Ruth Brown

From: Richardson, Ian [irichardson@csenergy.com.au]
Sent: Friday, 20 February 2009 3:27 PM
To: Ruth Brown
Cc: Hartigan, Roger; MAPP, Ivan
Subject: Kogan Creek Notification

Dear Ruth,

I would like to notify the EPA of an incident that occured at Kogan Creek Power Station yesterday. On Thursday morning a failure of an ash disposal line occured adjacent to the generation plant. This resulted in a flow of ash and process water into the station drains system, resulting in ash reaching the inlet of the onsite Drains reclaim dam (DRD). Measures taken to control the release included the shutdown of the station ashing system, deployment of sandbags to prevent the ash spreading and repair of the failed line. Currently the ash is being cleaned up with the use of plant machinery (bobcat and backhoe) as well as a vacuum truck.

A significant quantity of ash was released and it is anticipated that the cleanup may take approximately a week to complete, primarily due to the ash having to be removed from the station (underground) drainage system. An investigation has been commenced to identify the cause of the incident and any remedial measures required to minimise the occurance of another incident of this nature.

All of the ash has been contained within the power station grounds and there is a minimal risk of ash escaping from the DRD. CS Energy do not believe that this spill represents a risk of environmental harm.

I will follow up this notification with a phone call to further up date you this matter.

Regards,

Ian

Ian Richardson
Environmental & Industrial Chemist
Kogan Creek Power Station
ph (07) 4665 2525
mob sch4 - Personal information

****
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Ian Richardson phoned at 4.15pm 20/2/09. He said water quality testing had been done. The last testing prior to incident was on 17/2

	17/2	20/2
Dissolved Oxygen	7.5	8.5
pH	8.3	8.6
Conductivity	1206	1170

Today's readings are within the normal fluctuation for weekly monitoring.

1

Ruth Brown

From: Richardson, Ian [irichardson@csenergy.com.au]
Sent: Tuesday, 24 February 2009 3:18 PM
To: Ruth Brown
Cc: MAPP, Ivan; HATCH Peter; Hartigan, Roger; JOY, Gary
Subject: RE: Kogan Creek Notification

Attachments: Ash Spill 19 Feb 2009.pdf

Ash Spill 19 Feb 2009.pdf (1,0...

Hi Ruth,
I have attached a map which shows the power station boundary (to the North, South and East is the mining lease also owned by CS Energy), the location of the ash spill and the location of Kogan Creek. The water quality analysis is from the Drains Reclaim Dam (DRD on the map). Water from the DRD is pumped back to the power station for use in some of the power plant systems. As shown on the map the ash/water did not leave the power station site. Please feel free to contact me with any questions you have, I will also phone this afternoon to further update you on the cleanup.

Regards,

Ian

Ian Richardson
Environmental & Industrial Chemist
Kogan Creek Power Station
ph (07) 4665 2525
mob sch4 - Personal information

-----Original Message-----
From: Ruth Brown [mailto:ruth.brown@epa.qld.gov.au]
Sent: Tuesday, 24 February 2009 11:54
To: Richardson, Ian
Subject: RE: Kogan Creek Notification

Hi Ian,

Thanks for this information and the follow up phone call providing water quality testing results.

Were the water quality results taken from Kogan Creek and if so, where from - upstream or downstream of the station? Did the ash enter the creek or any other waterways?

Maybe you could provide a map showing where the incident occurred and the areas/structures affected by the ash spill.

The EPA would like to know the results of your investigation to identify the cause of the incident and what measures will be taken to prevent this type of incident happening again

Thanks. Ruth

Ruth Brown
Senior Environmental Officer
Environmental Protection Agency
PO Box 731
Toowoomba QLD 4350
Ph: (07) 4699 4304
Fax: (07) 4699 4399

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-----Original Message-----
From: Richardson, Ian [mailto:irichardson@csenergy.com.au]
Sent: Friday, 20 February 2009 3:27 PM
To: Ruth Brown
Cc: Hartigan, Roger; MAPP, Ivan
Subject: Kogan Creek Notification

Dear Ruth,

I would like to notify the EPA of an incident that occured at Kogan Creek Power Station yesterday. On Thursday morning a failure of an ash disposal line occured adjacent to the generation plant. This resulted in a flow of ash and process water into the station drains system, resulting in ash reaching the inlet of the onsite Drains reclaim dam (DRD). Measures taken to control the release included the shutdown of the station ashing system, deployment of sandbags to prevent the ash spreading and repair of the failed line. Currently the ash is being cleaned up with the use of plant machinery (bobcat and backhoe) as well as a vacuum truck.

A significant quantity of ash was released and it is anticipated that the cleanup may take approximately a week to complete, primarily due to the ash having to be removed from the station (underground) drainage system. An investigation has been commenced to identify the cause of the incident and any remedial measures required to minimise the occurance of another incident of this nature.

All of the ash has been contained within the power station grounds and there is a minimal risk of ash escaping from the DRD. CS Energy do not believe that this spill represents a risk of environmental harm.

I will follow up this notification with a phone call to further up date you this matter.

Regards,

Ian

Ian Richardson
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mob sch4 - Personal information

****
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Ruth Brown

From: Ruth Brown
Sent: Wednesday, 25 February 2009 12:23 PM
To: Russ McConnell
Subject: FW: 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 ...

Hi Russ,

I tried calling you this morning but was told you were out of the office this week.

In October last year we were discussing the problems Kogan Creek had with the design storage allowance of their Ash Disposal dam (refer to emails below).

In late November I sent through the inspection report for the hazardous dams, for your review and comments with respect to the strategies suggested to remedy the problem with the design storage allowance.

I know you are very busy at the moment but could you tell me when you will be able to comment on the report, as Kogan Creek management are chasing me for approval of the report.

I will try to phone you early next week to discuss.

Thanks. Ruth

Ruth Brown
Senior Environmental Officer
Environmental Protection Agency
PO Box 731
Toowoomba QLD 4350
Ph: (07) 4699 4304
Fax: (07) 4699 4399

-----Original Message-----
From: Ruth Brown
Sent: Thursday, 30 October 2008 1:06 PM
To: Russ McConnell
Subject: FW: Kogan Creek ash disposal area information DA IPDE00173405A11

Hi Russ,

Kogan Creek has water in their ash cell which is a high haz dam. Consequently they won't meet their design storage allowance for that dam by 1 November. They have suggested a few solutions to the problem as outlined in the email below.

Could you please have a look at this and provide me with any comments you have as to how I should advise them which solution to take. Alternatively if you think it's necessary to organise a meeting with Kogan people to discuss this either before or after the report is submitted, please let me know and I will organise it.

I think it would be better to try and reduce the amount of water by using extra cannons as suggested in solution 1. To me, raising the spillway height (solution 4) is not solving the problem of excess water, it is just prolonging the problem until the water reaches the new height of the spillway. Raising the height of the spillway may also weaken the integrity of the dam in other areas of the dam.

Thanks. Ruth

Ruth Brown
Senior Environmental Officer
Environmental Protection Agency
PO Box 731

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Toowoomba QLD 4350
Ph: (07) 4699 4304
Fax: (07) 4699 4399

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

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 where 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.

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 the there is a need to change the slurry lines about every 4days 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 then 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

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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 neat 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 toll 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

Siemens Ltd.
Energy

Mobile: +61- sch4 - Personal information
E-mail: thomas.scherer@siemens.com
Internet: http://www.siemens.com.au

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

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Ruth Brown

From: Ruth Brown
Sent: Tuesday, 24 February 2009 2:02 PM
To: 'Caldow, Stephen'
Subject: RE: Siemens ERA License
Attachments: Attachment 1.doc; Reg Cert form. doc.doc
* App. for rego cert

Hi Steve,

Our records show that the only permit currently held by Siemens is ENRE00741708 which is a registration certificate for ERA 75(b)(iv) – disposing of regulated waste (other than limited regulated waste) whether alone or in combination with any waste mentioned in paragraph (a), if the facility is designed to receive waste at the rate of 200,000 t or more a year. For this to be transferred to CS Energy, which is known as a continuing registration, you will need to complete an application form for an environmentally relevant activity (form attached) and attachment 1 to the application form (also attached).

Ruth

Ruth Brown
Senior Environmental Officer
Environmental Protection Agency
PO Box 731
Toowoomba QLD 4350
Ph: (07) 4699 4304
Fax: (07) 4699 4399

From: Caldow, Stephen [mailto:stephen.caldow@siemens.com]
Sent: Friday, 20 February 2009 11:27 AM
To: Ruth Brown
Subject: Siemens ERA License

Hi Ruth,

This email is a follow up from our meeting last Thursday. If you recall I asked if you could send me the appropriate form to transfer the License for the Ash Storage Area to CS Energy. I will coordinate the handover with Tim Mortimer. Tim and CS Energy have been"operating" the Ash Storage and managing the water usage from the Ash Dam so the handover of the License is appropriate and in line with our Contract agreement for March 1st handover. Thanks for your assistance Ruth.

Regards,

Steve Caldow
Project Manager

Siemens
Kogan Creek Power Project
Ph: 61 7 46652903
Fax: 61 7 46652200
Mob: 61 Sch4 - Personal information
Email: stephen.caldow@siemens.com

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Ruth Brown

From: Suhail Khan
Sent: Monday, 6 July 2009 4:43 PM
To: Ruth Brown; Rob Spalding
Subject: RE: Kogan Creek Power Station air quality monitoring

Attachments: Kogan Creek Power Station-CS Energy-Air Quality Report-comments.doc

Hi Rob and Ruth,

I have reviewed the Kogan Creek Power Station air quality monitoring report. Please find attached my comments. The main issue of the monitoring report is the non-compliance of EPP (Air) ambient air quality objectives of PM10 and PM2.5. As I understand the ambient air quality monitoring is going to finish by the end of July 2009. These two monitoring sites have been in operation for about two years.
I am not sure if there in any non-compliance of DA's particulate stack emission limits or issues with the fabric filters. These issues are not discussed in the report.

Kogan Creek Power Station-CS E...

Please give me a call if you need any clarification about my comments.

Regards,

Dr Suhail Khan
Principal Environmental Officer
Technical Operations Branch, Environmental Services Division,
Department of Environment and Resource Management, Queensland, Australia.
Tel: (617) 3224 8168, Fax: (617) 3227 7677
E-mail: Mailto:suhail.khan@derm.qld.gov.au

From: Ruth Brown
Sent: Wednesday, 24 June 2009 1:42 PM
To: Suhail Khan
Subject: Kogan Creek POwer Station air quality monitoring

Hi Suhail,

Rob Spalding spoke to you yesterday about reviewing and commenting on an air quality monitoring report we received from Kogan Creek Power Station.

I have attached the air quality monitoring protocol, the analysis of ambient air quality monitoring data (the report) plus cover letter and a copy of the development approval for your information.

<< File: 20070423 draft air monitoring protocol.pdf >> << File: CS Energy Report Final 1.0.pdf >> << File: 090610 cover leter for EPA report.pdf >> << File: 20070305 amalgamated permit.doc >>

If you have any problems accessing these reports, let me know and I will put them on T drive for you. Also if you need any other info, please let me know.

Thanks. Ruth

Ruth Brown
Senior Environmental Officer
Environmental Services, Western Region
Department of Environment & Resource Management
PO Box 731
Toowoomba QLD 4350

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Ph: (07) 4699 4304
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Comments on the Ambient Air Quality Monitoring Report of Kogan Creek Power Station

CS Energy, June 2009

Dr Suhail Khan
Project Support Unit, Technical Operations Branch, Environmental Services
DERM

CS Energy submitted an ambient air quality monitoring report of Kogan Creek Power Station. This monitoring was required under the conditions of Development Approval of this project. Air quality monitoring (AQM) was conducted by Sigma Process Solution for the period from August 2007 to Present (July 2009). The two monitoring sites (in the vicinity of residences) and the measurement parameters were selected as specified in the AQM protocol submitted to DERM in April 2007. Katestone Environmental Pty Ltd reviewed the air quality data and assessed compliance with the relevant environmental objectives and compared with the air dispersion modelling results, as specified in the permit conditions. After reviewing the Katestone's report, issues identified are as follows:

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Issues:

- It is mentioned in Section 7- Conclusion (page 9) that the ambient monitoring data from the Swan and Whyte stations has shown impact from the Kogan Creek Power Station operations is well below the EPP (Air) objectives. This is not correct. The cumulative frequency distribution of PM10 and PM2.5 is given in Figure 21. According to this diagram, the PM10 and PM2.5 concentrations (assuming it is 24-hour average) at the two sites are about 2 percent of the time greater than the EPP (Air) objectives of 50 $\mu g/m^3$ for PM10 and 25 $\mu g/m^3$ for PM2.5. Please note that PM10 objectives allow only 5 days exceedances in a year based on natural events such as dust storms and bush fires. The exceedances of PM10 and PM2.5 above the EPP (Air) objectives are not discussed in the report.
- It is not clear how efficient is the fabric filter dust collector (FFDC) in controlling the fine particulates. Continuous stack monitoring of total suspended particulate (TSP) is required as per DA conditions. It is not clear if there is any breach of stack's TSP emission limit of 80 mg/Nm^3 at 12 % CO_2. Is there any plant up set conditions such as filter medium breakthrough occurred during the monitoring period?
- A comparison of monitoring data with the air dispersion modelling results is discussed in Section 6.2 (page 7). However, the PM10 results were not compared in the report. It is not clear from the report that why this comparison is not made.
- The time series data of each monitoring station for NO_2, SO_2, PM10, PM2.5 and O_3 are presented in Figures 9 to 11. The averaging periods of this data (e.g. 1-hour 4 hour or 24 hour) is not given in these figures. The EPP (Air) objectives of PM10 and PM2.5 are also not given in Figure 10.
- The plots of SO_2, PM10, and PM2.5 concentrations are presented in Figures 18 to 20. The averaging periods of this data is also not given in these figures.
- The plots of pollutant concentrations (NO_2, SO_2, PM10, PM2.5 and O_3) versus wind direction for each monitoring station are presented in Figures 12 to 17. The averaging periods of this data (e.g. 1-hour 4 hour or 24 hour) is also not given in these figures.
- Figure 13 demonstrates that PM10 and PM2.5 concentrations at Swan monitoring site are high when the wind direction is approximately equal to 180 degree (southerly winds). Similarly, Figure 16 demonstrates that PM10 and PM2.5 concentrations at Whyte monitoring site are high when the wind direction is approximately equal to 90

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RTI 14-158 File L Page 13 of 20

degree (easterly winds). This indicates that power station is the main contributor of PM10 and PM2.5 concentrations at the two monitoring sites.

- It is not clear what sorts of monitoring equipments/analysers were employed for ambient air quality monitoring (e.g. PM10 monitoring using TEOM or high volume sampler) and whether all the determinations of contaminant releases to the atmosphere is made in accordance with methods prescribed in the DERM's Air Quality Sampling Manual.
- It is mentioned in Section 2 (Summary of monitoring undertaken) of the report that total suspended particulates were also monitored at the monitoring sites. However, this data is not presented in the report.

Recommendation:

Based on above issues, the following recommendations are made:

- Discuss the exceedances of PM10 and PM2.5 concentration above the EPP (Air) objectives and explain the reason(s) for these exceedances.
- Discuss the efficiency of fabric filter dust collector (FFDC) in controlling the fine particulates. Continuous stack monitoring of TSP is required as per DA conditions. Discuss the breaches of TSP stack emission limit of 80 mg/Nm^3 at 12 % CO_2, if any. Report the plant's up set conditions such as occurrence of filter medium breakthrough during the ambient air monitoring period.
- Compare ambient air monitoring of PM10 results with the air dispersion modelling results in Section 6.2 of the report.
- Specify the averaging period of concentration data presented in Figures 9 to 17. All averaging periods must be in accordance with the EPP (Air) objectives.
- Specify the equipment/analysers employed for ambient air quality monitoring (e.g. PM10 monitoring using TEOM or high volume sampler) and compliance with the methods prescribed in the DERM's Air Quality Sampling Manual.
- Discuss the TSP ambient air quality monitoring results and compare against the EPP (Air) objectives.

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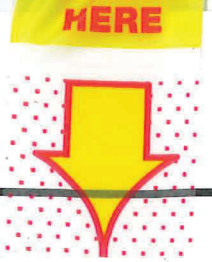

Ruth Brown

From: Warren Renew
Sent: Thursday, 17 September 2009 10:48 AM
To: Ruth Brown
Cc: Gary O'Connor
Subject: RE: Kogan Creek Power Station noise report

Hi Ruth

I have reviewed the report Noise Surveys- Kogan Power Station dated June 2009 prepared by Les Huson.

The report shows that measured values of noise from the power station are lower than predicted values.

Measurements were carried out under a number of typical wind conditions.

Narrow band analysis was employed to calculate power station noise at distant locations.

Cheers

Warren Renew
Principal Environmental Officer
Environmental Services
Technical Operations Branch
Project Support
Department of Environment and Resource Management
Ph: 61 7 3225 1419
Fax: 61 7 3227 7677
E-mail: Warren.Renew@epa.qld.gov.au
Visit us online at http://www.epa.qld.gov.au

From: Ruth Brown
Sent: Wednesday, 16 September 2009 11:27 AM
To: Warren Renew
Subject: Kogan Creek Power Station noise report

Hi Warren,

Recently I received a noise measurement report for Kogan Creek Power Station which was submitted to comply with a condition of their development approval. As I have no expertise or training in interpreting these kinds of reports or in fact much at all to do with noise monitoring, my manager (Rob Spalding) suggested that I could send it to an expert such as you.

If you have time, could you please review this report and provide any comments back to me. Please advise me if I need to complete a work request form.

Thanks for your help with this matter.

Ruth

<< File: 20090806 Noise report.pdf >>

Ruth Brown
Senior Environmental Officer
Environmental Services, Western Region
Department of Environment & Resource Management
PO Box 731
Toowoomba QLD 4350
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Queensland Government

Enquiries Ruth Brown
Telephone (07) 4699 4304
Your reference 642/064/0004
Our reference ENCD00281405 / TWB4258

Department of
Environment and Resource Management

23 September 2009

David Falconer
Kogan Creek Project Manager
CS Energy
GPO Box 769
BRISBANE QLD 4001

Dear Mr Falconer

I refer to the document CS Energy Ltd provided to the Department of Environment and Resource Management (DERM) on 4 August 2009 titled *Noise Measurement Report for Kogan Creek Power Station.* The report was prepared on behalf of CS Energy by L. Huson and Associates Pty Ltd. The provision of this report is in compliance with condition H10 of the Kogan Creek Power Station development approval (ENCD00281405) which states;

> *In order to evaluate noise modelling predictions, the holder of this development approval shall monitor noise levels and meteorological conditions over a representative number of samples, during the first 12 months of operation of the Power Station.*

The report shows that measurements were carried out under a number of typical wind conditions and that measured values from the power station are lower than predicted values. DERM has assessed the report and accepts the conclusions that;

> *Sound from the Kogan Power Station is readily observable at a location 1000m from the power station and at this point the predicted Lmax sound levels in the SIAS are at least 4dB(A) above the measured Lmax sound levels in the surveys*
>
> *At more remote locations, greater than 3000m away, the Lmax sound levels were difficult to identify within the ambient sound from wildlife and wind generated ambient sounds. Where possible, through the use of narrow band frequency analysis, the derived Lmax sound levels were found to be slightly lower (1dB to 2dB generally) than predicted Lmax sound levels in the SIAS.*

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Website www.epa.qld.gov.au
ABN 46 640 294 485

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Should you have any questions about this matter please contact Ruth Brown on 4699 4304.

Yours sincerely

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Rob Spalding
Manager, Environmental Services
South-West Region
Department of Environment and Resource Management

EHP RTI DL Release

Queensland Government

Enquiries Ruth Brown
Telephone (07) 4699 4304
Your reference 642/064/0004
Our reference ENCD00281405 / TWB4258

Department of
Environment and Resource Management

24 September 2009

David Falconer
Kogan Creek Project Manager
CS Energy
GPO Box 769
BRISBANE QLD 4001

Dear Mr Falconer

I refer to the document CS Energy Ltd provided to the Department of Environment and Resource Management (DERM) on 10 June 2009 titled *Analysis of Ambient Air Quality Monitoring Data and Model Comparison – Kogan Creek Power Station.* The provision of this report is in compliance with condition H2 of the Kogan Creek Power Station development approval (ENCD00281405) which states;

> *Within 6 months of commencement of Kogan Creek Power Station the holder of this development approval must commence a study to determine the ambient air quality of the neighbouring environment and compare results with the model predictions specified in the report entitled: "Draft Impact Assessment Study – Kogan Creek Power Project, March 1999" and "Supplementary Impact Assessment Study Report". This monitoring must be conducted for at least 12 months. The samples obtained in accordance with this condition must be analysed for at least:*
>
> *(i) sulphur dioxide*
> *(ii) nitrogen dioxide*
> *(iii) total suspended particulate*
> *(iv) particulate matters less than 10 micron in size (PM_{10})*
>
> *A report on the study must be lodged with the administering authority with the annual return which follows completion of the study.*

The report was forwarded to DERM's Technical Operations Branch in Brisbane for review and their comments are included below.

Issues:

- It is mentioned in Section 7- Conclusion (page 9) that the ambient monitoring data from the Swan and Whyte stations has shown impacts from the Kogan Creek Power

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Station operations to be well below the EPP (Air) objectives. This is not correct. The cumulative frequency distribution of PM10 and PM2.5 is given in Figure 21. According to this diagram, the PM10 and PM2.5 concentrations (assuming it is 24-hour average) at the two sites are for about 2 percent of the time greater than the EPP (Air) objectives of 50 $\mu g/m^3$ for PM10 and 25 $\mu g/m^3$ for PM2.5. Please note that PM10 objectives allow only 5 days exceedances in a year based on natural events such as dust storms and bush fires. The exceedances of PM10 and PM2.5 above the EPP (Air) objectives are not discussed in the report.

- It is not clear how efficient the fabric filter dust collector (FFDC) is in controlling the fine particulates. Continuous stack monitoring of total suspended particulate (TSP) is required as per DA conditions. It is not clear if there is any breach of the stack TSP emission limit of 80 mg/Nm^3 at 12 % CO_2. Is there any plant up set conditions such as filter medium breakthrough occurred during the monitoring period?
- A comparison of monitoring data with the air dispersion modelling results is discussed in Section 6.2 (page 7). However, the PM10 results were not compared in the report. It is not clear from the report why this comparison is not made.
- The time series data of each monitoring station for NO_2, SO_2, PM10, PM2.5 and O_3 are presented in Figures 9 to 11. The averaging periods of this data (e.g. 1-hour, 4 hour or 24 hour) is not given in these figures. The EPP (Air) objectives of PM10 and PM2.5 are also not given in Figure 10.
- The plots of SO_2, PM10, and PM2.5 concentrations are presented in Figures 18 to 20. The averaging periods of this data is also not given in these figures.
- The plots of pollutant concentrations (NO_2, SO_2, PM10, PM2.5 and O_3) versus wind direction for each monitoring station are presented in Figures 12 to 17. The averaging periods of this data (e.g. 1-hour 4 hour or 24 hour) is also not given in these figures.
- Figure 13 demonstrates that PM10 and PM2.5 concentrations at Swan monitoring site are high when the wind direction is approximately equal to 180 degree (southerly winds). Similarly, Figure 16 demonstrates that PM10 and PM2.5 concentrations at Whyte monitoring site are high when the wind direction is approximately equal to 90 degree (easterly winds). This indicates that the power station is the main contributor of PM10 and PM2.5 concentrations at the two monitoring sites.
- It is not clear what sorts of monitoring equipment/analysers were employed for ambient air quality monitoring (e.g. PM10 monitoring using TEOM or high volume sampler) and whether all the determinations of contaminant releases to the atmosphere are made in accordance with methods prescribed in the DERM's Air Quality Sampling Manual.
- It is mentioned in Section 2 (Summary of monitoring undertaken) of the report that total suspended particulates were also monitored at the monitoring sites. However, this data is not presented in the report.

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Recommendation:

Based on the above issues, the following recommendations are made for your attention in preparing a revised report to be submitted to the administering authority:

- Identify the exceedances of PM10 and PM2.5 concentration above the EPP (Air) objectives and explain the reason(s) for these exceedances.
- Discuss the efficiency of fabric filter dust collector (FFDC) in controlling fine particle emissions. Continuous stack monitoring of TSP is required as per DA conditions. Report and discuss breaches of TSP stack emission limit of 80 mg/Nm^3 at 12 % CO_2, if any. Report the plant's up set conditions such as occurrence of filter medium breakthrough during the ambient air monitoring period.
- Compare ambient air monitoring of PM10 results with the air dispersion modelling results in Section 6.2 of the report.
- Specify the averaging period of concentration data presented in Figures 9 to 17. All averaging periods must be in accordance with the EPP (Air) objectives.
- Specify the equipment/analysers employed for ambient air quality monitoring (e.g. PM10 monitoring using TEOM or high volume sampler) and compliance with the methods prescribed in the DERM's Air Quality Sampling Manual.
- Discuss the TSP ambient air quality monitoring results and compare against the EPP (Air) objectives.

Please submit an amended report (or an addendum) addressing the above comments and recommendations to this office by 30 October 2009.

Should you have any questions about this matter please contact Ruth Brown on 4699 4304.

Yours sincerely

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