

Ruth Brown

From: Scherer, Thomas [Thomas.Scherer@siemens.com]
Sent: Friday, 10 October 2008 10:39 AM
To: Ruth Brown
Subject: Kogan Creek ash disposal area information DA IPDE00173405A11

Attachments: Ash Dam Volumes.xls; Ash area pictures for EPA.pdf



Ash Dam
Volumes.xls (16 KB)



Ash area pictures
for EPA.pdf ...

Hello Ruth,

As discussed today on the phone we would like to discuss the current situation on the ash disposal area and the remaining water in the required storage capacity.

In accordance with the DA requirements under E4 we have arranged for an inspection of the dam by ARUP who were also involved in the design to assess its civil integrity. This inspection is scheduled for 21/10. Other parts will be covered by myself and both reports will be submitted to you as per the DA probably first half of November.

Everything is working fine but we have the issue that we still have water in the Design Storage Allowance. We will not be able to remove the water to provide the full capacity as of Nov 1. The table below shows the capacity over the level up to the spillway height. At the moment we have about 120ML of water still sitting in this area. This is about 35% of the required capacity. *120,000 m³* *capacity of 315 ML*

We have started to apply measures and have spray cannons in operation to increase evaporation. Some of the water/ run back from the cannons is taken up to the settlement ponds within the ash area. This area has some available storage capacity. I assume from a rough estimate this is about 15-20ML or a bit more.

The water level drop achieved per day at the moment is about 15mm/day with the applied measure.

We have considered the following further measures, which can be implemented if required:

- 1) Employ another diesel pump and spray cannons to lift the evaporation rate.
- 2) Recycling of water back to the station. In this option we would pump the water back up to the station by means of the diesel pump returning the water through the out of service slurry line back into our waste water pit for the slurry mixing. This has not been tested yet. The practical side is somehow limited as there is a need to change the slurry lines about every 4 days because of the need to relocate the discharge points of the in service line. It would also require constant work on opening and closing the line used for pumping water back to the station. Theoretically we might also have a restriction based on the water demand of the station.
- 3) same as above but this time dumping the water into the coal settlement ponds of the coal stock pile. The water in there is normally used for dust suppression in the coal handling plant. However it needs to be considered that the overflow from those ponds drains into the drains reclaim dam. Its water is being used in the station as well but might be at a later stage. Other than for the above 2) there is no restriction in pumping water back coming from the station.
- 4) raising the spillway level threshold temporarily about 0.5-0.75m. The design of the dam allows for a freeboard of 1.5m. From a civil engineering point of view it seems that the dam can accept a higher water level, but it would then be a change the DA as such. Details of such an threshold increase can be discussed if the idea is an option the EPA would find acceptable. Such a measure would increase the storage capacity to another 70-100ML as the pond area is very shallow on the top. I have discussed this idea with ARUP already and will get into details with them during the inspection.

From the above measures 1 and 4 can be implemented on short notice/ as required basis.

Items 2/3 require constant work as the slurry lines are required to be changed over regularly and therefore not a preferred measure.

Our proposal is to keep the current measure in place for the time being and if weather conditions (rainfall/water level) allow to cease this by Christmas. If required the cannons stay in operation beyond Christmas. If the water level increases before say by New Year by more than 0.5m from its current level another pumps/sprays will be installed. If the water level get up to another 1m at any time before February 1, above the current level the spillway level will be increased. Dates and levels are just picked but are considered a starting point for discussions. As a normal routine on site the ash area is inspected several times in a week and we have work in the area for the relocation of the slurry line once or twice a week. Monitoring of the water level and the remaining storage capacity is given. If measures are required we would like to apply them in the most efficient and economical way.

I know that the Owner has been looking into options how to make use of that water for the station, but because we have not handed this part of the station over to them the plans have not been finalised yet.

My observation throughout the time also showed that the stacked out ash has a sponge like characteristics which is beneficial in respect of the water balance in the area. I have noticed that the moist surface of the deposited ash is a good evaporator and when dried it soaks a fair bit of water back into it during rain event and releases this water through evaporation at a later stage. This can also be noticed as the run off in the settlement ponds and the storage area is quite a bit less than what you would expect. This is in my opinion a positive margin which we can keep in mind for the assessment.

On the ash slurry side the system works very well and we achieve excellent results. The ash stacks out nicely and we have optimised the system so that we pump slurry continuously. We achieve in average a slope of 1:15 and even up to 1:10. The downside of this good settlement is that we need to shift the discharge point about every 4 days, i.e. we lift the ash cone around this point by 1.5-2m. The slurry in average reaches its travel limits within a 100m range and often well within 50-80m.

I have attached a few pictures which I took earlier this week. Pictures 1 and 2 show you the water level in the storage area (view from the centre west and east. As you can see the excavated part is almost full and has reached its top in the southeast corner where started fill the low point next to the dam in that very spot. The next three pictures show you the northern section of the ash area where we have filled the north-eastern pocket and you can see the established slope pretty well on these pictures. The last picture shows you the flowing slurry from the outlet which has been in service for 2-3 days (continuous discharge). The picture was taken from around 50m away.

Hopefully this gives you a fair overview of the situation. Please do not hesitate to contact me if you need anything else. Could you please discuss the situation with your experts and advise on the next steps.

Could you please also send me the contact details of the person in charge for the renewal of the ERA certificate.

Best regards,

Thomas Scherer
Project Manager Kogan Creek

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<<Ash Dam Volumes.xls>> <<Ash area pictures for EPA.pdf>>

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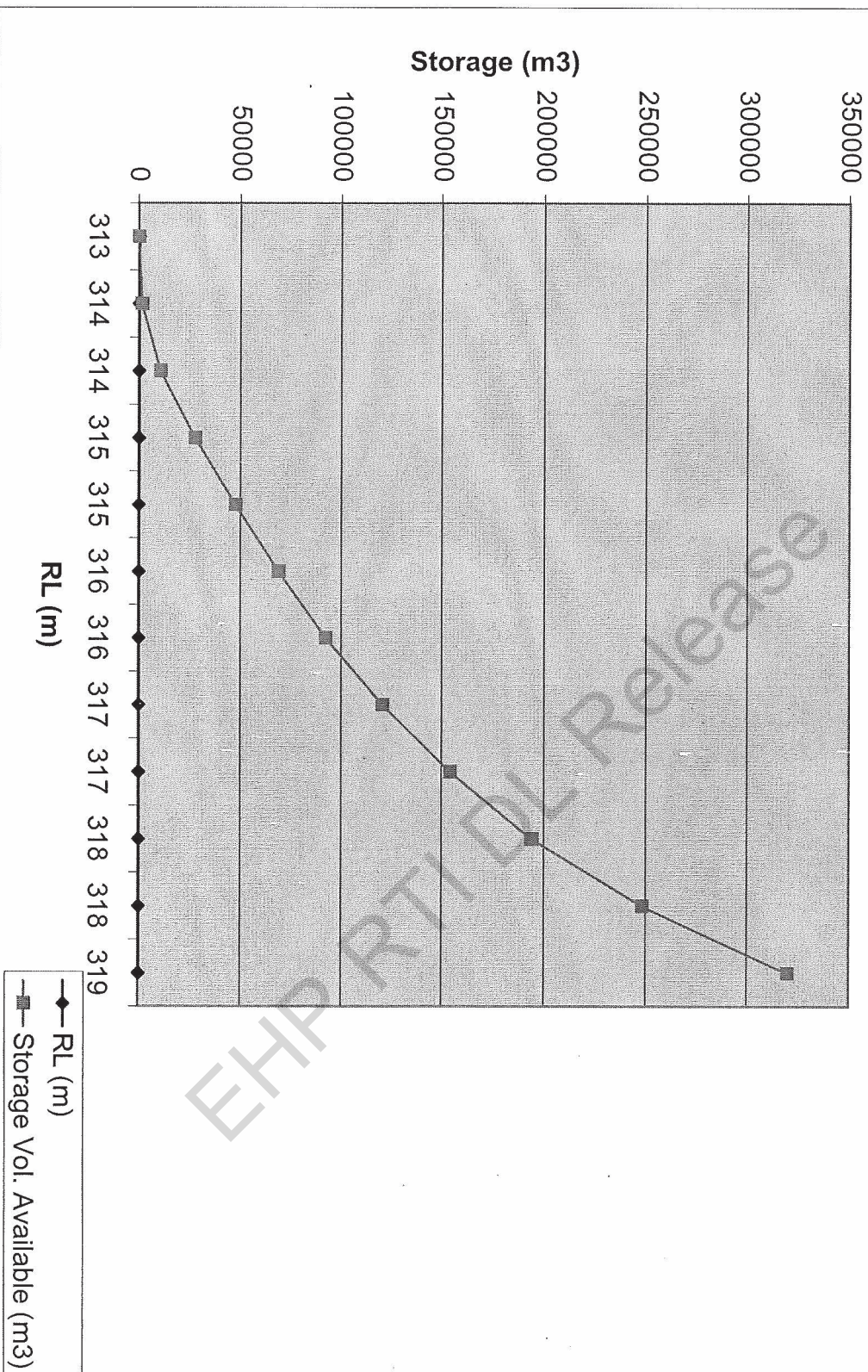
EHP RTI DL Release

Initial Ash Area Runoff Storage Volume

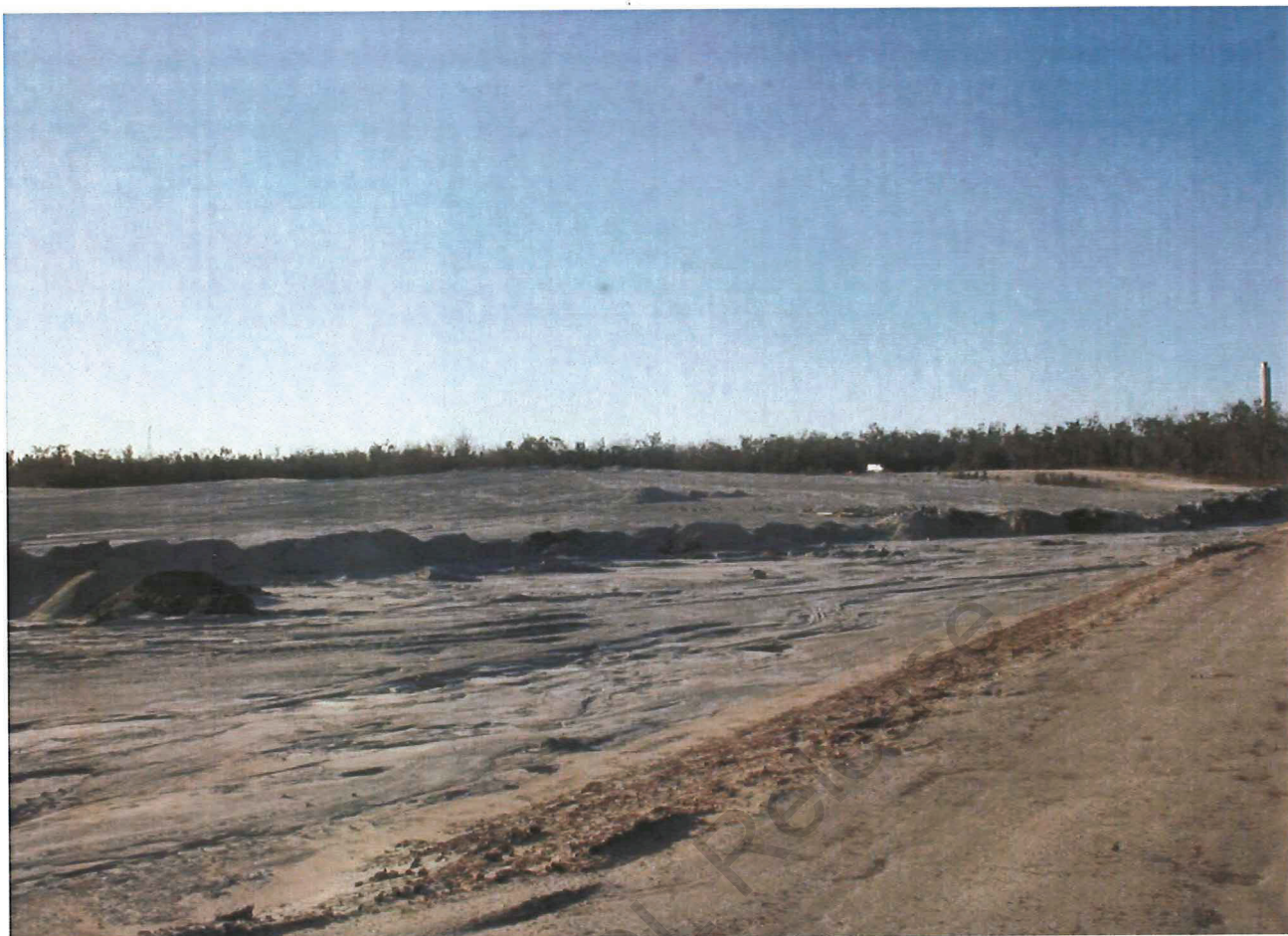
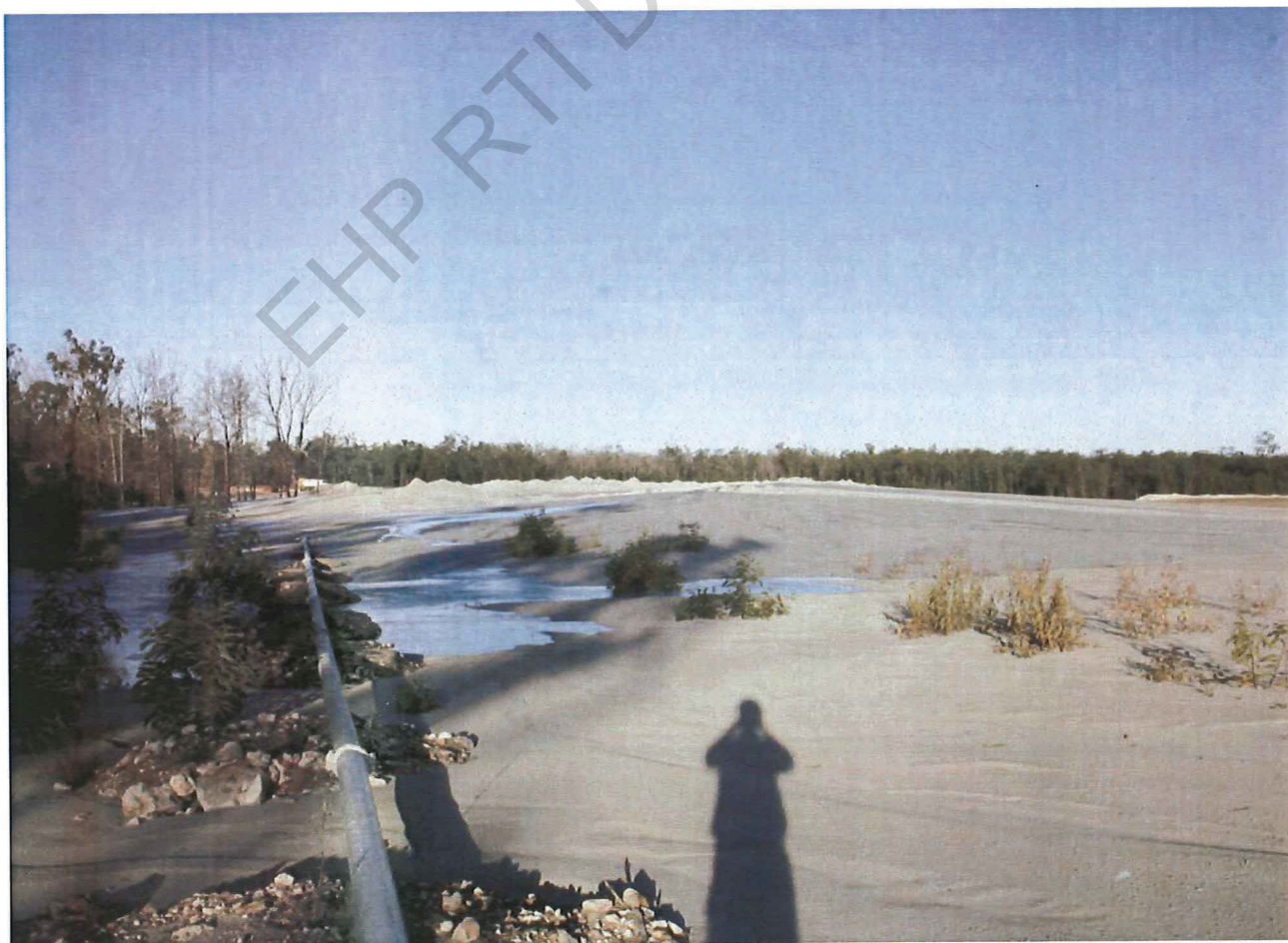
RL (m)	Storage Vol. Available (m3)
313	0
313.5	1617
314	10789
314.5	27721
315	47454
315.5	68744
316	92260
316.5	120606
317	154100
317.5	194113
318	248221
318.5	319875

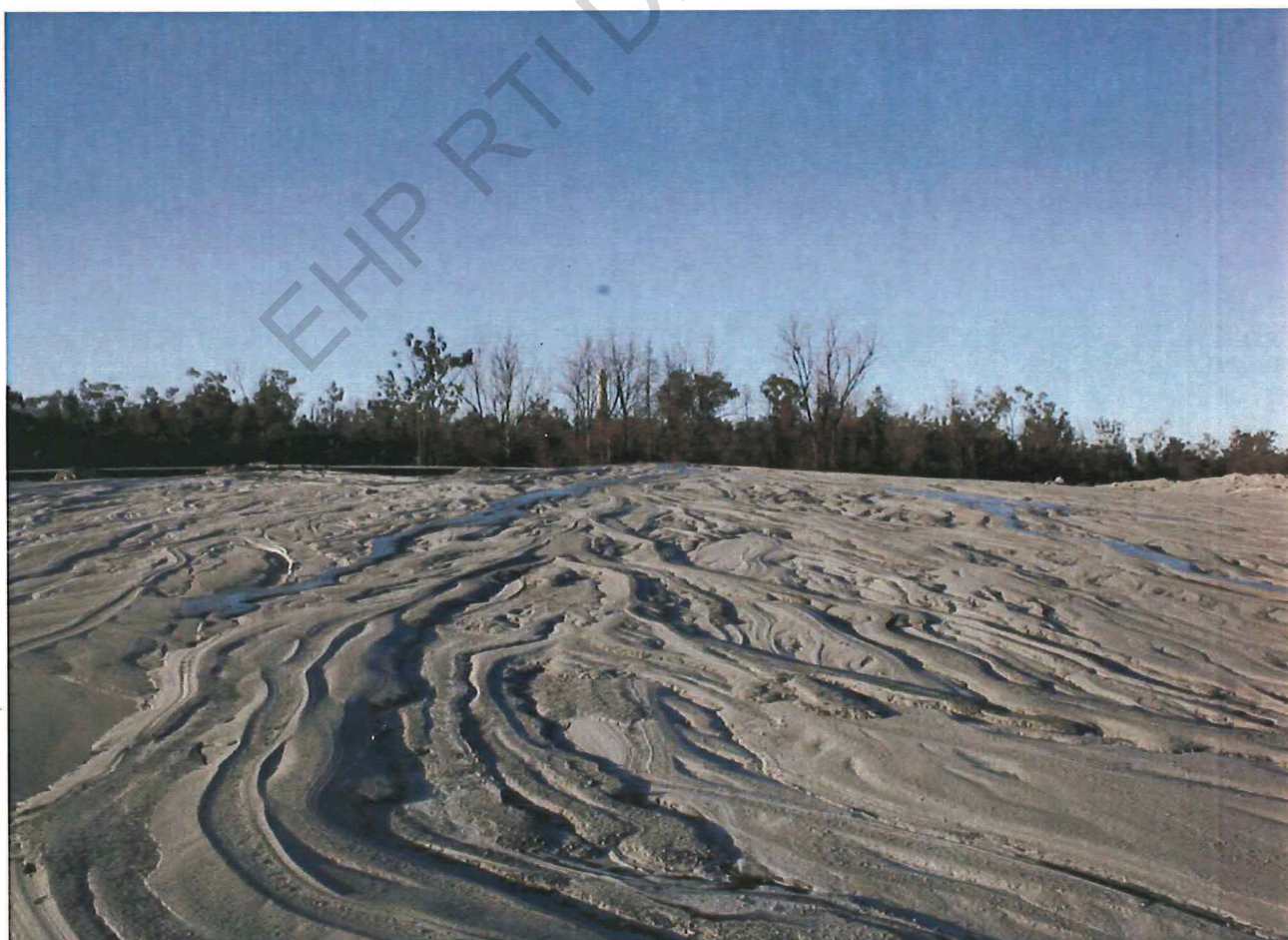
EHP RTI DL Release

Storage Volume Available vs RL









Ruth Brown

From: Scherer, Thomas [Thomas.Scherer@siemens.com]
Sent: Friday, 31 October 2008 11:03 AM
To: Ruth Brown
Subject: Marker at ash pond

Attachments: _MG_0001.JPG



_MG_0001.JPG (3 MB)

Hello Ruth,

As discussed please find the picture showing the marker in the ash pond. The 317.7red marking represents the MRL. The yellow 318.0 was considered the top level but the spillway is actually 318.5m.

Cheers,

Thomas

<<_MG_0001.JPG>>

Best regards

Thomas Scherer
Project Manager Kogan Creek

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Ruth Brown

From: Ruth Brown
Sent: Friday, 31 October 2008 11:17 AM
To: Russ McConnell
Subject: FW: Water in Ash Cell

Hi Russ,

I just spoke with Thomas from Kogan Creek. As mentioned in his email, the water has not come from the mine pits. It is rainwater that has fallen on the ash cell area, but is no longer pure rainwater due to it being in contact with the ash slurry. Thomas said the last time he measured the conductivity of the water it was 1500 microsiemens. They currently have 316.6ML. Their mandatory reporting level is 317.7ML and the top of the spillway is at 318.5ML. At present they have 3 cannons operating. Thomas said the report from the annual inspection of the dam will be sent to us next week.

Ruth

Ruth Brown
Senior Environmental Officer
Environmental Protection Agency
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Toowoomba QLD 4350
Ph: (07) 4699 4304
Fax: (07) 4699 4399

From: Scherer, Thomas [mailto:Thomas.Scherer@siemens.com]
Sent: Thursday, 30 October 2008 5:03 PM
To: Ruth Brown
Subject: RE: Water in Ash Cell

Hello Ruth,

I will give a ring tomorrow morning to discuss this further.

The water in the ash areas came from the rain events we had and is the result of the run off within the area. Nothing has been added or pumped into it. It is not pure rain water anymore as it had been in contact with the ash before it collected over the various settlement ponds. But as we filled the area with ash the water was squashed out from those ponds down to the next ponds and also the later rain falls picked up some of the ash components.

Therefore the water quality has changed a bit.

We have about 65% available capacity left and 35% of the storage volume is full.

We also have an MRL which has not been reached.

Talk to you tomorrow.

Cheers,

Thomas

Best regards

Thomas Scherer
Project Manager Kogan Creek

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From: Ruth Brown [<mailto:ruth.brown@epa.qld.gov.au>]
Sent: Thursday, October 30, 2008 4:04 PM
To: Scherer, Thomas
Subject: Water in Ash Cell

Hi Thomas,

I have now had a chance to read your email dated 10 October 2008 regarding the Ash Dam volumes. My first question would be where has the excess water come from? I know you had heavy rains at the start of the year, so I am guessing the water is the rainfall accumulated in the pits after the storms and has been pumped to the ash cell. If this is the case, the pit water should not be mixed with the ash slurry and should be stored separately from the ash cell. If this is not the case, where does the pit water go after heavy rain?

I believe the capacity of the dam is 315ML and with 120ML of water still in the dam, it means there is only 35% capacity available prior to the approaching wet season. Am I correct in thinking that the Design Storage Allowance as stated in Schedule C – Table 1 of the Environmental Authority, of 1:10 Year ARI 4 month wet season plus process inputs for the 4 month wet season is equivalent to 315ML capacity, or is there a mandatory reporting level for this 1:10 Year ARI which is less than the full capacity of the dam?

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