AMENDMENT LICENCE IN TERMS OF SECTION 50 AND 158 OF THE NATIONAL WATER ACT, 1998 (ACT NO 36 OF 1998)

1. Margaret-Ann Diedricks, in my capacity as Director-General in the Department of Water and Sanitation: and acting under authority of the powers delegated to me by the Minister of Water and Sanitation, hereby authorises the amendment of licence dated 17 May 2012, licence no: 04/B20G/AGJ/809

SIGNED: [Signature]

DATE: 23/01/2016

The above mentioned licence is amended as follows:

Amendment of the definition Department

1. The definition of Department is hereby amended-
   a. by substitution the definition for “Department” of the following definition:

      “The Department” means the Department of Water [Affairs] and Sanitation.

Amendment of the definition Regional Head

2. The definition of Regional Head is hereby amended-
   a. by substitution the definition for “Regional Head” of the following definition:

      [“Regional Head”] “Provincial Head” means the [Regional Chief Director] Head of Provincial Operations: Mpumalanga, Department of Water [Affairs] and Sanitation, Private Bag X 11259, Nelspruit, 1200.”

Amendment of the Licensee

3. The Licensee is hereby amended-
   a. by substitution the name for Licensee of the following name:


B 06713
Amendment of the Postal Address of water user on cover page

4. The postal address of the water user is hereby amended-
   a. by the substitution for postal address of the water user of the following postal
      address: "[Zibulo Colliery P. Box 399, Ogies, 2230] Zibulo Colliery Opencast
      Operation P.O. Box 399, Ogies, 2230"

Amendment of Definition of Report

5. The definition of Report is hereby amended-
   a. by substitution the definition for "Report" of the following definition:
      "Report" refers to the report entitled Integrated Water Use Licence dated May 2009 for
      Anglo American Inyosi Coal [Limited] (Pty) Ltd as compiled by Jones and Wagner for
      Zibulo Colliery (Opencast Operation) as well as all other related documentations and
      communications (emails, letters, verbal, etc) thereto".

Amendment of Description of the activities

6. The description of the activities is hereby amended-
   a. by substitution for the description of the activities of the following description of the
      activities:

      "Excess water will be pumped to the [41MI] 40ML pollution control dam. Water make
      from the opencast workings will initially be pumped to the [41MI] 40ML pollution control
      dam located immediately adjacent to the workshops and offices. Excess water will
      be pumped to the [41MI] 40ML pollution control dam. As mining progresses, dirty water
      will be pumped to the [200ML pollution control dam located North East of the
      project area] 40ML pollution control dam and 9ML pollution control dam or to the 1ML
      dust suppression dam."

      The pollution control dams will be located on the farm Oogiesfontein [41IS] 4IS
      portion 39. The water make from the opencast workings will be pumped initially to the
      [41MI] 40ML pollution control dam [located adjacent to the workshop and the office
      complex and as mining progresses, eventually to the 200ML pollution control
      dam] and 9ML pollution control dam or to the 1ML dust suppression dam. Water from
      the 40ML dam is pumped to the Emalahleni Water Reclamation Plant for processing.
      The dewatering will take place on the farms Oogiesfontein [41IS] 4IS portion 39."

Amendment of condition 1 of Appendix II

7. Condition 1 of the licence is hereby amended-
   a. by substitution for condition 1 of the following condition:

      "1 This Licence authorizes the taking of a maximum quantity of 216 445 m³/a (two
      hundred and sixteen thousand, four hundred and forty five cubic metres per
      annum) from an opencast pit (Zibulo [20MI] 40ML dewatering dam) on [portion
      RE/1 of the Farm Rietvlei] the farm Oogiesfontein 4IS portion 39 for reuse at
      the mine".
Amendment of condition 11 of Appendix II

8. Condition 11 of the licence is hereby amended-
   a. by Delete the condition 11:

Amendment of condition 1 of Appendix III

9. Condition 1.1 of the licence is hereby amended-
   a. by the substitution in condition 1.1 for Table 1 of the following Table:

<table>
<thead>
<tr>
<th>Facility</th>
<th>Farm Name</th>
<th>Geographic position</th>
</tr>
</thead>
<tbody>
<tr>
<td>40 ML Pollution</td>
<td>Oogiesfontein 41 IS Portion 39</td>
<td>S 26° 02&quot; 41.60' E 29° 02&quot; 28.23'</td>
</tr>
<tr>
<td>control dam</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9 ML Pollution</td>
<td>Oogiesfontein 41 IS Portion 39</td>
<td>S 26° 02&quot; 30.51' E 29° 02&quot; 24.26'</td>
</tr>
<tr>
<td>control dam</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 ML Pollution</td>
<td>Oogiesfontein 41 IS Portion 39</td>
<td>S 26° 02&quot; 22.73' E 29° 02&quot; 28.98'</td>
</tr>
<tr>
<td>control dam</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ROM stockpile</td>
<td>Oogiesfontein 41 IS Portion 39</td>
<td>S 26° 02&quot; 28.50' E 29° 02&quot; 32.50'</td>
</tr>
<tr>
<td>Overburden stockpile</td>
<td>Oogiesfontein 41 IS Portion 39</td>
<td>S 26° 02&quot; 09.30' E 29° 01&quot; 24.00'</td>
</tr>
</tbody>
</table>

Amendment of condition 2 of Appendix III

10. Condition 2.1 of the licence is hereby amended-
   a. by the substitution in condition 2.1 for Table 2 of the following Table

<table>
<thead>
<tr>
<th>Facility</th>
<th>Volume in Cubic meters per annum (m3/a)</th>
<th>Waste description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 ML Pollution Control Dam</td>
<td>29930</td>
<td>Mining waste</td>
</tr>
<tr>
<td>9 ML Pollution Control Dam</td>
<td>32120</td>
<td>Mining waste, storm water</td>
</tr>
<tr>
<td>[41] 40 ML Pollution Control Dam</td>
<td>216445</td>
<td>Mining waste</td>
</tr>
</tbody>
</table>

Amendment of condition 3 of Appendix III

11. Condition 2 of the licence is hereby amended-
   a. by addition of the following condition:

   "2.2 The Licensee is authorized to use a maximum quantity in cubic meters (m³) of 29,930 of waste water per annum for dust suppression activities."

Amendment of condition 3 of Appendix III

12. Condition 3 of the licence is hereby amended-
a. by substitution for condition 3.1 of the following condition:

"3.1 [The quality of waste water disposed of into the dams specified below shall not exceed the following limits as specified in Table 3] The Licensee shall submit the nature and the quality of the waste or water containing waste disposed of into all dirty water containment facilities."

b. by Delete the Table 3:

Amendment of condition 4 of Appendix III

13. Condition 4.1 of the licence is hereby amended:

a. by substitution for condition of the following condition:

"4.1 The licence shall monitor on a monthly basis the water resources at surface water monitoring points (Table 4: Surface Water monitoring Points for Zibulo Opencast Operation) and monitor on a [quarterly] 6 monthly basis the water resources at the ground water monitoring points (Table 5) to determine the impact of the facility and other activities on the water qualities by taking samples at the monitoring points.

b. by the substitution in condition 4.1 for Table 4 and Table 5 of the following Tables

| Table 4: Surface Water monitoring Points for Zibulo Opencast Operation |
|-------------------------|-----------------|-----------------|-----------------|
| **Sampling Point** | **Description** | **X Co-ordinate** | **Y Co-ordinate** |
| ZC 1 | Previously S19 | S25° 58’03.2" | E29° 01’37.4" |
| ZC 2 | Saalklapsruit, just before Phola sewage Plant | S 25° 59’44.5" | E 29° 01’44.4" |
| ZC 3 | Previously S16, Under the N 12 bridge before the Offramp from Johannesburg | S 26° 01’15.8" | E 29° 01’39.1" |
| ZC 4 | Upstream of Zibulo Opencast operation form the Oogies town | S 26° 02’41.5" | E 29° 02’54.1" |
| ZC 5 | At the back of the mine | S 26° 01’39.9" | E 29°03’17.0" |
| ZC 6 | At the back of Zibulo Opencast Operation | S 26° 01’32.9" | E29°03’20.9" |
| ZC7 | Previously S 19, downstream of ZC 6 | S 26° 01’21.8" | E 29°03’06.0" |
| ZC 8 | Downstream of Zibulo Opencast Operation | S 26° 01’22.9" | E 29°02’47.4" |
| ZC PCD 1 | 9MI Pollution Control Dam | S 26° 02’30.1" | E 29°02’25.4" |
| ZC PCD 2 | 40 MI Pollution Control Dam | S 26° 02’40.5" | E 29°02’26.0" |

<p>| Table 5: Ground water monitoring points for Zibulo Opencast Colliery |
|-------------------------|-----------------|-----------------|
| <strong>Sampling Point</strong> | <strong>Description</strong> | <strong>Latitude</strong> | <strong>Longitude</strong> |
| BSW-1 | Zibulo Opencast Borehole: BSW - 1 Operation | 26.01894° | 29.04276° |
| BSW-2 | Zibulo Opencast Borehole: BSW - 2 Operation | 26.02125° | 29.04014° |
| BSW-3 | Zibulo Opencast Borehole: BSW - 3 Operation | 26.02527° | 29.29666° |</p>
<table>
<thead>
<tr>
<th>Sampling Point</th>
<th>Description</th>
<th>Latitude</th>
<th>Longitude</th>
</tr>
</thead>
<tbody>
<tr>
<td>BSW-4</td>
<td>Zibulo Opencast Borehole: BSW-4</td>
<td>26.04098°</td>
<td>29.03950°</td>
</tr>
<tr>
<td>BSW-5</td>
<td>Zibulo Opencast Borehole: BSW-5</td>
<td>26.04657°</td>
<td>29.04483°</td>
</tr>
<tr>
<td>BSW-6</td>
<td>Zibulo Opencast Borehole: BSW-6</td>
<td>26.02359°</td>
<td>29.04886°</td>
</tr>
<tr>
<td>BSW-7</td>
<td>Zibulo Opencast Borehole: BSW-7</td>
<td>26.03539°</td>
<td>29.05210°</td>
</tr>
<tr>
<td>BSW-8</td>
<td>Zibulo Opencast Borehole: BSW-8</td>
<td>26.029450°</td>
<td>29.050150°</td>
</tr>
<tr>
<td>BSW-9</td>
<td>Zibulo Opencast Borehole: BSW-9</td>
<td>26.04417°</td>
<td>29.04906°</td>
</tr>
<tr>
<td>WSW-14</td>
<td>Weltevreten Borehole: WSW-14</td>
<td>26.01591°</td>
<td>29.03498°</td>
</tr>
<tr>
<td>GWE-1</td>
<td>Prinshof well</td>
<td>26.01480°</td>
<td>29.03841°</td>
</tr>
</tbody>
</table>

c. by substitution for condition 4.2 of the following condition:

"4.2 Water samples must be taken from all monitoring boreholes by using approved sampling techniques and adhering to recognised sampling procedures. Samples should be analysed for both organic and inorganic pollutants, as mining activity often lead to hydrocarbon spills in the form of diesel and oil. At least the following quality parameters should be analysed for:

- Major ions (Ca, K, Mg, Na, SO4, NO3, Cl, F)
- pH
- Electrical Conductivity (EC),
- Total Petroleum hydrocarbon (TPH),
- Total Alkalinity

These should be recorded on a data sheet. It is proposed that the data should be entered into an appropriate computer database and reported to the Department of Water [Affairs] and Sanitation. Total Petroleum hydrocarbon (TPH) as a monitoring parameter will only be analysed when a hydrocarbon spill occurs."

d. by substitution for condition 4.7 of the following condition:

"4.7 Water quality testing to be performed on the pollution control dams 1MI, 9MI and [41MI] 40MI, on a quarterly basis in order to determine the risks to the receiving environment."

e. by substitution for condition 4.8 of the following condition:

"4.8 Water quality testing must be conducted quarterly on the wastewater stream from the pollution control dam 1 MI, 9MI and [41 MI] 40 MI. [When returned back to the mine for use as process water.]"

f. by deletion of condition 4.9

Amendment of condition 5 of page Appendix III

14. Condition 5.1 of the licence is hereby amended-

a. by the substitution for condition 5.1 the following conditions:
"5.1 The impact of the activities of the mine [on the groundwater shall not exceed the following in-stream water quality objectives detailed in the water quality reserve for the area as indicated in table below] shall not exceed baseline groundwater quality limits as measured prior to construction as indicated in Table 6."

Table 6: Baseline Groundwater Quality

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Minimum</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>pH</td>
<td>6.2</td>
<td>8.0</td>
</tr>
<tr>
<td>EC mS/m</td>
<td>5</td>
<td>54</td>
</tr>
<tr>
<td>TDS(mg/l)</td>
<td>44</td>
<td>344</td>
</tr>
<tr>
<td>Ca(mg/l)</td>
<td>2</td>
<td>71</td>
</tr>
<tr>
<td>Mg(mg/l)</td>
<td>2</td>
<td>16</td>
</tr>
<tr>
<td>Na(mg/l)</td>
<td>4</td>
<td>40</td>
</tr>
<tr>
<td>K(mg/l)</td>
<td>1</td>
<td>8</td>
</tr>
<tr>
<td>Si(mg/l)</td>
<td>1</td>
<td>18</td>
</tr>
<tr>
<td>T-Alk(mg/l)</td>
<td>12</td>
<td>272</td>
</tr>
<tr>
<td>Cl(mg/l)</td>
<td>5</td>
<td>29</td>
</tr>
<tr>
<td>SO4(mg/l)</td>
<td>5</td>
<td>20</td>
</tr>
<tr>
<td>NO2(mg/l)</td>
<td>0.2</td>
<td>1.3</td>
</tr>
<tr>
<td>F(mg/l)</td>
<td>0.2</td>
<td>6.6</td>
</tr>
<tr>
<td>Al(mg/l)</td>
<td>0.100</td>
<td>0.660</td>
</tr>
<tr>
<td>Fe(mg/l)</td>
<td>0.30</td>
<td>47.000</td>
</tr>
<tr>
<td>Mn(mg/l)</td>
<td>0.30</td>
<td>0.590</td>
</tr>
</tbody>
</table>

Amendment of condition 6 of Appendix III

15. Condition 6 of the licence is hereby amended-
   b. by the substitution for condition 6.1 of the following conditions:

"6.1 The Licensee shall update the water balance annually and calculate the loads of waste emanating from the activities. The Licensee shall determine the contribution of their activities to the mass water balance for the water resource and furthermore co-operate with other water users in the catchment to determine the mass balance for the water resource reserve compliance point. The Licensee shall submit the nature and the quality of the waste disposed into the following dams: 1MI Pollution Control Dam, 9MI Pollution Control Dam, and 40MI Pollution Control Dam."

Amendment of condition 7 of Appendix III

16. Condition 7 of the licence is hereby amended-
   a. by substitution for condition 7.9 of the following condition:

"7.9 The polluted water captured in the [storm water control dams] 40 MI pollution control dam shall be pumped to the [process water treatment plant for reuse and—recycling]. Emalahleni Water Reclamtion Plant for processing and alternatively used on site on site for dust suppression."
Amendment of condition 8 of Appendix III

17. Condition 8 of the licence is hereby amended-

a. by substitution for condition 8.1 of the following condition:

"8.1 Pollution caused by spills from the [conveyances] transfers must be prevented through proper maintenance and effective measures especially near all stream crossings."

Amendment of condition 11 of Appendix III

18. Condition 11 of the licence is hereby amended-

a. by substitution for condition 11.2 of the following condition:

"11.2 The IWWMP [and RSIP] shall therefore be updated and submitted to the [Regional] Provincial Head for approval, annually and RSIP shall be submitted 5 years before closure."

Amendment of condition 3 of Appendix IV

19. Condition 3 of the licence is hereby amended-

b. by deletion of condition 3

[END OF LICENCE AMENDMENT]
ANNEXURE B

Request for an amendment
30 May 2011

Dear Lerato Maitjana

COMMENTS WITH REGARD TO THE GRANTED ZIBULO UNDERGROUND IWULA (LICENSE NUMBER 04/B11/E/CGIJ692)

This letter serves to acknowledge receipt of Zibulo Underground Colliery’s Water Use License. However, we would like to express our concerns regarding certain conditions stipulated in the license. The comments will be written in a numerical order, according to the numbering of the Water Use License document – License No. 04/B11/E/CGIJ692 File No. 1927/F/10/05/247

License

General

1. Water User: Please note that since the submission of the IWULA in 2008, the mine has undergone a name change. Please take note of the correct name:

   THERMAL COAL
   Anglo American Inyosoi Coal (Pty) Ltd
   Zibulo Colliery (Underground Operation)
   P.O. Box 380
   Ogies
   2230

2. Definitions: In the first bullet point, first line, the colliery is referred to as Zibulo. Please change this to Zibulo Colliery.
Appendix I

General Conditions for the License

3. Company Name: The licensee's name change in section 1(1) above is requested based upon this clause.

Appendix II

1. Construction, Operation and Maintenance

1.1.3 Coordinates: The coordinates provided are for the River crossings, however, the longitudinal positions are incorrect. Please include the correct coordinates for each River crossing, as given in the table below.

<table>
<thead>
<tr>
<th>Stream Crossing</th>
<th>Latitude Degrees</th>
<th>Minutes</th>
<th>Seconds</th>
<th>Longitude Degrees</th>
<th>Minutes</th>
<th>Seconds</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>26</td>
<td>10</td>
<td>8.12</td>
<td>29</td>
<td>1</td>
<td>34.18</td>
</tr>
<tr>
<td>2</td>
<td>26</td>
<td>9</td>
<td>36.38</td>
<td>29</td>
<td>1</td>
<td>46.48</td>
</tr>
<tr>
<td>3</td>
<td>26</td>
<td>8</td>
<td>22.60</td>
<td>28</td>
<td>2</td>
<td>0.77</td>
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<td>4</td>
<td>26</td>
<td>8</td>
<td>0.66</td>
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<td>2</td>
<td>3.76</td>
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<td>5</td>
<td>56.44</td>
<td>29</td>
<td>1</td>
<td>63.44</td>
</tr>
<tr>
<td>6</td>
<td>26</td>
<td>5</td>
<td>19.66</td>
<td>29</td>
<td>1</td>
<td>60.36</td>
</tr>
</tbody>
</table>

5. Protective Measures

5.16 And 5.17 Co-Disposal: Please note that all coal will be processed at Phola DMIS plant and that there is no co-disposal facility at Zibulo Underground Colliery. Based on this, please remove these two conditions as they are not applicable.

Appendix III

2. Storage of water containing waste

2.4  Maximum Quantities: Please note that the maximum quantity of 59,495m³/a, referred to in the license, only takes into account the 10ML, PC dam. This volume should be increased to 117,165m³/a (refer to Water Balance attached to this letter) to include both the 10ML and 20ML, PC Dam. This is correctly shown in Table 2 of this section of the license document.

3. Quality of waste water to be disposed

3.4  Dirty water quality: Please note that this is a Pollution Control Dam which has been specifically designed to contain polluted mine water, and has suitable liners to prevent pollution. This dam is thus a containment facility for polluted water. It would thus be considered impracticable to prescribe water quality guidelines for a PC dam. All water reporting from the Underground operation is contained within the specified pollution control dams namely the 10 ML PC dam and 20ML PC dam. Note that all runoff water considered to be "dirty" collects within these facilities. Refer to the attached plan indicating the Clean/dirty water separation plan. Suitable clean and dirty water separation measures have also been implemented at the mine, according to GN704.
4. Monitoring

4.1 Groundwater Monitoring: Please note that surface water quality will be monitored monthly. However, as per recommendation by the Mines appointed Groundwater specialists (JMA Consulting (Pty) Ltd), it is propose that the groundwater be monitored biannually (6 monthly) until any form of point source pollution/diffuse plume pollution can be identified. If any water quality discrepancies are identified during the data analysis, the Mine resort to proposed monthly sampling.

Furthermore, the Groundwater monitoring points given in Table 5 of the license have been revised, after consultation with the groundwater specialists. The points in Table 5 of the license document contains the list of All green-fields monitoring boreholes and boreholes, as drilled and surveyed during the baseline investigation of 2004. These boreholes were drilled over the total mine lease area for background information only. Please note that not all of these groundwater sites can be monitored during a monitoring session, since they are not applicable to the direct or potential sources of groundwater impacts on the Mine. To date a Groundwater Investigation was completed and recommendations were made for the drilling of 7 monitoring boreholes which are aimed at monitoring the direct impacts of groundwater by the Mine. The Department will be supplied with a list of the new monitoring sites once it is available.

4.3 Written notification: Written notification will be given to the Department when the monitoring sites are changed, as per point 4.1 – Groundwater monitoring.

4.5 Water Quality testing: Please note that there will be no coal processing at Zibulo Underground Colliery, and therefore there will be no coal slurry or discard.

4.6 Ash and 4.7 Tailings Waste: Please note that there will be no tailings produced at the Zibulo Underground operation and therefore these conditions are not applicable.

5. Water resource protection

5.1 Water Quality Objectives: Please expand Table 6, showing the water quality objectives, to include all of the parameters required for monitoring, as shown in point 13.1 of Appendix III of the water use license. The following constituents are not covered, K, F, EC, TPH, Total Alkalinity.

Please also confirm that the RQO are correct.

6. Reporting

6.2 Analysis Results: We would like to propose that the submission of the Water Quality Analysis results be made annually. In other parts of the report submissions are requested annually and Zibulo would prefer a standardized submission time. It is also believed that quarterly submissions will not give a broad enough picture of the circumstances, and are highly susceptible to seasonal influences.

After consultation with the Groundwater specialists (as stated in point 4.1 above), it was concluded that sufficient groundwater sampling has been performed at the greater Zondagsfontein Complex since 2004 to indicate that no mining-related impact has occurred on ground water resources. It is therefore suggested that a bi-annual sampling program is followed until any form of point source pollution/diffuse plume pollution can be identified. The results will be submitted annually.
7. **Stormwater management**

7.9 **Water treatment:** Currently there is no polluted water treatment being carried out, however, should this become a necessity in the future, the option will be considered.

*Please note that the numbering over here skips from 8 (Plant areas and conveyances) to 12 (Integrated water and waste management)*

12. **Integrated water and waste management**

12.2 **IWWMP and RSIP Resubmission:** The IWWMP will be resubmitted only when it is updated, which may not be annually. The Rehabilitation Strategy is included in the EMPR and will be updated and submitted 5 years before closure.

12.4 **Water Treatment:** Currently no water treatment plant has been proposed for Zibulo Underground Colliery.

13. **General Conditions**

13.1 **TPH Sampling:** Total Petroleum Hydrocarbon (TPH) sampling is a fairly costly exercise, with the results not expected to fluctuate significantly, unless there is a hydrocarbon spill. It is therefore proposed that one sample be taken to establish a baseline, and thereafter only when there are spills.

13.3, 13.4 and 13.6: Please note that there will be no opencast mining at Zibulo Underground which is purely an Underground operation. Therefore these conditions are not applicable and it is requested that they be removed.

13.7 **Groundwater sampling:** As per point 4.1 above, in the event that any form of pollution is identified, the monitoring program will be upgraded to do a full-spectrum quarterly analysis of all monitoring boreholes.

13.8 **Alternative water supply:** Please note that should Zibulo Underground affect any external users water supply, the external user will be compensated. However, this may be with additional water supplied by Zibulo, or alternatively, via a monetary compensation. This will be discussed and agreed upon with the affected party, as the situation develops.

13.11 **Discard material:** Please note that all coal processing takes place at the Phola plant and therefore this condition is not applicable.

**Appendix IV**

1. **Water volumes:** Please review the permitted volumes for removal as documented in the License conditions. The volumes written in words are not the same as the alphanumeric volumes in parentheses. The correct volumes are 26 280m³/a, and 72m³/day as per the latest water balance submitted to the Department. The co ordinates for the above point will be S28°1'53.4" and E29°01'01.8".

5. **PC Dam water qualities:** Please refer to comment 3.1 below.

3.1 **Dirty water quality:** Please note that this is a Pollution Control Dam which has been specifically designed to contain polluted mine water, and has suitable liners to prevent pollution. This dam is thus a containment facility for polluted water. It would thus be considered impracticable to prescribe water quality guidelines for a PC dam. All water reporting from the Underground operation is contained within the specified pollution control dams namely the 10 ML PC dam and 20ML PC dam.
Note that all runoff water considered to be "dirty" collects within these facilities. Refer to the attached plan indicating the Clean/dirty water separation plan. Suitable clean and dirty water separation measures have also been implemented at the Mine, according to GN704.

6. **Alternative water supply:** Please refer to comments 13.8 below.

13.8 **Alternative water supply:** Please note that should Zibulo Underground affect any external users' water supply, the external user will be compensated. However, this may be with additional water supplied by Zibulo, or alternatively, via a monetary compensation. This will be discussed and agreed upon with the affected party, as the situation develops.

7. **Operational Impacts on groundwater:** Please note that the mining method at Zibulo Underground will be strictly bord-and-pillar mining.

**Additional Comments**

Please also note that applications were made for additional water uses, which were not included in the license document. These license applications include:

- **Dust Suppression:** Please refer to the letters of 20 October 2010 and 9 February 2011, respectively. An application for dust suppression was also made, and not mentioned in the license. The volume of water applied for is 90m³/day. This translates to 2 700 m³/month and 32 400m³/annum.

- **Underground storage of water:** Please refer to the letter submitted 18 February 2011. In support of this application, reference is made to the license requirement given on page 16 of 19, section 13.2, which states that the area must be flooded as soon as possible to prevent oxygen from reacting with the pyrite.

- **Undermining:** Please refer to the letter submitted 18 February 2011. The application was made based on the depth of mining, as well as the measures that will be implemented to prevent pillar collapse. It appears that these applications were overlooked during the compilation of the license.

Please would you indicate if the above water use licenses will be adjudicated by the Department?

We trust that you will find those requests in order. Should you have any question, please do not hesitate to contact us.

Yours sincerely,

[Signature]

Willa Tollemaache
General Manager
T: +27 (0)13 643 4410
E: wtollemache@angloamerican.com
www.angloamerican.com
ANNEXURE C

Issued Licence
1. Deborah Gabaakelwe Mochothi, in my capacity as Project Manager: Letsema in the Department of Water Affairs and acting under authority of the powers delegated to me by the Minister of Water and Environmental Affairs, hereby authorise the following water uses in respect of this license.

SIGNED: ..........................................................

DATE: 2011-04-01

LICENCE NO. 04/B11E/CGJ/692
FILE NO. 16/27/B100/C247

1. Water User:
   Anglo Operations Limited: Zondagsfontein Mine (Izibulo)
   Postal Address of applicant: P.O. Box 61587
                             Marshalltown
                             2107

2. Water Uses
   2.1 Section 21(c) of the Act: Impeding or diverting the flow of water in a watercourse, subject to the conditions set out in Appendices I and Appendices II
   2.3 Section 21(g) of the Act: Disposing of waste in a manner which may detrimentally impact on a water resource, subject to the conditions set out in Appendices I and Appendices III
   2.4 Section 21(l) of the Act: Altering the bed, banks, course or characteristics of a watercourse subject to conditions set out in Appendices I and Appendices II
   2.5 Section 21(j) of the Act: Removing, discharging or disposing of water found underground, subject to the conditions set out in Appendices I and IV.

3. Properties on which the uses will be exercised
   3.1 Section 21 (c) & (i) of the Act: Rietvlei 64 IS, Smithfield 44 IS portion 2, Olga 35 IS portion 1
   3.2 Section 21(g) of the Act: Rietvlei 64 IS
   3.3 Section 21(l) of the Act: Rietvlei 64 IS

4. Registered owner of the Properties
   Owner's Name  Farm Portion Number
   4.1 Anglo Coal  Rietvlei 64 IS
   4.2 Anglo Coal  Smithfield 44 IS portion
   4.3 Anglo Coal  Olga 35 IS
5. Licence and Review Period

5.1 This licence is valid for a period of ten (10) years from the date of issuance and it will be reviewed every five (5) years.

6. Definitions

"Any terms, words and expressions as defined in the National Water Act, 1998 (Act 36 of 1998) shall bear the same meaning when used in this licence."

"The Regional Head” means the Regional Chief Director: Mpumalanga Region, Department of Water Affairs, Private Bag X 11259, NELSPRUIT, 1200,

"Report” refers to the report entitled Integrated Water Use License dated July 2008 for Anglo Coal as compiled by Jones & Wagener for Zondagsfontein as well as all other related documentations and communication (emails, letters, verbal, etc) thereto.

- IWULA for Zondagsfontein mine (Izibulo) dated August 2009 for Anglo Coal (Pty) Ltd as compiled by Jones and Wagener (Pty) Ltd for section 21(c), (g), (i), and (j) water use license., "Water Use License Application" Mining operation on the farm Rietvlei 64 IS and construction of the conveyor belt on portion 1 of the farm Olga 35 IS , portion 2 on the farm Smithfield 44 IS, Rietvlei 64 IS portion 1 of the farm Cologne 34 IS, portion 4 Goedgevonden Zondagsvlei 8 IS, Olverwacht 66 IS and Zondagsfontein 253 IR.

7. Description of the activity

The applicant, Anglo Coal (Pty) Ltd – Zondagsfontein Mine (Izibulo), is authorised for an Integrated Water Use Licence in terms of section 21 (c), 21(g), 21(i) and 21(j) of the National water Act, 1998 (Act 36 of 1998) to undertake a coal mining activity.

D.G. MOCHOTLHI

Project Manager: Letsema

Page 2 of 19
APPENDIX I

General Conditions for the licence

1. This licence is subject to all the provisions contained in the National Water Act.

2. The responsibility for complying with the provisions of the licence is vested in the licensee and not any other person or body.

3. The Licensee shall immediately inform the Regional Head of any change of name, address, premises and/or legal status.

4. If the property in respect of which this license is issued is subdivided or consolidated, the new Licensee must provide full details of all changes in respect of the properties to Regional Head of the Department within 60 days of the said changes taking place.

5. If a water user association is established in the area to manage the resource, membership of the licensee to this association is compulsory.

6. The Licensee shall be responsible for any water use charges or levies imposed by a responsible authority.

7. While effect must be given to the Reserve as determined in terms of the Act, where a desktop determination of the Reserve has been used in issuance of a licence, when a comprehensive determination of the Reserve has finally been made, it shall be given effect to.

8. When compulsory licensing is implemented for the water resource in respect of which this licence was issued, the water use authorized in this licence could be subject to appropriate reduction.

9. The licence shall not be construed as exempting the Licensee from compliance with the provisions of other applicable Act, Ordinance, regulation or By-Law.

10. This licence and amendment to this license are also subject to all the applicable procedural requirements and other applicable provisions of the Act, as amended from time to time.

11. The licensee shall conduct an annual Internal audit on compliance with the conditions of licence. A report on the audit shall be submitted to the Regional Head within one month of the finalisation of the audit.

12. The Licensee shall appoint an independent external auditor to conduct an annual audit on compliance with the conditions of this licence. The first audit must be conducted within 3 (three) months of the date this license and a report on the audit shall be submitted to the Regional Head within one month of finalisation of the report.

13. Flow metering, recording and integrating devices shall be maintained in a sound state of repair and calibrated by a competent person at intervals of not more than two years. Calibration certificates shall be available for inspection by the Regional Head or his representative upon request.

14. Any incident that causes or may cause water pollution shall be reported to the Regional Head or his/her designated representative within 24 hours.

D.G. MOCHOTLHI
Project Manager: Letsema
APPENDIX II

Section 21(c) of the Act: Impeding or diverting the flow of water in a watercourse;

Section 21(i) of the Act: Altering the bed, banks, course or characteristic of a watercourse

1. Construction, Operation and Maintenance

1.1 The licence authorises the section 21 (c) and (i) water use activities as set out below and in the water use application reports submitted to the Department.

1.1.1 The impeding, diverting and altering the flow and the banks of the Saaiwaterspruit and Klippotjiespruit for mining purposes at the following location:

1.1.2 Saaiwaterspruit tributaries: starting of Geographic location at 26° 10' 8.12" S and 29° 58' 25.82" E, 26° 9' 35.38" S and 29° 58' 13.52" E, to end of Geographic location 26° 8' 22.60" S and 28° 57' 58.93" E

1.1.3 Klippotjiespruit tributaries: starting of Geographic location at 26° 58' 44.54" S and 28° 58' 6.55" E 26° 58' 19.66" S and 28° 58' 9.64" E to the end of Geographic location 26° 8' 0.65" S and 28° 57' 55.24" E

1.2 The Licensee shall carry out and complete all activities listed under condition 1.1 according to the following

1.3 The Licensee must submit a set of as-built drawings (not schematic layouts) to the Regional Head of all river diversions, road crossings and weirs.

1.4 The conditions of the authorisation shall be brought to the attention of all persons (employees, sub-consultants, contractors etc.) associated with the undertaking of this activity and the Licensee shall take such measures that are necessary to bond such persons to the conditions of this licence.

1.5 Construction activities must not take place within the 1:100 year flood-line or within a horizontal distance of 100 meters from any watercourse, estuary, borehole or well, whichever is the greatest, unless authorised by this licence (as part of the activities described in the report(s) (referred to in condition 1.2) submitted to the Department).

1.6 No material with pollution generating potential will be used in any construction activities unless it is approved by the Regional Head.

1.7 The necessary erosion prevention mechanisms shall be employed to ensure the sustainability of all structures.

1.8 The Licensee must ensure that structures such as the river diversions, river road crossings, weirs and the culverts must withstand the 1:100 year flood line

1.9 The structure of temporary crossings must be non-erosive, structurally stable and must not induce any flooding or safety hazard. Temporary crossings must be inspected monthly for accumulation of debris, blockage, erosion of abutments and overflow areas. Debris must be removed and damages must be repaired and reinforced immediately.

1.10 Construction activities shall start up-stream and proceed into a down-stream direction, so that the recovery processes can start immediately, without further disturbance from upstream construction works.

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Zondagfontein: Anglo Coal
Project Manager: Lesema
1.11 Construction activities must be scheduled to take place during the dry seasons when flows are lowest.

1.12 The natural migration of aquatic biota and upstream movement of fish must not be disturbed.

1.13 The development may not impede natural drainage lines.

1.14 The construction camp shall not be located within the 1:100 year flood line or within 100 meters of any watercourse whatever the greatest.

1.15 Vehicles and other machinery must be serviced well above the 1:100 year flood line or within a horizontal distance of 100 meters from any watercourse or estuary. Oils and other potential pollutants must be disposed off at an appropriate licensed site, with the necessary agreement from the owner of such a site and proof of the agreement must be submitted to the Regional Head.

1.16 All reagent storage tanks and reaction units must be supplied with a bunded* area built to the capacity of the facility and provided with sumps and pumps return the spilled material back into the system.

1.17 The system shall be maintained in a state of good repair and standby pumps must be provided.

1.18 Any hazardous substances must be handled according to the relevant legislation relating to transport, storage and use of the substance.

1.19 Pollutions caused by spills from the conveyances must be prevented through proper maintenance and effective protective measures especially near all stream crossings.

1.20 Any access roads or temporary crossings should be:

1.21.1 non-erosive, structurally stable and should not induce any flooding or safety hazard
1.21.2 any damage be repaired immediately to prevent further damage.

2. Storm water Management

2.1 Storm water shall be diverted from the construction works and roads and shall be managed in such a manner as to disperse runoff and to prevent the concentration of stormwater flow.

2.2 Where necessary works must be constructed to attenuate the velocity of the stormwater discharge and to protect the banks of the watercourse.

2.3 Storm water control works must be constructed, operated and maintained in a sustainable manner throughout the project.

2.4 Increased runoff due to vegetation clearance and/or soil compaction must be managed, and steps must be taken to ensure that stormwater does not lead to bank instability and excessive levels of silt entering the watercourse.

2.5 Storm water leaving the Licensee's premises must in no way be contaminated by any substance, whether such substance is a solid, liquid, vapour or gas or a combination thereof which is produced, used, stored, dumped or spilled on the premises.
3. Water Quality and Quantity

3.1 The Licensee must determine the baseline water quality before the commencement of the activity and this must be complied with, before, during and after the cessation of the activities as per the EMP.

3.2 Activities (such as maintenance) that lead to elevated levels of turbidity of any watercourse must be minimised.

3.3.1 The Licensee shall ensure that the quantity of the water to downstream water users does not decrease because of the existence of the river diversions, river crossings, culverts and associated maintenance of road crossings.

3.3.2 As far as possible, all new road crossing of wetlands should cross the wetland at 90° to the direction of flow.

3.5 The original wetland geometry and topography in both cross-sectional and longitudinal profile altered during construction of a road crossing must be reinstated at closure.

3.6 The conveyor belt should be constructed in such a way that sufficient space remains underneath the conveyor belt to allow for free movement of faunal species such as small mammals and herpetofauna. A suitably qualified specialist should be consulted in this regard.

3.7 The conveyor belt should incorporate turn over to minimise spillage during operation. Should larger spillage occur due to malfunction of the conveyor belt or for any other reason, clean up of the spillage should be undertaken as soon as possible following the event. In this regard regular inspection must be undertaken.

4. General Specifications

4.1 A suitably qualified person, appointed by the licensee, and approved, in writing, by the Regional Head, must be responsible for ensuring that the structures are maintained in line with the design specifications.

4.2 The Licensee shall have a full time Civil Engineer Supervisor on the site during construction of river diversions, river crossings and culverts. The contractor shall have an approved Site Agent on the site during construction.

4.3 The Licensee must ensure that river diversions, river road crossings, weirs and the culverts shall not be damaged excessively by floods exceeding the magnitude of floods occurring on average once in every 100 years.

4.4 Development activities should start upstream and work downstream, so that the recovery process can start immediately, without further disturbance from upstream disturbances.

4.5 The necessary erosion prevention mechanisms shall be employed to ensure the sustainability of all the structures.

4.6 Where temporary crossings are included their structure must be non-erosive, structurally stable and may not induce any flooding or safety hazard. Temporary crossings must be inspected regularly for accumulation of debris, blockage, erosion of abutments and overflow areas. Damaged areas shall be repaired and reinforced immediately.
4.7 The Licensee must submit a set of as-built detailed drawings (not schematic layouts) to the Regional Head of all river diversions, road crossings, and weirs, when required.

4.8 The Licensee shall deliver proof to the Regional Head of compliance with the following, when required:

5 Protective Measures

5.1 The diversion structures may not restrict river flows by reducing the overall river width or obstructing river flow.

5.2 Operation and storage of equipment within the riparian zone must be limited as far as possible.

5.3 All activities within the riparian zone should be restricted as far as possible.

5.4 Any material removed from the in stream or riparian habitat, may not be stored within the riparian zone, and may not be stored in such a way that will cause damming of water or wash-away.

5.5 Alien vegetation must not be allowed to further colonise the area, and all new alien vegetation recruitment must be eradicated or controlled, using standard methods approved by the Department.

5.6 Soils that have become compacted through the activities of the development must be loosened to an appropriate depth to allow seed germination.

5.7 The proposed development must not impede the upstream movement of fish.

5.8 Increased runoff due to vegetation clearance and/or soil compaction must be managed and steps must be taken to ensure that storm water does not lead to bank instability and excessive levels of silt entering the stream.

5.9 Riparian vegetation, including dead trees, may not be removed from the area. In particular, snags (fallen trees and branches) in the river must be protected (i.e. not collected for firewood or any other purpose).

5.10 All reasonable steps should be made to minimise noise and mechanical vibrations in the vicinity of the river.

5.11 The extent of disturbance should be limited by limiting all construction activities to the servitude as far as practically possible.

5.12 No materials should be stockpiled within the wetland areas along the route and driving within the wetland areas should be kept to an absolute minimum.

5.13 As far as possible, the existing road and farm tracks should be used as the service road for the conveyor and to provide access during construction as this will reduce the extent of the disturbed area.

5.14 The conveyor should span the entire width of the valley bottom crossing. Conveyor footings within the wetlands should be kept minimal.

5.15 The construction activities should take place in winter (during the dry season).

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5.16 The co-disposal facility should be sealed to prevent leakage and seepage of polluted water into the adjacent valley bottom wetlands.

5.17 A series of cut-off trenches and return water dams should be constructed around the co-disposal facility to ensure that all contaminated water seeping out of the facility as well as run-off from the side-slopes will be intercepted and captured in the return water dams.

5.18 Water within return dams should be re-used as far as possible to avoid water release into adjacent wetland areas.

6. Rehabilitation Measures

6.1 All disturbed areas must be re-vegetated with an indigenous seed mix in consultation with an indigenous plant expert, ensuring that during rehabilitation only indigenous shrubs, trees and grasses are used in restoring the biodiversity.

6.2 The vegetation of the surrounding catchment should also be managed to prevent erosion and siltation of the water course.

6.3 The Licensee shall take steps necessary to allow movement of aquatic species, including migratory species during the rehabilitation programme.

6.4 The Licensee shall embark on a systematic long-term rehabilitation programme to restore natural watercourses to environmentally acceptable and sustainable conditions after construction, which shall include, but not be limited to:

6.4.1 The rehabilitation of disturbed and degraded riparian areas to restore and upgrade the riparian habitat integrity to sustain a bio-diverse riparian ecosystem; and

6.4.2 Annually assess the habitat to monitor the sustainability of the diversions and compliance with these conditions. Action must be taken to rectify any negative impacts.

6.5 The Licensee shall ensure that the volume of flow is not reduced except for natural evaporative losses and the authorised attenuation volumes.

6.6 The Licensee shall ensure that for every 1 ha of the pan that is destroyed, 3 ha must be rehabilitated.

7. General Surface Water Design Requirements and Criteria

7.1 The Licensee shall determine flood lines (1:50) prior to construction to ensure risks are adequately managed. Flood lines shall be clearly indicated on the layout plans.

7.2 The Licensee shall schedule construction activities at or close to river crossings, streams or wetlands to take place during low flow periods.

7.3 The Licensee shall clearly indicate all wetlands boundaries within the project area on layout plans.

7.4 Design and planning of all proposed construction activities adjacent to or in the vicinity of rivers, streams and wetlands shall consider the following measures:

7.4.1 Impact of alignment on springs and wetlands shall be investigated and monitored and ensure their continued functioning.
7.4.2 Where appropriate, large individual indigenous riparian trees shall be avoided during construction and shall be clearly marked on site.

7.4.3 All construction roads in or adjacent to the riparian zone shall be minimised and if required, shall be aligned and managed so as to minimise disturbance of the riparian zone and in-stream habitats.

7.5 The Licensee shall do bio-monitoring to determine the impact, change, deterioration and improvement of the aquatic system associated with the activities that of impeding, altering or diverting the water resource.
Appendix III

Section 21(g) of the Act: Disposing of waste in a manner which may detrimentally impact on a water resource

1. CONSTRUCTION AND OPERATION

1.1 The Licensee shall carry out and complete all the activities, including the construction and operation of facilities listed below in Table 1 according to the Report and according to the final plans submitted with the Water Use License Application for Report No. JW115/08/B145 as approved by the Regional Head.

Table 1: Geographical positions of all the waste water management facilities

<table>
<thead>
<tr>
<th>Facility</th>
<th>Farm Name</th>
<th>Geographic Position</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pollution Control Dam</td>
<td>Rietvlei 64IS</td>
<td>E26° 12' 19.29&quot;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>S29° 01' 08.76&quot;</td>
</tr>
<tr>
<td>Pollution Control Dam</td>
<td>Rietvlei 64IS</td>
<td>E26° 12' 17.44&quot;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>E29° 01' 00.53&quot;</td>
</tr>
<tr>
<td>Rock Dump</td>
<td>Rietvlei 64IS</td>
<td>E26° 11' 54.73&quot;</td>
</tr>
<tr>
<td>Donstruction</td>
<td></td>
<td>S28° 58' 57.63&quot;</td>
</tr>
</tbody>
</table>

1.2 The construction of the dams listed in Table 1 must be carried out under the supervision of a professional Civil Engineer, registered under the Engineering Profession of South Africa Act, 1990 (Act 114 of 1990), as approved by the designer.

1.3 Within 30 days after the completion of the activities referred to in accordance with the relevant provisions of this licence, the Licensee shall, in writing, under reference 16/27/B100/C247, inform the Regional Head thereof. This shall be accompanied by a signature of approval from the designer referred to above that the construction was done according to the design plans referred to in the Report.

1.4 The Licensee must ensure that the disposal of the waste water and the operation and maintenance of the system are done according to the provisions in the Report.

1.5 The waste facility shall be operated and maintained to have a minimum freeboard of 0.8 meters above full supply level and all other water systems related thereto shall be operated in such a manner that it is at all times capable of handling the 1:50 year flood-event on top of its mean operating level.

1.6 The Licensee shall use acknowledged methods for sampling and the date, time and sampler must be indicated for each sample.

2. STORAGE OF WATER CONTAINING WASTE

2.1 The Licensee is authorised to dispose of a maximum quantity of 59 495 m³/a (fifty nine thousand four hundred and ninety five cubic metres per annum) of waste water per year(s) into the waste management facility on the farm Rietvlei 64 IS.

D.G. MOCHOTLHI
Project Manager: Letsema
### Table 2: Volumes of waste to be disposed at the waste disposal facilities

<table>
<thead>
<tr>
<th>Facility</th>
<th>Volume metres in per day</th>
<th>Waste Description</th>
<th>Property Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pollution Control Dam 1(10ML)</td>
<td>163</td>
<td>Direct rainfall, runoff from crusher, groundwater make, seepage &amp; runoff from coal stockpile and workshop runoff</td>
<td>Rietvlei 64 IS</td>
</tr>
<tr>
<td>Pollution Control Dam 2(20ML)</td>
<td>158</td>
<td>Inflow from the 10ML pollution control dam and rainfall</td>
<td>Rietvlei 64 IS</td>
</tr>
<tr>
<td>Rock Dump Construction</td>
<td>127</td>
<td></td>
<td>Rietvlei 64 IS</td>
</tr>
</tbody>
</table>

### 3. QUALITY OF WASTE WATER TO BE DISPOSED

#### 3.1

The quality of dirty water disposed of into the pollution control dam and waste facility listed on the Table below shall not exceed the following limits:

### Table 3: Quality of waste water to be disposed into waste water facility

<table>
<thead>
<tr>
<th>SUBSTANCE/PARAMETER</th>
<th>LIMIT</th>
</tr>
</thead>
<tbody>
<tr>
<td>pH</td>
<td>7.5 – 9.0</td>
</tr>
<tr>
<td>EC</td>
<td>150 – 600</td>
</tr>
<tr>
<td>Total Alkalinity (mg/l)</td>
<td>50 to 800</td>
</tr>
<tr>
<td>Aluminium (mg/l)</td>
<td>25 to 250</td>
</tr>
<tr>
<td>Calcium (mg/l)</td>
<td>25 to 80</td>
</tr>
<tr>
<td>Sulphate (mg/l)</td>
<td>10 – 20</td>
</tr>
<tr>
<td>Iron (mg/l)</td>
<td>100 to 2500</td>
</tr>
<tr>
<td>Magnesium (mg/l)</td>
<td>130</td>
</tr>
<tr>
<td>Potassium (mg/l)</td>
<td>&lt;1 to 5</td>
</tr>
<tr>
<td>Sodium (mg/l)</td>
<td>&lt;1 to 10</td>
</tr>
</tbody>
</table>

### 4. MONITORING

#### 4.1

The Licensee shall monitor on monthly basis at water resource at the surface water monitoring point and groundwater monitoring points to determine the impact of the facility and other activities on the water quality by taking samples at the monitoring points described in Tables below:

### Table 4: Surface Water monitoring points for Zondagsfontein

<table>
<thead>
<tr>
<th>Sampling Point Name</th>
<th>X Co-ordinate</th>
<th>Y Co-ordinate</th>
</tr>
</thead>
<tbody>
<tr>
<td>ZU 1</td>
<td>28º 57' 29.9&quot;</td>
<td>28º 57' 29.9&quot;</td>
</tr>
<tr>
<td>ZU 2</td>
<td>28º 56' 35.4&quot;</td>
<td>28º 57' 29.9&quot;</td>
</tr>
<tr>
<td>ZU 3</td>
<td>28º 54' 61.5&quot;</td>
<td>28º 57' 29.9&quot;</td>
</tr>
<tr>
<td>ZU 4</td>
<td>28º 00' 24.7&quot;</td>
<td>28º 57' 29.9&quot;</td>
</tr>
<tr>
<td>ZU 5</td>
<td>28º 00' 36.3&quot;</td>
<td>28º 57' 29.9&quot;</td>
</tr>
<tr>
<td>ZU 6</td>
<td>28º 03' 06.6&quot;</td>
<td>28º 57' 29.9&quot;</td>
</tr>
<tr>
<td>ZU 7</td>
<td>28º 02' 42.3&quot;</td>
<td>28º 57' 29.9&quot;</td>
</tr>
<tr>
<td>ZU 8</td>
<td>28º 01' 55.6&quot;</td>
<td>28º 57' 29.9&quot;</td>
</tr>
<tr>
<td>Sampling Point Name</td>
<td>X Co-ordinate</td>
<td>Y Co-ordinate</td>
</tr>
<tr>
<td>---------------------</td>
<td>---------------</td>
<td>---------------</td>
</tr>
<tr>
<td>ZU 9</td>
<td>29° 01' 48.2&quot;</td>
<td>28° 57' 29.9&quot;</td>
</tr>
<tr>
<td>ZU 10</td>
<td>28° 57' 28.9&quot;</td>
<td>28° 57' 29.9&quot;</td>
</tr>
<tr>
<td>ZUPC 1</td>
<td>28° 57' 29.9&quot;</td>
<td>28° 57' 29.9&quot;</td>
</tr>
</tbody>
</table>

Table 5: Ground Water Monitoring points for Zondagsfontein mine

<table>
<thead>
<tr>
<th>Sampling Point Name</th>
<th>X Co-ordinate</th>
<th>Y Co-ordinate</th>
</tr>
</thead>
<tbody>
<tr>
<td>ZDF-1</td>
<td>28° 57' 13.79&quot;</td>
<td>26° 8' 23.96&quot;</td>
</tr>
<tr>
<td>ZDF-2</td>
<td>28° 56' 58.91&quot;</td>
<td>26° 8' 22.56&quot;</td>
</tr>
<tr>
<td>ZDF-3</td>
<td>28° 59' 59.70&quot;</td>
<td>26° 8' 26.64&quot;</td>
</tr>
<tr>
<td>ZDF-4</td>
<td>28° 55' 9.30&quot;</td>
<td>26° 14' 3.73&quot;</td>
</tr>
<tr>
<td>ZDF-5</td>
<td>28° 55' 18.12&quot;</td>
<td>26° 9' 51.80&quot;</td>
</tr>
<tr>
<td>ZDF-6</td>
<td>28° 56' 16.68&quot;</td>
<td>26° 9' 54.72&quot;</td>
</tr>
<tr>
<td>ZDF-7</td>
<td>28° 57' 29.99&quot;</td>
<td>26° 11' 25.51&quot;</td>
</tr>
<tr>
<td>ZDF-8</td>
<td>28° 56' 35.70&quot;</td>
<td>26° 11' 41.89&quot;</td>
</tr>
<tr>
<td>ZDF-9</td>
<td>28° 1' 15.82&quot;</td>
<td>26° 12' 52.16&quot;</td>
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<tr>
<td>ZDF-10</td>
<td>28° 0' 10.62&quot;</td>
<td>26° 13' 26.54&quot;</td>
</tr>
<tr>
<td>ZDF-11</td>
<td>28° 2' 21.01&quot;</td>
<td>26° 8' 19.76&quot;</td>
</tr>
<tr>
<td>ZDF-2</td>
<td>28° 57' 13.68&quot;</td>
<td>26° 8' 21.66&quot;</td>
</tr>
<tr>
<td>ZDF-3</td>
<td>28° 56' 58.92&quot;</td>
<td>26° 8' 27.13&quot;</td>
</tr>
<tr>
<td>ZDF-4</td>
<td>28° 59' 58.85&quot;</td>
<td>26° 14' 3.70&quot;</td>
</tr>
<tr>
<td>ZDF-5</td>
<td>28° 58' 8.83&quot;</td>
<td>26° 9' 50.62&quot;</td>
</tr>
<tr>
<td>ZDF-6</td>
<td>28° 86' 18.42&quot;</td>
<td>26° 9' 55.51&quot;</td>
</tr>
<tr>
<td>ZDF-7</td>
<td>28° 56' 16.12&quot;</td>
<td>26° 11' 26.66&quot;</td>
</tr>
<tr>
<td>ZDF-8</td>
<td>28° 56' 35.77&quot;</td>
<td>26° 11' 26.58&quot;</td>
</tr>
<tr>
<td>ZDF-9</td>
<td>28° 1' 16.78&quot;</td>
<td>26° 11' 41.60&quot;</td>
</tr>
<tr>
<td>ZDF-10</td>
<td>28° 0' 10.22&quot;</td>
<td>26° 12' 52.20&quot;</td>
</tr>
<tr>
<td>ZDF-11</td>
<td>28° 2' 20.62&quot;</td>
<td>26° 13' 26.62&quot;</td>
</tr>
<tr>
<td>ZSW-1</td>
<td>28° 52' 15.89&quot;</td>
<td>26° 6' 16.62&quot;</td>
</tr>
<tr>
<td>ZSW-2</td>
<td>28° 53' 21.54&quot;</td>
<td>26° 7' 23.82&quot;</td>
</tr>
<tr>
<td>ZSW-3</td>
<td>28° 52' 38.92&quot;</td>
<td>26° 7' 22.26&quot;</td>
</tr>
<tr>
<td>ZSW-4</td>
<td>28° 55' 15.64&quot;</td>
<td>26° 7' 34.33&quot;</td>
</tr>
<tr>
<td>ZSW-5</td>
<td>28° 55' 18.06&quot;</td>
<td>26° 8' 10.17&quot;</td>
</tr>
<tr>
<td>ZSW-6</td>
<td>28° 54' 23.56&quot;</td>
<td>26° 8' 33.08&quot;</td>
</tr>
<tr>
<td>ZSW-7</td>
<td>28° 53' 29.42&quot;</td>
<td>26° 8' 77.79&quot;</td>
</tr>
<tr>
<td>ZSW-8</td>
<td>28° 52' 69.41&quot;</td>
<td>26° 8' 32.47&quot;</td>
</tr>
<tr>
<td>ZSW-9</td>
<td>28° 54' 41.12&quot;</td>
<td>26° 9' 0.62&quot;</td>
</tr>
<tr>
<td>ZSW-10</td>
<td>28° 53' 57.06&quot;</td>
<td>26° 9' 36.72&quot;</td>
</tr>
<tr>
<td>ZSW-11</td>
<td>28° 53' 10.72&quot;</td>
<td>26° 10' 16.30&quot;</td>
</tr>
<tr>
<td>ZSW-12</td>
<td>28° 53' 10.72&quot;</td>
<td>26° 10' 16.30&quot;</td>
</tr>
<tr>
<td>ZSW-13</td>
<td>28° 55' 23.15&quot;</td>
<td>26° 10' 31.63&quot;</td>
</tr>
<tr>
<td>ZSW-14</td>
<td>28° 55' 1.84&quot;</td>
<td>26° 10' 16.70&quot;</td>
</tr>
</tbody>
</table>

4.2 The date, time and monitoring point in respect of each sample taken shall be recorded together with the results of the analysis.

4.3 Monitoring points shall not be changed prior to notification to and written approval by the Regional Head.
4.4 An Aquatic Scientist approved by the Regional Head must establish a monitoring programme for the following indices: Invertebrate Habitat Assessment System (IHAS) and the latest SASS (South African Scoring System). Sampling must be done once during the summer season and once during the winter season, annually, to reflect the status of the river upstream and downstream of the mining activities.

4.5 Water quality testing to be performed on the pollution control dam 1, 2 and 3, 10ML pollution control dam, 20ML pollution control dam and rock-dump construction on a quarterly basis in order to determine the risks to the receiving environment. The data gathered in the investigation must be reported annually to the Regional Head. If any concentrations levels as specified above are exceeded, the Licensee must institute an investigation to determine the cause of poor quality. Furthermore, the Licensee must undertake geochemical assessment on coal slurry and discard dump.

4.6 The Licensee shall participate in any initiative such as Direct Estimation of Ecological Effect Potential (DEEEP) to determine the toxicity of complex tailings waste discharges. Both acute and chronic toxicity must be addressed and at least three taxonomic groups must be present when toxicity tests are performed.

4.7 Analysis shall be carried out in accordance with methods prescribed by and obtainable from the South African Bureau of Standards (SABS), in terms of the Standards Act, 1982 (Act 30 of 1982).

4.8 The methods of analysis shall not be changed without prior notification to and written approval by the Responsible Authority.

5. WATER RESOURCE PROTECTION

5.1 The impact of the activities of the mine on the groundwater shall not exceed the following in-stream water quality objectives detailed in the water quality reserve for the area as indicated on the table below:

<table>
<thead>
<tr>
<th>VARIABLE</th>
<th>Unit</th>
<th>RQO</th>
</tr>
</thead>
<tbody>
<tr>
<td>pH</td>
<td></td>
<td>65-9.0</td>
</tr>
<tr>
<td>Total Dissolved Solids</td>
<td>mg/l</td>
<td>650</td>
</tr>
<tr>
<td>Sulphate (SO4)</td>
<td>mgSO4/l</td>
<td>360</td>
</tr>
<tr>
<td>Chloride (Cl)</td>
<td>mgCl/l</td>
<td>25</td>
</tr>
<tr>
<td>Sodium (Na)</td>
<td>mgNa/l</td>
<td>70</td>
</tr>
<tr>
<td>Magnesium (Mg)</td>
<td>mgMg/l</td>
<td>70</td>
</tr>
<tr>
<td>Calcium (Ca)</td>
<td>mgCa/l</td>
<td>150</td>
</tr>
<tr>
<td>Nitrate (NO3)</td>
<td>mgNO3/l</td>
<td>6</td>
</tr>
<tr>
<td>Dissolved Oxygen</td>
<td>%sat</td>
<td>70</td>
</tr>
</tbody>
</table>

6. REPORTING

6.1 The Licensee shall update the water balance annually and calculate the loads of waste emanating from the activities. The Licensee shall determine the contribution of their activities to the mass balance for the water resource and must furthermore co-operate with other water users in the catchment to determine the mass balance for the water resource reserve compliance point.
6.2 The Licensee shall submit the results of analysis for the monitoring requirements to the Regional Head on a quarterly basis under Reference number 16/2/7/B100/C247

7. STORM WATER MANAGEMENT

7.1 Storm-water leaving the licensee’s premises shall in no way be contaminated by any substance, whether such substance is a solid, liquid, vapour or gas or a combination thereof which is produced, used, stored, dumped or spilled on the premises.

7.2 Increase runoff due to vegetation clearance and/or soil compaction must be managed, and steps must be taken to ensure that storm water does not lead to bank instability and excessive levels of silt entering the stream.

7.3 Storm-water shall be diverted from the mine complex site and roads and shall be managed in such a manner as to disperse runoff and concentrating the storm-water flow.

7.4 Where necessary works must be constructed to attenuate the velocity of any storm-water discharge and to protect the banks of the affected watercourses.

7.5 Storm-water control works must be constructed, operated and maintained in a sustainable manner throughout the impacted area.

7.6 Increased runoff due to vegetation clearance and/or soil compaction must be managed, and steps must be taken to ensure that storm-water does not lead to bank instability and excessive levels of silt entering the streams.

7.7 All storm-water that would naturally run across the pollution areas shall be diverted via channels and trapezoidal drains designed to contain the 1:50 year flood.

7.8 The polluted storm water system shall be designed and implemented to provide suitable routing and pumping capacity for contaminated storm water from the individual facilities to the respective storm water dams in accordance with the design specifications as contained in the Integrated Water Use License Application Report No. JW115/08/B145

7.9 The polluted storm water captured in the storm water control dams shall be pumped to the process water treatment plant for reuse and recycling.

8. PLANT AREAS AND CONVEYANCES

8.1 Pollution caused by spills from the conveyances must be prevented through proper maintenance and effective protective measures especially near all stream crossings.

8.2 All reagent storage tanks and reaction units must be supplied with a banded area built to the capacity of the facility and provided with sumps and pumps to return the spilled material back into the system. The system shall be maintained in a state of good repair and standby pumps must be provided.

8.3 Any hazardous substances must be handled according to the relevant legislation relating to the transport, storage and use of the substance.

8.4 Any access roads or temporary crossings must be:

8.4.1 non-erodible, structurally stable and shall not induce any flooding or safety hazard; and
8.4.2 be repaired immediately to prevent further damage.
9. ACCESS CONTROL

9.1 Strict access procedures must be followed in order to gain access to the property. Access to the Pollution Control dam and waste facility must be limited to authorised employees of the Licensee and their Contractors only.

9.2 Notices prohibiting unauthorised persons from entering the controlled access areas as well as internationally acceptable signs indicating the risks involved in case of an unauthorised entry must be displayed along the boundary fences of these areas.

10. CONTINGENCIES

10.1 Accurate and up-to-date records shall be kept of all system malfunctions resulting in non-compliance with the requirements of this licence. The records shall be available for inspection by the Regional Head upon request. Such malfunctions shall be tabulated under the following headings with a full explanation of all the contributory circumstances:

- 10.1.1 operating errors;
- 10.1.2 mechanical failures (including design, installation or maintenance);
- 10.1.3 environmental factors (e.g. flood);
- 10.1.4 loss of supply services (e.g. power failure); and
- 10.1.5 other causes.

10.2 The Licensee must, within 24 hours, notify the Regional Head of the occurrence or potential occurrence of any incident which has the potential to cause, or has caused water pollution, pollution of the environment, health risks or which is a contravention of the licence conditions.

10.3 The Licensee must, within 14 days, or a shorter period of time, as specified by the Regional Head, from the occurrence or detection of any incident referred above, submit an action plan, which must include a detailed time schedule, to the satisfaction of the Regional Head of measures taken to:

- 10.3.1 correct the impacts resulting from the incident;
- 10.3.2 prevent the incident from causing any further impacts; and
- 10.3.3 prevent a recurrence of a similar incident.

11. AUDITING

11.1 The Licensee shall conduct an annual internal audit on compliance with the conditions of this licence. A report on the audit shall be submitted to the Regional Head within one month of finalisation of the report, and shall be made available to an external auditor should the need arise.

11.2 The Licensee shall appoint an independent external auditor to conduct an annual audit on compliance with the conditions of this licence. The first audit must be conducted within 3 (three) months of the date this license was issued and a report on the audit shall be submitted to the Regional Head within one month of finalisation of the report.
12. INTEGRATED WATER AND WASTE MANAGEMENT

12.1 The Licensee shall submit the updated Integrated Water and Waste Management Plan (IWWMP) after the received of the water use license, which must together with the Rehabilitation Strategy and Implementation Programme (RSIP), be submitted to the Regional Head for approval within one (1) year from the date of issuance of this licence.

12.2 The IWWMP and RSIP shall thereafter be submitted to the Regional Head for approval annually.

12.3 The Licensee must, at least 180 days prior to the intended closure of any facility, or any portion thereof, notify the Regional Head of such intention and submit any final amendments to the IWWMP and RSIP as well as a final Closure Plan, for approval.

12.4 The Licensee shall make full financial provision for all investigations, designs, construction, operation and maintenance for a water treatment plant should it become a requirement as a long-term water management strategy.

13. GENERAL CONDITIONS

13.1 Water samples must be taken from all the monitoring boreholes by using approved sampling techniques and adhering to recognized sampling procedures. Samples should be analyzed for both organic as well as inorganic pollutants, as mining activity often lead to hydrocarbon spills in the form of diesel and oil. At least the following water quality parameters should be analyzed for:

- Major ions (Ca, K, Mg, Na, SO₄, NO₃, Cl, F)
- pH
- Electrical Conductivity (EC)
- Total Petroleum hydrocarbon (TPH)
- Total Alkalinity

These should be recorded on a data sheet. It is proposed that the data should be entered into an appropriate computer database and reported to the Department of Water Affairs.

13.2 The mining areas should be flooded as soon as possible to prevent oxygen from reacting with remaining pyrite.

13.3 The applicant should remove all coal from the opencast and as little as possible should be left.

13.4 The final backfilled opencast topography should be engineered such that runoff is directed way from the opencast areas.

13.5 The final layer should be as clayey as possible and compacted if feasible, to reduce recharge to the opencasts.

13.6 A safety pillar of at least 30 m should be left between the underground and opencast areas.

13.7 Quarterly groundwater sampling must be done to establish a database of plume movement trends, to aid eventual mine closure.

13.8 The applicant must ensure in advance that alternative water supply for external water users is provided to these users should groundwater resources be impacted.

D.G. MOCHOTLHI
Project Manager: Lethema
13.9 A proper ground and surface water monitoring network should be established to monitor the quality and quantity of groundwater as per the report recommendation and ensuring that water used by other water users are safeguarded in accordance to chapter 14 of the National Water Act, 1998.

13.10 The pollution control dam must be designed in such a manner that any spillage can be contained and reclaimed without any impact on the surrounding environment, a plan must be in place to stop overflowing in a dam in case of rainy seasons.

13.11 Geochemical assessment should be done on the discard material during the mining operation.

13.12 The Licensee shall at all times together with the conditions of this license adhere to the Regulations on use of water for mining and related activities aimed at the protection of water resources (GN 704, 4 June 1999).
APPENDIX IV

Section 21(j) of the Act: Removing of Water Found Underground

1. The Licensee is authorised to remove a volume of twenty five thousand two hundred cubic meters per annum (57670m³/a) of groundwater from portion 5 of the farm Rietvlei 64 IS, based on an average quantity of eight hundred and twenty eight and forty nine cubic meters (159m³/d) per day, Location of abstraction point: S2898852 and E-1690.

2. The Licensee is authorised to dispose of the groundwater into the pollution control dam on the farm Portion 5 of the farm Rietvlei 64 IS.

3. The disposal of water into the pollution control dam shall take place at the following location:

<table>
<thead>
<tr>
<th>Location</th>
<th>X co-ordinate</th>
<th>Y co-ordinate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pollution control dam (10ML)</td>
<td>26° 12' 19.29&quot;</td>
<td>29° 01' 08.76&quot;</td>
</tr>
<tr>
<td>Pollution Control Dam 1(20ML)</td>
<td>26° 12' 17.4&quot;</td>
<td>29° 01' 00.83&quot;</td>
</tr>
</tbody>
</table>

4. The quantity of the water authorised to be removed and disposed of into the pollution control dam in terms of this license may not be exceeded without prior authorisation by the Minister.

5. The quality of the water disposed into the pollution control dam shall not exceed the quality as specified in the Table below:

<table>
<thead>
<tr>
<th>Variable</th>
<th>Average concentration</th>
<th>Maximum concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>pH</td>
<td>7.5–9.0</td>
<td>6.5-9.0</td>
</tr>
<tr>
<td>EC</td>
<td>150-600</td>
<td>0-40</td>
</tr>
<tr>
<td>Total Alkalinity (mg/l)</td>
<td>50 to 800</td>
<td>0-50</td>
</tr>
<tr>
<td>Aluminium (mg/l)</td>
<td>25 to 250</td>
<td>0.15</td>
</tr>
<tr>
<td>Calcium (mg/l)</td>
<td>25 to 60</td>
<td>32</td>
</tr>
<tr>
<td>Sulphate (mg/l)</td>
<td>10-20</td>
<td>200</td>
</tr>
<tr>
<td>Iron(mg/l)</td>
<td>100 to 2500</td>
<td>0.1</td>
</tr>
<tr>
<td>Magnesium(mg/l)</td>
<td>130</td>
<td>30</td>
</tr>
<tr>
<td>Potassium(mg/l)</td>
<td>&lt;1 to 5</td>
<td>50</td>
</tr>
<tr>
<td>Sodium(mg/l)</td>
<td>&lt;1 to 10</td>
<td>70</td>
</tr>
</tbody>
</table>

6. The Licensee shall provide any water user whose water supply is impacted by the water use with potable water.

7. The impact of groundwater resource during the operational as discussed in the geo-hydrological report will include:
   - The influx of groundwater into mine workings due to pillar mining
   - Inter-mine flow between adjacent mines during the operation phase
   - Depletion of external users groundwater resources and fountains; therefore the mine must comply with the groundwater measures stipulated in the IWWMP to control the impacts associated in the mining.

8. The quantity of water removed from underground must be metered and recorded on a daily basis.
9. The groundwater levels shall be monitored every six months (once in the beginning of the dry season and once in the beginning of the wet season).

10. Self registering flow meters must be installed in the delivery lines at easily accessible positions near the dewatering points.

11. The flow metering devices shall be maintained in a sound state of repair and calibrated by a competent person at intervals of not more than once in two years. Calibration certificates shall be available for inspection by the Regional Head or his/her representative upon request.

12. Calibration certificates in respect of the pumps must be submitted to the Regional Head after installation thereof and thereafter at intervals of two years.

13. The date and time of monitoring in respect of each sample taken shall be recorded together with the results of the analysis.


15. The methods of analysis shall not be changed without prior notification and written approval by the Minister or his/her delegated nominee.

16. The Regional Head must be informed of any incident that may lead to undergroundwater being disposed of contrary to the provisions of this license, by submitting a report containing the following information:

   16.1 nature of the incident (e.g. operating malfunctions, mechanical failures, environmental factors, loss of supply services, etc);
   16.2 actions taken to rectify the situation and to prevent pollution or any other damage to the environment; and
   16.3 measures to be taken to prevent re-occurrence of any similar incident.

17. The Licensee shall follow acceptable construction, maintenance and operational practices to ensure the consistent, effective and safe performance of the underground water removal system.

18. Reasonable measures must be taken to provide for mechanical, electrical or operational failures and malfunctions of the underground water removal system.

END OF LICENCE
ANNEXURE D

Record of Recommendations
**RECORD OF RECOMMENDATION**

Regarding the application for a license submitted by

**ZONDAGSFONTEIN: ANGLO COAL**

<table>
<thead>
<tr>
<th>Sub-sec</th>
<th>Description as per the Act</th>
<th>Existing Authorisation</th>
<th>Applied for</th>
<th>Licence Recommended/ Not Recommended</th>
</tr>
</thead>
<tbody>
<tr>
<td>a</td>
<td>Taking water from a water resource</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b</td>
<td>Storing water</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>c</td>
<td>Impeding or diverting the flow of water in a watercourse</td>
<td>X</td>
<td>Recommended</td>
<td></td>
</tr>
<tr>
<td>d</td>
<td>Engaging in a stream flow reduction activity</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>e</td>
<td>Engaging in a controlled activity</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>f</td>
<td>Discharging waste or water containing waste into a water resource through a pipe, canal, sewer or other conduit</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>g</td>
<td>Disposing of waste in a manner which may detrimentally impact on a water resource</td>
<td>X</td>
<td>Recommended</td>
<td></td>
</tr>
<tr>
<td>h</td>
<td>Disposing in any manner of water which contains waste from, or which has been heated in, any industrial or power generation process</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>i</td>
<td>Altering the bed, banks, course or characteristics of a watercourse</td>
<td>X</td>
<td>Recommended</td>
<td></td>
</tr>
<tr>
<td>J</td>
<td>Removing, discharging or disposing of water found underground if it is necessary for the effective continuation of an activity or for the safety of people</td>
<td>X</td>
<td>Recommended</td>
<td></td>
</tr>
<tr>
<td>K</td>
<td>Using water for recreational purposes</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## 1. SUMMARY OF APPLICATION

<table>
<thead>
<tr>
<th>File/Register Number</th>
<th>Date of Application:</th>
<th>Details of Applicant</th>
</tr>
</thead>
<tbody>
<tr>
<td>16/2/7/B200/C181</td>
<td>August 2009</td>
<td>Name: Zondagsfontein Mine: Anglo Coal</td>
</tr>
<tr>
<td>Water Area</td>
<td>Management</td>
<td>Company or Gender (M/F): Company</td>
</tr>
<tr>
<td>Upper Olifants WMA</td>
<td>Quaternary Catchment</td>
<td>Status (BBBEE, HDI, HAI, SOE, LG,: Social &amp; Labour Plan is submitted</td>
</tr>
</tbody>
</table>

### Type of water use(s)-indicate S25(2)

<table>
<thead>
<tr>
<th>Water Resource (SW/GW)</th>
<th>Volume (m³/a) /Capacity (m³)/Length (m³)</th>
</tr>
</thead>
<tbody>
<tr>
<td>GW S 21: 21(g) &amp; (j)</td>
<td>PCD's volumes: 59495 m³/a &amp; 57670 m³/a &amp; design capacities are: 10MI &amp; 20 MI dams.</td>
</tr>
<tr>
<td>SW S 21: Sect. 21(c) &amp; (i)</td>
<td>Tributaries of Klippoortjiespruit, Saaiwaterspruit &amp; their tributaries</td>
</tr>
<tr>
<td>S25(2) Yes No</td>
<td></td>
</tr>
</tbody>
</table>

### Existing Authorisation(s):

<table>
<thead>
<tr>
<th>Water Resource (SW/GW)</th>
<th>Volume (m³/a) /Capacity (m³)/Length (m³)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SW Permits</td>
<td></td>
</tr>
<tr>
<td>Others</td>
<td></td>
</tr>
</tbody>
</table>

### Property Description (Name, Number and Portion)

Rietvlei 62 IS

### Sector (e.g. Agriculture, Industry, Mining, Local Government, SFRA, Power Generation)

Mining (underground)

### If Agric indicate irrigation or forestry and hectares

### Reserve Determination

Available (Yes/No): Yes

Requested (Yes/No):

Date Completed: 26/10/2010

Date Drafted: August 2010

### Recommendations by Assessor and Date

Recommendation (30 day letter, issue, decline):

Comments: Licence issued

### Name of Assessor:

Lerato Mautjana

Draft Licence Prepared (Yes/No): Yes

Date Prepared: 22/02/2011
2. BACKGROUND TO APPLICATION

Zondagsfontein is a newly commissioned underground bord and pillar mine, with the coal being accessed a shaft area comprising an inclined conveyor shaft, and a vertical man and materials shaft. Zondagsfontein mining area is situated between the towns of Khendal, Ogies and Lionelton in Mpumalanga Province, and is located within the Ekangala District Municipality, within quaternary drainage B11E and B11F.

The life expectancy of Zondagsfontein mine is 20-30 years

3. DESCRIPTION OF WATER USES

The application was submitted for the following water uses:

<table>
<thead>
<tr>
<th>No</th>
<th>Water use activity</th>
<th>Property</th>
<th>Mining activity</th>
<th>Capacity</th>
<th>Throughput</th>
<th>Coordinates</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Section 21(g)</td>
<td>Rietvlei 64 IS</td>
<td>PCD</td>
<td>10 000 m³</td>
<td>59495 m³/a</td>
<td>E 26° 12' 19.29&quot; S 29° 01' 08.76&quot;</td>
</tr>
<tr>
<td>2</td>
<td>Section 21(g)</td>
<td>Rietvlei 64 IS</td>
<td>PCD</td>
<td>20 000 m³</td>
<td>57670 m³/a</td>
<td>S26° 12' 17.4&quot; E29° 01' 00.53&quot;</td>
</tr>
<tr>
<td>3</td>
<td>Section 21(g)</td>
<td>Rietvlei 64 IS</td>
<td>Rock dump construction</td>
<td>46 490 m³</td>
<td></td>
<td>E26° 11' 54.73&quot; S28° 58' 57.63&quot;</td>
</tr>
<tr>
<td>No</td>
<td>Water use activity</td>
<td>Property</td>
<td>Mining activity</td>
<td>Capacity</td>
<td>Throughput</td>
<td>Coordinates</td>
</tr>
<tr>
<td>----</td>
<td>-------------------</td>
<td>----------</td>
<td>----------------</td>
<td>----------</td>
<td>------------</td>
<td>-------------</td>
</tr>
<tr>
<td>4</td>
<td>Section 21(c)&amp; (i)</td>
<td>Smithfield 44IS portions 2&amp;4  Cologne 34IS portion 1  Goedgevonden portion 4  Rietvlei 64 IS  Zondagsvlei 8 IS  Onverwacht 66 IS  Olga 35 IS  Zondagsfontein 253 IR</td>
<td>Klippoortjiespruit tributaries  Saaiwaterspruit tributaries</td>
<td></td>
<td></td>
<td>S26° 10' 8.12&quot; E29°58'25.82&quot;  S26° 9'35.38&quot;  E28°58'13.52.&quot;  S26° 8' 22.60&quot;  E28° 57'59.23&quot;  S26° 8' 0.65&quot;  E28° 57' 56.24&quot;  S266°5'58.44&quot;  E28° 58.6.56&quot;  S26°5'19.65&quot;  E28° 58.9.64&quot;</td>
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<td>Dewatering</td>
<td></td>
<td>26280 m³/a</td>
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</tbody>
</table>

4. SUMMARY OF TECHNICAL INFORMATION

The pollution control dam will be constructed in order to contain polluted water generated from runoff at the Zondagsfontein man and material and coal shafts, as well as water from the underground workings. The conceptual dam size is 10ML based on the 1:24 hour 1:50 year event, but the intention is not to collect and reuse this water due to the small size of the catchment. The pollution control dam will be located on the farm Rietvlei 64IS portion RE/1. This dam will also be used as a sampling point as well as to ensure that runoff from the site is free of oil and other potential contaminants, and will include a silt collection facility.

All water from underground, as well as any runoff from the overburden material excavated during the construction of the shaft will be pumped to a sump located at the southern end of the shaft area, from where the polluted water will be drained to the man and materials shaft pollution control dam at the surface.

The sewage treatment plant with a design capacity of 60 kl/day will be constructed and located on the farm Rietvlei 64IS portion RE/1 to treat the flow from the change house from some 530 shift workers and laundry at an estimated flow of 100 l/day, which would equate to a total flow of 53 kl/day. The pollution control dam will be used as the final disposal of the effluent. No effluent will be discharged to the system.

The 20 ML PC Dam will be fed by the 10 ML PCD, and will be the source of water used for dust suppression around the mine, for example, the haul roads, in the workings and on the stockpiles. The water from this dam will also be used to cool the continuous miners underground. The dam has a 250 mm mild steel outlet pipe, and a 4.2 m wide reinforced concrete overflow channel which flows into an existing storm water drain if the dam should overflow. This overflow containment was constructed as an emergency measure and may only be utilized in an extreme rainfall event. The outer dimensions of
the dam are 101.8 m x 84.6 with 1:1.5 sloping sides and a bottom dimension of 83.8 m x 66.6 m

The dam is lined using a 2000 micron HDPE lining anchored in a trench situated on top of the dam wall. All the joints have been joined together using a continuous extrusion electric welding system to ensure a totally integrated homogeneous joint. Clean water cut off trench will be constructed above the dam to ensure the deflection of clean stormwater away from the dam into the natural environment water from the dam will be used for dust suppression on the mine footprint and underground mining operations.

The rock dump construction will be located on the farm Rietvlei 64 IS portion RE/1. The coal generated during the construction of the coal inclined shaft will be disposed of adjacent to the shaft, within the area draining to the pollution control dam.

The proposed conveyer belt will be used to carry out the coal from the mining area into the Klipspruit Phola Plant for coal washing purposes. The conveyer route between the Zondagsfontein and Klipspruit DMS Plant crosses six watercourses. Tributaries of the Klippoortjespruit and Saaiwaterspruit and its tributary will be crossed. The watercourse crossings are located on the following farms:

- Smithfield 44IS portions 2 and 4
- Cologne 34IS portion 1
- Goedgevonden portion 4
- Rietvlei 64 IS
- Zondagsvlei 9 IS
- Onverwacht 66 IS
- Olga 35 IS
- Zondagsfontein 253 IR

5. Environmental impacts emanate from the water uses applied for and their mitigation measures

5.1 Surface Water

Construction of the watercourse crossings will require shaping of and construction on the banks of the non-perennial streams. Construction activities will inevitably damage the banks at the river crossing, however the extent of damage will be confined as tightly to the actual crossing as is practical, and damaged areas will be repaired with the necessary erosion protection. The limited extent of such banks within the non-perennial streams suggests that simply hydro seeding disturbed areas will be adequate to limit any erosion.

At the watercourse crossings, a number of piles with gantries, supported by piers, will be placed over the streams to ensure adequate elevation and width so that flow can occur on the floodplain over bank.

5.2 Groundwater

The pollution control dams are a potential source of groundwater pollution. Contaminants from these facilities can percolate through the unsaturated zone to the saturated zone. Once the contaminants reach the groundwater table, lateral migration
along the groundwater gradients can occur and groundwater contaminants plumes may established. In terms of potential impacts on the groundwater, two boreholes (ZSW-8 and ZDF-8) are located in the vicinity of Zondagsfontein coal and man and material shafts. ZSW is the shallow drilled monitoring borehole and ZDF the deeply drilled monitoring borehole. The groundwater within the deeper aquifer and in user's boreholes will be monitored as detailed in the EMPR.

The dirty water contained in the pollution control dam has the potential to spill to the catchment. The risk of spill is considered to be less than 2% in any one year. The pollution control dams will be lined therefore preventing seepage of dirty water to the catchment.

6. Summary of reserve determination

6.1 Surface Reserve

Summary of Instream Flow Requirements (IFR) estimate for: Total runoff at outlet of quaternary catchment B11E

Annual flows (Mill. Cu. M or index values)
Mean Annual Runoff (MAR) = 65.381
Standard Deviation (S.DEV) = 53.033
Coefficient (CV) = 0.811
Seventy fifth quartile (Q75) = 0.480
Seventy fifth quartile (Q75) / Mean Media Flow (MMF) = 0.088
Base Flow Index (BFI) Index = 0.298
Coefficient Variation (CV) (June, July & August ((JJA +JFM )index=2.601
Ecological Reserve Category (ERC) =D
Total Instream Flow Requirements (IFR) = 7.921 (12.11% MAR)

Maint. Low flow = 3.123 (4.78% MAR)
Drought Low Flow = 2.2.38 (3.42% MAR)
Maint. Highflow = 4.798 (7.34% MAR)

6.2 Groundwater Reserve

<table>
<thead>
<tr>
<th>Catchment</th>
<th>Area (km²)</th>
<th>Recharge (Mm³/a)</th>
<th>Population</th>
<th>Baseflow (Mm³/a)</th>
<th>EWR (Mm³)</th>
<th>BHN reserve (Mm³/a)</th>
<th>Reserve as % of reserve</th>
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</thead>
<tbody>
<tr>
<td>B11E</td>
<td>466.7</td>
<td>20.96</td>
<td>600</td>
<td>3.72</td>
<td>1.58</td>
<td>0.006</td>
<td>7.46</td>
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<tr>
<td>B11F</td>
<td>428.3</td>
<td>20.39</td>
<td>1938</td>
<td>3.65</td>
<td>0.69</td>
<td>0.02</td>
<td>3.48</td>
</tr>
</tbody>
</table>

This reserve has been revised in light of the information and therefore can be considered within the content of the previously determined reserve. The directorate-RDM is satisfied that the existing reserve can be used to evaluate the current application.
(a) Recommendations by RDM

(i) No groundwater abstraction may take place within 100m of river, spring or wetland. This distance may be increased by the Regional Office if deemed necessary.

(ii) Future license applications in this area should be referred to the Chief Director: Resource Directed Measures to verify the applicability of the level of reserve determination in relation to the specific license application.

(iii) Due to the low confidence of this reserve determination, the results should not be used to evaluate medium to high impact water activities.

It is recommended that when considering these proposed WULA’s, it should be kept in mind that the Olifants WMA is under stress. There is a deficit in available water and the EWR are already not being met. There are also major water quality problems due to poor management of mining activities and sewage treatment systems. The ISP highlighted that no further abstractions should be allowed, however, further development of the resource (both surface and groundwater) is inevitable.

7 SECTION 27 (1) REQUIREMENTS OF THE NATIONAL WATER ACT, 1998 (Act NO 36 of 1998)

In keeping with Section 27 (1) of the National Water Act of 1998 (Act no 36 of 1998), this office has taken the following considerations into account in the assessment of this application:

Section 27 (1) (i) Existing lawful water use

No existing lawful use.

Section 27 (1) (i) Need to redress the results of the past racial and gender discrimination.

Anglo Coal Operations has a significant affirmative action policy. The Social and Labour Plan has been submitted to the Department. Zondagsfontein Colliery management will follow this procedure to ensure that all employees are given the opportunity to achieve their full potential at the workplace. The mine will encourage that all employees have personal development plans in place that address current training gaps as well as future developmental needs. This will ensure that employees as well prepared for future promotional opportunities in line with the company’s Talent Management Process

Section 27 (1) (i) Efficient and beneficial use of water in public interest.

All dirty water will be contained and reused in the mining operations. No discharge will take place to the resource. The management measures proposed involved the Followings:

1. Belt turnovers will be used on all overland conveyers to minimise spillage along the trajectory of the conveyers. The belts will be cleaned at the turnovers, thus minimising the risk of coal sticking to the underside of the conveyer, and spilling along the route.
2. Dust containment will be carried out at transfer points. Wash down water at the transfer points will be collected and continued. There will be no transfer houses (at the start and end of the conveyer) so that all water used will be contained within the dirty water system.

3. The area to be affected by the construction of the pollution control water will be checked for protected or Red Data plants prior to dam construction.

4. The slopes and areas surrounding the dams will be seeded and vegetation established as soon as possible after construction.

5. If erosion is evident or water quality monitoring indicates an increase in suspended solids, a silt trap will be constructed below the construction area.

6. Water quality monitoring will be taken upstream and downstream of the shaft sites in order to detect any increase in suspended solids or turbidity.

7. The lined pollution control dam will be constructed to manage all dirty run-off water from surface and underground.

8. All dirty water generated from the shaft area will be directed to a sump and be pumped to the Zondagsfontein man and materials shaft pollution control dam.

9. Management of clean and dirty water will be implemented to prevent water pollution.

10. Water quality monitoring and rehabilitation monitoring will be implemented during the decommissioning phase to establish the success of the final rehabilitation, to determine the shorting comings.

**Socio-economic impact**

1. The socio-economic impact of the water use or uses if authorized

2. The construction of watercourse crossings and shaft infrastructure will enable Anglo Coal to access new mining reserves and therefore continue mining in the Ogies area.

3. The mining of the new coal reserves will create job opportunities for both construction and operation phase. A breakdown of new employment opportunities is outlined in Anglo Coal Limited Social and Labour Plan.

**Section 27 (1) (i) Catchment management strategy applicable to the relevanc resource.**

The catchment (Olifants River Catchment) in which Zondagsfontein underground mine is located is stressed, with significant salinity concerns. The strategy of avoiding impacts on water quality through containment of affected water is detailed in the Zondagsfontein underground mine IWMP document which will be submitted before commencement of mining, however the comments from civil design were approved.
Section 27 (1) (i) Likely effect of the water use to be authorised on the water resource and on other water users (Quantity and Quality).

The impact on water quality, as outlined in the water use license application, is considered to be low. Because the watercourse crossings will not impede the flow during low flows, and because there will be limited attenuation upstream of the crossings there will be no impact on yield.

Section 27 (1) (i) The class and resource quality objective of the resource.
Water quality guidelines for the relevant Management unit within the Witbank Dam subcatchment as outlined by the Department of Water Affairs will be used by the mine, since the Department does not have the resource quality objectives.

Section 27 (1) (i) Investment already made and to be made by the water user in respect to the water uses in question.
Investments made so far with regards to the new Zondagsfontein underground project includes the undertaking of specialist studies for the whole new mining area, along with the commencement of construction of surface infrastructure at the shaft areas. Anglo Coal operations have purchased some of the surface properties, around the infrastructure areas.

Section 27 (1) (i) The strategic importance of the water uses to be authorised.

The strategic importance of the shaft infrastructure and watercourse crossings is considered to be high as the only access to the new underground reserves will be via shafts and all coal will be transported to the Klipspruit DMS plant via a conveyor. If the shaft infrastructure is not constructed the mining of the new Zondagsfontein underground reserves will not be possible.

Section 27 (1) (i) The quality and quantity of the water in the resource, which may be required for the reserve and meeting international obligations.

The reserve has been determined.

Section 27 (1) (i) The probable duration of any undertaking for which use is to be authorised.

The license will be issued for 20-30 years.

7. ASPECTS TAKEN INTO CONSIDERATION

The following aspects were taken into account with regard to this recommendation:

7.1 Licence Administration and Correspondences

(i) The mine has received the Environmental Authorization for the construction of pollution control dam, sewage works and waste facility and was submitted to the Department.

(ii) The mining rights from the Department of Minerals and Resources were received and approved.

(iii) Signed application forms with the Title Deeds were submitted.
(iv) Copy of proof of licensing fee of R114.00 has been submitted.
(v) Both surface and groundwater reserve are available and applied in the License.
(vi) The water balance were clarified and it is also corresponding to the values or volumes indicated in the application forms.

The groundwater make will be 72m³/d that will be dewatered from the underground mine and stored into the pollution control dam designed for (10ML), together with water from the runoff (60m³/d), coal stockpile(1) and water from the workshop(30m³/d); therefore other dirty mine water will be channeled to the 20ML dam of approximately 158m³/d, and 66m³/d will be pumped to the underground storage; the side of the pillars after mining will be plugged with concrete to create the sidewall for the containment facility and 90m³/d will be used for dust suppression.

Water quality monitoring will be taken upstream and downstream of the shaft sites in order to detect any increase in suspended solids or turbidity.

The section 27 motivation has been addressed and supported by the social and labour plan.

Public Participation was conducted followed the DWA M1.0 guideline for control over the alteration in the course of public stream. This involved the placement of advertisements in the local and regional newspapers and consultation with affected landowners. Public meetings were held on the 17 July 2002, 06 October 2004 and 11 October 2007.

7.2 Inputs from other Sections of Department of Water Affairs

1. Comments from Civil Design

The proposed additional storage of 1 day capacity as part of the sewage treatment plant is acceptable and the storage pond must be suitably lined with a 2 mm thick HDPE geomembrane. Presently the 2mm and thicker membranes are being offered and this has effectively set the standard, unless if proper protection of the geomembrane by means of a cladding is proposed, then it is recommended that a 2mm thick HDPE lining is used. The provision of a suitable lined sampling dam of about 600 m³ is acceptable.

2. Comments from Environment and Recreation

Four types of wetland community are found in the study area, which constitutes about 7.51% of the study area. Furthermore the applicant will be crossing six watercourses. These wetlands are drainage line wetlands, floodplains, hillslope seepage wetlands and pans. Sections of the drainage line have been affected by mining and overgrazing. Cultivation has taken place mainly outside of the drainage line and pans.

To prevent the increased sediments loads to the wetlands; mitigation measures must include the construction of low berm, between the opencast workings/ soil stock piles
and the wetlands. These berms would serve to intercept flows containing suspended soils. These berms must be located outside the wetlands boundary and should be constructed prior to construction commencing on the opencast operations.

Topsoil stockpiles must be re-vegetated to stabilize the soil, reduce the run-off and minimize erosion. A stripping and stockpile plan should be followed as advised by the soil specialist.

The applicant must make sure that no development takes place within the wetland zone and associated wetland. The applicant must delineate appropriate buffer zones as advised by the wetland specialist.

No dirty water run-off must be permitted to reach the wetland resources or any water resources. All dirty water should be channeled to appropriate pollution control facilities. Close monitoring of water quality must take place.

Adequate stormwater management must be incorporated into the design of the proposed development in order to prevent erosion and the associated sedimentation of riparian and instream areas.

All areas affected by the construction should be rehabilitated upon closure of mining expansion. Areas should be reseeded with indigenous grasses as required. During construction and operation phase no vehicles should be allowed to drive through the wetland areas.

No dumping of waste should take place within riparian zone or within the delineated wetland zone. Dumping should only be done at the appropriate authorized sites.

Specific Conditions

The river crossings; it has come to the department's attention that all the six crossings have been completed without the Water Use License; however the following are discussion and specific recommendation.

The applicant will have to conduct an environmental audit for all the six crossings. This should be submitted to the Department within six months of receiving the license for evaluation. This should be accompanied by the rehabilitation plan where necessary. The audit must cover the change in the watercourse with regards to the following characteristics;

- Morphology (bed and banks)
- Riparian and instream habitat
- Water quality
- Flow region and flow dynamics
- Biotic components
- System functioning

General Recommendation
To prevent erosion at storm-water discharge points, where possible storm-water should be conveyed through grassed swales rather concrete channels to aid infiltration and reduce runoff volumes.

Mining infrastructure must be located/moved outside the delineated wetland boundaries on site.

3. Comments from the Geohydrology

The Geohydrological report covers all the critical groundwater regimes, including the groundwater direction, storativity, transitivity, hydraulic gradient as well as hydraulic conductivity.

The impact of groundwater resource during the operational as discussed in the geohydrological report will includes:

- The influx of groundwater into mine working due to pillar mining
- Inter-mine flow between adjacent mines during the operation phase
- Depletion of external users groundwater resources and fountains

The groundwater flow direction has not been impacted by the mining relate activities. The study does not outline the groundwater mitigation measures for the impact indicated above.

The groundwater of the area has elevated values of Sulphate, Nitrate, Aluminium, Iron and Manganese as an indicator for mine related pollution and this is due to the fact that samples were acidified in the field before it was filtrated later under laboratory condition and only high sulphate values may be associated with mine workings.

It is recommended that groundwater monitoring around all facilities must be implemented to determine the quantity and quality of migration from dam and possible the other facilities.

The monitoring system should be implemented as soon as the commissioning of the infrastructure takes place.

The area is also dominated with groundwater irrigation activities; however, it is therefore recommended that the mine should find an alternative water supply in case the mine severely impacts other groundwater users.

The mine should comply with the groundwater mitigation measures to control the impacts as stipulated in the IWWMp.

Recommendation by WUAAAC

The applicant applied for section 21(c), (g), (i) and (j) water uses. In the application; the applicant also applied for an exemption in terms of section 4(c) of the GN 704 Regulation 4 of GN 704 (Vol. 408, No. 20119) dated 4 June 1999 from the requirement of regulation 4(c) for the containment facility underground “the side of the pillars after mining will be plugged with concrete to create the side wall for the containment facility” however the licensing process was completed before the comments on the aspects of exemption were received; thus it was suggested at the Letsema WUAAAC meeting held
on the 22 February 2011 that a license can be recommended for issuance once waiting for the comments on the exemption on the exemption motivation.

The WUAAAC committees have recommended the above-mentioned application for issuance. Currently the exemption motivation was submitted to the following directorates for specialist comments:

- Geohydrology
- Environment and Recreation
- Civil Design

Civil Design comments were received and it recommended that the proposed undermining of the watercourse shall be signed off by a Registered Professional Engineer who shall formulate the special measures required. These measures shall be submitted to the Regional Head for approval within 6 months of the issue of the license

RECOMMENDATIONS AND DECISIONS

License recommended to be issued.

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<th>Recommended/not Recommended</th>
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<tbody>
<tr>
<td>Comments:</td>
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**Regional Chief Director: Mpumalanga**

**Date**

<table>
<thead>
<tr>
<th>Recommended/not Recommended</th>
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</thead>
<tbody>
<tr>
<td>Comments:</td>
</tr>
<tr>
<td>------------------------------</td>
</tr>
</tbody>
</table>

**Chairperson: WUAAAC**

**Date:**

The license is hereby **issued/not issued**: **Zondagsfontein: Anglo Coal**

**Comments:**

**Project Manager: Letsema**

**Date:**
DIRECTOR-GENERAL


The above mentioned licence dated 17 May 2011 refers.

1. On 17 May 2011 the Department issued a water use licence to Anglo American Inyosi Coal (Pty) Ltd – Zibulo Colliery, based on the Record of Recommendation attached as Annexure D. The Licence issued is attached as Annexure C.

2. On the 12 July 2011 Anglo American Inyosi Coal (Pty) Ltd wrote a letter to the Department requesting an amendment on the issued licence. The letter is attached as Annexure B.

3. In terms of section 50 of the National Water Act, a responsible authority may amend or substitute a licence condition if the licensee or successor-in-title has consented to or requested the amendment or substitution; or to reflect one or more successor in-title as the new licensee and to change the description of the property to which the licence applies, if the property described in the licence has been subdivided or consolidated with other property.

4. In terms of section 158 of the National Water Act an amendment or substitution of an instrument is allowed if the proposed amendment or an instrument is not likely to alter the rights and obligation of any person materially; or corrects any clerical mistake, unintentional error or omission in an instrument; correct any figure miscalculated in an instrument.

5. The proposed amendments are summarised in Table 1 of this submission, listing the proposal as submitted by Anglo American Inyosi Coal (Pty) Ltd – Zibulo Colliery Opencast Operation the recommendation by the Department.

6. In view of the above mentioned it is recommended that you approve the amendments reviewed by the Department for Anglo American Inyosi Coal (Pty) Ltd – Zibulo Colliery Opencast Operation. The licence amendment is attached as Annexure A.

RECOMMENDED/ NOT RECOMMENDED

CHAIRPERSON: WUAAAC
DATE: 21/01/2016

RECOMMENDED/NOT RECOMMENDED

( Acting) CEO: OLI FANTS PROTO-CMA
DATE: 2015-01-22

RECOMMENDED/NOT RECOMMENDED

DEPUTY DIRECTOR GENERAL: WATER SECTOR REGULATION
DATE: 21/01/15

APPROVED/ NOT APPROVED

DIRECTOR-GENERAL
22-10/16
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<th>Comments/Justification</th>
<th>DWS comments</th>
<th>Recommendation on Applicant proposal</th>
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<td>Item 1 of the licence introduction</td>
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<td>Clerical mistake.</td>
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<td>3</td>
<td>Licence introduction</td>
<td>Section 158</td>
<td>Item 7 of the licence introduction</td>
<td>Description of the Activities</td>
<td>“Report” refers to the report entitled Integrated Water Use Licence dated May 2009 for Anglo American Inyosi Coal Limited as compiled by Jones and Wagner for Zibulo Colliery as well as all other related documentation and communications (emails, letters, verbal, etc) thereto.</td>
<td>“Report” refers to the report entitled Integrated Water Use Licence dated May 2009 for Anglo American Inyosi Coal Limited (Pty) Ltd as compiled by Jones and Wagner for Zibulo Colliery (Opencast Operation) as well as all other related documentation and communications (emails, letters, verbal, etc) thereto.</td>
<td>Correction of name of company</td>
<td>Unintentional error</td>
<td>Proposal by the applicant is recommended</td>
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<td>4</td>
<td>Licence introduction</td>
<td>Section 158</td>
<td>Item 7 of the licence introduction</td>
<td>Description of the Activities</td>
<td>Excess water will be pumped to the 41Ml pollution control dam.</td>
<td>Excess water will be pumped to the 44Ml 40Ml pollution control dam.</td>
<td>There is no 41Ml PCD at Zibulo Opencast. There are three PCD’s on site that is the 40Ml, 9Ml and 1Ml PCD.</td>
<td>Clerical mistake.</td>
<td>Proposal by the applicant is recommended</td>
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<td>5</td>
<td>Licence introduction (unintentional error)</td>
<td>Section 158</td>
<td>Item 7 of the licence introduction</td>
<td>Description of the Activities</td>
<td>Water make from the opencast workings will initially be pumped to the 41Ml pollution control dam located immediately adjacent to the workshops and offices.</td>
<td>Water make from the opencast workings will initially be pumped to the 44Ml 40Ml pollution control dam located immediately adjacent to the workshops and offices.</td>
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<td>Clerical mistake.</td>
<td>Proposal by the applicant is recommended</td>
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<td>Licence introduction (unintentional)</td>
<td>Section 158</td>
<td>Item 7 of the licence introduction</td>
<td>Description of the Activities</td>
<td>Excess water will be pumped to the 41Ml pollution control dam.</td>
<td>Excess water will be pumped to the 44Ml 40Ml pollution control dam.</td>
<td>There is no 41Ml PCD at Zibulo Opencast.</td>
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<td>7</td>
<td>Licence introduction</td>
<td>Section 158 (unintentional error)</td>
<td>Item 7 of the licence introduction</td>
<td>Description of the Activities</td>
<td>As mining progresses, dirty water will be pumped to the 200Ml pollution control dam located North East of the project area.</td>
<td>As mining progresses, dirty water will be pumped to the 200Ml pollution control dam located North East of the project area.</td>
<td>There is no 41Ml PCD at Zibulo Opencast.</td>
<td>Unintentional error</td>
<td>Proposal by the applicant is recommended</td>
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<tr>
<td>8</td>
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<td>Description of the Activities</td>
<td>The pollution control dams will be located on the farm Oogiesfontein 41S 41S portion 39. The water make from the opencast workings will be pumped initially to the 41Ml pollution control dam, located adjacent to the workshop and the office complex and as mining progresses, eventually to the 200Ml pollution control dam</td>
<td>The pollution control dams will be located on the farm Oogiesfontein 44S 44S portion 39. The water make from the opencast workings will be pumped initially to the 44Ml pollution control dam located adjacent to the workshop and the office complex and as mining progresses, eventually to the 200Ml pollution control dam and 9Ml pollution control dam or to the 1Ml dust suppression dam. Water from the 40Ml dam is pumped to the Emalahleni Water Reclamation Plant for processing.</td>
<td>The farm name was incorrect. There is no 41Ml PCD at Zibulo Opencast. There are three PCD's on site that is the 40Ml, 9Ml and 1Ml PCD. Water from the 40Ml PC dam is pumped to Emalahleni Water Reclamation Plant for processing.</td>
<td>Unintentional error</td>
<td>Proposal by the applicant is recommended</td>
</tr>
<tr>
<td>9</td>
<td>Licence introduction</td>
<td>Section 158 (unintentional error)</td>
<td>Item 7 of the licence introduction</td>
<td>Description of the Activities</td>
<td>The dewatering will take place on the farms Oogiesfontein 41S portion 39.</td>
<td>The dewatering will take place on the farms Oogiesfontein 41S portion 39.</td>
<td>The farm name was incorrect.</td>
<td>Clerical mistake.</td>
<td>Proposal by the applicant is recommended</td>
</tr>
<tr>
<td>10</td>
<td>II</td>
<td>Section 50</td>
<td>1</td>
<td>Taking water from a water resource</td>
<td>This Licence authorizes the taking of a maximum quantity of 216 445 m³/a (two hundred and sixteen</td>
<td>This Licence authorizes the taking of a maximum quantity of 216 445 m³/a (two hundred and sixteen</td>
<td>The water dewatered is not from the 20Ml, there is no 20Ml dewatering dam. The water</td>
<td>Clerical mistake.</td>
<td>Proposal by the applicant is recommended</td>
</tr>
<tr>
<td>NO</td>
<td>Appendix</td>
<td>Amendment Type</td>
<td>Condition</td>
<td>Title</td>
<td>Original Clause (in italics)</td>
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<tr>
<td>11</td>
<td>II</td>
<td>Section 158</td>
<td>11</td>
<td>Taking water from a water resource</td>
<td>thousand, four hundred and forty five cubic metres per annum) from an opencast pit (Zibulo 20MI dewatering dam) on portion RE/1 of the Farm Rietvei for reuse in the mine.</td>
<td>thousand, four hundred and forty five cubic metres per annum) from an opencast pit (Zibulo 20MI 40MI dewatering dam) on portion RE/4 of the Farm Rietvei the farm Oogiesfontein 4IS portion 39 for reuse in at the mine.</td>
<td>dewatered from the pit is pumped to the 40MI dam. The 40MI dam is not situated on on portion RE/1 of the Farm Rietvei. The 40MI dam is situated on the farm Oogiesfontein 4IS portion 39</td>
<td>Repeat of Appendix 1 clause 13.</td>
<td>Proposal by the applicant is recommended</td>
</tr>
<tr>
<td>12</td>
<td>III</td>
<td>Section 158</td>
<td>1.1</td>
<td>Construction and Operation</td>
<td>The coordinates of waste water management facilities in the original licence are incorrect</td>
<td>Correct the geographical positions of all the waste water management facilities</td>
<td>The coordinates in the original licence are incorrect</td>
<td>Clerical mistake.</td>
<td>Proposal by the applicant is recommended</td>
</tr>
<tr>
<td>13</td>
<td>III</td>
<td>Section 50</td>
<td>2.1 Table 2</td>
<td>Storage of water containing waste</td>
<td>Capacities for the dams in table 2 are incorrect</td>
<td>Capacities for the dam to be corrected.</td>
<td>No 41MI pollution control dam has been constructed, nor will be constructed throughout the mining operation. There are currently the 3 pc dams situated at the opencast colliery: - 40MI main holding PC dam - 9MI balancing dam - 1MI dust suppression dam</td>
<td>Clerical mistake.</td>
<td>Proposal by the applicant is recommended</td>
</tr>
<tr>
<td>14</td>
<td>III</td>
<td>Section 50</td>
<td>2.2</td>
<td>Storage of water containing waste</td>
<td>None</td>
<td>The Licensee is authorized to use a maximum quantity in cubic meters (m³) of 29930 of waste water per</td>
<td>In the IWULA dust suppression was applied for but was omitted from the granted WUL.</td>
<td>Omission</td>
<td>Proposal by the applicant is recommended</td>
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<td>NO</td>
<td>Appendix</td>
<td>Amendment Type</td>
<td>Condition</td>
<td>Title</td>
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<td>15</td>
<td>III</td>
<td>Section 50</td>
<td>3.1</td>
<td>Quality of waste water to be disposed</td>
<td>The quality of waste water disposed of into the dams specified below shall not exceed the following limits as specified in table 3, Refer to table attached: Quality of waste water to be disposed into waste facility</td>
<td>The maximum and minimum waste water quality standards (minimum and maximums) for the pollution control dams should be used</td>
<td>Pollution Control Dams which have been specifically designed to contain polluted mine water. All the PC dams have suitable liners to prevent pollution via seepage and leaks. These dams are thus a containment facility for polluted water.</td>
<td>The condition is noted and shall be changed monitor the quality to determine the nature of the waste water disposed</td>
<td>Proposal by the applicant is not recommended but to be revised</td>
</tr>
<tr>
<td>16</td>
<td>III</td>
<td>Section 50</td>
<td>4.1</td>
<td>Monitoring</td>
<td>The licence shall monitor on a monthly basis the water resources at surface water monitoring points (table 4) and monitor on a quarterly basis the water resources at the ground water monitoring points (table 5) to determine the impact of the facility and other activities on the water qualities by taking samples at the monitoring points.</td>
<td>The licence shall monitor on a monthly basis the water resources at surface water monitoring points (table 4: Surface Water Monitoring Points for Zibulo Opencast Operation) and monitor on a quarterly 6 monthly basis the water resources at the ground water monitoring points (Table 5) to determine the impact of the facility and other activities on the water qualities by taking samples at the monitoring points.</td>
<td>As a baseline has been established there is a request for 6 monthly monitoring.</td>
<td>Applicants have submitted results for two years in a row we can change it too biannually</td>
<td>Proposal by the applicant is recommended</td>
</tr>
<tr>
<td>17</td>
<td>III</td>
<td>Section 50</td>
<td>4.2</td>
<td>Monitoring</td>
<td>Water samples must be taken from all monitoring boreholes by using approved sampling techniques and adhering to recognised sampling</td>
<td>Water samples must be taken from all monitoring boreholes by using approved sampling techniques and adhering to recognised sampling</td>
<td>Total Petroleum Hydrocarbon (TPH) sampling is a fairly costly exercise, with the results not expected to fluctuate significantly, unless there</td>
<td>Proposal by the applicant is acceptable</td>
<td>Proposal by the applicant is recommended</td>
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<td>NO</td>
<td>Appendix</td>
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<td>18</td>
<td>III</td>
<td>Section 50</td>
<td>4.7</td>
<td>Monitoring</td>
<td>Water quality testing to be performed on the pollution control dams 1ML, 9ML and 41ML, on a quarterly basis in order to determine the risks to the receiving environment.</td>
<td>Water quality testing to be performed on the pollution control dams 1ML, 9ML and 41ML, on a quarterly basis in order to determine the risks to the receiving environment.</td>
<td>There is no 41 ML dam at the opencast operation;</td>
<td>Clerical mistake.</td>
<td>Proposal by the applicant is recommended</td>
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<tr>
<td>19</td>
<td>III</td>
<td>Section 50</td>
<td>4.8</td>
<td>Monitoring</td>
<td>Water quality testing must be conducted quarterly on the wastewater stream from the pollution control dam 1 ML, 9ML and 41 ML. When returned back</td>
<td>Water quality testing must be conducted quarterly on the wastewater stream from the pollution control dam 1 ML, 9ML and 41 ML. When returned back</td>
<td>There is no 41 ML dam at the opencast operation; There is a 1 ML, 9 ML and 40 ML pollution</td>
<td>Clerical mistake.</td>
<td>Proposal by the applicant is recommended</td>
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<td>Condition</td>
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<td>20</td>
<td>III</td>
<td>Section 50</td>
<td>4.9</td>
<td>Monitoring</td>
<td>The licensee shall participate in any initiatives such as the Direct Estimation of Ecological Effect Potential (DEEEP) to determine the toxicity of complex tailing waste discharges. Both acute and chronic toxicity must be addressed and at least three taxonomic groups must be present when toxicity tests are performed.</td>
<td>The condition should be deleted</td>
<td>The operation does not produce any tailings waste.</td>
<td>Remove the condition as it is not applicable</td>
<td>Proposal by the applicant is recommended</td>
</tr>
<tr>
<td>21</td>
<td>III</td>
<td>Section 50</td>
<td>6.1</td>
<td>Reporting</td>
<td>The Licensee shall update the water balance annually and calculate the loads of waste emanating from the activities. The Licensee shall determine the contribution of their activities to the mass water balance for the water resource and furthermore co-operate with other water users in the catchment to determine the mass balance for the water resource reserve compliance point.</td>
<td>The Licensee shall update the water balance annually when there are changes on site and calculate the loads of waste emanating from the activities. The Licensee shall determine the contribution of their activities to the mass water balance for the water resource and furthermore co-operate with other water users in the catchment to determine the mass balance for the water resource reserve compliance point.</td>
<td>Request that water balance conducted when there are changes on site instead of annually.</td>
<td>This condition is a standard condition.</td>
<td>Proposal by the applicant is not recommended</td>
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</table>
| 22 | III      | Section 50     | 6.1       | Reporting | The Licensee shall submit the nature and the quality of the waste disposed into the following dams:  
- 1MI Pollution Control Dam  
- 9MI Pollution Control Dam  
- 6MI Pollution Control Dam | The Licensee shall submit the nature and the quality of the waste disposed into the following dams:  
- 1MI Pollution Control Dam  
- 9MI Pollution Control Dam  
- 6MI Pollution Control Dam | Inclusion of 40MI PCD | Clerical mistake. | Proposal by the applicant is recommended |
| 23 | III      | Section 50     | 7.9       | Storm Water Management | The polluted water captured in the storm water control dams shall be pumped to the process water treatment plant for reuse and recycling. | The polluted water captured in the storm water control dams 40 MI pollution control dam shall be pumped to the process water treatment plant for reuse and recycling.  
*Emalahleni Water Reclamation Plant for processing and alternatively used on site for dust suppression.* | Zibulo Opencast Colliery does not have a process water treatment plant on site. Water from the 40MI pollution control dam is pumped to the Emalahleni Water Reclamation Plant. Other uses include dust suppression. | Clerical mistake. | Proposal by the applicant is recommended |
| 24 | IV       | Section 50     | 8.1       | Plant areas and Conveyances | Pollution caused by spills from the conveyances must be prevented through proper maintenance and effective measures especially near all stream crossings. | Pollution caused by spills from the conveyances transfers must be prevented through proper maintenance and effective measures especially near all stream crossings. | Change of the word conveyances to transfers for ease of understanding. | Clerical mistake. | Proposal by the applicant is recommended |
| 24 | IV       | Section 50     | 3         | Specific Conditions | The quality of waste water disposed into the pollution control dams shall not exceed the following limits as specified in table 7 below. | Delete the condition | Replication of condition 3.1, appendix III, table 3. | Clerical mistake. | Proposal by the applicant is recommended |
ANNEXURE A
Licence Amendment