

INTEGRATED ENVIRONMENTAL AUTHORISATION

**Environmental Impact Assessment, Water Use License and Waste Management License Applications for the
Proposed 60 Year Ash Disposal Facility at Kusile Power Station**

(DEA Ref No 12/12/20/2412 and NEAS Reference: DEA/EIA/0001448/2012)

DRAFT MINUTES OF FOCUS GROUP MEETING

Wednesday, 20 August 2014, at 10h00, Kopanong Hall, Kendal Power Station

ACTION

- 1. WELCOME, INTRODUCTIONS, SAFETY AND OBJECTIVES OF THE MEETING**
Mrs Nicole Venter (Zitholele Consulting) welcomed all present to the meeting. A round of introductions was done by the project team.

The safety procedures were explained in case of any emergencies.

The objectives of the meeting are to:

 - provide a brief overview regarding the proposed project;
 - present a summary of the Environmental Findings and Engineering Design as documented in the Draft Environmental Impact Assessment Report (DEIR);
 - present a summary of the mitigation measures proposed as documented in the DEIR;
 - and to obtain comments and inputs from stakeholders on the DEIR.

(Refer to Appendix A for attendance register)
- 2. NEED FOR THE PROJECT**
Mr Leon Stapelberg (Eskom Holdings SOC Limited) presented the need for the project.
(Refer to Appendix B for full presentation)
- 3. OVERVIEW OF THE EIA, WUL AND WML APPLICATIONS PROCESS**
Dr Mathys Vosloo (Zitholele Consulting) presented the overview of the EIA process
(Refer to Appendix B for full presentation)
- 4. SUMMARY OF THE ENVIRONMENTAL FINDINGS AND MITIGATION MEASURES AS PER THE DEIR**

Dr Mathys Vosloo presented a summary of the environmental findings and mitigation measures recommended as per the Draft Environmental Management Programme (EMPr).
(Refer to Appendix B for full presentation)
- 5. OVERVIEW OF THE TECHNICAL ASPECTS OF THE ADF DESIGN**
Mr Charl Cilliers (Jones and Wagner) presented the overview of the technical aspects of the ADF design and operational phase.

ACTION

(Refer to Appendix B for full presentation)

Question Mr Andre Cherry (Landowner) asked how much top soil goes on top of the ash?

Response Mr Charl Cilliers (Jones & Wagener) responded that 300 mm goes on top.

Question Mr Andre Cherry asked why is there ash shown on the conveyor belt cover? Should it not be wet?

Response Mr Charl Cilliers responded that the picture on the slide was to show how the site will be rehabilitated. The picture that was used in the presentation was from Matimba Power Station just to illustrate the conveyor belt system.

Post-meeting note

There will always be some degree of dust fallout directly associated with the conveyor system. The ash is conditioned to be damp when transported along the conveyor to minimise dust fallout around the conveyor.

Comment Mr Andre Cherry commented that no dust fall out should be allowed as the ash should be kept wet when it is travelling on the conveyor belt. If it cannot be watered down then the conveyor belt should be an enclosed system.

Answer Mr Charl Cilliers responded that the design can be re looked at again, if required.

Post-meeting note:

It is possible to enclose the conveyor above and on the sides. This will be communicated to the Mechanical Engineers that will design the conveyor system.

6. DISCUSSION

Comment Mr Andre Cherry commented that it will be ideal to use Site C so that the ash can blow onto Eskom property and not onto the famers land.

Response Ms Nicolene Venter (Zitholele Consulting) acknowledged the comment.

Comment Mr Andre Cherry commented that only the landowners on the site alternatives were consulted and not the neighbours, even during the site selection process. Not Eskom or the engineers consulted the neighbouring landowners. The only people who visited their properties where the specialist during their specialist studies.

ACTION

Response Mrs Nicolene Venter informed the attendee that not only landowners' who properties are affected by the proposed sites but those on neighbouring properties as well have been notified of the proposed project and are on the project database from the start of the EIA process and has been part of the public participation process since then.
Mr Tobile Bokwe (Eskom Holdings) responded that there is forum called the Environmental Management Committee (EMC) where issues can be tabled, discussed and be addressed

Post-meeting note:

Impact studies are conducted only on possibly affected properties i.e. those within the proposed site although the specialists do mention impacts, if any, on the surrounding areas.

Question Mr Andre Cherry asked how much aluminium is in the ash as this can be harmful should it leaked into the groundwater, as it kills plants, and maize cannot grow in the soil that has been contaminated with aluminium.

Response Mr Charl Cilliers responded that a response regarding the volume / percentage of aluminium in the ash will be responded to in the draft minutes.
Mrs Nicolene Venter replied that a post-meeting note will be provided in the draft minutes in response to the impact of aluminium, should traces be in the ash, on crops.

Post-meeting note:

The ash classification was conducted on ash samples taken from the Kendal Power Station, since no ash is yet being produced for the Kusile Power Station. Although the same type of coal will be used to fuel the Kusile Power Station, it cannot be determined for sure what the constituents, and concentrations of these constituents, in the ash produced at Kusile Power Station will be until samples of ash produced at Kusile is classified in terms of the waste regulations. Once ash is produced ash samples from the Kusile Power Station will be analysed and classified to determine its constituents.

Post-meeting note:

Aluminium was encountered in the waste classification but at a very small percentage of the total. The values encountered are below the Acceptable Risk Levels stated in the waste classification regulations.

Comment Mr Andre Cherry commented that if Kusile is managed like Kendal Power Station then there will be disastrous consequences. Currently the infrastructure at Kendal Power Station is not managed properly and foresees this as happening at Kusile Power Station.

Response Mr Leon Stapelberg commented that he could not respond regarding Kendal Power Station's infrastructure. One can only put so many checks and balances in place, and there is no perfect system and it can fail at any time. The attendees were also informed that cognisance need to be taken that living in this area, with all the developments taking place, the environment will change in the near future.

Post-meeting note:

Challenges with the management of the Kendal Power Station infrastructure must be dealt with and rectified by Eskom. However, when dealing with the expected and potential impacts associated with the

ACTION

Kusile Power Station infrastructure, mitigation measures that will prove successful is identified and must be implemented to ensure the impacts are avoided, or minimised. It remains Eskom's responsibility to ensure that in the event of failure an emergency response back-up system is in place to continue to mitigate the impact. It further remains the Interested and Affected Parties' responsibility to raise such events or impacts with the Eskom Environmental Management Committee or the competent authority in order to address these impacts in terms of the authorisation granted.

Question Mr Andre Cherry asked what is going to happen to the surrounding wetlands.

Response Dr Mathys Vosloo replied that the ash disposal facility (ADF) is designed in such a way that any run-off water will be channelled to holding dams from where it will be released back into the surrounding wetland systems.

Post-meeting note:

As part of the mitigation and rehabilitation strategy for the Kusile ADF, surrounding wetlands will be rehabilitated and monitored for signs of impact, while a comprehensive offset strategy will be put in place to offset the loss of wetlands within the ADF footprint.

Comment Mr Andre Cherry commented that he totally objects to Site A, especially when the wind blows then it will be blown in the direction of the landowners' properties.

Response Ms Nicolene Venter acknowledged the comment regarding the objection raised.

Post-meeting note:

The air quality specialist identified potential impacts such as windblown ash and modelled the potential movement of the ash with and without mitigation in place. Conclusions from the exercise was that with mitigation successfully implemented it can be said with confidence that dust and ash can be limited to the ADF footprint. Furthermore, dust fallout monitoring will have to be done on neighbouring properties to measure effectiveness of the mitigation measures.

Question Mr Andre Cherry asked what is the projected tonnage of ash that will be disposed of daily at Kusile Power Station.

Response The projected tonnage is approximately 19440 tonnes per day.

Comment Mr Andre Cherry commented that if Site A is chosen then the system used for disposing the ash should be of very high standard to ensure that when one system is down then another system must kick in, and a third system should the other two fail.

Response Mr Leon Stapelberg reiterated that there is always a possibility that the best designed system can fail.

Post-meeting note:

If the dust suppression system fails, the irrigation system can be used for dust suppression. However these are designed to be smaller sprinklers so they will have to be on for longer periods in order to get the coverage required. Irrigation will then need to be carried out by water tankers/bowsers. If both the irrigation and dust suppression systems are

ACTION

out, water tankers/browsers will need to be used. Temporary sacrificial soil cover can also be considered as well as compaction of the ash for areas that will be exposed for long periods of time. If excessive winds are experienced from a specific direction, wind breaks may be installed to reduce dust blow.

Question Mr Andre Cherry asked why are the minimum standards used for the site selection?

Response Mr Tobile Bokwe replied that if there is a flaw in the site selection process, then it should be re-looked at.

Comment Mr Hans Jansen van Resnburg (Landowner) commented that historically Kusile Power Station has been placed in the wrong place in the area.

Response Ms Nicolene Venter noted the comment.

Comment Mr Hans Jansen van Rensburg stated that Site C is the better site for the ADF.

Response Ms Nicolene Venter noted the comment.

Mr Tobile Bokwe (Eskom Holdings) commented that all the issues and recommendation will be captured and submitted for decision making to the Department of Environmental Affairs (DEA). Should the landowners not be happy or in agreement with the DEA's decision, then they will have an opportunity to appeal the decision that has been taken.

Post-meeting note:

The statement that Site C is the better site for the ADF is considered unqualified as no explanation or reasons were given why it is considered the better site from the commenter. In terms of the EIA conclusions drawn a process was followed where environmental, socio-economic, and technical aspects were considered which led the project team to the conclusion that site C was not a preferred site for placement of the ADF.

Comment Mr Hans Jansen van Rensburg commented that the decision has already been taken, this is just a process.

Response Ms Nicolene Venter responded that the team does not take a decision as to whether the project is approved or not. The only recommendation that the team makes is to ensure that the facility is placed in an area where it will have the least environmental impact (biophysical as well as social). Comments received from landowners, I&APs and stakeholders are also taken into consideration, but the final decision is taken by the DEA.

Mr Tobile Bokwe responded that the license holder (e.g. Eskom) is compelled to comply with the conditions set out in the Environmental Authorisation. If the stakeholders or landowners believes that the licence holder is not complying with the conditions, then the matter can be escalated to the DEA for non-compliance. The DEA will set out the various avenues to report non compliances to an Environmental Authorisation granted.

Post-meeting note:

A process was followed during the EIA where potential developable areas was identified within 15 radius of the Kusile Power Station. Next feasible sites were identified, which was further investigated by a host of specialist to identify environmental, socio-economic and technical constraints and sensitivities. Based on the recommendations of these

ACTION

studies a preferred site was identified, which has now been recommended for consideration by the competent authority. The project team has therefore made a recommendation to the competent authority, which must however make the final decision regarding the merits of the alternative sites considered and the preferred site recommended.

7. WAY FORWARD AND CLOSURE

Without further discussions the meeting was adjourned at 12h30.

DATE:**SIGNATURE:****ZITHOLELE CONSULTING**

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APPENDIX A**Environmental Impact Assessment, Water Use License and Waste Management License Applications
for the Proposed 60 Year Ash Disposal Facility at Kusile Power Station****(DEA Ref. No.: 12/12/20/2412, NEAS Ref. No.: DEA/EIA/0001448/2012)****FOCUS GROUP MEETING****Wednesday, 20 August 2014 at 10h00****Kopanong Hall, Kendal (opposite Kendal Power Station)****RECORD OF ATTENDANCE**

TITLE	NAME	SURNAME	COMPANY / ORGANISATION
Mr	Tobile	Bokwe	Eskom Holdings SOC Limited
Mr	Tinus	Breedt	Mtech Industrial
Mr	Charl	Cilliers	Jones & Wagener Engineering & Environmental Consultants
Mr	André	Cherry	Farm: Klipfontein
Mr	Jimmy	Farie	Farm: Arbor
Mnr	Hans	Jansen van Rensburg	Plase: Bossemanskraal & Witklip (Hans van Rensburg Boerdery)
Mr	Hardus	Kotze	Eskom Holdings SOC Limited
Ms	Mari	Kotze	Eskom Holdings SOC Limited
Mr	Siphiwe	Mahlangu	Eskom Holdings SOC Limited
Ms	Patiswa	Mnqokoyi	Zitholele Consulting (Pty) Ltd
Mnr	Lenert	van Dalen	Plase: Witklip & Arbor (L van Dalen Boerdery)
Ms	Nicolene	Venter	Zitholele Consulting (Pty) Ltd
Dr	Marthys	Vosloo	Zitholele Consulting (Pty) Ltd

INTEGRATED ENVIRONMENTAL AUTHORISATION

**Environmental Impact Assessment, Water Use License and Waste Management License
Applications for the Proposed 60 Year Ash Disposal Facility at Kusile Power Station**

(DEA Ref. No.: 12/12/20/2412. NEAS Ref No.: DEA/EIA/0001448/2012)

Draft Minutes of Key Stakeholder Workshop

Wednesday, 20 August 2014, 14h00 at Kopanong Hall (opposite Kendal Power Station)

ACTION

1. Welcome, Introductions, Safety and Objectives of the meeting

Ms Nicolene Venter welcomed all present to the meeting. A round of introductions was done by the team members and the delegates present introduced herself.

The safety procedures were explained in case of any emergencies.

The objectives of the workshop are to provide a brief overview regarding the proposed project, present a summary of the Environmental findings, mitigation measures and engineering designs as documented in the Draft Environmental Impact Assessment Report (DEIR) and to obtain comments and inputs from stakeholders on the DEIR.

(Refer to Appendix A for Attendance Record)

It was discussed and agreed that as only one delegate is present that an around the table presentation and discussion will take place.

2. Need for the project

Mr Mathys Vosloo presented the need for the project.

(Refer to Appendix B for presentations)

Questions and Discussions

Question Mrs Anele Ngcebetssha (Nkangala District Municipality): What is the difference between ash and gypsum?

Response Dr Mathys Vosloo (Zitholele Consulting) responded that ash is a combination of different elements and gypsum is the by-product that will be produced from the Flue Gas Desulphurisation process to be used as air quality abatement technology at Kusile coal fired power station.

Question Mrs Anele Ngcebetssha: Is the 10 year (10y) ash disposal facility (ADF) currently being used?

Response Dr Mathys Vosloo responded that the 10y ADF is currently being constructed.

- Question** Mrs Anele Ngcebetsha: Has the IWULA been authorised yet?
- Response** Dr Mathys Vosloo replied that the process is lagging behind but that extensive consultation has taken place with the Department of Water and Sanitation (DWS) during the scoping phase of the EIA process. Towards this consultation process, a workshop was held earlier this year with both the Department of Environmental Affairs (DEA) and the DWS.
- Question** Mrs Anele Ngcebetsha: Has the case officer been on the site visit?
- Response** Dr Mathys Vosloo confirmed that the case officer did undertake a site visit.

3. Overview of the EIA, WUL and WML Applications Process

Dr Mathys Vosloo presented the overview of the EIA
(*Refer to Appendix B for presentations*)

Questions and Discussion

- Question** Mrs Anele Ngcebetsha
Are there any activities happening on site A such as farming and will the ADF impact on the crop productivity when the ADF is operational?
- Response** Dr Mathys Vosloo responded that there is agricultural activity currently taking place on site A and that there are some portions of the land that will be lost to the ashing activity. It was mentioned that the property within which site A is located is entirely owned by Eskom.
- Question** Mrs Anele Ngcebetsha: It was mentioned that it seems that Site A is full of wetlands.
- Response** Dr Mathys Vosloo replied that the Klipfontein Spruit and Holfontein Spruit are present on Site A which meets and end up in the Wilge River, and that is the only disadvantage about Site A, from a wetland perspective. Site A has more wetlands than the other sites.
- Question** Mrs Anele Ngcebetsha: Will there be any offsets done?
- Response** Dr Mathys Vosloo responded that discussions are being held with the DWS regarding offsets. In the EIR, some principles to be observed in development of the offsets strategy are provided.
- Question** Mrs Anele Ngcebetsha: As per the Report it is noted that SANBI is being consulted.
- Response** Eskom, together with DWS, approached SANBI to assist with the framework for the offset plan. This consultation will be on going throughout the WULA process
- Question** Mrs Anele Ngcebetsha: Do you have a relocation plan for biodiversity?
- Response** Dr Mathys Vosloo responded that it is not done yet. It will be included in the EA conditions as a post-authorisation condition.
- Question** Mrs Anele Ngcebetsha: Do some of the species need a permit and has this been taken that into consideration.
- Response** Dr Mathys Vosloo responded that this will be done post-authorisation, if required.
- Question** Mrs Anele Ngcebetsha: Will landscaping / screening be done in such a manner that the facility does not stand out?

- Response** Dr Mathys Vosloo responded that the design will be done to minimise visual impact i.e. shaping the ADF that it blends in as naturally as possible into the surrounding landscape.
- Question** Mrs Anele Ngcebetsha
How long does SAHRA (South African Heritage Resource Agent) take to issue a permit to relocate any graves that may need to be relocated?
- Response** Dr Mathys Vosloo responded that the exact timeframes are not known but the required process as set out by SAHRA will be followed.
- Question** Will there be any relocation of people from Site A?
- Response** Dr Mathys Vosloo responded that there is no occupants that required relocation as the farm is rented from Eskom.
- Question** Mrs Anele Ngcebetsha: Everything always looks good on paper, the Report has been done and the recommendations are made but what measures are in place to ensure that Eskom complies with the conditions stipulated in the EA and licenses?
- Response** Dr Mathys Vosloo responded that Eskom will have to comply to the conditions set out in the EA. If not, non-compliance by Eskom can be reported to the DEA and should the investigation prove that Eskom has not complied to the conditions, Eskom can receive a heavy fine.
- Mr Tobile Bokwe (Eskom Holdings) responded that there is a clause in the license to say that if the license holder does not comply to any of the conditions, the non-compliance must be reported to the DEA within 24 hours.
- There will also be an Environmental Control Officer (ECO) on site to monitor activities and make sure that license conditions are adhered to.
- The only assurance that the public has that Eskom is compliant is to request Reports that are compiled by Eskom on their various monitoring activities. The Reports are drafted either monthly or quarterly, as required by the EA.
- Question** Mrs Anele Ngcebetsha: How do you make sure that all the recommendations are adhered to during construction?
- Response** Dr Mathys Vosloo responded that this will be the responsibility of the appointed independent ECO.
- Question** Mrs Anele Ngcebetsha: As a suggestion there should be a quarterly environmental forum where the public can get feedback on activities during construction and operations of ADF. She enquired as to what happens with complaints received and whether these complaints are just put in the report as a suggestion?
- Response** Mr Tobile Bokwe replied that currently Kusile Power Station has an EMC (Environmental Management Committee) forum which comprises of general public, landowners and stakeholders that are around the Power Station. During these meetings complaints are captured and given to the correct people / department to address the issues.
- Question** Mrs Anele Ngcebetsha: Who will be taking the samples on site since there is an issue with leakages as per some comments from the public?

Response Mr Tobile Bokwe responded that various consulting firms monitor the groundwater, surface water, wetlands and air quality.

4. Summary of the Environmental findings and mitigation measures as documented in the DEIR

Dr Mathys Vosloo presented the overview of the EIA process, environmental findings and mitigation recommendations.
(Refer to Appendix B for presentations)

5. Overview of the technical aspects of the ADF Design

Mr Charl Cilliers presented the overview of the technical aspects of the ADF Design
(Refer to Appendix B for presentations)

Questions and Discussion

No discussion and questions were held

6. Way forward and Closure

With nothing further to discuss the meeting was adjourned at 15h30.

DATE: 03 September 2014

SIGNATURE:

ZITHOLELE CONSULTING

APPENDIX A

Environmental Impact Assessment, Water Use License and Waste Management License Applications for the
Proposed 60 Year Ash Disposal Facility at Kusile Power Station

(DEA Ref. No.: 12/12/20/2412, NEAS Ref. No.: DEA/EIA/0001448/2012)

KEY STAKEHOLDER WORKSHOP

Wednesday, 20 August 2014 at 14h00

Kopanong Hall, Kendal (opposite Kendal Power Station)

RECORD OF ATTENDANCE

TITLE	NAME	SURNAME	COMPANY ORGANISATION
Mr	Tobile	Bokwe	Eskom Holdings SOC Limited
Mr	Tinus	Breedt	Mtech Industrial
Mr	Charl	Cilliers	Jones & Wagener Engineering & Environmental Consultants
Mr	Hardus	Kotze	Eskom Holdings SOC Limited
Ms	Mari	Kotze	Eskom Holdings SOC Limited
Mr	Siphiwe	Mahlangu	Eskom Holdings SOC Limited
Ms	Patiswa	Mnqokoyi	Zitholele Consulting (Pty) Ltd
Ms	Anele	Ngcobetsha	Nkangala District Municipality
Mr	Michael	Were	Eskom Holdings SOC Limited
Ms	Nicolene	Venter	Zitholele Consulting (Pty) Ltd
Dr	Marthys	Vosloo	Zitholele Consulting (Pty) Ltd

INTEGRATED ENVIRONMENTAL AUTHORISATION

**Environmental Impact Assessment, Water Use License and Waste Management License Applications for the
Proposed 60 Year Ash Disposal Facility at Kusile Power Station**

(DEA Ref No 12/12/20/2412 and NEAS Reference: DEA/EIA/0001448/2012)

DRAFT MINUTES OF OPEN HOUSE AND PUBLIC MEETING

Wednesday, 20 August 2014, at 18h00, Eltoro Conference Centre

ACTION

1. WELCOME, INTRODUCTIONS, SAFETY AND OBJECTIVES OF THE MEETING

Mrs Nicole Venter (Zitholele Consulting) welcomed all present to the meeting. A round of introductions was done by the project team and those present at the meeting.

The safety procedures were explained in case of any emergencies.

The objectives of the meeting were to:

- provide a brief overview regarding the proposed project;
- present a summary of the main Environmental Findings and Engineering Design as documented in the Draft Environmental Impact Assessment Report (DEIR);
- present a summary of the main mitigation measures proposed as documented in the DEIR;
- and to obtain comments and inputs from stakeholders on the DEIR.

(Refer to Appendix A for attendance record)

2. NEED FOR THE PROJECT

Mr Leon Stapelberg (Eskom Holdings SOC Limited) presented the need for the project.

(Refer to Appendix B for full presentation)

3. OVERVIEW OF THE EIA, WUL AND WML APPLICATIONS PROCESS

Dr Mathys Vosloo (Zitholele Consulting) presented the overview of the EIA process

(Refer to Appendix B for full presentation)

4. SUMMARY OF THE ENVIRONMENTAL FINDINGS AND MITIGATION MEASURES AS PER THE DEIR

Dr Mathys Vosloo presented a summary of the environmental findings and mitigation measures recommended as per the Draft Environmental Management Programme (EMPr).

(Refer to Appendix B for full presentation)

5. OVERVIEW OF THE TECHNICAL ASPECTS OF THE ADF DESIGN

ACTION

Mr Charl Cilliers (Jones and Wagner) presented the overview of the technical aspects of the ADF design and its operational phase.

(Refer to Appendix B for full presentation)

6. DISCUSSION

Question Mr Gert Smith (Agri Mpumalanga): Will the water be monitored?
Response Dr Mathys Vosloo (Zitholele Consulting): One of the mitigation measures included in the EMPr is that Kusile Power Station (KPS) must ensure regular water monitoring.

Post-meeting note:

The project has applied for the Waste Management Licence and a Water Use Licence, both of these licences, if acquired, will have conditions for water monitoring.

Question Mr Gert Smith: Are you aware that one of the largest open cast mines will be in the area?

Response Dr Mathys Vosloo: The project is aware of the newly proposed open cast mine.

Question Mr Gert Smith: Have all the properties of the alternative sites been purchased?

Response Dr Mathys Vosloo: No new property is required as Site A is already owned by Eskom.

Post-meeting note:

At the EIA phase the alternative sites are only considered with consultation with land owners. Only after an environmental authorisation has been granted will negotiation with land owners and purchase agreements be finalised for the authorised alternative site. In the case of the Kusile 60-year ash dump recommended site, the property on which the recommended preferred site is located is already owned by Eskom.

Question Mr Gert Smith: Have all the landowners been informed about this project?

Response Ms Nicolene Venter: Landowners within the study area were identified and informed throughout the EIA process. Organisations such as AgriSA and TLU SA were also informed with the understanding that they will filter the information through to their members.

Question Mr Gert Smith: Will the ash have significant impact on air quality?

Response Dr Mathys Vosloo: The Air Quality Specialist did identify that there will be an impact on air quality but it will not be significant, after successful mitigation, and the impact will be below the standards and limits as set out in the National Environment Management: Air Quality Act.

ACTION

Comment Mr Thomas Mnguni (Greater Middelburg Residents Association) raised the following concerns:

- the venue for the meeting is not accessible for community members to attend the public meeting and there was no transport made available to the community;
- aware of the project deadlines but the only way to access the reports is at the library and this is a problem because there is not enough time to read the report;
- did not understand the technical jargon that was used in the presentations. It would have been nice to make the presentations simpler; and
- there should be another meeting for the community members that have not attended the meeting today.

Response Ms Nicolene Venter (Zitholele Consulting) responded that there were challenges between the project team and the communities, and due to unforeseen circumstances, the public meeting had to be moved to this location (El Toro).

Post-meeting note:

One of the reasons that the meeting venue was moved was due to the fact that Eskom and the labour force was in wage negotiations with a risk of strikes deemed looming. Due to the identified potential risk it was identified that having the meeting at the Phola Community Hall could flare up tensions between Eskom and the work force. It was therefore decided, for safety of residents and the project team, to move the venue to the closest neutral venue, which was El Toro.

Ms Venter acknowledged the constraint to access the Report and, with the approval of the project team, provided a hard copy of the Report (including the Appendices) to Mr Mnguni and his organisation. It was requested that the Report be circulated to their members and it was agreed that a collective written comment on the DEIR will be submitted to Zitholele within the presented time frame.

Ms Nicolene Venter, on behalf of Zitholele Consulting, acknowledged the comment and will take the matter forward for future projects.

The response for a meeting in Phola was acknowledged and will be presented to the team for consideration.

Question Ms Khensani Shilubone (Middelburg Environmental Justice Network (MEJN)): There are many dangerous toxins in the ash e.g. lead, mercury, aluminium etc. How sure are Zitholele that this will not affect the community as this can cause cancer, kidney problems etc? The reason for the question was that there was an incident at Hendrina Power Station where two kids were ill as a result of the toxins caused by the ash.

ACTION

Response Dr Mathys Vosloo responded that exposure to toxin in the ash can happen in two ways:

1. Through run off containing ash; or
2. windblown ash.

The engineers are confident that the design of the ADF will prevent or minimise such incidents and the team is also confident that the mitigations recommended in the EMPr will address these situations.

In terms of the windblown ash, the air quality specialist is confident with the mitigations that they have recommended such as dust suppression and rehabilitation of the ADF. If these mitigation measures are done correctly, it will limit the windblown dust to the footprint of the site. It is very unlikely that the community members will be affected if the mitigation measures are put into place and adhered to.

Mr Leon Stapelberg (Eskom Holdings) further commented that he is unaware of any employees of Eskom working at power stations including Kusile Power Station, being diagnosed with any of the disease mentioned by Ms Shilubone.

Question Mr Thomas Mnguni: Except the ash site for Kusile, Kendal is very close to Kusile Power Station and taking that into consideration, what cumulative impacts are there from all of these sites?

Response Dr Mathys Vosloo responded that the cumulative impacts are addressed in the Report but on impact basis and not specifically in detail on cumulative impacts.

Mrs Nicolene Venter reported that she will forward the page number from the report to where it talks about cumulative impacts.

ZC**Post-meeting note:**

Page 18, Paragraph 3.2.2: Impact Assessment Methodology. Under each Specialist Summary in the DEIR the specialists included **cumulative impacts**, which contributes to the specialist findings and recommendations. These recommendations was incorporated into the DEIR as presented by the specialists.

Comment Mrs Tersia van Vuuren (Landowner) commented that they have attended all the meetings and their business focusses on tourist from overseas. It is a concern that the Zitholele, in their presentation indicated that the study area is not a tourism destination and therefore a tourism study was not required nor noted as such in the report. It is therefore believed that their concerns / comments submitted via e-mail were not taken into consideration.

Response Mrs Nicolene Venter commented that the comments are captured in the comments and response report. There were responses provided to the comments that were raised.

Dr Mathys Vosloo: The comments will be forwarded to the social specialist team for further investigation or response.

ZC**Post-meeting note:**

In terms of the residential and accommodation aspect of the

ACTION

property, the proposed ash dump will not be visible from either the farmstead (located in a depression in the landscape) or from the two chalets (located deep in the river valley) in the early lifespan of the ADF. However, during the site investigation it became evident that the ADF would become visible from the farmstead during the later years of the ADF's life. With reference to the activities (hiking, mountain biking, 4x4-ing and hunting), the proposed ash dump will be partially to fully visible when travelling in an eastern and south-eastern direction along routes on the main koppie / mountain. These views would also, to some extent, include the, currently constructed, Kusile Power Station. Upon leaving the adventure facility, the proposed ash dump would be partially visible in conjunction with full-on views of the Kusile Power Station.

The rating of the impact from this sensitive visual receptor will be included in the addendum to the Visual Impact Report
Mitha Cilliers, Visual Specialist

Comment Mr Thomas Mnguni requested that a clearer breakdown be done from the social specialist, as this project is not about only creating jobs but also about people losing their livelihood in the area.

Response Mr Leon Stapelberg commented that if a principle contractor is appointed on site they have to appoint local labour from the community. This is a complex issue and there will always be people who are not happy.

Comment Ms Khensani Shilubone also commented that it is not only the power station that hires labour from outside the community but the mines do the same thing.

Responses Ms Nicolene Venter acknowledged the comment.

Question Ms Lydia Ngwenya (Guqa Community Environmental Service) is concerned about the water that will be used and asked whether the Wilge River will be able to supply the quantity of water required as there is already a shortage of water in Phola.

Response Dr Mathys Vosloo responded that the water will not be used from the Wilge River for the proposed project. Water will be obtained from the water pipeline from Kendal Power Station that is currently supplying Kusile Power Station with water.

Mr Leon Stapelberg added to Dr Vosloo's response that water will be supplied to Kusile Power Station from Kendal Power Station, and this water pipeline forms part of the Vaal Scheme. The water supply to Phola is not being supplied from this water pipeline, but from eMalahleni Local Municipality and Phola would therefore not be impacted by the proposed project regarding water supply.

Question Ms Lydia Ngwenya: Does Eskom recycle the water for the community?

Response Dr Mathys Vosloo responded that the engineers designed the facility in such a way that the dirty water is caught in the ash/waste water return dam, which is then recycled to be used for the dust suppression.

ACTION

Question Mr Thomas Mnguni raised his concern regarding the possible negative impact this will have on the community especially those that use land close to Kusile Power Station for growing crop as dust will settle on the crops that will be harvested by the farmers. How will this impact be mitigated?

Response Dr Mathys Vosloo responded that in terms of the air quality assessment done and the mitigation measures as proposed in the EMPr will be sufficient to address the negative impact.

Question Mr Thomas Mnguni commented that in the Water Act is stated that developments should stay clear of wetlands, with a 100m radius. In the presentation it is shown that this Act is not complied with and instead a wetland will be destroyed. How do we preserve the ecosystem if we destroy the wetlands?

Responses Mr Leon Stapelberg responded that no matter which site is selected, wetlands will be affected.

Dr Mathys Vosloo responded that the decision regarding the wetlands was not taken lightly. The wetland impact was discussed at length with the Department of Water and Sanitation (DWS) and the South African National Biodiversity Institute (SANBI).

Question Mr Thomas Mnguni: The farmers also rely on borehole water. How will leachate and runoffs into the boreholes be monitored?

Response Mr Leon Stapelberg responded that Eskom is already engaged in monitoring their groundwater sources via various boreholes, and that there is a consultation process with farmers and community members that raise concerns regarding the quality of the water at their boreholes. On the Site A no negative effluence were identified in the boreholes.

Mr Tobile Bokwe (Eskom Holdings) responded that the advantage of this ash facility is that it will be lined with an appropriately designed barrier system, according to existing environmental legislation. During the construction phase a groundwater specialist will be there to assist in any way possible to ensure that there are no leakages.

Comment Mr Thomas Mnguni commented that the Medical Research Council has done a study on the impacts of lead on crops, and what they have found is that around the Middleburg and Witbank areas there are heavy lead deposits on the crops.

Mr Tomas Mnguni to forward the report to Zitholele Consulting.

Response Ms Nicolene Venter acknowledged the comment and replied that the team will search for such a report on the Medical Research Council's website. Should such a report not be found, then Mr Mnguni will be requested to send a copy of the Report to Zitholele Consulting.

Post-meeting note:

It is not disputed that there are heavy lead deposits on crops in

ACTION

the Witbank and Middleburg areas. The air quality specialist has identified mitigation measures that, if successfully implemented, will reduce the impact of dust and windblown ash to the development footprint. Eskom shall also be responsible for the monitoring of ash fallout on neighbouring properties to measure the effectiveness of the proposed mitigation measures. The results of the monitoring event shall be discussed at the Eskom Environmental Management Committee established by Eskom for the Kusile Power Station development.

Post-meeting note:

Agreed - mitigation of the ADF is recommend to minimise the impact to the surrounding environment. The possibility of synergistic or antagonistic effects of the toxins in coal fly-ash has been noted in the literature (for example, Liberda and Chen, 2013). However, due to the complex set of variables (for example: coal source and chemical element profile, boiler process, ash particle size and age) it is not possible to quantify the impact.

The literature referenced above is *Eric N. Liberda & Lung Chi Chen (2013) An evaluation of the toxicological aspects and potential doses from the inhalation of coal combustion products, Journal of the Air & Waste Management Association, 63:6, 671-680,*

DOI:10.1080/10962247.2013.777374

Dr Terri Bird, Air quality specialist

Question Mr Thomas Mnguni asked how does Eskom carry the burden if something negative happens.

Response Mr Leon Stapelberg responded that Eskom adheres to strict safety rules to eliminate any possible negative impacts / incidents. Should these occur, Eskom responds responsibly and effectively with respect to incidents.

Question Ms Nomcebo Makhubelo (Mpumalanga Youth Against Climate Change (MYACC)) asked why should Eskom take the risk to build the ash disposal facility as it will contaminate the water at some point?

Response Mr Leon Stapelberg responded that the system that will be built is known as a closed system, which means zero impact outside the footprint of the ash facility.

From a technical point of view all coal fired power stations generate ash and the ash needs to be deposited somewhere. If there is no ash disposal facility then the power station will need to shut down.

Question Mr Thomas Mnguni asked whether the team are not under estimating the impact of fly ash in the province by saying that the risk is very minimal. If one combine all the toxins in the ash, one cannot be too cautious with mitigations.

Response Dr Mathys Vosloo responded that the concern will be forwarded to the air quality specialist for review. ZC

Post-meeting note:

ACTION

A pre-cautionary approach has been taken with regards to complex impacts such as ash fallout on a provincial basis. The assessment of air quality impacts were done on the information at hand at the time of compiling the EIR. However, once the power station produces ash it will be analysed and classified in terms of the relevant waste regulations. At this point mitigation measures can be intensified to further minimise the impact of ash on the surrounding environment and the EMPr updated. It must still be noted that if the mitigation measures recommended by the specialist is implemented successfully the impact of windblown ash can be minimised to the ash disposal facility footprint.

Question Ms Lydia Ngwenya asked if consultation was done with DEA and Government officials, and if so, why are they not present at the meeting as members of the public cannot get hold of them.

Response Ms Nicolene Venter replied that all Government Officials, including the DEA, that are registered on the project database received the DEIR notification and Public Meeting invitation. Attendance of a public meeting is not compulsory, but a choice.

7. WAY FORWARD AND CLOSURE

Without further discussions the attendees were again thanked for their attendance at the public meeting and they were wished a saved journey home.

The meeting was adjourned at 20h30.

DATE:

SIGNATURE:

ZITHOLELE CONSULTING

APPENDIX A

**Environmental Impact Assessment, Water Use License and Waste Management License Applications
for the Proposed 60 Year Ash Disposal Facility at Kusile Power Station Applications**

(DEA Ref No 12/12/20/2412 and NEAS Reference: DEA/EIA/0001448/2012)

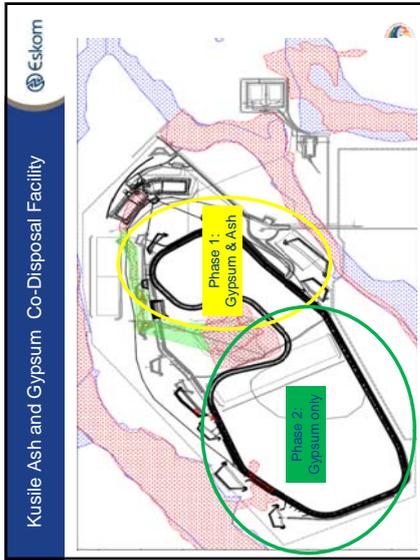
PUBLIC MEETING

Wednesday, 20 August 2014 at 17h00

Phola Community Hall, Phola Township, Mpumalanga Province

RECORD OF ATTENDANCE

TITLE	NAME	SURNAME	COMPANY / ORGANISATION
Mr	Tobile	Bokwe	Eskom Holdings SOC Limited
Mr	Tinus	Breedt	Mtech Industrial
Mr	Charl	Cilliers	Jones & Wagener Engineering & Environmental Consultants
Mr	Wayne	Erasmus	Gernet mining (pty) Ltd
Mr	Hardus	Kotze	Eskom Holdings SOC Limited
Ms	Mari	Kotze	Eskom Holdings SOC Limited
Mr	Siphiwe	Mahlangu	Eskom Holdings SOC Limited
Ms	Patiswa	Mnqokoyi	Zitholele Consulting (Pty) Ltd
Miss	Nomcebo	Makhabelo	Mpumalanga Youth Agaist Amate
Mr	Themba	Mhlongo	Eskom Holdings SOC Limited
Mr	Thomas	Mnguni	Greater Middleburg Residents Association
Mr	Khensani	Shilobone	MEJN
Mr	Gert	Smith	Agri Mpumalanga
Mnr	Andries	van Vuuren	Plaas: Witpoort (Manyathela Adventures)
Mrs	Tersia	van Vuuren	Manyathela Adventures
Ms	Nicolene	Venter	Zitholele Consulting (Pty) Ltd
Mnr	Barend	Vorster	Topigs SA (Pty) Ltd
Dr	Mathys	Vosloo	Zitholele Consulting (Pty) Ltd



Kusile Ash and Gypsum Co-Disposal Facility Capacity

Original Footprint:

- Based on the Kusile Range Rate for Ash and Gypsum Production (2010) which assumes a commissioning period of 8 months between units:
 - Phase 1 footprint > 5 years co-disposal of Ash and Gypsum
 - Phase 2 footprint > 55 years disposal of gypsum, or another 5 years of ash & gypsum co-disposal

Amended Footprint:

- In support of the DVA mandate to preserve wetland areas it was necessary to amend the original footprint design leaving the pan area and its associated buffer zone free from material deposits.
 - amended Phase 1 footprint > 4.25 years co-disposal of Ash and Gypsum
 - amended Phase 2 footprint > 50 years disposal of gypsum

Estimated coal consumption per day (pending on coal quality)

Coal	Tonnes per day
Per 1 unit	Between 7 500 and 10 500
Per 6 units	Between 45 000 and 63 000

Estimated Ash, Gypsum and Crystallizer salts production per day with 90 % load factor & 80 Availability (Base load) (pending on the coal quality)

Ash	Tonnes per day
Per 1 unit	3 600
Per 6 units	21 600

Gypsum	Tonnes per day
Per 1 unit	465
Per 6 units	2785

Crystallizer solids	Tonnes per day
Per 1 unit	7
Per 6 units	43

Conclusion

- Your comments, inputs and suggestions will enable us to:
 - improve our planning
 - perform better impact assessments
 - include them in selection of the best option that will be operated and managed in manner that seeks to address the identified impacts

Thank you

Eskom | Powering your world

Integrated EIA, WML and WULA for the proposed 60 year ash disposal facility for Kusile Power Station

Draft Environmental Impact Assessment Phase
Focus Group Meeting

Wednesday 20 August 2014
Kopanong Hall, Kendal Power Station

Presented by: Mathys Vosloo



Integrated EIA, WML and WULA for the proposed 60 year ash disposal facility for Kusile Power Station

Draft Environmental Impact Assessment Phase
Key Stakeholder Meeting

Wednesday 20 August 2014
Kopanong Hall, Kendal Power Station

Presented by: Mathys Vosloo



Integrated EIA, WML and WULA for the proposed 60 year ash disposal facility for Kusile Power Station

Draft Environmental Impact Assessment Phase
Public Meeting

Wednesday 20 August 2014
El Toro Conference Centre, Kendal.

Presented by: Mathys Vosloo



Guidelines for Productive Discussion

- Focus on issues, not people
- Courtesy
- One person at a time
- Work through facilitator
- Agree to disagree
- Cell phones on silent



Agenda

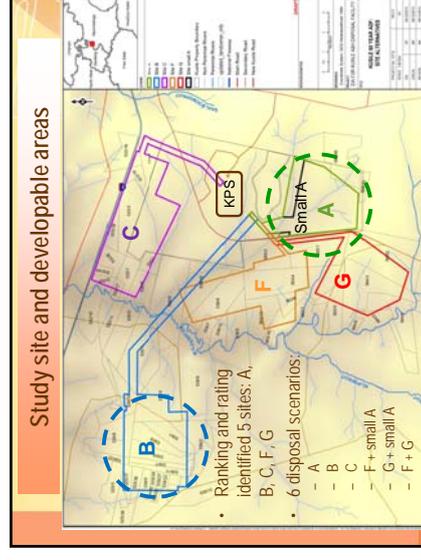
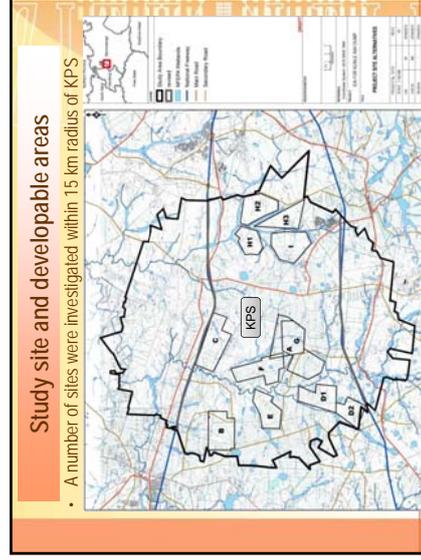
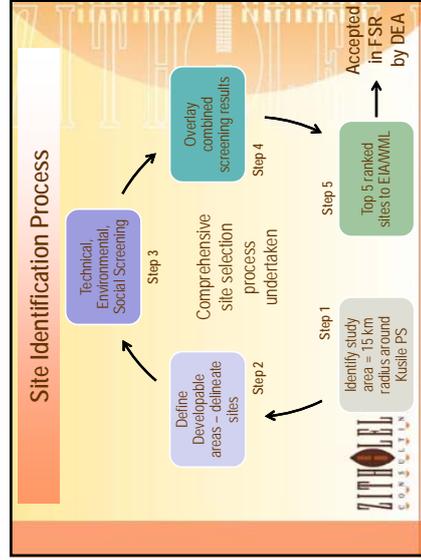
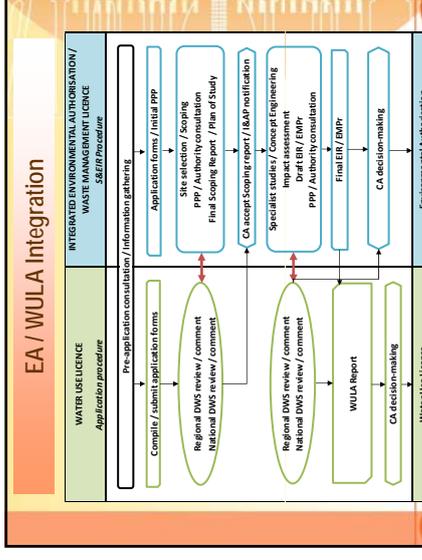
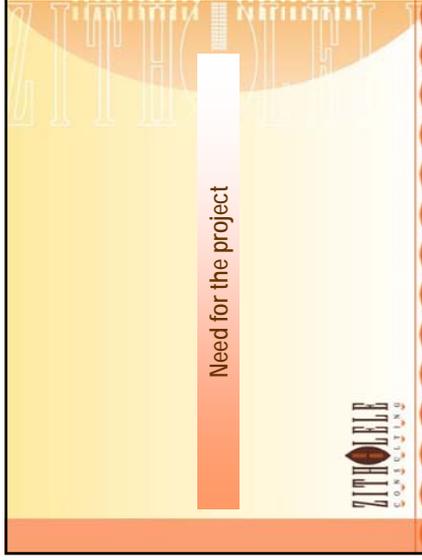
1. Welcome, Introductions, Safety and Meeting Objectives
2. Need for the Project
3. Overview of the Integrated EIA / WML Processes
4. Recap of the site identification process
5. Summary of the Major Environmental Findings and Mitigation Measures as per the Draft Environmental Impact Report
6. Proposed engineering designs and measures
7. Discussion
8. Way Forward and Closure



Objectives of the meeting

- Present the findings of the site selection process
- Present key findings of the specialist studies and mitigation measures
- Provide opportunity for stakeholders to raise concerns, comments





Environmental specialist studies

Terrestrial Ecology	Avifauna	Bats
Hydrology Water Quality	Wetlands	Aquatic Ecology
Soils, Land Capability	Groundwater	Air quality



Social & technical studies

Heritage Impact Assessment	Social Impact Assessment	Traffic Impact Assessment
Visual Impact Assessment	Sustainability Assessment	Engineering concept design
Ash classification	Geotechnical Assessment	Noise



Air Quality

- Study area within the Highveld Airshed Priority Area (HPA), near to the eMalahleni Hot Spot
- HPA poor air quality – managed through HPA Air Quality Management Plan (2011)
- Project impact on air quality will not impact the ambient air quality more than the status quo situation

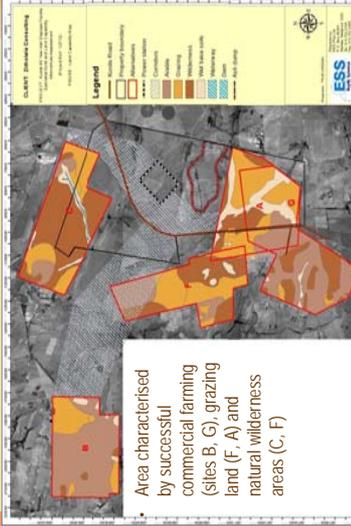


Air Quality

- Mitigation measures include:
 - Continuous dust suppression through engineered dust suppression system, water tankers
 - Concurrent rehabilitation of the advancing face of the ash facility
- Increased life-time health impact risk resulting from exposure to inhalable arsenic, nickel and chromium was low to very low if mitigations successfully implemented



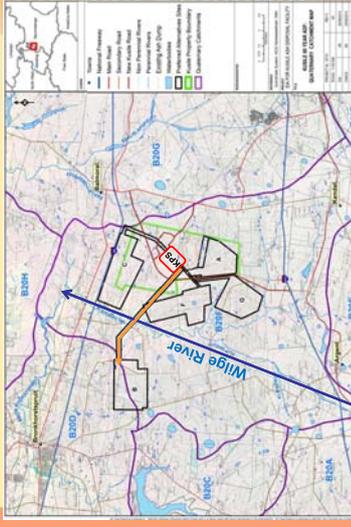
Soil & Land Capability



Area characterised by successful commercial farming (sites B, G), grazing land (F, A) and natural wilderness areas (C, F)

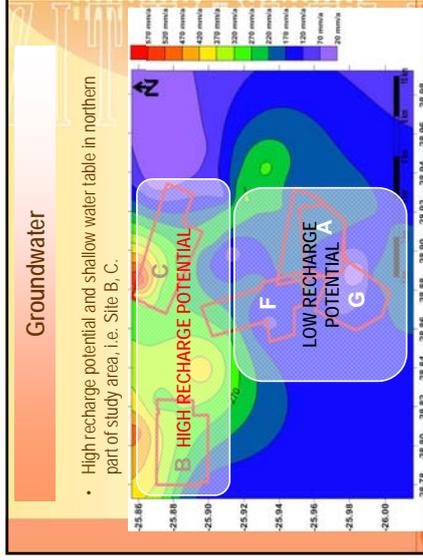


Surface Water



Surface Water

- Widge River the most important river system in upper Ollifants catchment, i.e. direct or potential impacts regarded as significant sensitivities
- Sites B, F, G pose a significant pollution risk to the Widge River system due to close proximity
- Mitigation measures:
 - Maintain buffer to the Widge River
 - Storm water management plan

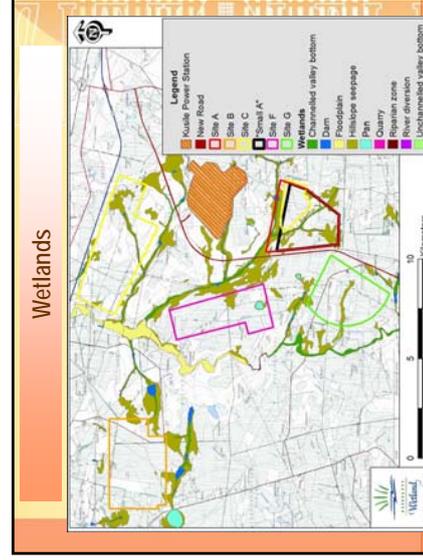
Groundwater

- Potential significant impact include possible contamination of groundwater resources
- Mitigation's measures:
 - Installation of barrier system will prevent groundwater contamination
 - Successful rehabilitation of ADF
 - Groundwater management plan / monitoring network
- Groundwater contamination detected by leachate detection layer in barrier system



Groundwater

- Possible mitigation in unlikely event of groundwater contamination:
 - Natural flushing of contamination
 - In situ bioremediation (ISB): breaking down contaminants by living organisms
 - In situ Chemical Oxidation Reduction (ISCOR): inject a chemical to change chemistry or pH of the contaminant
 - Electrokinetic barriers: pass electricity between 2 points (electrodes) in groundwater. Contaminants collect at one point, can be pumped out
 - Permeable Reactive Barriers (PRB): "Wall" traps and changes harmful chemicals to harmless chemicals
 - Pump, treat and reuse: Pump water from boreholes, treat water and pumped back to aquifer / reused
- Eskom to consider the feasibility and applicability of any or all of above mitigation measures. at the specific site if contamination becomes evident

Wetlands

- Most significant impacts include direct loss and indirect impact on wetlands.
- Mitigation's include:
 - Minimise destruction of wetlands within / next to the ADF footprint
 - On-site and offsite rehabilitation of wetlands, especially downstream of the Holfontein spruit
 - Extensive offset management plan within the same sub-catchment or catchment



Terrestrial Ecology

- 16 mammals, 41 bird species, 10 reptiles, 7 amphibians and 95 arthropoda taxa noted within study area
- Species of conservation importance include
 - Aardvark (Protected - Mpumalanga Nature Conservation Act)
 - Cape clawless otter (Protected - NEMBA TOPS list (2007) & Mpumalanga Nature Conservation Act (No 10 of 1997))
 - Greater flamingo (*Phoenicopterus ruber*) - Near Threatened (International Union for Conservation of Nature)



Terrestrial Ecology

- Major impacts: habitat loss, degradation and fragmentation
- Mitigation measures:
 - Search & Rescue operation in all areas to be cleared
 - Conveyors and linear infrastructure along existing infrastructure
 - Culverts or passage ways along linear infrastructure



Aquatic Ecology

- Invertebrate diversity and sensitivity score highest within Wilge River sites, lowest in Unnamed Tributary and Klipfonteinspruit
- Shorfin Suckermouth good indicator of water quality
- One of the few remaining populations in the upper Olifants River catchment



Shorfin Suckermouth

Aquatic Ecology

- Impacts include water quality impacts, habitat loss, altered flow regimes and possible loss of sensitive species
- Mitigation measures:
 - Maintain wetland function through active management of Klipfonteinspruit
 - Management of storm water runoff - prevent erosion
 - Manage and rehabilitate wetland ecosystems e.g. the Klipfonteinspruit system



Bats

- 17 species can be expected to at least occasionally roost and utilise the airspace over the study area
- Displacement of bats from and reducing airspace at foraging areas
- Mitigation measures:
 - Encircling bats away from ADF site with lights
 - Creating artificial roosting sites away from construction and operational areas



Avifauna

- Five Red Data bird species (Blue Crane, Lesser Kestrel, Lesser Flamingo, Secretarybird and Greater Flamingo) recorded during the field surveys.
- Reduction in species diversity and abundance due to habitat transformation and fragmentation
- Mitigation measures:
 - Off-seas or contributions to grassland / wetland conservation if site A is chosen
 - Wetland and terrestrial ecological recommendations to be followed
 - Maximum use of existing infrastructure



Noise

- Noise levels at the site include existing ambient noise levels resulting from traffic along the N4 and N12, and mining and construction activities in the area
- Noise is expected to have a minor impact
- Mitigation measures:
 - Maintenance of vehicles, plant and equipment on regular basis
 - Monitoring noise levels at noise sensitive receptors within 1 km from the construction site
 - Site or relocate noise sources to less sensitive areas to take advantage of distance and shielding



Visual

- Views from roads would be temporary and as the study area is not a tourist destination; travellers through the study area will not be regarded as sensitive.
- Visual impacts are thus expected to be minor
- Mitigation measures:
 - Rehabilitate / restore exposed areas;
 - Avoid high pole top security lighting along the periphery of the project area



Heritage

- A number of graves and cemeteries identified within study area.
- Impacts could include relocation of graves, cemeteries, architectural heritage
- Mitigation measures:
 - Incorporation of the heritage resources into development without impacting, or
 - Relocation of heritage resources such as graves and cemeteries



Social

- Significant impacts include:
 - Impacts on livelihood of commercial farmers on Site B
 - Relocation of residents on site C, which were re-located to this area previously. Specialist recommended that Site C be eliminated as a result of this.
 - Influx of job seekers resulting in conflict with local communities and unacceptable social behaviour



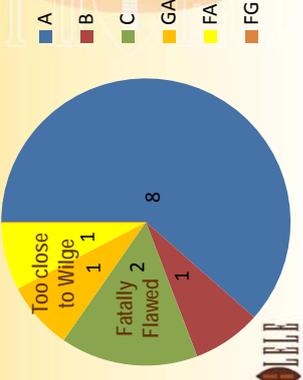
Social

- Mitigation measures include:
 - Authorisation and implementation of site A, which is owned by Eskom, therefore no resettlement, relocation of farmers
 - Create and communicate an employment policy to jobseekers and other stakeholders
 - Create or join a local, land owner or policing forum



Sustainability assessment

Specialists choice of preferred sites...



Category	Count
A	8
Too close to Wilge	1
Factly Flawed	2
B	1
C	1
GA	1
FA	1
FG = 0	0



Comparative assessment

IMPACTS / IMPACT CATEGORIES	SITE ALTERNATIVES / PERSONAL SCENARIOS				
	A	B	C	D	Eg
Degree of difficulty of engineered solution	2	5	4	4	4
Land ownership	1	5	3	3	4
Impacts on Widge (shortest distance, impact risk)	2	4	3	4	4
Direct impacts on wetland, aquatic habitat	5	2	5	4	4
Indirect impact on adjacent wetlands, pans	3	4	5	4	4
Impact on wetland biodiversity	3	5	4	3	3
Impact on groundwaters	2	4	4	2	2
Adverse effects on terrestrial vegetation / habitat for fauna	2	1	5	3	4
Loss of bat species richness	1	4	5	2	2
Air quality impacts	1	1	1	1	1
Noise impacts on residences / communities	1	1	1	1	1
Soil, Land Use & Agricultural potential	3	5	1	3	2
Geomorphology, historical structures and resources	1	3	5	2	4
Loss of livelihoods / resettlement of people	1	5	5	4	2
Ability and landscape character	1	4	5	3	2
Visual impact	1	4	5	3	2
SENSITIVITY SCORE	33	59	67	48	47

Very low sensitivity: 1, Low Sensitivity: 2
 Moderate Sensitivity: 3, High Sensitivity: 4
 Very high sensitivity: 5

Site A – Positive Aspects

- Contained Zone of Impact within already impacted sub-catchment
- Smallest Physical Footprint, Shortest Conveyor Route
- Easiest Solution to construct, maintain and operate
- Single direction of drainage (least complex water management)
- Furthest from Widge River – ample space for implementation of on-site mitigation and rehabilitation
- Best opportunity for wetland rehabilitation to act as a buffer to the Widge River
- Least expensive solution to implement, i.e. least impact on electricity price
- Property owned by Eskom / Relocation of people within the footprint of Site A is completed
- Limited interference with neighbouring farming activities
- Only Site A allows for future switching to New Largo as a disposal site

NB design and mitigation measures

- Dust suppression engineered into ADF solution
- Consecutive rehabilitation of the Ash Disposal Facility
- Barrier system to prevent groundwater contamination
- Phased installation of the barrier system
- Storm water management measures during construction (such as sediment traps)
- Clean and dirty water separation during operation
- Will meet minimum design requirements for storage of contaminated water (GN 704)

NB design and mitigation measures

- Vegetated / natural / clean water cut-off canal
- Diversions will be engineered to mimic natural flow rates and can be designed to incorporate natural habitat features
- Energy dissipation / erosion control measures at clean water discharge points
- Culverts installed at regular intervals along conveyor routes, fences and access roads to allow fauna dispersal
- Housing on conveyor to prevent spillage, wind-blown dust
- Monitoring and pumping boreholes will be installed around the facility to ensure that the water level is retained >5 m below the barrier system ("Cut-off Curtain")

Public Participation

and I&APs ongoing throughout EIA Phase

- Environmental Impact Assessment Newsletter (December 2013)
- Mining and Prospecting Rights Confirmation Process (Landowners) (March 2014)
- Project Status Update (May 2014)
- Draft Environmental Impact Report Notification & PM Invitation Advert (18 & 26 July 2014)
Beneath Citizen/Street, Near/Corridor, Gazette/Wetland, Nerve/Point/Mineral/Sign, Nerve/Meat/Drug, Hazard/Habitat/Sign/Structure/Sign - With/No/Other/Signage/Structure/Sign
- Draft Environmental Impact Report Notification & PM Invitation Letter (28 July 2014)
- Draft Environmental Impact Report Review & Comment (23 July 2014 to 06 September 2014)
- Continue

Public Participation (continued)

and I&APs ongoing throughout EIA Phase

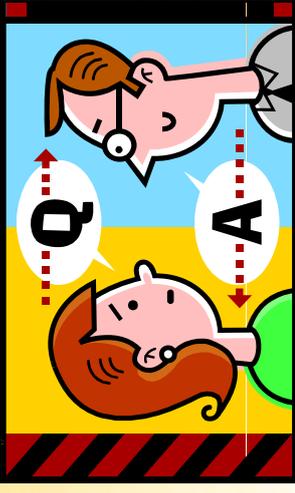
- Focus Group Meeting / Key Stakeholder Workshop / Public Meeting (20 & 21 August 2014)
- Final Environmental Impact Assessment Report (envisaged submission to DEA: 14 October 2014) (envisaged public comment period: 14 October 2014 to 12 November 2014 – 30 calendar days)
 Comments to be submitted to the DEA – not the EAP/ESKOM
- Notification of Environmental Authorisation to registered Interested and/or Affected Parties & Advise Decision (DEA decision envisaged: 19 February 2014) (I&AP Notification within 12 days of date of EA, 02 March 2015)
- Appeal Period (envisaged: 26 February 2014 to 08 April 2015)

Where can Draft EIR be accessed:

Public places		
LIBRARY	ADDRESS	CONTACT DETAILS
Phole Public Library	Ovabas Street, Phole location	Ms Agnes Mabhena, Tel: 013 646 0094
Ogie Public Library	G1 Main Street, Ogie	Ms Ntshonyi SAs Tel: 013 643 3150 or 013 643 3027
Delmas Public Library	C/O Sarel Cilliers Street & Von Reibeck Avenue, Delmas	Ms Lydia Mkhajane, Tel:013 665 1831
Kusile Power Station	Office at Witje Village	Mr Haridus Kotze, Tel: 013 639 4836

Electronic copies

Zitholele Consulting Website	http://www.zitholele.co.za/kusile.asp
Nicolene Verter or Patiswa Mngokoyi	Available on CD on request via email Tel: 011 207 2060; E-mail: patiswam@zitholele.co.za

Contact us on:



011 207 2060
086 674 6121
PO Box 6002, Halfway House, 1685

Nicolene Verter: nicolenev@zitholele.co.za
Patiswa Mngokoyi: patiswam@zitholele.co.za



Jones & Wagener
Engineering & Environmental Consultants



Kusile 60 yr Ash Facility EIA
Ash Facility Concept Design

20 August 2014

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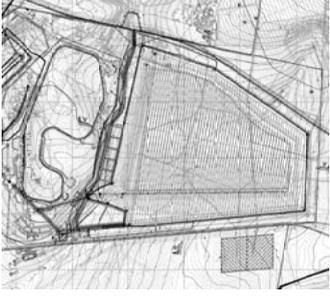
Introduction

- Ash Facility Layout and Development
- Waste Classification & Liner Design
- Clean Storm Water Management
- Rehabilitation
- Other details
- Questions

Jones & Wagener
Engineering & Environmental Consultants

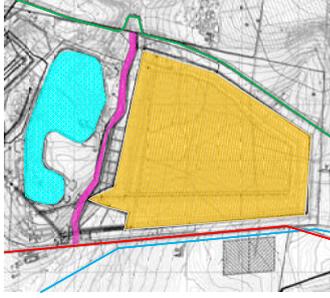
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Ash Facility Layout



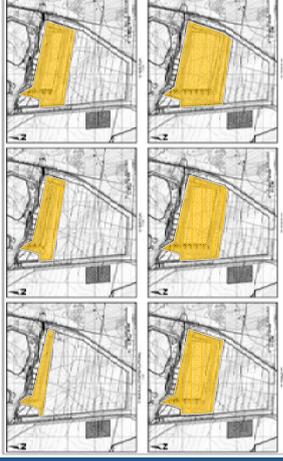
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Ash Facility Layout



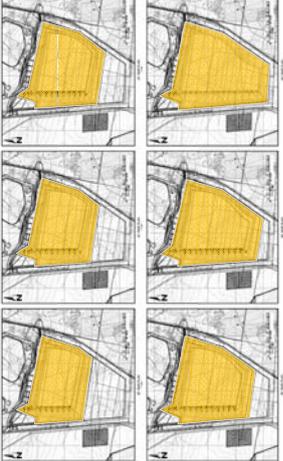
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Ash Facility Layout



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Ash Facility Layout



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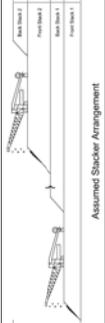


General Technical Information

- Storage Requirement: 530 million cubic meters ash (212 000 Olympic sized swimming pools)
- Deposition rate: 740 000 m³/month
- Land Requirement: 817 Ha (±1 600 Soccer Fields)
- Life time: 60 Years

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Ash Facility – Stacker Arrangement



Assumed Stacker Arrangement

- Bottom Stacker:
 - Front stack height – 5m;
 - Back stack height – 12m;
- Top Stacker:
 - Front stack height –Varies 51.6m average;
 - Back stack height – 12m.

Total Average Height: 80.6m

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Stackers



Stackers from Medupi Power Station and Kendal Power Station

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Waste Classification*

- Ash (Kendal samples) classifies as a Type 3 waste which requires a Class C lining system;

* S.A. Republic of South Africa (2013) National Environmental Management, Waste Act (107/2008), Waste Classification and Management Regulations, Government Gazette 34798 No. 34, 6/4/2013. Act 107/2008 National norms and standards for the assessment of waste for landfill disposal, Government Gazette 33767 No.4,8/2, 22 August 2011. National Environmental Management Act (107/1998), Government Gazette 33208 No.4, 22 August 2011. (Former stage)

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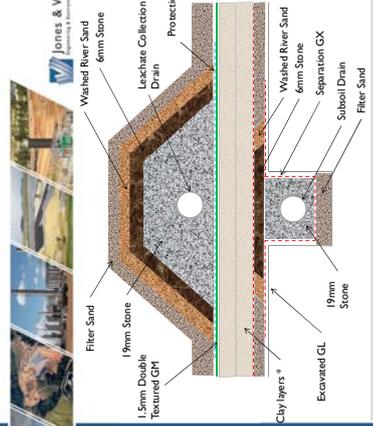


Diagram labels:

- Filter Sand
- 19mm Stone
- 1.5mm Double flexured GFI
- Clay layers*
- Excavated GL
- 19mm Stone
- Washed River Sand
- 6mm Stone
- Leachate Collection Drain
- Protection GX
- Washed River Sand
- 6mm Stone
- Separation GX
- Subsoil Drain
- Filter Sand

*2 x 150mm Clay (allite) Layers compacted to 98% Std. Proctor (k: 1x10⁷ cm/s)

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Liner Installation



Liner installation at Medupi Power Station

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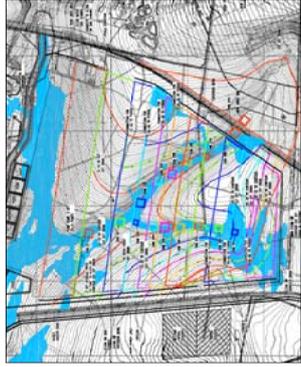
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Presentation of barrier system to DWA

- Barrier system presented to DWS (DWA) Civil Engineering Department on 11 July 2013
- Barrier design conditionally accepted

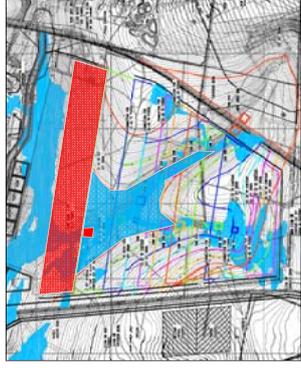
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Clean Storm Water Management



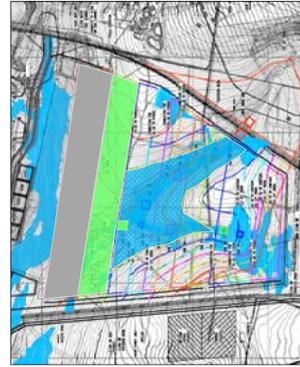
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Clean Storm Water Management



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Clean Storm Water Management



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Ash Facility Rehabilitation



Rehabilitated side slopes at Matimba Power Station

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Ash Facility Rehabilitation



Rehabilitated side slopes at Matimba Power Station

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Ash Facility Rehabilitation

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Dust Suppression

Dust suppression system at Matimba Power Station

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Conveyor Corridor

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Conveyor Corridor

Overland Conveyor at Medupi Power Station

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Contaminated Storm Water Trenches

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Contaminated Storm Water Trenches

Contaminated Storm Water Trenches at Medupi Power Station

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End - Questions

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Department of Water Affairs

Private Bag X 313

Pretoria

0001

Date: 14 August 2013

Enquiries: Leon Stapelberg

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Discussions with regards to the Eskom Kusile Power Station Project 60 Year Ash Dump

Attendance Register

Ms Madi Moloto (MM)	DWA Regional office: Bronkhorstspruit
Mr Dumisane Hlongwane (DH)	DWA Regional office: Bronkhorstspruit
Ms Valerie du Plessis (VdP)	DWA Directorate: Environment and Recreation
Ms Namisha Muthraparsad (NM)	DWA Environment and Recreation
Dr Wietsche Roets (WR)	DWA Environment and Recreation
Ms Mari Kotze (MK)	Eskom Kusile Power Station
Mr Tinus Breedt (TB)	Eskom Kusile Power Station
Mr Warren Kok (WK)	Zitholele Consulting
Dr Mathys Vosloo (MV)	Zitholele Consulting
Mr Jackie Crafford (JC)	Prime Africa Consultants
Mr Kyle Harris (KH)	Prime Africa Consultants

Welcome

Warren Kok welcomed all and the evacuation procedure was explained

Item	Design Comments
Comments Response Report	
	<ul style="list-style-type: none"> • 2 Meeting were held with DWA prior to today's meeting to discuss the 60 Year Ash Dump Site Selection – WK requested that DWA focus on the EIA and WMLA and provide comments to these processes
	<ul style="list-style-type: none"> • The Comments Response Report was handed to all attendees of the meeting • DWA comment: Site A is the drainage catchment of the Klipfonteinspruit together with its wetland that provide its headwaters. The PES is of an A/B nature of the wetlands. • WK stated that the extent of wetlands with category A or B PES status within site A is 17.9 ha while within site B it is 14.89 ha. Warren stated that this comment is incorrect as the majority of wetlands (173 ha) are in a category C PES. • NM responded that site A would destroy the entire catchment. Although the wetlands of site A are not classified under NFEPA database they are classified as wetland clusters. NM stated that site B shows the smallest effect on the environment.
	<ul style="list-style-type: none"> • JC raised the question: may it be that the wetland and aquatic specialist criteria used by the EIA specialists differ from the criteria used by DWA? • We are aware that site A is not ideal, but none of the sites are and the same issues found at site A were also found at site B • JC also raised the question: focus was a lot on why site A is the preferred site, but not a lot of focus was put on why the other sites were not feasible. Should the focus of the reports shift in this direction? • Response from NM was that sites were only investigated at a local point and not at the catchment level, the wetland report also did not take the entire catchment into consideration • NM made the statement that Kusile construction have up to date not applied water resource management and can't see how this will change for the 60 Year Ash Dump
	<ul style="list-style-type: none"> • JC: why is site B better from a catchment level? Can DWA indicate clearly what criteria was used at a catchment level and how can this be included into the specialist reports? • WR replied that there is no problem with the specialist reports and their quality. It is just that generally in an EIA process the specialists do not have the strategic perspective that the E&R division focus on. • JC stated that the wetland specialist study was of very high quality incorporating both the delineation and functionality of the wetlands, including the Present Ecological State (PES) and Ecological Importance and Sensitivity (EIS). The criterion of the Water Research Commission was used. What more is required? Can DWA please indicate what extra info they require on a catchment level?
	<ul style="list-style-type: none"> • WK stated that from an EAP point he should use the information that the specialists have given to him. He cannot use site B as the preferred site when the specialists prefer site A. • NM stated that in the reports, site B should be excluded due to the pan nearby, however site A is also impacting on a pan nearby and this should also be considered. • WK answered that the pan nearby site A is not in the draining direction from the planned Ash Dump, while the pan nearby site B is directly in the draining direction from the planned Ash Dump.
	<ul style="list-style-type: none"> • NM indicated that in the reports issued to DWA it was stated that site B is preferred in terms of environmental impacts, but site A is within Kusile property and would be preferred from an economic point of view. • WK requested that NM should send him the reference of the report in which this statement was made. WK said that 10 of the 12 specialist reports preferred site A, including all the water specialist reports. He also stated that site B would definitely have a great economic impact as it would cost an additional R 5 billion due to the length of the conveyer belt. This is equal to the price of the Gautrain. DWA cannot ignore Section 27 of the National Water Act.
	<ul style="list-style-type: none"> • JC highlighted that from a wetland point of view all wetland zones that were

	<p>degraded due to historical activities were identified and earmarked by Wetland Consulting Services. It was recognised that most of the wetland degradation was due to historical agriculture activities (planted maize fields). Guidelines were used for the offset of wetlands and this should be taken up with John Dini from Working for Wetlands: SANBI before it is approved by Valerie's office.</p> <ul style="list-style-type: none"> • VdP stated that downstream of activities are not seen as offset as these areas are impacted as an onsite impact. VdP is not profound of offset mitigation, and stated that Kusile should focus all their energy on the rehabilitation of site C's wetlands. • JC emphasized that offset should be done to hectare equivalents and that the hectares of wetlands for rehabilitation on site C is not sufficient as these are already used for offset for other Kusile Impacts • NM mentioned that due to the fact that a great area of site B contains category D wetlands doesn't mean they can be destroyed as Category D wetlands can easily be rehabilitated and are good areas for offset • VdP suggested that a meeting be set up with John Dini from Working for Wetlands: SANBI and invite DWA attendees to discuss a wetland offset strategy. Working for Wetlands: SANBI is currently in the process of drafting wetland offset mitigation standards and procedures.
	<ul style="list-style-type: none"> • WR: Principle driver of wetlands is flow. E&R look at how the water table mimics the landscape. The proposed 60 year Ash Dump will definitely alter the landscape and a new hydrological head will develop. Has the wetland reports determined what the drivers of the wetlands are? • WK responded by stating that New Largo will impact on the groundwater at site A and cause a depression cone which will decrease the water volumes at site A. Series of cut off drains and channels and stream diversion will ensure that clean water get discharged back into the natural system as to not adversely affect the volume of water entering into the Klipfonteinspruit wetland. A leachate collection system would capture dirty water which will be used to irrigate the Ash Dump. The design for site A has been approved by Kelvin Legge. • WK: as site A is located close to Kusile Power Station and New Largo the impacts will be kept in a small area and not be spread over the entire catchment. At site A the impacts of the 60 Year Ash Dump can also be intercepted at one area as all water flows in this direction. However if site B is chosen the impacts would not only spread further into the Olifants catchment but will also impact on the Bronkhorstspruit catchment. Site B water drains away from the site in all 4 directions. The northern and western reaches drain towards the Bronkhorstspruit (quaternary catchment B20D) while the southern and eastern portions drain towards the Wilge River (quaternary catchment B20F). As water drains in four directions it will be difficult to manage and intercept impacts as they would spread in four directions. • WR responded that if site A is chosen all the impacts would be concentrated into the Klipfonteinspruit wetlands flowing into the Wilge River which is an ecosystem that is already under stress. If site B is however chosen the impacts will be diluted into four directions and two quaternary catchments.
	<ul style="list-style-type: none"> • NM stated that they are waiting for comments from RDM office on geohydrology. DH has submitted the geohydrological reports to RDM office last week. Sub 19 showed data that indicate areas identified for 60 Year Ash Dump as no go areas. A GIS spatial tool was developed by SANBI (Steven Hollness) which highlight no go areas that have never been identified before.
	<ul style="list-style-type: none"> • WK raised the question whether DWA is taking into account the conveyer belt and its influences as the conveyer will cross watercourses at least 5 times. • NM responded that the conveyer was taken into account but seems not to be a big threat as it will not influence the drivers of wetlands. It also does not have a direct impact on the water resources as destruction of the wetlands at A would have.
	<ul style="list-style-type: none"> • WK: in the comments letter from DWA there was referred to site E. Was DWA referring to site E, or was this a typo and should've been site F? • NM responded that they were referring to site E • WK gave emphasis to the fact that site E was not presented to DWA at the previous meeting of 10 April 2013 as this site has not even made it past the Scoping phase

	<p>due to it being fatally flawed through technical reasons</p> <ul style="list-style-type: none"> • WK stated that the comment from DWA stating that the Klipfonteinspruit will be used as a water treatment facility is incorrect as this was never the case. Site A is \pm 7km from the Wilge River and in the accidental case of an impact a lot of mitigation can occur before reaching the Wilge River. There are already other mitigation measures in place for the prevention of pollution into the wetlands. Can this letter be revised? • VdP responded that the letter has been signed and can thus not be changed or revised.
	<ul style="list-style-type: none"> • NM raised the question of where will construction water be obtained for the 60 Year Ash Dump? • MK to find out
Way Forward	<ul style="list-style-type: none"> • Hydrology report indicating reduction in flow of water to be submitted to DWA by WK • Geohydrology comments to be received from RDM Office • Letter from DH to Kusile incorporating RDM comments and opinions from E&R • KH to check with Steven Hollness for GIS Spatial data regarding wetlands • Letter to be sent to DWA indicating mitigation measures to be applied at site A and B. Scenarios should be included and validated. Eg site A with New Largo or site A without New Largo

Proposed Kusile 60 year Ash Disposal Facility

DWA Site Selection Meeting

Friday, 7 December 2012, 11:30, Sedibeng Building

Draft Meeting Minutes

1. WELCOME AND INTRODUCTIONS

All were welcomed to the meeting. An attendance register was circulated. Those present at the meeting were:

Betty Mnguni (BM)	DWA
Danie Brink (DB)	Jones and Wagener
Marisa Groenewald (MG)	DWA
Kyle Harris (KH)	Prime Africa Consultants
Marie Kotze (MK)	Eskom: Kusile Environmental Advisor
Valerie Du Plessis (VDP)	DWA E&R
Charl Cilliers (CC)	Jones and Wagener Consulting Engineers
Warren Kok (WK)	Zitholele Consulting
Chané Pretorius (CP)	Zitholele Consulting
Alta Van Dyk (AVD)	Private
Dumisani Hlongwane (DH)	DWA
Namisha Muthraparsad (NM)	DWA

2. WELCOME AND INTRODUCTION

All was welcomed to the meeting. A brief background description was given to all the attendees.

3. AGENDA FOR THE MEETING

The Agenda proposed and accepted for the meeting is given below:

1. Purpose of the meeting;
2. Site Selection Presentation
 - a. Approach
 - b. Negative Mapping / Defining Developable Areas;
 - c. Site selection
 - d. Discussion Finalisation of Alternatives for Scoping;
3. Discussion / General

- a. EIA/WML Application
 - b. EIA Timelines;
4. Way Forward

4. PURPOSE OF THE MEETING

The purpose of the meetings was described as:

- 1. To give a background to the project and describe the scope of work;
- 2. To describe the site selection process; and
- 3. To obtain input from DWA on the site selection process, and to obtain direction in terms of the Water Use License Process from this point forward.

5. SITE SELECTION PRESENTATION

The following matters and Questions arose from the Site Selection Presentation:

- 1. In terms of the criteria that was used for the infrastructure rating, was this criteria only used for infrastructure or was it used for sensitive ratings as well? **VDP**

The criteria was used for the following components:

WK

- *Sensitivity;*
- *Infrastructure;*
- *Rivers;*
- *Wetlands;*
- *Farmsteads;*
- *Homesteads;*
- *Roads;*
- *Pans; and*
- *Power lines.*

After the ratings were done it was clear that no site came without impacts of some sort.

- 1. Did you have a wetland specialist on site to do an assessment and ensure that there are no other fatal flaws on any of the other sites? **VDP**

At the site identification phase we had a wetland delineation specialist to advise on the use of appropriate desktop information and ratings in the screening assessment. We did not do detailed site based studies for the site identification and screening studies. We have appointed Wetland Consulting Services to evaluate the wetlands and aquatic ecology in the detailed assessment phase of the study. Some sites were already fatally flawed based on the desktop information, and the detailed scope of further studies for the remaining sites has been established. **WK**

- 2. Area A has a full site engineering model and a smaller modelling system of the ash facility, was **VDP**

- this smaller modelling system done for the other sites as well?
- No, the modelling done for each area was to try and achieve a maximum volume of disposal on each footprint. The primary reason for this was to reduce the number of dumps. The more dumps established the larger the final footprint because storage volume is lost. Area was remodelled on a smaller footprint to try and preserve the newly built infrastructure corridor to the west of the Kusile site.* **WK**
3. Could you give us an indication of the difference when you go with one dump site compared to two sites? **VDP**
- It would be ideal to have just one site for the ash dump because the total footprint would be smaller. With each new dump additional infrastructure is required, and the storage volume is reduced by the side slopes.* **CC**
4. Will the alternative corridors for the conveyor and the impacts be included into the EIA? **VDP**
- We have recently demarcated the corridors where the conveyer will run through and that will form part of the assessment from this stage forward, but this will all be included in the EIA.* **WK**
- I think that you will only have sufficient information once the wetland studies have been completed to get a better indication in terms of the impacts.* **VDP**
5. How did you come up with the criteria to ensure that it is comprehensive enough? **DH**
- Extensive desktop studies were undertaken, criteria utilised in other studies were considered. Input was received from various engineering and environmental specialists in terms of the criteria, their sensitivity thresholds and ratings. The site selection process, criteria utilised, and ratings has been extensively consulted with stakeholders and reviewed by the DEA and no comments have been received. We believe the criteria set to be extensive and relevant.* **CC**
6. The DWA already consider Area C to be a no-go area because of the wetland offset area for the 10 year facility located in near vicinity to that area; as indicated by Condition 4.15 of the water use license for the 10 year disposal facility. **VDP**
- The people that were located in this area have been relocated and there are discussions at the moment to talk about the off-set from the first co-disposal facility from relocating people from area to another area but we will verify.* **WK**
7. AvD invited all members from the DWA to attend the specialist briefing session on the 18th of January 2013. **VDP**
- I think it would be a good idea in that way you can stay up to date on the outcomes from the studies.* **WK**
8. What is meant by a trade-off assessment? **VDP**
- None of the sites are ideal, each site has unique characteristics that make it ideal or flawed. In* **WK**

order to evaluate the sites using a common denominator i.e. to allow a comparison of apples with apples, a trade-off assessment is being undertaken in which the inherent value of each environmental and social element is calculated and rated. This will allow a comparison of each alternative in a uniform manner.

VDP

9. I think that you need to consider the sites north and south of the N4 and N12 respectively, I don't see how the road is valued more than the river.

WK

This will be undertaken as part of the EIA phase.

6. GENERAL DISCUSSION

It was suggested by the DWA that the Water Use License Application (WULA) should be done as soon as possible to give the DWA sufficient time to get through the process instead of pressure being applied to get the Water Use License granted.

VDP

The DWA requested that the process for the DWA should be included in a work schedule for the project and be sent to them.

VDP / AVD

VdP stated that she would not be commenting on the Scoping Report at this stage as she has already given her comments and advice during this meeting. The comments for the Scoping Report can be expected from Mr Dumisani Hlongwane from the Regional Department.

VDP

NM indicated that the DWA:Waste Division would not get involved with the site selection process, and would only get involved once the final site was selected to make inputs / approval of the design.

All attendees

A mutual agreement was reached that **AvD** will be the mediator / correspondence between the EIA / WML consultants and the Department of Water Affairs.

7. SUMARRY AND MEETING CLOSURE

The way forward is as follows:

- Arrange a meeting with the DWA for specialist feedback presentation;
- Set up monthly schedule for WULA and send to DWA;

All were thanked for their contributions and the meeting was closed

8. NEXT MEETING

Next Meeting to be scheduled for February 2013.

DEA Information Sharing Session

Meeting with the Department of Water Affairs

**Environmental Impact Assessment and Waste Management License Application
for the proposed extension for the ash disposal facility at Kusile Power Station**

10 April 2013

Project No : 12712

ACTION

1. Present

Mr Pacome Ahokpossi (PA)	Aqua Earth Consulting
Ms Amelia Burger (AB)	Prime Africa Consultants
Mr Charl Cilliers (CC)	Jones & Wagener
Ms Jackie Crafford (JC)	Prime Africa Consultants
Ms Valerie du Plessis (VdP)	Department of Water Affairs
Mr Kyle Harris (KH)	Prime Africa Consultants
Mr Dumisane Hlongwane (DH)	Department of Water Affairs
Mr Dieter Kassier (DK)	Wetland Consulting
Ms Marize Koekemoer (MK)	Zitholele Consulting
Mr Stanford Macavele (SM)	Department of Water Affairs
Ms Mokgad Maloba (MM)	Department of Water Affairs
Ms Namisha Muthraparsad (AM)	Department of Water Affairs
Mr Warren Kok (WK)	Zitholele Consulting
Ms Mari Kotze (MK)	Eskom Holdings SOC Limited
Mr Albertus Lombaard (AL)	Aqua Earth Consulting
Ms Subhashini Pillay (SP)	Zitholele Consulting
Ms Norma Sharratt (NS)	Wetland Consulting
Ms Alta van Dyk (AvD)	AVD Environmental
Dr Mathys Vosloo (MV)	Zitholele Consulting

2. Apologies

Mr Develin Greef	Eskom Holdings SOC Limited
Mr Shane Prins	Eskom Holdings SOC Limited
Ms Sindy Ngubane	Eskom Holdings SOC Limited

3. Safety/Evacuation Procedure

WK outlined the safety and evacuation procedures.

4. Declaration of Interest

ACTION**5. Background, Introductions and Purpose of the Meeting**

- 5.1 WK welcomed everyone present and requested that they introduce themselves and outline their interest in the project.
- 5.2 WK outlined objectives of the meeting:
- Present the updated site identification study;
 - Present the detailed baseline studies;
 - Present the identified risks to water resources;
 - DWA to provide direction and early input into the EIA; and
 - DWA acknowledgement and agreement on way forward.
- 5.3 AK pointed out that upon agreement the project will go into design stage and cautioned against redesigning and slowing the process when the application for the water license has been submitted.
- 5.4 WK outlined the agenda. No additional items were added.

6. Presentations**6.1 Project Progress – Where are we now?**

- 6.1.1 WK and JC outlined the project progress.

6.2 Overview of Conceptual Engineering

- 6.2.1 JC outlined the overview of the conceptual engineering.
- 6.2.2 VdP enquired whether the RTOs were also done for the wetlands and all the water resource or only for the rivers. Need to look at the connectivity of all the other water resources and the water in the landscape, not only the river system.
- 6.2.3 JC offered to send the question to Chris Dickens to be answered and added that there are two layouts of the areas which had discrepancies in the classification system, but added that the wetlands were considered in the classification system. He agreed that all the water resources should be looked at. The management class is either a 1, 2 or 3 or unacceptable. The Wilge River is definitely not a class 1 or 3 and is undergoing a public participating process.
- 6.2.4 SM emphasised that the wetlands should also be looked at.

6.3 Overview of Specialist Studies Undertaken**6.3.1 Groundwater and Geohydrology**

- 6.3.1.1 PA presented an overview of the groundwater and geohydrology.
- 6.3.1.2 SM enquired about the impacts found during the assessment, especially with regards to water reduction when taking the agricultural users into consideration. He stressed that New Largo and Kusile needs to be looked at together. He also enquired about the surface and groundwater interaction.
- 6.3.1.3 PA replied that New Largo is also in the same catchment, and when they start pumping at New Largo it will have an impact on Site A.
- 6.3.1.4 WK added that this will cause a cone of depression and the level of the groundwater to drop at Site F.
- 6.3.1.5 AL confirmed that that this would be taken into consideration when the modelling is done and that they would be able to generate similar levels. He also pointed out that a snap shot of the current data is being presented. The question of the overall impact of other activities will be answered by the monitoring data. The monitoring network will most

ACTION

- probably be extended. Groundwater currently mimics the topography and will change when New Largo starts with its activities. You would also be able to see quicker in which area it is going to change. There would probably be little dewatering and a very localised cone developing at New Largo. More will be revealed with the modelling to be done.
- 6.3.1.6 VdP enquired whether a greater volume is required before it reaches the groundwater, as the numbers of the recharge potential increase.
- 6.3.1.7 AL clarified that there will be a greater percentage of precipitation before it reaches the groundwater. All of this is relative because the aquifers have tight formations and are not high yielding.
- 6.3.1.8 WK added that this would be the cone effect seen in the presentations. In the first stages of operation it will work like a recharge and in the long term the area will be like a source and will stop water from recharging into that area and would cause additional surface water.
- 6.3.1.9 SM mentioned that if depending on groundwater in that area you would not want a drop in the water level, given that the yield is low. The stakeholders in the catchment would need to be kept in mind. He also pointed out that no authorisations are made for taking water from the river and the water users are thus reliant on groundwater supply.
- 6.3.1.10 AL added that the two effects would be that the water level will drop faster when over pumping and if more water is required more holes will need to be drilled.
- 6.3.1.11 VdP wanted to know to what extent they could conclude that the green spots are areas where there is a lot of reliance on groundwater and that there are other water users.
- 6.3.1.12 WK clarified that it is not a reliance on groundwater, but rather that they are being pumped.
- 6.3.1.13 AL clarified that there are other water users. Every landowner in the area has a low yielding borehole and water supply and quality is good. There is not enough water though for irrigation depending on groundwater as a source.
- 6.3.1.14 WK pointed out that the proposed facility will not be taking significant quantities of water from the resource in any area selected to have the disposal facility built on. He added that the modelling being done will prove this in the next phase when the modelling data is available.
- 6.3.1.15 AL confirmed that the extent of the dewatering will be seen from the modelling. When dewatering at New Largo the cone will not extend more than 200 metres from the New Largo perimeter over time and that the roll down expected will be approximately two metres. It will not affect the yield only the level pumping at and it will not affect the adjacent water users at Kusile. The cones of depression will be localised. It will not be a wide scale cone of depression developing over the whole site.
- 6.3.2 Geotechnical Assessment**
- 6.3.2.1 CC presented an overview of the geotechnical assessment.
- 6.3.3 Wetlands**
- 6.3.3.1 DK presented an overview of the wetlands.
- 6.3.3.2 SM requested that the conveyor belt crossings be indicated more clearly and on a bigger scale and showing distances between infrastructures and

ACTION

- water features.
- 6.3.3.3 VdP enquired whether there would be connectivity to other wetlands on the southern side underneath Site A.
- 6.3.3.4 CC clarified that there would be no connectivity going up.
- 6.3.3.5 JC mentioned that people living in the Kusile footprint area were relocated to Site C and part of the relocation had an agreement that the wetland be rehabilitated.
- 6.3.3.6 ?? (lady) confirmed that it had to in that area and be a wetland with the same functionalities as before.
- 6.3.3.7 VdP wanted to know how much of the wetlands on the southern side would be affected..
- 6.3.3.8 CC clarified that the footprint would take up approximately 30% of the wetland catchment. The existing Kusile power station also falls within the same catchment.
- 6.3.3.9 VdP enquired why the facility cannot be developed more to the right on Site A.
- 6.3.3.10 WK pointed out that the New Largo conveyor runs through there.
- 6.3.3.11 VdP wanted to know how the right hand side will be influenced by the proposed facility.
- 6.3.3.12 CC clarified that the area drains into the seepage wetlands which were cultivated in the past and are heavily degraded, but they contribute towards the Klipfonteinspruit. Seepage wetlands might provide some limited form of dilution when potentially polluted water will be coming in from the top. The pollution control dams would increase with drainage line the length of the conveyor belt.
- 6.3.3.13 VdP cautioned that the project should not only look at the conveyor footprint.
- 6.3.3.14 CC confirmed that during the comparison of the various alternatives they looked at various factors like the extent within the footprint, adjacent to the condition of the wetland, proximity to the Wilge river, location within affected or unaffected catchments relative to other activities, the ash dam, the conveyor, pollution control dams, etc.
- 6.3.4 Aquatic Ecology**
- 6.3.4.1 NS presented an overview of the aquatic ecology.
- 6.3.4.2 SM requested that the current water resource conditions and the possible future impacts and risks be assessed in a water resource management capacity to be able to make an informed decision from a regulatory perspective.
- 6.3.4.3 WK replied that the limits to acceptable risk and change and formulation of impact statements would have to be addressed.
- 6.4 Overview of Receiving Water Environment**
- 6.5 Summary of Environmental Risks per Scenario**
- 6.5.1 WK presented a summary of environmental risks per scenario.
- 6.6 Multi-Criteria Assessment of Alternative Scenarios**
- 6.6.1 JC presented the multi-criteria assessment of alternative scenarios.
- 6.6.2 MS enquired whether the cost is for rehabilitation of the wetland in the

ACTION

- event of construction
- 6.6.3 JC replied that it is not and that the cost to benefit ratio of a wetland is very large.
- 6.6.4 VdP enquired if the cost is for offset and onsite rehabilitation as well i.e. no nett loss in terms of the residual impact.
- 6.6.5 WK explained that a cost for rehabilitation has also been incorporated in the costs. In addition to that a specific cost was incorporated for rehabilitation of wetlands to maintain the eco system services at the level it is now. This cost varies from one alternative to another. If a wetland is impacted during construction or during rehabilitation of the disposal facility when infrastructure is removed there is a direct cost as well which is indicated separately.
- 6.6.6 JC added that the costs are part of the impact and sustainability assessments.
- 6.7 Mitigation Sequences Summary**
- 6.7.1 WK presented the mitigation sequences summary.
- 7. General Discussion**
- 7.1 VdP requested that all facts and figures which was presented be documented and submitted to the authorities in order to make recommendations to the regional office. This should include Sites B and C. The 10 year Ash Dump already has an offset north of Kusile which includes the whole system up until the Wilge river. Work on offsets need to start now.
- 7.2 WK indicated that the draft specialist studies cannot be finalised until the preferred site has been identified and would therefore have to find an interim deliverable. Specialist baseline reports are done bus does not include the impact statement. This will be submitted to the authorities.
- 7.3 SM requested an integrated approach for the three application processes which include the WULA, the EIA and the Waste License. Information should be submitted to the authorities as soon as it becomes available because time is of the essence and decisions need to be made timeously by the Acting Director General.
- 7.4 ?? (lady) enquired whether DWA RDM office can start with preparations.
- 7.5 VdP answered that it can only commence when the application has been submitted.
- 7.6 SM added that there is an option of a reserve being done which would require the terms of reference etc being provided.
- 7.7 VdP added that a decision cannot be made only on an EIA and EMP being submitted. All the necessary and as much as possible information should be submitted.
- 7.8 WK pointed out that the technical team need to make a decision now in order to move on to the next stage of design so that the process can move forward. Part of the purpose of this meeting was to try and get DWA input into the EIA process so that the project team can take a decision around risk on a specific site. The project team cannot stop the EIA process and produce specialist reports as an independent process and then receive a site selection answer and then continue with the EIA process.

ACTION

- 7.9 SM replied that the process to be followed would be for DWA to comment on the EIA within a legal timeframe and then send a recommendation concerning the EIA, which would include site selection findings and recommendations, to the environmental assessment practitioner. The EIA is followed by the waste license with a timeframe of approximately 60 days and an ROD being issued to the DEA in the context of the waste license applied for after which the DEA will commence with their permitting process. The two processes will run parallel to each other. This will not stop the decision in terms of the preferred site. The decision ultimately rests on the water users. The outcome will be determined by the public consultation process. DWA is one of the parties in the process and only a commenting authority. DWA can influence the EIA process but needs the information in order to do it.
- 7.10 VdP added that DWA as the commenting authority needs to be consulted. It is critical to have all the information and documentation when reviewing the documentation in order to give the DWA recommendation to the DEA. Stakeholders not in agreement with the site selection will also have to be consulted.
- 7.11 WK wanted to know what would happen if the project team proceeded with Site A as the preferred site, provide DWA with the specialist reports and DWA indicates that they do not agree.
- 7.12 VdP answered that the project team would then need to consult with DWA who is one of the stakeholders in the EIA process and part of the process. The information that the project team has to draft for the EIR and the public review will also go to the authorities for review. DWA will provide comments throughout the EIA process. Should more detailed information be submitted at a later stage and red flags are triggered the WUL might not be granted.
- 7.13 CC enquired whether DWA would be able to at any point in the process whilst reviewing the requested documentation, provide recommendations pointing out possible flaws in granting the WUL.
- 7.14 VdP answered that it would depend on the level of information provided. Should the WUL application be submitted and more detailed information submitted which trigger red flags for the site it could result in the WUL not being recommended.
- 7.15 ?? verified if that means that the design can continue and the first draft be submitted and as more detailed information become available in the process it be submitted
- 7.16 VdP confirmed that the WUL is then triggered as it has to run through the process. At this stage we are only discussing alternatives.
- 7.17 SM added that time is of the essence and what should happen is that this stage in the process the WUL should be triggered. The DWA decision will be based on the documentation submitted. The only factor that can cause a site to be disqualified is if a fatal flaw is discovered at a later stage. The information submitted should be within the framework. Site selection will follow certain steps within the authorisation process, which is the framework. Documentation which is separate from the framework should not be submitted.
- 7.18 WK verified whether this would entail compiling and submitting the draft specialist study reports which addresses methodologies and baseline

ACTION

hazards per site, submitting the multi-criteria assessments which supports the selection of the preferred site, DWA studying the reports and providing comments to the study team and the study team in the meantime continue with the EIA process and the next deliverable in the process which is the draft EIR is submitted. In terms of the environmental authorisation process the study team is undertaking an integrated environmental authorisation waste management license application process. This would be one EIA for both processes and one report would be generated for both processes which would be the waste management license and EIA report to the level of detail required for a waste management license. As part of the project team's strategy to remain engaged with DWA the project team will submit to DWA the draft specialist study reports team and the study team in the meantime continue with the EIA process. Should DWA find any fatal flaws missed it will be communicated to the project team so that the design can be altered.

- 7.19 SM pointed out that the parallel process is the WUL application process. There is no other parallel process than the WUL application process. CC and Calvin can engage with an assessor present in order to get agreement that the concept of the engineering is correct. There is no program which would happen for the design itself.
- 7.20 WK pointed out that for CC to proceed with the design a site selection must be made first.
- 7.21 VdP wanted to know why all the information is not going into the EIR which should go to the commenting authorities.
- 7.22 WK replied that the detailed design is necessary for the EIR because it is an integrated waste management license application which gets submitted for sign off by DWA and then DEA.
- 7.23 SM added that that is not a problem in terms of water related aspects. A detailed design is not necessarily needed because once the concept is correct the detail is not going to be wrong. Should the Waste License be issued and someone is not in agreement with the site, DWA would have to give an ROD within 60 days after the response from the DEA, which would include basic resource protection measures which would include civil engineering and geohydrology. The CMI perspective will have to fit into the 60 day period.
- 7.24 VdP added that she understands and agrees with the process in that the project team needs agreement on the site selection before going into design.
- 7.25 SM reiterated that it would happen within the framework. There are two frameworks namely the EIA Waste License framework and the WUL framework. Whatever recommendations DWA makes will have to be within that framework. If the project team has started with the EIA Waste license process it will not have to be stopped because of the site selection.
- 7.26 VdP highlighted that the Waste licence application should not commence on the wrong site. We need to make sure that the process is aligned correctly. It would be costly at a later stage in the application process if the site selection was made on the wrong site from a water resource management perspective. The process SM is describing indicates that a

ACTION

- site has already been selected.
- 7.27 MS added that the team will not have decided on one site and that in an EIA process three sites are considered with a preferred site amongst those sites. In terms of the WUL perspective the parallel process will need to be within the WUL. There are two issues. The one is DWA making a decision in terms of section 21 and there is another process on the side which means once you start engaging in an EIA the process will continue until it finishes and the DEA will make a decision whether DWA contributes or not.
- 7.28 WK stated that he understands that DWA make decisions with the mechanisms that the law provides them.
- 7.29 VdP verified that a draft EIR is not required but that the applicant needs to be involved in the EIA process needs which can happen at different levels such as the scoping level. Upon receiving more detailed information DWA can start making inputs within the mechanism of an authorisation process.
- 8. Conclusions and Way Forward**
- 8.1 WK clarified that the next deliverable to DWA would be the detailed reports which would be reviewed by DWA upon which DWA would provide comments on the site selection.
- 8.2 VdP pointed out that the project team would proceed with the EIA process at the risk of the applicant which is a decision for Eskom.
- 8.3 WK proceeded to clarify that the next deliverable upon commencing with the EIA process is the Draft EIR which will be completed upon receiving feedback from DWA. AvD will be submitting the WUL application to DWA to start that process. Everything being done for the draft EIR will be done at such a level that it can be utilised for the WUL application. The design is for the project team to meet the time frames on the EIA process. CC had to start with the concept designs two weeks ago which need to be discussed with Calvin and passed on for Waste Permit purposes within the timeframe. WK enquired when the project team can expect feedback on the specialist reports.
- 8.4 SM indicated that feedback can be expected within a month from submitting the specialist reports.
- 8.5 WK requested that a process flow diagram be compiled and circulated for comments.

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Eskom SOC Limited

MEETING – DWA Consultation – Site A and B additional information

18 February 2014

Project No : 12712 – EIA and WML for the proposed Kusile Ash Disposal Facility

ACTION

1. Present

Mr Pacome Ahokpossi (PA)	Aqua Earth Consulting
Mr Gernie Agenbag (GA)	Zitholele Consulting
Mr Charl Cilliers (CC)	Jones & Wagener
Mr Kyle Harris (KH)	Prime Africa Consultants
Mr Warren Kok (WK)	Zitholele Consulting
Ms Mari Kotze (MK)	Eskom Holdings SOC Limited
Ms Norma Sharratt (NS)	Clean Stream
Ms Alta van Dyk (AvD)	AVD Environmental
Dr Mathys Vosloo (MV)	Zitholele Consulting
Mr Tobile Bokwe (TB)	Eskom Holdings SOC Limited
Ms Sindi Ngubane (SN)	Eskom Holdings SOC Limited
Ms Lee Boyd (LB)	Golder Associates Africa
Mr Thinus Breedt (TBr)	MTEK Industrial
Mr Hardus Kotze (HK)	Eskom Holdings SOC Limited
Mr Jackie Crafford (JK)	Prime Africa Consultants
Mr Dumisane Hlongwane (DH)	Department of Water Affairs
Mr Dieter Kassier (DK)	Wetland Consulting
Ms Masina Litsoane (ML)	Department of Environmental Affairs
	Aqua Earth Consulting
Mr Albertus Lombaard (AL)	Department of Water Affairs
Ms Nancy Motebe (NMo)	Department of Water Affairs
Mr Msawenkosi Buthelezi (MB)	Department of Water Affairs
Ms Namisha Muthraparsad (NM)	Department of Water Affairs
Mr Wietsche Roets (WR)	Zitholele Consulting
Ms Nicolene Venter (NV)	Eskom Holdings SOC Limited
Mr Michael Were (MW)	Department of Water Affairs
Mr Henry Maluleke (HM)	Department of Water Affairs
Ms Leshego Ntwampe (LN)	

2. Apologies

Ms Valerie Killian Department of Water Affairs

3. Welcoming

MV welcomed everyone present and requested that please complete the circulated attendance register.

4. Safety/Evacuation Procedure

MV outlined the safety and evacuation procedures.

5. Background and Purpose of the meeting

MV outlined the agenda which was accepted without any changes.

AvD outlined objectives and purpose of the meeting.

- Provide feedback after extensive site selection investigation;
- Conclude on site selection process w.r.t preferred site;
- Agree on the proposed way forward allowing EIA to continue into final submission;
- Allow for the WULA in support of the preferred site;
- Allow technical design to continue

MV described the project need, background w.r.t DWA involvements as well as the recap on the site selection process.

He also mentioned that the following specialist studies have been updated and will report back on the comparison between Site A and B:

- Sustainability Assessment
- Wetland Assessment & Delineation
- Aquatic Ecology
- Geohydrology
- Water Quality / Hydrology
- Updated Concept Engineering

6. Specialist Presentations

6.1 Sustainability Assessment (KH)

KH presented the findings of the sustainability assessment conducted on both Site A and B.

Study includes Environmental, Social and Economic Aspects

In total 8 of the 13 specialist preferred Site A and only 1 specialist study recommended site B

MOU being signed with SANBI

Q. WR wanted to know why there are not alternatives to the East of the Kusile Power Station

A. MV indicated that the sites to the East was eliminated during the site selection process and also due to the proposed New Largo mine.

A. WK indicated that the site selection took a 15km buffer from Kusile Power Station and New Largo is taking up a big portion thereof. Also the Wetlands and Watercourses are rated more sensitive there.

WK also mentioned that our approach toward the project was of a sustainability nature.

6.2 Wetland Assessment (DK)

DK provided feedback on the findings of the wetland assessment.

Indicated that Site A is preferred seeing that only a single wetland system would be influence as to the 4 sub-catchments of Site B and also due to the possible mitigation measures.

Q MB wanted to know whether the loss of flow has been quantified yet?

A Site A would occupy between 10 – 12 % of the catchment and Site B about 25%. Water will still move through the system and the hardened surface from Kusile will definitely also contribute (DK).

- Q MB – Have you looked at the option of a river diversion and where?
A DK – The need for a stream diversion was indicated on the presentation map. CC also mentioned and described the proposed diversion.
- Q MB - What would the quality impact be from the diversion?
A DK - Engineering mitigations to prevent seepage of contaminants – To be discussed in the engineering presentation.
A MB – The surface and groundwater cannot be seen as separate system due to interlinking.
A PA indicated that the groundwater presentation shall include quantities as well as relationship between these two. DK also indicated that the seepage wetlands are fed by water from soils and no direct groundwater interlink.
- Q WR indicated that DWA look at water in the landscape, whether it be surface or groundwater. The construction will create a new hydraulic gradient and landscape changing. Have you in your opinion properly assessed the quantitative hydraulic drivers creating this landscape? Reason for asking is that people tend to think that ash dams is isolated systems and it does not work like that. From a water resources protection perspective we need to understand those parameters.
A LB and WK responded that to quantify this would require the simulation of an extremely big model.
A WR responded that there was a hydrological model compiled and quantities are available. The surface water assessment will address this, but less than 2% loss of quantity. Many measure can be implemented to contain the polluted water.
- 6.3 Aquatic Investigation - NS**
NS indicated the comparison between the two sites.
Site A is preferred over Site B w.r.t PES of the different systems as well as all the required conveyor crossings.
- Q NM - Kusile were already allowed a canalised diversion and no new canalised diversion will be considered from DWA. Should be natural system. There will also be a loss of ecology during the construction of the diversion and until a habitat for the re-establishment of the aquatic community is created. What will be the effect on the catchment thereof?
A Yes, it will have an impact but the system is already eroded and channelled and was categorised as a category D. The biodiversity might even increase in the diversion with species colonising should the diversion be well designed. DK also indicated that the wetland system is channelled and eroded currently and the diversion will take time to establish vegetation.
- Q Wetlands should not be used as stormwater management but should be managed at site footprint.
A Stormwater management will need to be in place prior to any soil stripping and is included in the engineering aspects.
A Need to respect the functionality of the ecosystem and there are soft engineering solutions available to increase wetland functions.

6.4 Water Quality/Hydrology (LB)

LB provided a comparison between Site A and B

Very small percentage loss of flows from both sites

Surface water quality – Can be seen that certain sampling sites already show impact and increasing trends in TDS at Site A. Spring 6 show high impacts.

WK – Spring 6 is upstream of Kusile and already impacted by possible decanting from next door neighbours.

SW7 shows direct influence from Kusile.

Q BM – Can the pollution at spring 6 be associated with the New Largo mine next door?

A GA – Previous studies indicate that there are a connection between Spring 6 and old mines.

Q WR – Would there be any additional (Extra) discharge from the ash dump w.r.t liner leaching or stormwater decant?

CC – All liner system do leak but there are a lot of controls in place.

Stormwater system will not decant. For Site A all pollution goes to a single point where as with Site B it can flow in 4 directions. Construction of liner to be done with quality assurance system. Stormwater system to accommodate 1:50 year flood event.

WK – How will the liner leakages be managed?

AL – Not major excavation during construction of the ash dumps, so on top of water layers. Should there be leaks it can be managed by cut-off trenches, boreholes as early warning detection systems etc.

Q BM – How can you improve the quality of downstream spring 6?

WK – There should be a catchment wide management plan, but Eskom cannot be held liable for decant from mines on their property.

6.5 Geohydrological Assessment - PA

PA provided feedback on the geohydrological model for both sites.

Model run with no liner system in place – Worst Case scenario

Also indicate possible pollution plumes

Q BM – Concerned that lateral flow were not taken into consideration, but only rainfall recharge. What about the discharge at Spring 6?

A AL – There is no lateral discharge at Spring 6 and it is considered to be decanting. When New Largo comes online there will need to be dewatering at their site which will ensure that the flow of water will be towards the mine due to the formation of a cone of depression.

Q BM – Why is the plume on site A wider

A AL – The transmissivity on site B is much higher

Q Monitoring boreholes only seen downstream?

A There is existing boreholes upstream, but plume migrating downstream therefore the indicated positions.

Q NM – You indicated Site A will have a lower impact with liner and pollution plume migration. Have you modelled the leaks only over a 60 or 100 year

- period?
- A AL – Worst case scenario was modelled without any liner system.
- Q NM indicated that they would like to see the model with leaks w.r.t post closure? What will happen? Who will manage and monitor it post closure.
- A AL – Post closure have not been modelled. You can model 10% of what we have done or just take 10% of what is indicated. It can be modelled.
- Q Fundamental question is, who is going to monitor and managed the pollution and plume post closure? Will Eskom do this through passive or active activities?
- A AL – Looking at passive mitigation then you also need to take into consideration the New Largo mining, so in short it should be a catchment wide approach. It should be an integrated process.
KH – MOU with SANBI plays a big part in the way going forward for the catchment
TB – Eskom does have processes to address this. It should also be addressed before closure. Developers should be held to commitments that is made.
- Q WK – Can we then commit Eskom in the EIA and EMPr to establish some water management body or something of such sort and that ongoing monitoring should be done.
TB – Eskom would need to factor this in yes, but Eskom being the responsible developer.
WK – It factors into the DEA and DWA decision making.
WK – Eskom to take precautionary measures and to commit to these and a review of it.
To conclude, the commitment of Eskom to the above will constitute to decision making on DEA and DWA side.

NM also indicated that there should be a catchment wide approach to water management.

6.6 Engineering

Provide the proposed site layout and engineering design

- Q NM – Were the high levels of turbidity, currently observed at Kusile, taken into consideration when designing the stormwater system?
CC- Yes specifically on site A, the focus being to have a stilling basin infrastructure. Also open areas to be kept to a minimum during construction.
- Q NM – There are different water levels between engineering and groundwater?
- A PA – Groundwater depth was measured at ‘striking water’ not static water in a boreholes.
- C CC mentioned that their design was in principle approved by DWA civil engineering department and they are also proactive in their approach to temperature management at other ash dumps. The ash design will also incorporate a temperature measurement system.
- Q Have you presented the stormwater design to DWA?
- A CC – The designs have been presented to Kelvin Legge.

Q NM – How far will the diversion be from your ash facility?

A CC - About 100m including the buffer.

7. Discussion

C WR – Thank everyone for the presentations and information. DWA cannot provide a firm commitment or answer today. There is enough good information for the Departments to make a review and decide on which alternative. The EIA and WUL process are well aligned at the moment. Should any gaps be identified in the review phase it will be communicated to all parties involved.

C NM – After the presentations it is much clearer between the alternatives. Main issue – How will you mitigations influence the Wilge system? Rehabilitation and offset also discussed. Rehab to cost approximately R100m as previously discussed.

A KH – Calculations on the amount of offset was done as per the SANBI draft regulations. SANBI to be approached to assist – MOU being signed.

C NM – Rehabilitation to cost about R100m and the offset to about 100 hectares. Need to account for the available hectares. When doing the offset report you need to account for all the calculations and put all the option on the table.

C KH – SANBI to assist with the calculations and provide input into the offset plan.

C NM – The WUL to include conditions w.r.t when the offset should be initiated.

C JC - There is a lot of data available which should be incorporated. Also to note that there is a lot of previous agricultural damage and room for rehabilitation. The information is available, just a very complicated calculation to make.

C NM – Offset implementation need to be sorted out in WUL stage. It is not a requirement but will surely assist with decision making.

Q WK - Zitholele to recommend Site A w.r.t the specialist input. What happens when DEA approve Site A and DWA Site B?

A ML – Decision from DEA to incorporate comments from DWA, but should they not agree on a site then the situation is escalated to higher levels of authority.

C ML – What will also delay the process is that DEA need to also include their biodiversity directorate on the offset issues. What should help is to include a draft offset into the Final EIR.

Q MV asked whether DEA will be able to comment on the Draft EIR?

A ML – If you wish us to do so we can.

8. Closure

MV thanked all for their attendance and participation and the meeting was adjourned.

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Eskom SOC Limited
Project Meeting – DWA Consultation
06 October 2014
EIA and WML for the proposed Kusile Power Station 60 year Ash Disposal Facility

Meeting Minutes

a) Welcome and Introductions

All were welcomed to the meeting. An attendance register was circulated. Those present at the meeting were:

Present	
Mathys Vosloo (MV)	Zitholele Consulting
Motshewa Matimolane (MM)	Eskom Sustainability
Tobile Bokwe (TB)	Eskom Sustainability
Tinus Breedt (TBr)	AVD Environmental
Hardus Kotze (HK)	Eskom Kusile Projects
Lumka Kuse (LK)	Department of Water and Sanitation
Pieter Ackerman (PA)	Department of Water and Sanitation
Jackie Crafford (JC)	Prime Africa Consultants
Alta Van Dyk (AVD)	AVD Environmental
Mari Kotze (MK)	Eskom Kusile Projects
Kyle Harris (KH)	Prime Africa Consultants
Mr Dieter Kassier (DK)	Wetland Consulting
Ronald Mulauchi (RM)	Department of Water and Sanitation
Dumisane Hlongwane (DH)	Department of Water and Sanitation

Apologies	
Gary Marneweck	Wetland Consulting

b) Agenda for the Meeting

The Agenda proposed and accepted for the meeting is given below:

1. Registration
2. Welcome, introductions, safety and objectives of the meeting
3. Summary of the site selection process
4. Summary of the environmental findings and mitigation measures for water related studies
5. Discussion
6. Way forward and closure

c) Purpose of the Meeting:

- Provide a brief overview regarding the proposed project.
- Present a summary of the site selection process.
- Present a summary of the environmental findings and engineering design.
- Present a summary of the mitigation measures proposed.
- Obtain comments and inputs from DWS.

d) Matters for DiscussionsOverview of projects:

- AVD mentioned to PA that previously, two full day workshops were conducted with the whole project team and DWS, where every specialist presented in full.
 - PA mentioned that he would like to know about geohydrology, subsurface flows and surface flows; how is it affected; how is it going to be mitigated; is it acceptable or not; is it ecological and sustainable or not.
- Site Selection Process (MV):
 - The site selection followed a five step process. First the study was identified looking at a 15km radius. Second, a negative mapping exercise was done which looked at the no-go areas to avoid such as the Wilge river, surrounding settlements, and national roads. Based on this a number of iterations was undertaken. For each iteration, buffers were generated for the social, environmental and technical sensitivities. Buffers were reduced until iteration 5 to save as much of the sensitivities as possible and to find a number of feasible/suitable sites to investigate further. At this point, (Step 3) existing desktop geographical information and data available were used in terms of the social, environmental and technical aspects. Then sensitivity screening was taken for each of those aspects. Step 4 looked at the sensitivity aspects over the developable area to identify areas of high and low sensitivities. Information was rated and ranked to identify sites with most and least sensitivities. The top 5 ranked sites were the least sensitive sites (Site A, B, C, F and G).
 - In terms of the 60 year ADF footprint, the calculations indicated that about 532 million m³ in volume is needed. This translated to a site more than a 1000ha.
 - During the site selection, areas between water courses were looked at, to fit a large enough area for the ADF. However a lot of these sites were not more than a 1000ha, so a number of combination sites were proposed.
 - Site A was the least sensitive, Site B was the second least sensitive, Sites F and G were not large enough to house 60 years of ash, so this is where combination sites were introduced for F & G, F & A and G & A. The small A option was also introduced which excluded the Klipfonteinspruit River to reduce the footprint on site A.
 - Specialist Studies (MV):
 - The specialists were introduced and a number of specialist studies were undertaken such as wetlands, groundwater, aquatic, geohydrology, terrestrial ecology, social, heritage, air quality, noise, bats, avifauna, soil study, traffic, sustainability assessment, conceptual engineering and visual. DWS had requested that the sustainability assessment be done as part of the specialists studies.

-
- Surface Water Summary (MV):
 - In terms of the surface water summary, the most important part of the upper Olifants catchment is the Wilge River that is closest to site A. If site B had to be considered, a conveyer would have to be built across the river which would pose direct and potential impacts in terms of significant sensitivities. Sites B, F and G pose a significant risk as there is a river frontage from site F and G, and the topography is sloping in the direction towards the Wilge river and from site B. There was also some river frontage from site C that was considered.
 - Mitigation measures would be to maintain the buffer as far as possible and to develop a comprehensive stormwater plan.
 - Groundwater (MV):
 - One of the most important findings from the groundwater study was that the yellow area signifies areas with a higher recharge potential. As it becomes darker the recharge potential decreases. In the northern area of site B and C there is a high recharge potential as compared to the southern area which has a low recharge potential. From a groundwater perspective, it is better to have an area with a low recharge potential to minimise the risk of groundwater pollution.
 - The most important significant sensitivity concern was the contamination of groundwater resources. The mitigation measures must be to install a barrier system as prescribed by DWS; successful rehabilitation of the ADF as soon as possible; and to develop and implement a groundwater management plan and monitoring network to monitor the groundwater in terms of the ADF. The groundwater contamination is detected by a leach detection layer in the barrier system.
 - Wetland Delineation and Assessment Study (DK):
 - This study covered all the 5 sites and the areas in between where the conveyors will run. Site A has a number of drainage lines draining across it. Also extensive hill-slope seepage wetlands across Site A. Site A is located within one sub catchment with all systems draining towards one point. Site B is located on the watershed of the quaternary catchment with six wetland systems draining away from the site. Site C is generally categorised by fairly shallow soils which was not conducive to wetland formation, thus lower wetland extent. The wetland system that drains across site C had been identified as a wetland rehabilitation target from previous commitments and initial work in terms of costing, etc towards that rehab plan had been done. Site F has a pan which falls within the footprint. Site G has three wetland systems and three sub catchments draining away from the site.
 - PA asked why can't areas with no water course be used. DK responded by showing the area of the new largo reserve and an existing small mine that is actively mining. PA asked if the mine is licensed and what is its name. DK saw the mine on google earth as well as the activity but doesn't know the name of the mine. There is also other mining activity already existing in the area which is marked on the topography maps. PA asked, would it have persisted if that mine was not there and a part of the largo was not there for the ADF to be developed in that area. MV responded to say that the topography is sloping upwards and at that point it's on top of a ridge, so it will be difficult to dump ash in that area. Also the footprint will be much bigger in this area than at site A.
 - Site A is located in the same sub catchment as the co-disposal facility as well as the Kusile Power Station. From the findings of the Wetland study, the big advantage of such a scenario, is that it is within a sub catchment that is already impacted. Site A also drains to a single point which makes it easier to control potential movement of contaminants away from the facility. The conveyor to site B will cross wetlands, a Wilge crossing and a valley-bottom crossing, resulting in pollution

control dams at every low point and the facility itself also having pollution control dams for every one of the sub catchments draining away from site A.

- PA asked if the wetland specialists also recommended Site A. DK agreed. PA asked about the mitigation measures for putting water back into the system. DK responded to say that there would be the diversion of clean water from upslope around the facility. The recommendation for the diversion is that it becomes a vegetative system and not a lined facility with the required erosion protection measures and steps necessary to make sure it becomes a stable feature.
- MV added that the surface hydrology shows that with the diversions in place, only two percent of the surface runoff would be lost in that small catchment. The groundwater seepage and subsurface flows will have engineered piping's underneath the facility to drain straight back into the southern part. PA asked if there is no losses of the groundwater. MV said that surface water-groundwater interaction study will be undertaken in the WUL phase to give more clarity on groundwater.
- PA asked if new reserve studies need to be made for new large for the pans, because there is already another drainage system. DK responded, in terms of the surface water-groundwater interaction study, DK has submitted a proposal towards that and one of the areas that was modelled and monitored for new large was this catchment with a monitoring point situated just downstream. PA asked if DK feels confident they can put that as a condition and you don't need it before the time. DK said he will ask Hannes who does the modelling work and they should be able to give a strong commitment in this regard.
- RM asked about the status of the affected wetlands. DK responded in terms of the PES that a lot of the wetlands are dominated by category C's (moderately modified), and explained the classifications.
- PA asked whether a wetland be created or a river system. DK responded to say that the downstream wetland system in place at the moment is taking a lot of strain in terms of erosion and existing activities in the catchment and is likely to take even more strain with further developments, so a recommendation is to put in place a management plan for this system from the ash dam all the way downstream. Some initial work has been done towards wetland offsets which might target that specific area and we would want any rehabilitation from an offset perspective to be done in the same sub-catchment as far as possible. PA said that he would like to see a wetland and not really another canal system. DK added that one of the problems is that this system at the moment draining away from Kusile is eroding, is incising and becoming very much concentrated just a conduit for water.
- DK mentioned that a management plan and interventions within this system would help to address storm water potential impacts. PA asked if the new large is going to cut off a lot of groundwater going through this system. DK said that considering the new large footprint, it's about 18 percent of the sub-catchment in terms of surface area. MV added, the groundwater modelling showed that the groundwater flow direction will change towards the new large, so part of the groundwater under Site A would start migrating towards the New Large. PA mentioned that present impacts and pollution plume impacts must be checked. Furthermore the system from the mine towards this system impacts must be checked, what filters are going to be used there, what the quality of the groundwater will be coming out of that filter and if the wetland system is going to work.
- PA asked if DK was involved in this project from the planning stage. DK confirmed that they were involved and surveyed these five sites, and 6 alternatives and from their own site selection process, Site A came as the preferred option from a wetlands perspective.

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- Engineering Designs (MV):
 - MV mentioned that DWS was involved very early on in the process and everything was run through them in terms of their valuable inputs.
 - MV described the engineering designs and the diversions. PA asked if the designs were for the clean waters. MV replied that there is clean and dirty water separation and what comes from the catchment will be diverted and released back into the system at pre-development flow rates at the lowest point of the development.
 - PA said that with regards to clean water, he wants to see a soft natural system because it's going to be permanent. MV said that the design was done so that the lining system will be installed at 5 year intervals and as the ash disposal facility progresses in the southerly direction, concurrent rehabilitation will be taking place behind the moving front.
 - PA mentioned that he would like to see as the facility develops, that rehabilitation (topsoil and re-vegetation) must take place. MV said that is what is planned, i.e. the slopes will be shaped to the correct angles. PA mentioned that the rehabilitated slopes should be 1 in 3.
 - Water Use Licence Application (MV):
 - AVD said that the licence application is now eminent for Site A.
 - MV mentioned that although a lot of consultation was done with DWS through the EIA for the WULA, the actual process is still in the starting phase. The water uses are for B, C, I and G.
 - For the WULA, a number of studies will be commissioned including the flood line determination, water and salt balance, site stormwater management plan. PA said that a condition on the wetland rehabilitation plan must be to include a plant species plan.
 - MV mentioned, as before, that a surface water-groundwater interaction study will be done to give more clarity and to ensure that the mitigation and rehabilitation is done to the highest standard. PA asked by when will this study be undertaken. MV replied that this will take about seven months, depending on the data availability for the new lingo. DK confirmed that if the new lingo data is available, it will probably take a month.
 - MV mentioned that one of the big recommendations that came out of the previous consultation with water affairs was to develop an extensive wetland offset plan for the area. Eskom has engaged SANBI in the process to assist in developing an offset plan that will comply with DWS requirements.
 - As part of the WULA, the IWWMP will be undertaken and consultation will continue with DWS, even after submission to ensure that what is proposed and recommended is acceptable. PA said that the master plan must be updated, and must be more logical and descriptive, and preferably be done on A1. PA also mentioned that the landscape maintenance plan will also be a condition in the licence.
 - e) **General**
 - MV asked if there was anything else to discuss. PA asked who is dealing with this project in the regional office. MK mentioned DH from Mpumalanga. DH said he would like to see in the WULA, that the mitigation measures should be viable enough to protect the water resources and how it is going to be done as well as the monitoring plan. AVD said that the WULA will have a chapter on the monitoring dedicated to the facility and there will also be a chapter with the previous workshops and the minutes that was taken during those meetings.

- MV said that in terms wrapping up the EIA process, DWS written comments are needed and asked DH what timeframes can DWS give for these comments. DH said that he will let MV know via email.

- With no further comments and the meeting concluded.

DATE: 06 October 2014

SIGNATURE:

ZITHOLELE CONSULTING