falls on the waste on this side (points to the left hand side of the bund cross-section) is treated as leachate and that will get



Project Update

Gypsum deliveries now at 19,850T as @ 20/10/21



pumped to that leachate basin near the cell but on this side (points to the right hand side of the bund cross-section) these compartments are empty and rainwater that falls here can be treated as stormwater.

There's actually a cap, there's a sleeve here that can be pushed back and a cap can be installed here so that way we can segregate the rainwater that falls in here and not have it flowing into this cell because the water will drain in that way and that minimises the amount of leachate that has to be handled on site and treated through the water treatment plant.

Mod 1 - TWTP

- Modification to the consent for the construction and operation of a temporary water treatment plant was approved on the 22/9/21
- Conditions of consent include:-
 - A water treatment plant management plan (including final design details and expected treatment performance for pollutants of concern) to be approved prior to operation
 - Fluoride treatment – an appraisal of any opportunities to further reduce fluoride
 - An irrigation management plan is to be approved prior to operation
 - A water quality monitoring program must be approved prior to operation
- Construction will start next week

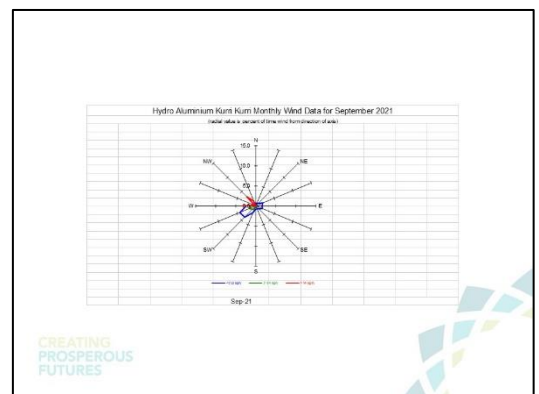
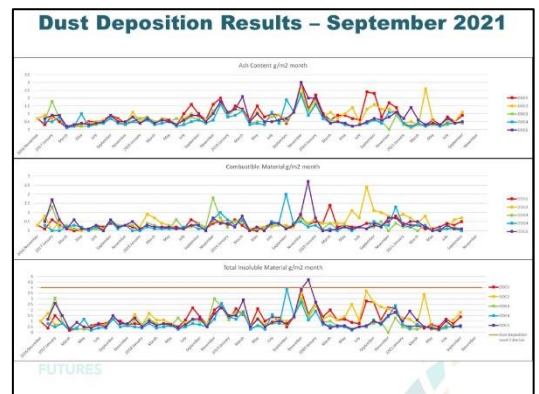
CREATING PROSPEROUS FUTURES

AW: Good segue - so the water treatment plant which was modification one to our consent has now been approved. It was approved on the 22nd of September, and the conditions of consent, which you can have a look at online, in summary, we have to prepare a water treatment management plan which actually Enviro Pacific Services have been doing that. They're designing, building and operating the treatment plant and it had to cover off the final design details, expected treatment performance for pollutants of concern and has to be approved by the EPA and the Department of Planning prior to operation.

They also challenged us on fluoride treatment so that at the moment we've said that it can reduce the fluoride levels in the leachate down to less than 15 milligrams per litre. They've asked us to look at any improvements to further reduce the fluoride. We'll report back on that.

And then we have to write an irrigation management plan which we already have but it has to be updated for the fact that the water treatment plant, once the water's treated, that water will be released into our site stormwater system which will then go to the northern dams and will then be sent to our irrigation area which is just a paddock at Wongara (our cattle property), so a management plan has to be written to cover all of that. And a water quality monitoring program, which we already have but we'll just update it for the water treatment plant.

The construction will start next week so Daracon will be pouring the slab and we've actually modified the plant and the slab is going to be bigger because we're adding three additional vessels on two treatment lines and that part of the treatment plant can



deal with any PFAS contamination so that's a further enhancement of the water treatment plant.

MU: Andrew, those plans are going to be made public and put on the website with all the others?

AW: Yeah, they will be included in all of that water treatment management plan and the changes that we've made to the process flow diagram and the actual general arrangement drawings, they will be part of that plan, which will be accessible.

These are the latest dust deposition gauge results so they're all fine well within the 4 grams per square metre limit. The wet weather's helped there, I guess.

AW: And this is the latest wind rose chart so mostly from the south-west and east, got some wind from the north-west and west.

AW: So we're keeping an eye on the five monitoring locations which you can see here.

AW: And that's it from me so does anyone have any questions?

MU: There's a lot in that anyone have any questions to Andrew about the construction of the cell and all of that digging out, replacement of materials and so forth?

AG: Oh, you've done well.

AW: Thank you Alan.

DG: No-one's going to say it's inadequate.

TT: Just one quick question, all this having to re-do, this stuff with Daracon, is that a Daracon's expense or you share it or what?

AW: Yeah, that's at their cost.

TT: Yeah, that's a bit of bad luck then.

AW: Just a bit of bad luck but I think they might be looking at a claim for some of it but I think they've learnt their lesson that they're only going to prepare the subgrade just keeping in front of Ecoline, so like a just in time philosophy and the same with that leachate pond, they're not going to do it again until they're ready to line it. Alright, I'll hand over to Richard now.

AG: I might leave you quickly here I'm running out of battery.

AW: No worries thanks Alan.

RB: I won't take as long as Andrew I don't have as much detail. So the second modification, we talked about it the last meeting the update I have there on red was current the time that I wrote it but



Mod 2 – Project Boundary

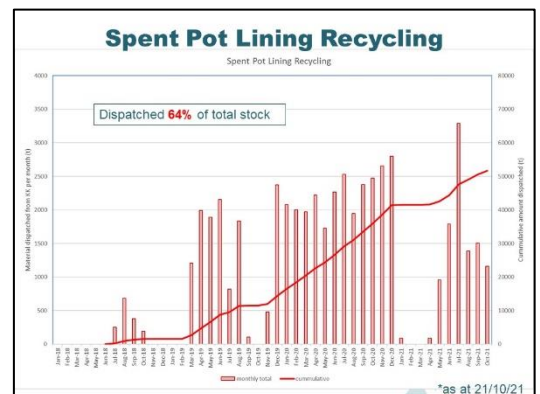
- A Modification Application is being **assessed by DPIE and relevant agencies**
 - Revision of the project boundary which **reduces the project footprint**
 - Reduction of the vegetation clearance area**, and the associated re-calculated biodiversity credit requirements as described in Condition B41 of the development consent for SSD 6666
 - Removal of the designation** of the northern area east of the Clay Borrow Pit as a potential archaeological deposit/area of **high archaeological sensitivity** and therefore removal of Condition B38 of the development consent for SSD 6666

CREATING PROSPEROUS FUTURES

VPA

- \$6.5 million Monetary Contribution (long term cell management) has been paid to Waste Assets Management Corporation
- Stage 1 (A and B) will soon be certified as being completed and the bank guarantee associated with these works will need to be cancelled.
- Preparing for Containment Cell subdivision and realignment of the CC Access Road. Subdivision plan requires DPIE approval before being lodging with CCC.

CREATING PROSPEROUS FUTURES



now obviously been updated I've got information about it has been assessed, not being assessed by the department and the agencies and we've now got a request for information on this so that's being progressed next slide.

RB: The VPA, nothing's changed to the VPA but we are starting to engage with the department on what those next steps look like, predominantly in terms of the containment cell subdivision and the release of the VPA on certain parts of the land, which goes to the divestment picture, which I'll touch on at the end.

RB: Moving on, SPL - continuing to proceed. We are at 64% dispatched from site. We expect that the amount will increase so you can see in the last 12 months obviously we haven't had the same rate but that will pick up in the next few months. No reason to be concerned at this stage.

RB: On the rezoning, just a bit of an update I've highlighted in red the sort of status updates from the previous meeting. So with regards to Maitland, the agency consultation with Transport for NSW and RFS is now closed and please Ian and Neil, either of you could you correct me if I'm wrong here, when I'm done.

Regarding the biodiversity strategy. So I'll touch a bit more on the biodiversity on the next slides but we've had a bit of a challenge with biodiversity strategy which has meant a change for the Maitland side of things. So previously we were talking about the biocertification but now it is a simpler and more straight forward pathway for us to do to prepare what we call a straight Biodiversity Assessment Report for the rezoning and that's on the back of some consultation with BCD and in engaging an expert in Regent Honeyeater and Swift Parrot, who has confirmed that the vegetation in the Maitland LGA area does not represent important habitat for those species and therefore is not considered to be a serious and irreversible impact, which in turn allows for a different approval pathway for the biodiversity. So we're hoping that the rezoning can proceed with this simpler Biodiversity Assessment Report and then when the development application is raised in a BDAR or a Biodiversity Development Assessment Report.

At the moment, we're currently, jointly with council in consultations with the Department on options to meet the current gateway timing, or if not, an extension, a short extension, to get that over the line, but we're very, very close with Maitland.

AN: Just further to that, I'll just jump in there sorry. We're reporting the DCP that McCloy's have prepared up to the next council meeting which is next Tuesday night to get a public exhibition so

Rezoning

- MCC
 - Final agency consultation closed with TNSW and RFS
 - Biodiversity strategy changed to prepared a BAR for rezoning following expert confirmation of no SAILs
 - Consulting with DPIE re options to meet current gateway timing (1/12/21)

- CCC
 - Working through issues with CCC and agencies to satisfy Gateway
 - TNSW - expecting to reach agreement on requirements
 - Local Traffic (CCC) - preparing local impact assessment
 - BCD - see next slide
 - Hunter Water - working with agency regarding potential conflicts of an odour buffer/impact from KK WWTP. HW have engaged a consultant to assess.
 - Murrumbidgee LALC - CCC responding to issues raised in consultation
 - RFS - agency response received, future development to comply with Planning for Bushfire Protection 2019
 - Gateway timing - CCC requesting extension for 12 months to 1 December 2022

the next stages of development on site will be guided by the development control plan so we're well and truly progressing with that one too.

RB: Okay, thank you Andrew.

RB: On Cessnock, not quite so advanced, although that's probably due to a bunch of more complicated issues I'd suggest, but what has progressed over the last couple of months is the local traffic issues. We're now currently working with the McCloy's on the local traffic impact assessment. On the Hunter Water side of things, we look forward there are there are potential conflicts of the odour buffer required of the Kurri Kurri Waste Water Treatment Plant. Hunter Water have engaged a consultant to assess those potential impacts and report that back into the assessment process and along with Maitland, RFS has responded with questions from the agency consultation, and their comment back consistent with Maitland, was that any future development needs to comply with the bushfire protection guidelines or requirement.

The biggest issue we've got in Cessnock is around the biodiversity and as a result, those biodiversity issues predominately, it's likely that council will be looking at requesting an extension for the gateway for probably 12 months. That's what I understand Ian, correct me if I'm wrong.

IR: Yeah, that's correct.

RB: And the reason behind that is on the next slide.

RB: So this is a bit of a recap just a refresher on where we have been heading. We've been looking to get a biocert on the site now for a number of years and in fact we're struggling in different legislations. So the latest version of that is that we have prepared a BCAR Biodiversity Certification Assessment Report in accordance with the legislation. That BCAR's been prepared by an accredited assessor and the purpose of the BCAR is to identify any potential impacts from the development on ecosystems and on species and within that they calculate those impacts and turn them into biodiversity credits which would be required to be retired to offset those impacts.

Those credit retirements when translated into areas, the offset is often significantly greater than the impact areas so one hectare of impact will translate into seven and ten hectares of conservation. It was, and still is, always has been our intention to generate those credits for the offset on site, by establishing a biodiversity stewardship site. That is still the intent because we have the like for like ecosystems and species next to each other, so it's the

Biodiversity Certification

- Biodiversity Certification Assessment Report (BCAR)
 - Prepared in accordance with the NSW Biodiversity Conservation Act 2016
 - Prepared by an accredited assessor, GHD
 - Has identified development (rezoning) impacts on ecosystems and species and calculates biodiversity credits required to be retired to ensure offset for the impact
 - Intention is to generate the required credits (offset) on-site by establishing a Biodiversity stewardship site
 - Preliminary assessment of the BCAR by the Biodiversity and Conservation Division (BCD) of DPIE has been completed
 - A number of issues have been raised, some technical and some administrative, but most concerning the issues regarding potential Serious And Irreversible Impacts (SAII)
 - Legislation requires SAII to be avoided and mitigated and Hydro has reduced development footprint by ~50% since preliminary master plan was development to avoid biodiversity impacts

CREATING PROSPEROUS FUTURES

Site Visit by the CRG

- **Dependent on COVID restrictions**
- Visit to site by the CRG to inspect the ECC construction works – either 21/10 at 5pm or 16/12 at 5pm?

CREATING PROSPEROUS FUTURES

perfect partnership.

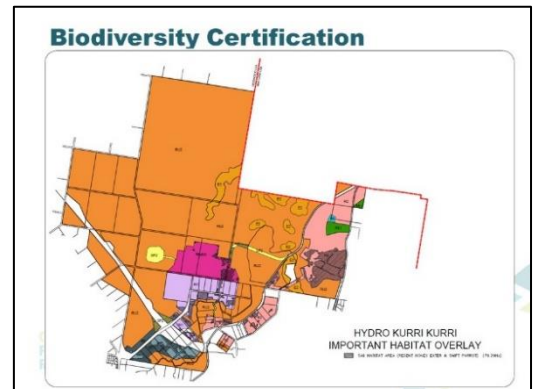
We have now completed and submitted the BCAR to BCD and they have completed their preliminary assessment. Whilst they've raised a number of issues, some of those are technical issues that have required us to deal with a couple of extra surveys, some of them were administrative, the biggest and most concerning issue was regarding the potential for serious and irreversible impacts on threatened species. The biodiversity legislation requires that any serious and irreversible impacts are to be avoided or mitigated, and it's been our view that since we have been developing our biocert strategy and assessment process, that we have thought that we have been able to demonstrate that avoidance by reducing the footprint significantly. So whilst we started at a large area of potential development footprint, that's been reduced now back to probably 50% of where it was initially and that was our view initially.

RB: However. I apologise that this might be difficult to see but what this slide attempts to show is the zone footprint overlaid with what's considered potentially serious and irreversible impacts on the Swift Parrot and Regent Honey Eater habitat. So, the hatched areas you can see there are currently identified the are currently identified as five locations. The view of BCD, and I'm going to paraphrase this and we're actually in the process of negotiating and discussing this and trying to understand what this means, but their view is as we understand it, but those areas need to be avoided at all costs. That has a very serious impact on the ability to develop the site as you can well imagine.

IR: I think Richard too if I can jump in there, we've encountered in the past with a similar issue with the Hunter Economic Zone.

RB: Yes, yes and of course that is not being developed as a result. Now the path forward for us now is to, in our view. This is very much wet paint here at the moment, but our view is that there is clearly other merit in the benefit of the development of the site. When you consider social and economic benefits that that development will bring to the region.

It is supported by council, supported by strategic planning, tools and plans that are developed by the Department of Planning by the state, who identified this as an important site not just for residential development but probably in our view, Hydro's view as an employment generating centre, the infrastructure, the site layout, the locations along the Hunter Expressway, the power, water, all those kind of attributes, lends itself perfectly to the development that we have dreamed about for a long, long time.

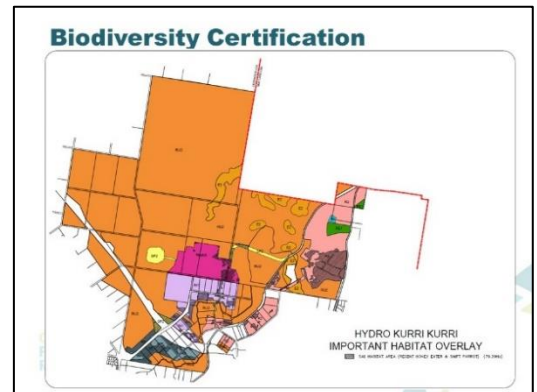


It's still early days but at some point it's likely that we'll appeal to the referee, you know whoever the referee is in this context we tried to understand that this can't surely be an all or nothing approach and there must be a sensible compromise and a sensible outcome here that allows the site to be developed in a logical and sensible way whilst maintaining or whilst delivering a fantastic conservation outcome. I guess the one perverse situation that results from the fact that if these areas are needed to be avoided at all costs then there are also no offsets required and therefore are no conservation of those offsets, so not only do you severely impact the viability of the development of the site, but you also then don't get a very large biobank or biodiversity site which has funded conservation measures attached to it, so you end up with a large sort of piece of rural land that overtime you get this sort of a risk of incremental impacts on the biodiversity in those areas completely legally under the permissions of the existing zone. So that's not our intent that's not what we want to achieve. What we'd like to achieve is a sensible and balanced outcome that hopefully delivers a good result for the community which is what we've been striving for. So, at the moment we've got a recognised expert whose been in the field analysing those hatched areas. There may be some of those hatched areas, because this is simply just a mapping tool that is applied by the state and actually by the commonwealth that identifies these areas so we've got the expert in the ground looking at trees in the area particularly forage trees for these species and its possible that even the expert may come back and say well the area could be mapped as important but it's unlikely that those species will forage here because the feed trees aren't there or they just aren't mature enough or something like that so there's a bit of field work that we're doing and then we need to sit down with the BCD and probably with the Department of Planning and say you know "what next? What now?" And clearly that's going to take a bit of time and hence the reason why we expect that the rezoning from the Cessnock side of things is going to take a little bit longer than the Gateway timeframe which is December this year will allow for so hopefully not too much longer, hopefully this can be resolved early next year and then we can get on with the activities on the site.

Any questions?

MU: That yellow strip there to the right so you've got SP2 there which is the clay borrow pit and the cell space but to the right isn't that the old railway line?

RB: That is not the old railway line but a proposed SP2 connector to the development. So it allows for future rail connections to the



industrial land.

MU: So it comes off the other rail line?

RB: Yeah. The South Maitland Railway Line is actually a blank space because we don't own that land so everything that's white is not our land.

MU: Yep, Got you.

RB: Alright moving on, I think I have one more slide Andrew which is just the divestment.

RB: I don't have too much to add to that. That's the same photo as we had last time. That's clearly changed, the switchyard demolition and remediation is all but finished, with audits to do. It's the same auditor we are using. They are preparing to sign off on that probably in the next month or month and a half along with a significant part of the Hydro site and that will then form our evidence to the Department of Planning that that land is able to be released under the restrictions of the VPA.

In turn what that means is that land will transfer to McCloy's and in this case subsequently that it will transfer the Snowy Hydro for construction of their Hunter Power Project.

I know that's not formally approved yet. But I'm guessing just with the information that's available in the public domain that you've probably seen, that they're probably pretty close to that approval as they've gone to the market for, well they've actually placed orders for their turbines in Japan so clearly they are understanding that that approval is imminent.

I've got a meeting on site shortly with the Snowy team and with McCloy's to start them getting us in the loop in terms of what they're looking for, in terms of timing and requirements on the site, and I'm guessing they are looking to move very very quickly once they get that approval. But we'll start and see some development action there and sort of tailing back to what I was talking about the biodiversity. Let's hope that that is the last development action that we see on the site any time soon.

RB: Last slide, and that's just a bit of a heads up.

We have alluded to this last meeting we weren't quite sure that we'd be ready this meeting so we decided to make this meeting like the last meeting via zoom but I think the next meeting will be a good opportunity for us to go out on site.

If you guys are interested we can host a visit where we can go out and look at the cell, touch it feel it all those things that Andrew's been talking about you can see and have it explained first. Ideally





and give you some thought I suppose, it would be ideal if we could start that a little bit earlier. If people are available to be on site at 5 that will give us a little bit more daylight, a little bit more of an ability to get out there and get back.

By the middle of December it will be pretty late but what I would like to do following that meeting is not have our tradition presentation but have a bit of a just an informal gathering of afterwards and share a few snacks and beverages afterwards if you're up for it.

MU: And Christmas trivia. Look I would mention, if anyone has any concerns around Covid or coming to site or anything in relation to OHS or personal safety just reach out to me and we'll have a discussion about that and see if we can put your concern to rest and we'll look to make it as safe as possibly can, given that the guidelines will be certainly looser soon and looser again by the first of December around covid and there shouldn't be any issues as I believe but these things are fluid as Richard mentioned so please let us know if you've got any concerns at all so we can walk it through,.

RB: Yeah I'll probably extend that to we might need to understand with a week or so's notice maybe I'll get Michael to follow up individually with everybody with their intention to join or not because that will sort of drive some of the logistics on how we'll get out the site. So I might get you to sort of follow that up Michael.

MU: Yeah we need to know whether to order the non alcoholic wine or the non-alcoholic spirits depending on who's coming. Alright any further questions for Richard or Andrew as we move towards the end of the meeting.

TT: Just one question any feedback on how close the power station is to approval?

RB: I don't know Toby, as I said I'm only going off what I read in the media recently and that indicates to me that they are all, but so in the next couple of months.

TT: It would be good to get some more feedback from McCloy Stephens too just on you know anything that they've got in the wind.

RB: My intention was to invite Shane along to that December meeting as well so you can have that chat so you know get him to sort of join in in with us.

MU: That's alright mate, not a worry. We'll get to see it in the flesh next time so that's great. Alright any further comments or



questions around the room?

MU: Will anyone have any issues arriving to site to 5pm on December 16? Well with that, 7:47 by my watch so we'll close the meeting thank you very much for hanging in there a lot of information, remember the acronyms for the next meeting and stay safe everyone we'll see you soon.

6 Meeting close

Meeting closed: 7:47pm

Date of following meeting: 16/12/2021