



Project	Hydro Kurri Kurri Site Redevelopment Project	From	Emily Strauss	
Subject	Community Reference Group Meeting	Tel	1800 066 243	
Venue/Date/Time	Thursday 18 August 2022	Job No	2218982	
	MS Teams video conference 6.05pm – 7.30pm			
Copies to	All committee members			
Attendees	Mr Brad Wood – Community representative (BW)			
	Mr Toby Thomas – Community representative, Towns with Heart (TT)			
	Mrs Kerry Hallett – Hunter BEC (KH)			
	Mr Alan Gray – Community representative - Retired Mineworkers (AG)			
	Mr Andrew Walker – Hydro Kurri Kurri Project Manager (AW)			
	Mr Iain Rush – Cessnock City Council (IR)			
	Ms Emily Strauss – Minutes, GHD (ES)			
	Mr Michael Ulph – CRG Chair, GHD (MU)			
Guests/observers				
Apologies	Mr Richard Brown – Managing Director, Hydro Kurri Kurri (RB)			
	Mr Andrew Neil – Manager Strategic Planning, Maitland City Council (AN)			
	Mr Bill Metcalfe – Community representative (BM)			
	Mr Kerry McNaughton – Environmental Officer, Hydro	Kurri Kurri (Kl	VI)	

Not present





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1 Welcome and Acknowledgement of Country

Meeting commenced at 6.06pm

Michael Ulph (Chair) (MU)

Acknowledgement of country.

Emily Strauss from GHD taking minutes.



3 Welcome and meeting opening

MU welcomed attendees, provided an Acknowledgement of Country and noted apologies.

MU asked those present to declare any pecuniary interests.

4 Last meeting minutes

AG moved the minutes.

AW seconded the minutes.





5 Project Update

AW: That's where we got to at the last CRG meeting on the 16th of June. That was an aerial shot of the cell so we had just started lining the primary liner on the southern batter, which is the dark black area on the right-hand side of the containment cell and the clay bunds had just been installed and we were starting to put primary liner on the floor, which you can see just in the foreground which is the western part of the cell.

This is how it looks today. We've now got primary liner down on the floor in the two western quadrants which are in the foreground and we're working on the northeast quadrant, which is in the background and the southeast quadrant still needs to have the primary liner done.

You'll also notice that water is being held in the southwest quadrant. We have saddlebacks there and there are drainage pipes. We've capped those pipes which holds any storm water. It helps with construction on the eastern half of the cell because all the water drains from west to east. And in the future, when we're putting waste in the cell, that will help minimise leachate generation. You'll also notice the two western ramps. The pavement layers are going in as well.

So as we were discussing before the start of the meeting, there was a hell of a lot of rain in the area early in the month of July. This is a photo that was taken by our Sentinel camera, so we have a camera that takes a picture every 10 minutes and we had 209 mm of rain that day on Tuesday the 5th of July and 435 mm of rain in four days from the 3rd to the 6th and nearly 500 mm of rain for the month of July, which is a record for us. So we haven't had that much rain in a month since we've been keeping records for the last 30 years or so. That's from our onsite weather station that Kerry manages.

So, water has infiltrated the north sump, so we already knew there was a problem with the south sump, that's why not much work has been happening in the southeast corner. We're currently working through what we can do there but this northeast sump, after this rain event got some water under it, so I'll talk a bit about what we're doing there in the next few slides.











This was just after that rain event, so 16th of July. This is an aerial shot. But we had managed to get the floors finished in the western quadrants, which was a good thing. So they are all protected from the wet weather now and there's not much more to do in the western half to be ready to receive waste. It's just got to have the cloth put down and they had already put the rolls of cloth there on the floor. So they are those white rolls you can see on the very western edge of the cell. They'll be laid out on the floor and then once the ramps are built, they'll start putting the drainage aggregate down, then another layer of geotextile and then the western half is ready to receive waste. So we can see light at the end of the tunnel. It's just getting through this, completing the construction the eastern half that's been challenging for us.

MU: Andrew, would you commence putting waste in the sections that are complete before you finish the entire cell?

AW: No.

MU: No, OK. I wasn't sure.

AW: No, because of the risk of asbestos.

MU: Yes

AW: Anybody that goes into the cell once waste starts going in there has to go through a wet decon unit and wear full PPE, so paper overalls, gloves. booties, respirator. So we have to finish construction and lining before any waste starts moving. So this week Daracon took the decision to bring in a rather large crane. A 500-tonne mobile slewing crane. It's the biggest crane I've ever seen on site. It's got a fly jib on the end of it you can see there. So on maximum reach, right over on the far side of the sump, it can only lift about 6 tonnes I believe when it's at full reach.

But because we've already lined a large area it would have been too difficult to get in and repair the sump the conventional way we would have had to remove liners so the crane arrived Monday this week, and it'll be there till Monday next week.

And what we are doing is Daracon have had to remove those two pipes in the bottom of the sump and we have agreed to a repair method with GHD as the designer and SMEC as the independent engineer and we've actually welded in a patch of HDPE liner with GCL over the top of the existing liner, so we've made, if you like, we've got two secondary liners and then we'll have a primary on top of that. So we're actually going to have three layers in the sump instead of two. But by doing that, we've now fully encapsulated the GCL so that's like sandwiched in between two layers of plastic, so it can't prematurely hydrate.

So the GCL is the geosynthetic clay liner it's a geotextile impregnated with bentonite and the idea is it needs to remain dry









until it has confining pressure on it. Which is either the 300 mm of sand or 300 mm of drainage aggregate. Once it's got confining pressure on it, if it gets wet it doesn't matter because it expands and forms a tight seal underneath the plastic.

That is just going through in chronological order what we've been doing. The other thing we've been doing is a soil confining layer field trial. On the side walls of the cell, we've got the secondary liners, which is geocomposite drainage layer, geosynthetic clay liner, 2 mm HDPE, and then on top of that, the same thing: primary liner which is GCD, GCL, HDPE. Then they put down a thick layer of geotextile, which is the protection geotextile. And then we put a 300mm layer of clay down. And then that will be covered with another layer of plastic, just a thin 1 mm thick layer and then the waste can be pushed up to the side wall of the cell, you don't actually, sorry, you don't actually push it up the sidewall, you just place it as you fill the cell. So that layer of clay is there to protect the liner materials on the side wall from damage that could potentially be caused by the waste. And we know that in the capped waste stockpile we've got anodes that will have anode rods attached to them or the stubs or the yolks, and we have cathode blocks that will have collector bars in them, which are long steel bars that could potentially damage the liner so there will be sorting of that waste and we'll try to put those jagged materials in the centre of the cell and just keep like soils and things towards the outside. Anywhere near the liner, we're going to try and use soil that doesn't have any sharp material in it.

Also on the base above the drainage aggregate, the GHD tech spec calls up a 1.5 metre thick what they call a fluffy layer, which again is just soil. And we're going to use a lot of the sandy soil that came from the municipal landfill in all the remediation that we did in the buffer zone over the last five or six years because that's a good material to protect the floor from damage.

So this field trial had to be done. So Daracon, it is similar to the field trial we did last year on the floor, they've got to simulate and prepare the subgrade, put all the liners down and then start placing the clay and tracking over it with light machinery so they only use five ton excavator and a small posy track, which is like a bobcat, but it has tracks instead of wheels, so very low ground pressure, less than 35 KPA and that worked well. When we uncovered it, there was no damage to the liner. It's an empirical trial to actually simulate the equipment and methodology that you're going to use in practice.

The other interesting thing that's been happening is we've actually started stripping the cap of the capped waste stockpile. So that's a bit of a milestone for our project. So Daracon have been taking half a metre of topsoil and stockpiling that in an area and that topsoil, it's got to be tested by Ramboll. But we're pretty sure it's









clean with no contamination, so that can be reused on the new cell.

MU: Is that it just behind?

AW: Sorry?

MU: It looks like there's a smaller pile just behind the front pile there.

AW: Ah, yeah, that's it there.

MU Just behind the ... Off to the right, back right

AW: They started and that's filled up this whole area now with topsoil.

This is a few days later so quite a bit of topsoil removed.





More topsoil.



So that's the stockpile there in the background, which is next to the Daracon compound. That's all topsoil. And by this stage I think there might have still been this windrow along the eastern side and the southern side, that topsoil still had to be loaded out and that's actually the clay cap. So underneath the half a meter of topsoil, there's a one-metre thick clay cap, and then a 200 mm gas draining layer. We have allowed Daracon to strip half of the clay cap, so half a metre. We didn't want to take any more that that away, just so we're protecting, making sure that nothing can, no water can get in contact with the waste and no waste gets exposed. Over the last two weeks they've been stockpiling clay over in this stockpiling area and again, that clay will be reused in





the cap for the new cell. Along with another stockpile of clay, which is over the back here that came from the excavation of the containment cell.

This photo is showing the soil confining layer that 300 mm thick layer of clay which actually came from the excavation of the cell, that's been laid on the northwest access ramp. These are the ramps that the dump trucks are actually going to reverse down and start tipping the waste onto the floor of the cell. But they need a fairly thick pavement layer, so the first layer is the 300 mm of clay, the soil confining layer, and they're putting down something like a geogrid, it's called a Tensar Triax Geogrid.

And on top of that, there is four pavement layers, so there's a 150 mm select fill layer which is a graded material that came from Buttai quarry. I think it's a minus 20 mm clay product and 150 mm of that, and then a 150 mm sub base 125 mm base course, 75 mm wearing course and that will all be a material called DGB 20 which stands for dense graded base. So it'll be like a normal road, it just won't have any asphalt on it, of course, it'll just be a gravel road. And that will have to be maintained by Daracon. If we get wheel rutting, things like that, it'll have to be repaired. So it's 800 mm thick in total. To be conservative, we don't want to use a roller on static for each one of these layers to compact it. And we think that should be good enough compaction for the pavement to have fully loaded dump trucks reversing down.

Now going back to the north sump, this is a photo taken this week. One of the first things was the pipes, which are called the leak detection pipes. They're between the primary and secondary liner and they collect any leachate. If it did leak through the primary liner, it would go into the sand drainage layer. We had to cut those pipes and remove them with that big 500 tonne crane. And they'll be joined back together later on using a process called electrofusion welding with some sockets.

And so the guys were cleaning all the plastic there on the old secondary liner. In this photo, one of the guys from Ecoline is arc testing the secondary liner which uses a positive and negative electrode and you pass high voltage at low current. And if there's any holes in the liner, even small pin holes, this will pick it up and record it as a defect. Fortunately, we didn't find any holes in the liner. It was all good.











And once that was done, then they could start the process of putting in this secondary liner patch, so it's a complete patch over the whole sump because water has got in under the liner and it didn't have confining pressure on it. The GCL is no good, so it's got to be redone.

So that involves putting down another layer of GCL.

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Which is what they are doing here, that's the white material and the crane is bringing it in one roll at a time.

So in this photo they've done the complete patch of GCL. And now they are starting the HDPE liner so that's the black roll there.

And in the next photo they have got the HDPE liner all laid. Now they are extrusion welding it, so the new liner to the old liner which is what you can see. That's the extrusion weld there. And that goes all the way around across here, down, across, back up all the way along there and all the way around the rest of the patch.

MU: Do we know how the water got in in the first place? Was it just it wasn't completed and you got so much rain, that sort of thing?

AW: One of the things we had to do, we had to put a temporary liner trench in. I'll go back up.

But if you look at this shot here, where we haven't lined, so along here. The original secondary liner we dug what we call a temporary anchor trench. Which is just like a trench in the subgrade about 300 mm deep by 300 mm wide and we buried the three liners in that trench and backfilled it.













There's two theories. One is that water has somehow made its way through that temporary liner trench. The other theory which I think is more possible. On this eastern batter, I've noticed shale. There's some exposed shale at the bottom of this, at the toe of this batter. And I know that when we dug the two sumps, we found shale in both sumps. So I'm thinking when we had that rain event in early July, water has got into the shale and made its way via the shale, which is a fractured rock, a very soft rock, very similar to clay and it's actually got in and up and underneath the liner and the same thing happened with the southern sump. But it happened back in February, mid-February, we had a big rain event then, I think we had like 70 mm in one day, and water got in. There it's either got in through the temporary liner trench or the shale.

So the problem is, whilst ever, we have an opening here on the eastern batter, which is Daracon's main construction access to bring in materials like sand and gravel and machines, whilst ever that's open, we're vulnerable to this happening again. We know where we need to get to. We need to get the whole thing completely sealed in with secondary liner. Once that happens, then we're waterproof. But it's getting to that point. That's the challenge.

Yeah, so in this photo here, they're just putting patches in anywhere you have a T joint. So like here, there's a hot wedge fusion weld, which is the overlapping scene. You can't weld an extrusion weld to a hot wedge fusion weld properly and get a complete seal, so they have to cut a circle and do an extrusion welder patch. So that's what they're doing here. And here this big patch, they actually cut out a DT sample. which stands for destructive testing sample. That's the one I explained in the site visit where they cut it into three coupons. One is tested on site another one gets sent to an independent third-party laboratory and other one is kept and handed over to us at the end as a record. That's like a tensile test on the weld to check the weld strength.

Then, while the crane is there, Daracon has been also using it to complete the floor in this northeast quadrant. So this is the subgrade getting prepared. After the clay was all shaped and rolled, they put a thin layer of sand down just to seal any imperfections and then it's ready to start lining.

So that's the next photo here is showing the GCD being laid down on the floor of the northeast quadrant, that's the Geocomposite



Secondary HDPE liner patch being extrusion welded to the existing secondary liner – 17/8/22. Small circles are patches at the T joints. Large











drainage layer followed by GCL and HDPE and that's all that was all completed today actually.

And so you'll notice, so that's the clay bund. So that bund as soon as they get this liner finished on the floor, which happened today, they can now start completing the clay bund right across to the eastern batter here. You have to put down some geotextile and some more GCD on the batter, but once that bund is in, then that whole quadrant is sealed off, and if we get water in the southeast quadrant, it's not possible for it to get into the northeast quadrant, so I think that would be a good thing once we get to that stage, we've got it isolated from the rest of the cell.

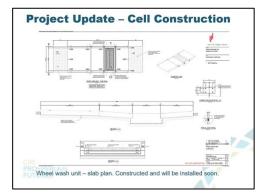
And then we can move on with the primary. I spoke about the wheel wash units last time, so the concrete has now been curing for at least two months. They're ready to be lifted, there's lifting eyes. I think over the next month or two, they're going to be positioning them, certainly getting the one in at the capped waste stockpile. The one at the cell may not go in until just before we're ready to start putting waste in the cell, so I'll have more to say on that next time, in two months time.

The water treatment plant. That's the same photo from last time but dry commissioning has become completed, so that's where they go around and do all their point-to-point checks like checking instrumentation, checking all the cabling in like power cabling, instrument cabling, checking the PLC program. And at the moment they're doing wet commissioning, so they're taking water from the leachate pond which is just storm water and they're filling up the raw water tank, and these tanks here that feed the filter banks and they're filling the filter banks with the first fill of media the things that I talked about last time, like the resins, the sand, things like that.

In about 2 week's time, they should be ready to start what they call process commissioning, which is actually taking some of the leachate from the capped waste stockpile, which they're going to pump out of a couple of the wells that we still have there, pump that leachate into an IBC. Bring it down and start running it through the water treatment plant and testing to make sure it's all working OK before, obviously we want that process proven that it can work before we start moving waste.

On the waste handling side, so there's been a lot of work happening in the last two months. On the methodology for the capped waste stockpile, waste removal and handling, and the gypsum addition and cell filling. And we had a workshop, last week, between Daracon and Enviropacific Services, who are Daracon's subcontractor and will be doing all the waste handling, Ramboll, who are our environmental consultant, and us. We went











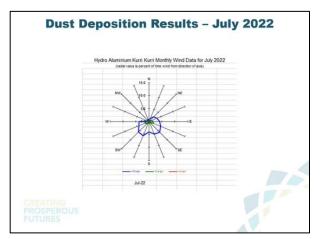


through the work method statement that was developed by Daracon and EPS. We had a lot of comments. We had like an Excel spreadsheet with like 120 comments. So Daracon and EPS are just doing a final update now, addressing our comments and the next step is to actually do a trial, a dry run, simulating what's going to be happening in practice. So we got a pile of material which is pretty inert, it's just anode butt fines. So we're going to do a trial using that and simulate weighing the waste with the excavator, fitted with load cells, adding the gypsum with a loader, fitted with load cells, loaded into a dump truck, drive the dump truck around site and then download the data from the data collection system in both the excavator and the loader. And we'll probably do like half a dozen loads, drive the truck around site monitor dust, test out the wheel wash units. Things like that.

We've also got to set-up some health monitoring protocols, so anybody who needs to go into the cell or the capped waste stockpile, they have to do health screening which involves an xray of your lungs just to check that everything's OK. That's just standard practice that's required under the Code of Practice.

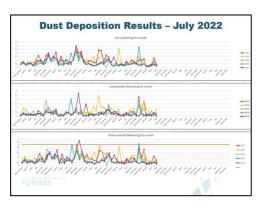
Our site auditor, Ross McFarlane from Aecom, also needs to review this methodology and we're planning to have a meeting on site with Safe Work NSW. We made contact with them, a few weeks ago and told them this is coming up. And one of the guys that actually commented on the EIS back in 2016, he's going to be coming to site to have a look around and to have a meeting with us and Daracon and EPS.

These are the dust deposition gauge results so for June and July, the results were pretty normal as you would expect. All the rain, there isn't a lot of airborne dust.



And the wind mainly from the southwest and the southeast.

Richard's updated this slide. So on SPL recycling, we're now up around 80,000 tonnes total that have left site and we estimate that's about 91% of the total stock. We do have slightly more SPL







in the sheds than what we originally estimated. I think, when we started these meetings, we estimated 79,000 tonnes. That was based on the number of pot failures. Over the time period when we first started putting it in the SPL sheds. Well, that was a little bit out, so it's probably more like, I think 88,000 tonnes, 89 something like that.

This is another one of Richard's slides so on the rezoning and biocertification. Still progressing with DPE, Department of Planning and Environment, for the rezoning with Cessnock Council for the part of the site that's in the Cessnock LGA. And on the biocertification - public exhibition in two to three weeks for 30 days. Details to be advertised in the various newspapers, access to biodiversity certification assessment report, the BCAR, and instructions for making a submission will be on our website - the Regrowth Kurri Kurri website. And responses to submissions to be considered in the BCAR assessment determination.

And that's it. Any questions?

MU: Thanks. Thanks, Andrew. I'll just mention also we've put a couple of other documents onto the website, basically, that talk about the MOD approval and a couple of other things like that.

I've been dealing with Shaun to get those on there. And I've just asked him to double check that I've got everything on in the right place so that I haven't missed any document, but that's under that compliance section of the website. Yeah. Any questions to Andrew around the presentation or other things around the site?

AG: Very well explained.

MU: OK, so we have got Alan, and nothing from Toby?

TT: Can I just ask with all this rain and etcetera, etcetera? Daracon must be suffering some significant financial losses, unless they've been compensated by Hydro, any compensation from Hydro?

AW: Not really, we've been trying to give them work that they can do in wet weather, but it's pretty limited. I think it's the same on all their sites. Yeah, it is an issue, it's been difficult for them and their subcontractor, the lining contractor, they've been suffering as well. It's not a good time to build a containment cell like digging a hole in the ground in wet weather.

TT: They probably won't want to build another one after this.

AW: No. Yeah. I mean, if you could predict the weather. You can only build it in a drought, I think.

KH: And they're forecasting more rain too.



Rezoning / Bio-Certification

Rezoning (Cessnock)Still progressing with DPE

Bio-Certification

- Public exhibition in 2-3 weeks for 30 days
- Details to be advertised in various newspapers
 Access to Biodiversity Certification Assessment Report (BCAR) and instructions for making
- Report (BCAR) and instructions for making submission will be on
- www.regrowthkurrikurri.com.au • Responses to submission to be considered in BCD

assessment/determination







AW: Yeah, it's supposed to be another a wet spring and a wet summer.

KH: Yeah.

AW: We're nearly there. The crane has worked very well this week. It's been so much more productive having the crane. We can do the same with the southern sump, the southeast quadrant, get that finished. Then once the base is done, we can relax, but then the problem is when waste starts going in the cell. We don't want to be producing a lot of leachate, but that's also a concern.

We're just thinking about options for leachate storage at the moment - whether we need to put in another leachate pond or get some bladder tanks. And also sending it off site which is another thing that's in the contract. Some of it could go to a plant down in Sydney, Cleanaway at Homebush. That is also a contingency option.

TT: You've just got to pray for fine weather.

AW: That's it.

MU: Thanks, Toby. Anything from Iain, while you're on the call, Iain?

IR: Yeah. Nothing from me. Thanks.

MU: Thanks Iain. Alright and no further questions? Last call. Alright, great, well thanks then for that, Andrew. Is there any general business at all. Got a short meeting today. Nothing else to add?

KH: So everything is going OK with the power plant?

AW: Yeah, I believe so. There's still a lot of civil work going on, so ground stabilisation works. What they do, they bring in truckloads of cement powder and they have a machine that actually mixes it into the soil and then to a certain depth and it makes a very hard base. But UGL have actually set-up – I'll just go back to an earlier slide. There's a contractor's, I call it a contractor's city. Actually, sorry it's not in my presentation. I've got a video which shows the rest of the site and it shows UGL's contractor's compound so I can play that video if you would like?

MU: Yeah, let's do that.

AW: That's another one of Andrew Solomou's videos.

Project recap video by Ansol-Tech Visual Production

7:17 video featuring the following subheadings:

- Hydro Aluminium Smelter Kurri Kurri
- Asbestos Removal
- Demolition
- Material Recycling



- 2020
- 2022
- Capped waste testing
- Buffer zone remediation
- Old municipal landfill site
- Smelter site contamination clean up
- Engineered containment cell construction (ECC)
- Ground water sampling
- Sediment detention basins
- Leachate pond construction
- ECC earthworks
- Material placement trials
- Water treatment plant construction
- Containment cell lining
- Liner weld quality test
- Drainage sand placement
- Dipole testing
- Internal bund construction
- Liner arc testing
- Soil confining layer placement
- Capped waste soil removal
- To be continued

MU: To be continued. Wow, that's a long one, Andrew. Should have got some popcorn.



NOTE: "Contractor's City" above. A screen grab from the video.

AW: We did that one, we had some people from the ALGA Conference on site last week. It's the Australian Land and Groundwater Association. And I think it's the first conference they've had face to face since COVID started and they wanted a site visit. So Ramboll is on the organising committee, so they organised site visit. We thought we would do a video for them so they get a bit of a background of what we've done so far on the project.







MU: Yeah, that's fantastic. That's great. Any comments or questions in relation to the video?

AG: No, I think it would be great, shortly, to be able to put it up in town at the Retired Mineworkers meetings or something like that. Show the community, what you've had on.

MU: Yeah, I think so. Yeah, bring the community up to speed with what's been going on out at the smelter site because I guess there hasn't been many visitors besides those that are working on it, so absolutely that would be great.

AW: And maybe that could be McCloys and Snowy involved with that as well. Talk about what's planned for the future.

MU: Yep, yeah.

AG: We had McCloy the other day. They give us a presentation to our audio stuff wasn't up to date. Frank is buying a new set. We get that in and have the hall available.

MU: Sounds good

AW: OK

MU: Alright. Any further comments or questions before we wrap? Alright. Well, thank you very much for that. So the next meeting we've got planned is for the 20th of October, so two months away, on that third Thursday as usual, so watch this space.

We'll get the minutes out to you soon-ish.

So, enjoy your week. I'll be back on the 29th. Thanks very much for joining us all. And see you next time.

1 Meeting close

Meeting closed: 7pm

Date of following meeting: 20 October 2022