

IN THE WATER TRIBUNAL

IN THE APPEAL OF:

ENDANGERED WILDLIFE TRUST

FIRST APPELLANT

FEDERATION FOR A SUSTAINABLE ENVIRONMENT

SECOND APPELLANT

MPUMALANGA LANDBOU/AGRICULTURE

THIRD APPELLANT

AND

**DIRECTOR-GENERAL (ACTING),
DEPARTMENT OF WATER AND SANITATION**

FIRST RESPONDENT

ATHA-AFRICA VENTURES (PTY) LTD

SECOND RESPONDENT

NOTICE OF APPEAL IN TERMS OF SECTION 148(1) OF THE NATIONAL WATER ACT, 1998

(ACT NO. 36 OF 1998)

1. Take notice that the Appellants intend appealing at a date, time and place determined by the Tribunal Officer against the decision of the First Respondent to issue a water-use licence to the Second Respondent for its proposed Yzermyn underground coal mine situated in the Magisterial District of Wakkerstroom in Mpumalanga Province.
2. The First and Second Appellants appoint the Centre for Environmental Rights as their representative in this matter.
3. The Third Appellant appoints Noltes Attorneys as its representative in the matter.
4. Although separately represented, the First to Third Appellants bring this appeal as a joint appeal.

5. The First and Second Appellants will accept service of all documents in the above matter at the offices of their representative at 2nd Floor, Springtime Studios, 1 Scott Road, Observatory 7925, Cape Town.
6. The Third Appellant will accept service of all documents in the above matter at its offices at 124 Alwyn van Zyl Street, Ermelo, 2350.
7. The appeal is based in the following grounds:
 - 7.1. on account of the inadequate and inaccurate information in Atha's water-use licence application about the environmental sensitivity, vulnerability and importance of the proposed mining area and its surrounds, the Director-General failed to consider, alternatively adequately consider, the efficient and beneficial use of water in the public interest as required in terms of section 27(1)(c) of the National Water Act (**first ground of appeal**);
 - 7.2. on account of the inadequate and inaccurate information in Atha's water-use licence application about the risks and consequences posed by the proposed colliery pertaining to dewatering of aquifers and the decant of contaminated groundwater and acid mine drainage ('AMD'), cumulative impacts of the proposed colliery, as well as the impacts of the proposed colliery on downstream water users, the Director-General failed to consider, alternatively adequately consider, the likely effect of the proposed water uses to be authorised on the water resource and on other water users as required in terms of section 27(1)(f) of the National Water Act (**second ground of appeal**);
 - 7.3. the Director-General failed to consider, alternatively adequately consider, the 'precautionary' environmental management principle in section 2(4)(a)(vii) of the National Environmental Management Act ('NEMA'), as required in terms of section 2(1) of NEMA (**third ground of appeal**);

- 7.4. the Director-General's grant of exemption to Atha in terms of Government Notice 704 was unjustifiable (**fourth ground of appeal**);
- 7.5. on account of the failure of Atha's Integrated Water and Waste Management Plan and Environmental Impact Assessment Report to report objectively and fully on the possible effects of the proposed colliery on people living in the area, the Director-General failed to consider, alternatively adequately consider, the socio-economic impact of the water uses, if authorised, as required in terms of section 27(1)(d) of the National Water Act (**fifth ground of appeal**); and
- 7.6. the failure to give effect to the right to procedurally fair administrative action in terms of section 33 of the Constitution of the Republic of South Africa, 1996 and sections 3 and 4 of the Promotion of Administrative Justice Act, 2000 (**sixth ground of appeal**).
8. The written evidence in support of the appeal is set out hereinbelow.

SIGNED AND DATED AT **PRETORIA** ON THIS **15th** DAY OF **DECEMBER 2016**.

FIRST AND SECOND APPELLANTS' REPRESENTATIVE

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Mr Robert Mabe, Registrar

By hand

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Pretoria

WUL no.: 05/W51A/ACFGIJ/4726

File no.: 16/2/7/W51/Yzermyn

AND TO: DIRECTOR-GENERAL (ACTING), DEPARTMENT OF WATER AND SANITATION

Ms Nolwazi Gasas

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GROUNDS OF APPEAL

INTRODUCTION

1. This is an appeal to the Water Tribunal in terms of section 148(1)(f) of the National Water Act, 1998 ('the NWA') against the decision of the Director-General (Acting) ('DG') of the Department of Water and Sanitation ('DWS') on 7 July 2016 to issue a water-use licence ('WUL') (attached hereto as 'A') to Atha-Africa Ventures (Pty) Ltd ('Atha') under section 41 of the NWA for its proposed Yzermyn underground coal mine situated in the Magisterial District of Wakkerstroom in Mpumalanga Province.
2. The appeal against the issuing of the WUL is brought by the Appellants, who timeously lodged written objections against the application for the WUL as is required by section 148(1)(f) of the NWA (see the High Court case of *Escarpment Environment Protection Group and Another v Department of Water Affairs and Others*¹).
3. The appeal is brought timeously in that the reasons contemplated in section 148(3)(c) of the NWA ('WUL reasons') were received by the Appellants on 17 November 2016. The reasons are attached marked 'B'.
4. The First Appellant is the Endangered Wildlife Trust, a non-profit organisation whose strategies include the identification of human-induced threats and affected species in order to halt or

¹ *Escarpment Environment Protection Group and Another v Department of Water Affairs and Others, In Re; Escarpment Environment Protection Group and Another v Department of Water Affairs and Others, In Re; Escarpment Environment Protection Group and Another v Department of Water Affairs and Others* A666/11, 4333/12, 4334/12) [2013] ZAGPPHC 505 (20 November 2013)

reverse species decline; and the development of innovative, economically viable alternatives to address harmful impacts to the benefit of people and biodiversity.

5. The Second Appellant is the Federation for a Sustainable Environment, a non-profit organisation whose aim is to ensure that mining in South Africa is environmentally sound, particularly in the context of South Africa's scarce water resources.
6. The Third Appellant is Mpumalanga Landbou/Agriculture, a non-profit federation of agricultural organisations in the Mpumalanga Province and a provincial affiliate of Agri SA. Mpumalanga Agriculture's objectives include the development of the agricultural industry in Mpumalanga and the conservation of soil and water resources within the province.
7. Each of the Appellants has juristic personality. They comprise registered non-profit environmental conservation organisations and an agricultural association. Their objectives include environmental conservation and advancing the rights of those who are most vulnerable to the effects of environmental degradation.

PART A: THE PROPOSED YZERMYN UNDERGROUND COAL MINE IN OUTLINE

8. The Yzermyn underground coal mine would, if authorised, employ the conventional bord and pillar mining method, with an adit (a type of underground access-way) being sunk to access the underground coal seams. The conventional bord and pillar mining method involves the removal of large areas of coal while leaving *in place* 'pillars' of coal to hold up the roof of the underground mine. The project would involve the extraction, crushing, screening and stockpiling of coal product, as well as the transportation of the coal product for sale. The estimated life of mine is 15 years.²

² IWWMP pg 2

9. The extent of the underground workings and surface infrastructure is depicted in figure 3-2 (on page 48) of Atha's Integrated Water and Waste Management Plan³ ('IWWMP'). A copy of the relevant figure is attached marked 'C', with the underground workings depicted by a red border and the surface infrastructure labelled for ease of reference.
10. According to Atha, the surface layout of the mine has been re-configured during the lifespan of the project, which has included the removal of the originally-intended coal washing plant and discard dump/residue stockpile from the project proposal. The final surface layout of the mine infrastructure (referred to as the 'Best Environmental Option') is reflected on Annexure C hereto and has a surface footprint of approximately 22.4 hectares.
11. The proposed mining area is located in the quaternary catchment W51A of the Nkomati-Usutu Water Management Region.⁴ The predominant land uses to date in the area are non-industrial, involving commercial and subsistence agriculture and eco-tourism, due to the area's unique biodiversity.

PART B: ATHA'S GROUNDWATER AND WETLAND ASSESSMENTS

12. Atha commissioned two groundwater/geohydrological assessments as part of its environmental impact analyses of the proposed mine: a 'Specialist Study: Geohydrology Impact Assessment' by WSP Environmental (Pty) Ltd ('WSP') (Adam Smith) dated 3 September 2013 ('the WSP groundwater assessment'), which does not form part of the WUL application ('WULA') and is attached hereto marked 'D', and a groundwater assessment by Delta H dated August 2014 (Appendix H to the WULA) ('the Delta H groundwater assessment'). According to Atha, the Delta H groundwater assessment was commissioned on account of the revision of the surface

³ August 2015 (revision)

⁴ WUL reasons (Annexure B hereto) pg 2

infrastructure of the mine (the WSP groundwater assessment was based on the original surface layout).⁵

13. Atha's full faunal, floral, aquatic and wetland ecological assessment was conducted by Natural Scientific Services CC, producing a report dated September 2013 ('the NSS ecological assessment') (Appendices F8, F9, F10, F11, F12, F13, F14 and F15 to the WULA). In conducting its assessment, NSS relied on the findings of the WSP groundwater assessment.

14. A further wetland ecological assessment was conducted by Scientific Aquatic Services CC ('SAS'), producing a report entitled 'Wetland Ecological Assessment as part of the Environmental Assessment and Authorisation Process for the proposed Yzermine Coal Mining Project' dated June, August 2014 ('the SAS 2014 assessment') (Appendix F7 to the WULA). Both the NSS ecological assessment and the SAS 2014 assessment predated the determination of the 'Best Environmental Option' surface layout⁶, in other words, they are based on an outdated surface layout.

15. After the determination of the 'Best Environmental Option' surface layout, SAS conducted a delineation of the wetlands situated in the surface footprint area, producing a wetland delineation letter dated 9 December 2014 ('the SAS wetland delineation letter') (Appendix F1 to the WULA). In conducting the 2014 assessment and the wetland delineation, SAS relied on the findings of the Delta H groundwater assessment.

PART C: BACKGROUND CONTEXT

16. On 19 September 2014 the Director-General of the Department of Mineral Resources ('DMR') granted a coal mining right to Atha in terms of the Mineral and Petroleum Resources Development Act, 2002 ('MPRDA') in respect of the proposed Yzermyn underground coal mine.

⁵ See paragraph 9 above and IWWMP pg 164

⁶ See paragraph 9 above

On 14 April 2015 the Minister of Mineral Resources withdrew the grant of the mining right and issued a fresh mining right to Atha. On 7 June 2016 the Chief Director of the Mpumalanga Department of Agriculture, Rural Development, Land and Environmental Affairs granted environmental authorisation in terms of the National Environmental Management Act, 1998 ('NEMA') to Atha in respect of the Yzermyn mine. On 28 June 2016 the DMR approved Atha's environmental management programme in respect of the Yzermyn mine in terms of the MPRDA.

17. The First and Second Appellants are part of a coalition of eight community and civil society organisations, comprising (in addition to the Appellants) EarthLife Africa Johannesburg, BirdLife South Africa, the Mining and Environmental Justice Community Network of South Africa, groundwork, the Association for Water and Rural Development and the Bench Marks Foundation, who are challenging the lawfulness of these authorisations and approvals. The coalition has instituted proceedings in the High Court for the judicial review of the grant of the mining right on the basis that such grant is unlawful. The coalition has also appealed the grant of the environmental authorisation on the basis that such grant is unlawful. The coalition has furthermore appealed the approval of Atha's environmental management programme on the basis that said approval is unlawful. All of these proceedings are presently in progress and have not been determined.

18. Pursuant to the above-mentioned legal challenges, the coalition commissioned three scientific reviews of the specialist environmental impact assessments commissioned by Atha in respect of the Yzermyn project, as well as Atha's Environmental Impact Assessment Report ('EIAR'), environmental authorisation, WULA and WUL, as follows:

18.1. *'Review of Environmental Impact Assessment Report & Environmental Management Programme, and Environmental Authorisation, for Yzermyn underground coal project'* dated 17 August 2016 by Susie Brownlie, which is attached hereto marked 'E' ('the Brownlie review');

18.2. *'Review of the groundwater documentation related to the proposed Yzermyn Colliery'* dated August 2016 by Ingrid Dennis, which is attached hereto marked 'F' ('the Dennis review'); and

18.3. *'IWULA, IWUL and Specialist Investigation Review of the Yzermyn Colliery Mpumalanga'* dated 18 November 2016 by GCS Water and Environmental Consultants, which is attached hereto marked 'G' ('the GCS review').

19. These reviews form an integral part of this appeal.

PART D: THE WATER-USE LICENCE

20. On 7 July 2016 the DG issued a WUL to Atha authorising the following water uses on the farms Kromhoek 93 HT (comprising Kromhoek 93 HT: Remaining Extent ('RE') and Kromhoek 93 HT: Portion 1), Goedgevonden 95 HT, Yzermyn 96 HT: Portion 1, Zoetfontein 94 HT and Vaalbank 74 HT, in respect of the proposed Yzermyn underground coal mine:

20.1. taking water from a water resource (section 21(a) of the NWA), in particular the abstraction of groundwater from two specified supply wells (boreholes) on Kromhoek 93 HT: RE and Goedgevonden 95 HT;

20.2. impeding or diverting the flow of water in a watercourse (section 21(c) of the NWA) and altering the bed, banks, course or characteristics of a watercourse (section 21(i) of the NWA) pursuant to the construction and operation of the mine and associated infrastructure, including, amongst others:

20.2.1. the construction and operation of underground mining activities and voids on various wetland systems on Yzermyn 96 HT: Portion 1, Goedgevonden 95 HT, Kromhoek 93 HT and Zoetfontein 94 HT;

- 20.2.2. the partial destruction of a wetland system on Yzermyn 96 HT: Portion 1 pursuant to the construction and operation of a pollution control dam ('PCD') system;
 - 20.2.3. the construction and operation of the following infrastructure within 500 metres of various wetland systems on Yzermyn 96 HT: Portion 1:
 - 20.2.3.1. an adit;
 - 20.2.3.2. the main workshop platform;
 - 20.2.3.3. two coal stockpile slabs; and
 - 20.2.3.4. an office block and parking area;
 - 20.2.4. the construction and operation of various pipelines and clean- and dirty-water floodrains (drainage systems) through and/or within 500 metres of various wetland systems on Yzermyn 96 HT: Portion 1, Kromhoek 93 HT, Goedgevonden 95 HT and Vaalbank 74 HT;
 - 20.2.5. the construction and operation of various berms (artificial ridges or embankments) and canals through and within 500 metres of various wetland systems on Yzermyn 96 HT: Portion 1; and
 - 20.2.6. the construction and operation of two access roads through and/or within 500 metres of various wetland systems on Yzermyn 96 HT: Portion 1;
- 20.3. discharging waste or water containing waste into a water resource through a pipe, canal, sewer or other conduit (section 21(f) of the NWA) and disposing of waste in a manner which may detrimentally impact on a water resource (section 21(g) of the NWA), including:

- 20.3.1. discharging water containing waste (treated to a specified quality) into a wetland system on Yzermyn 96 HT: Portion 1;
- 20.3.2. disposing and storing contaminated water in a PCD on a wetland system on Yzermyn 96 HT: Portion 1;
- 20.3.3. the construction and operation of a sewage treatment plant on a wetland system on Yzermyn 96 HT: Portion 1;
- 20.3.4. the construction and operation of a wastewater treatment plant within 500 metres of various wetland systems on Yzermyn 96 HT: Portion 1; and
- 20.3.5. the use of PCD-process water for dust suppression on roads within the mining area within 500 metres of various wetland systems on Yzermyn 96 HT: Portion 1; and
- 20.4. removing, discharging or disposing of water found underground (section 21(j) of the NWA), in particular pumping out groundwater flowing into the adit and underground workings situated on various wetland systems on Yzermyn 96 HT: Portion 1, Goedgevonden 95 HT, Kromhoek 93 HT and Zoetfontein 94 HT.
21. The WUL has been issued for a period of 15 years, with a discretion on the part of the DWS to review the WUL every two years.⁷
22. It is apparent from the WUL that the Environmental and Social Impact Assessment Report and Environmental and Social Management Programme for the Yzermyn Underground Coal Mine (January 2015) ('the EIAR'), compiled pursuant to Atha's application for environmental

⁷ WUL (Annexure A hereto) para 4.1, pg 2

authorisation in terms of NEMA, was considered by the DG as part of the WULA.⁸ The EIAR without its annexures is attached hereto marked 'H'.

PART E: GROUNDS OF APPEAL

E.1 The failure to consider, alternatively adequately consider, the efficient and beneficial use of water in the public interest as required in terms of section 27(1)(c) of the NWA (first ground of appeal)

23. The footprint of the proposed mining area (surface infrastructure and underground operations) and the surrounding area are environmentally sensitive, vulnerable and important, from a regional and national perspective. The following key features are drawn from, amongst others, the NSS ecological assessment and the SAS 2014 assessment:

23.1. the quality of the surface and groundwater in the area has been monitored and determined to be good (mostly potable quality) with very little anthropogenic impacts;⁹

23.2. the surface and underground areas of the proposed mine coincide with several wetlands (see Annexure C hereto);¹⁰

23.3. the wetlands in the proposed mining area (surface infrastructure and underground operations) are considered to have a Category A Present Ecological State ('PES'), meaning that they are natural and unmodified.¹¹ The existing impacts on the wetlands caused by, among other things, alien invasive species and cattle tracks are very limited and minor in extent (it is important to note that these and other findings by NSS as regards wetlands within the then surface infrastructure footprint were based on actual fieldwork and that, as explained below, although the total area of the surface infrastructure footprint has

⁸ WUL (Annexure A hereto) para 1.2.1.8, pg 19;

⁹ Delta H (August 2014) pg 9; IWWMP pg 3

¹⁰ See also NSS pg 195

¹¹ NSS pg 196; SAS pg 63

since been decreased (as part of the 'Best Environmental Option'), the same wetlands are implicated, albeit smaller areas of them);¹²

23.4. the wetlands in the proposed mining area (surface infrastructure and underground operations) have a 'VERY HIGH' Ecological Importance and Sensitivity ('EIS'), meaning that the wetlands are considered to be ecologically important and sensitive on a national or even an international level, the biodiversity of these wetlands is likely to be very sensitive to flow and habitat modifications and the wetlands play a major role in moderating the quantity and quality of water of major rivers;¹³

23.5. the wetlands in the proposed mining area (surface infrastructure and underground operations) provide 'HIGH' eco-services in respect of the maintenance of biodiversity, erosion control, groundwater discharges, surface flow attenuation, and tourism and recreation;¹⁴

23.6. there are several springs within the proposed underground mining area;¹⁵

23.7. the proposed mine is situated in a Department of Water Affairs ('DWA') and Department of Environmental Affairs ('DEA') designated National Freshwater Ecosystem Priority Area ('FEPA')¹⁶ river catchment: numerous headwater and mountain streams flow from the proposed mining area into rivers that drain into the Assegai river, a B ecological category (i.e. largely natural) FEPA river.¹⁷ Furthermore there are six wetland FEPAs (of A/B

¹² NSS pgs 196-199

¹³ NSS pg 199; SAS pg 67

¹⁴ NSS pg 200

¹⁵ NSS pg 195. Although it appears from the IWWMP that the underground area to be mined is slightly smaller than the target area depicted in the NSS ecological assessment (NSS pg), there is a very large overlap between the two, and at least four of the springs would still fall within the underground mining area (compare IWWMP pg 14 with NSS ecological assessment (NSS pg 195))

¹⁶ NSS pgs 209 and 210; SAS pg 41

¹⁷ This refers to a system of classification developed by several organisations working together with organs of state including the DEA and DWA. The NFEPA project resulted in several guidelines one of which is that mining in any form should not be permitted in wetland FEPAs or within 1 km of a wetland/riverine FEPA buffer. The significance of the classification of an area as a FEPA is that it acquires the status of an ecosystem which the

ecological category, i.e. natural or largely natural) in close proximity to the proposed mine (some within 1 km of the underground mining area);¹⁸

23.8. the proposed mine is situated in the Enkangala Drakensberg Strategic Water Source Area, as determined by the South African National Biodiversity Institute ('SANBI') and the World Wide Fund for Nature: South Africa ('WWF-SA') as part of the DWA and DEA National Freshwater Ecosystem Project. The Strategic Water Source Areas are the 8% of South Africa's land area that provide 50% of our surface water run-off;¹⁹

23.9. the proposed mining site is situated at the headwaters of the Pongola, the Vaal and the Thukela Rivers;²⁰

23.10. the underground area to be mined falls within the Mabola Protected Environment which was declared as such on 22 January 2014 in terms of the National Environmental Management: Protected Areas Act, 2003,²¹ and furthermore the motivation for, and purpose of declaring the Mabola Protected Environment included protecting this environmentally sensitive, unique area which has irreplaceable biodiversity, against coal mining;²²

23.11. the underground and surface areas of the proposed mine fall within the Wakkerstroom/Luneberg Grasslands which are classified as '*Endangered*' in terms of the National Environmental Management: Biodiversity Act, 2004;²³

national sphere of government has recognised formally warrants special conservation (see for instance Notice No. 83 in Government Gazette 37302 dated 7 February 2014)

¹⁸ NSS pgs 22 and 209; SAS pg 41

¹⁹ See http://awsassets.wwf.org.za/downloads/wwf_sa_watersource_area10_lo.pdf (pg 46)

²⁰ See http://awsassets.wwf.org.za/downloads/wwf_sa_watersource_area10_lo.pdf (pg 46); EIAR (Annexure H hereto) pg 173

²¹ EIAR (Annexure H hereto) pg 43. Notice No. 20, *Mpumalanga Provincial Gazette* No. 2251, dated 22 January 2014. The project area also borders the Kwamandhlampisi Protected Environment to the east

²² The surface infrastructure of the mine will be situated on Yzermyn 96 HT: Portion 1, which is outside of and adjacent to the Mabola Protected Environment

²³ NSS pgs 204 and 208

- 23.12. the entire surface and underground areas of the proposed mine fall within an area identified by the DEA in the Mining and Biodiversity Guideline, 2013²⁴ as having the '*Highest Importance for Biodiversity*' and as being at the '*Highest Risk*' from mining – meaning that the area is viewed '*as necessary to ensure the protection of biodiversity, environmental sustainability, and human well-being*';²⁵
- 23.13. the surface infrastructure of the proposed mine falls largely within an area designated in the Mpumalanga Biodiversity Sector Plan 2013 ('the MBSP') as being an '*Optimal Critical Biodiversity Area*', while the underground workings of the mine fall largely within an area designated in the MBSP as being an '*Irreplaceable Critical Biodiversity Area*';²⁶
- 23.14. the proposed mine is situated in Rutherford & Westfall's (1994) Grassland Biome which has extremely high biodiversity, second only to the Fynbos Biome;²⁷
- 23.15. six floral species at a high risk of extinction in the wild were found by NSS in the study area, and 30 species which are listed as Protected Species under the Mpumalanga Conservation Act, 10 of 1998 have been found during surveys of the mining area;²⁸
- 23.16. twenty-one Conservation Important ('CI') mammals have been recorded previously in the proposed mining area, and eight CI mammal species, including one Endangered and five Near Threatened species, were found there by NSS;²⁹
- 23.17. eighteen CI bird species have been recorded in or near the proposed mining area, and NSS observed five CI species during surveys related to the project;³⁰

²⁴ The official citation of this document is the '*Department of Environmental Affairs, Department of Mineral Resources, Chamber of Mines, South African Mining and Biodiversity Forum, and South African National Biodiversity Institute. 2013. Mining and Biodiversity Guideline: Mainstreaming biodiversity into the mining sector. Pretoria.*' It is voluminous and is therefore not attached but it may be found on the DEA website

²⁵ NSS pgs 211 and 212

²⁶ NSS pg 215

²⁷ NSS pg 22

²⁸ NSS pgs 53-58 and 64-65

²⁹ NSS pgs 95-99

23.18. several globally, nationally or provincially Near Threatened reptiles and frogs are also likely to occur at the site;³¹

23.19. the mine will fall within an Important Bird Area ('IBA') identified by BirdLife International, which is considered to be '*one of the most important IBAs in Africa and ...vital for the conservation of a number of locally- and globally-threatened bird species, as well as the conservation of other fauna and flora*';³² and

23.20. the NSS ecological assessment concludes with the finding that the Yzermyn project '*is **fatally flawed, and should be NO GO in terms of Biodiversity.** This is largely because of the impact of the proposed underground mining on the **supply of water to the surface water resources (due to the de-watering activities) and the potential groundwater contamination.** These aspects will have a significant impact on **aquatic and wetland ecosystem functioning and biodiversity in a far greater area than the underground mining area.** These and other aspects of the mining project are in **strong conflict with international, national and provincial legislation, policies and guidelines.** A high number of CI species were detected, and most habitat in the proposed underground mining and surface infrastructure areas was assigned a **Very High or High sensitivity**'.³³ [own emphasis]*

24. We pause here to point out that the conclusion drawn in the NSS ecological assessment was based on the impacts of underground mining on surface water resources. Any change to the surface infrastructure layout would not alter this conclusion.

³⁰ NSS pgs 100-103

³¹ NSS pgs 104-106

³² NSS pg 213

³³ NSS pg 269

25. Notwithstanding the findings of the NSS ecological assessment and the SAS 2014 assessment, Atha's IWWMP and EIAR record the following regarding the environmental sensitivity, vulnerability and importance of the proposed mining area and its surrounds:

25.1. Atha's EIAR states: '*construction of the proposed surface infrastructure will result in removal of vegetation*', however '*the ecosystem is fragmented in the proposed areas of the surface infrastructure disturbance*'.³⁴ The IWWMP states further that '*the surface infrastructure site layout has been selected in an area with previously disturbed, marginal and degraded seep wetlands*'.³⁵ This assertion is repeated in the WUL reasons,³⁶ accordingly it is apparent that the DG relied on this information in deciding to issue the WUL. This information is fundamentally at odds with the following findings of the NSS ecological assessment and the SAS 2014 assessment:

25.1.1. as explained in paragraphs 23.3, 23.4 and 23.5 above, the wetlands in the proposed mining area (surface infrastructure and underground operations) have been found by NSS and SAS to have a Category A Present Ecological State ('PES') (meaning that they are natural and unmodified), a 'VERY HIGH' Ecological Importance and Sensitivity ('EIS') and as providing 'HIGH' eco-services; and

25.1.2. the findings of the NSS ecological assessment are that '*construction of the proposed surface infrastructure will result in **complete removal of vegetation and levelling of the area** ... The impact will be **long-term** as it will continue from the construction phase until de-commissioning ... **The main recommended mitigation measure is to avoid all areas of Very High and High sensitivity**. This would make the project a **No Go** as almost the entire ... area is rated as having a Very High or High sensitivity'* [own emphasis]. NSS records this impact as having a 'HIGH'

³⁴ EIAR (Annexure H hereto) pg vi

³⁵ IWWMP pg 3

³⁶ WUL reasons (Annexure B hereto) pg 7

significance (NSS's highest significance rating) without mitigation, with mitigation only lowering the impact significance to 'MEDIUM-HIGH'. In particular, NSS records that *'The proposed surface infrastructure footprint will result in direct loss of ... [various specified] vegetation communities ... The loss of these communities will also result in a loss of CI plant specimens and small populations.'*³⁷

25.2. The IWWMP states that *'no National Freshwater Ecological Priority Area (NFEPA) or local FEPA wetlands were identified in the direct sphere of influence of the YUCM [Yzermyn Underground Coal Mine] site'*³⁸ and the EIAR states that *'the NFEPA database does not indicate any wetlands on or adjacent to the study area...'*³⁹. This overlooks the following findings contained in specialist reports:

25.2.1. as explained in paragraph 23.7 above, the Assegaai River into which drainage from the mine will flow is a B ecological category (i.e. largely natural) FEPA river;

25.2.2. as further explained in paragraph 23.7 above, there are six wetland FEPAs (of A/B ecological category, i.e. natural or largely natural) in close proximity to the proposed mine (some within 1 km of the underground mining area); and

25.2.3. in respect of the proposed underground mining within 1 km of a wetland FEPA,⁴⁰ the NSS ecological assessment records that, *'...the greatest concern regarding the FEPA's is the potential impact of the mine on the water resources as a result of*

³⁷ NSS para 4.1, pg 239 to 241. It also appears from the NSS ecological assessment that the White Stork and Common Quail occur in the precise area where the surface infrastructure is to be placed, regardless of its revised configuration for the Best Environmental Option. The pentad into which the surface infrastructure will fall has remained the same (NSS ecological assessment (Appendix F10) Appendix 3 on pg 119 to 126 and Figure 2-1 on pg 74). These species are listed in Appendix II to the Convention on the Conservation of Migratory Species of Wild Animals to which South Africa acceded in 1991. South Africa therefore has an international obligation to endeavour to conclude international agreements covering their conservation and management. The authorisation of water uses which will negatively impact on these species is in conflict with such international obligation

³⁸ IWWMP pg 3

³⁹ EIAR (Annexure H hereto) pg 359

⁴⁰ See paragraph 23.7 above

underground water reduction due to de-watering activities and groundwater contamination due to sulphate seepage from the mine workings ... (WSP, 2013). Both the cone of depression and the groundwater contamination plume extend to the wetland FEPA's in the near vicinity' [own emphasis].⁴¹

25.3. The EIAR says that *'the most significant feature in terms of the freshwater priority area is the habitat for fish. As this is the origin of the system, it is unlikely that it will have a significant impact on the fish population.'*⁴² Apart from the fact that the negative impacts on FEPAs would have far wider consequences than just for fish populations,⁴³ according to the NSS ecological assessment reduced flow would hinder fish migration and could negatively affect three fish species of Conservation Importance which have been sampled in the Assegaai River catchment. If the flows in these systems change, these species will be lost in these rivers.⁴⁴ Moreover, changes in water quality could lead to species loss.⁴⁵ These impacts would undoubtedly be significant.

25.4. The EIAR contains the following statement as regards what the specialist studies say about the presence or absence of sensitive species: *'The specialist studies conducted found none of the sensitive species of mammals, butterflies, amphibians, reptiles or plants likely to be associated with these ecosystems. It is likely that these ecosystems do not support the biodiversity that is typical of the area as these ecosystems are no longer in their pristine condition.'*⁴⁶ These statements are entirely irreconcilable with the findings of the NSS ecological assessment.⁴⁷

⁴¹ NSS pg 209 and also sections E.2.1 and E.2.2 below

⁴² EIAR (Annexure H hereto) pgs 7 and 8

⁴³ See paragraph 25.1 above

⁴⁴ NSS para 8.8.4.2, pg 339

⁴⁵ NSS para 8.8.4.3, pg 343

⁴⁶ EIAR (Annexure H hereto) pg 7

⁴⁷ See paragraph 23 above and the Brownlie review (Annexure E hereto) pgs 13 and 14

26. Both the EIAR and the IWWMP place heavy reliance on the SAS wetland delineation letter to suggest that the revised surface layout will result in acceptable impacts. That approach is however materially undermined by the following:

26.1. GCS reviewed the SAS wetland delineation letter and found that based on the results obtained during the NSS ecological assessment and the SAS 2014 assessment '*the scientific veracity and value of the wetland delineation letter ... is questionable*';⁴⁸

26.2. While the NSS ecological assessment and the SAS 2014 assessment are detailed reports of 278 and 99 pages, respectively, the SAS wetland delineation letter is a 3 page letter which does not contain any information explaining the methodology utilised or the results obtained from the application of any methodology; and

26.3. SAS's own 2014 assessment (as well as the NSS ecological assessment) entailed both desktop and field-based investigations of the wetlands within the surface infrastructure area,⁴⁹ and there is no reason to believe that the EIS, PES and eco-services assessments in these reports are incorrect.

27. In addition to the aforesaid misstatements as regards the strategic importance of the water resource, neither Atha's IWWMP nor its EIAR mention that the proposed mine is situated in the Enkangala Drakensberg Strategic Water Source Area, as determined by SANBI and WWF-SA as part of the DWA and DEA National Freshwater Ecosystem Project. As explained in paragraph 23.8 above, the Strategic Water Source Areas are the 8% of South Africa's land area that provide 50% of our surface water run-off. WWF-SA explains this⁵⁰ to mean that '*water source areas (WSAs) provide a disproportionate amount of run-off to the rest of the catchment ... Downstream*

⁴⁸ GCS review (Annexure G hereto) pg 24

⁴⁹ As already noted, although the surface infrastructure was re-configured to the Best Environmental Option, this entailed a reduction of the surface infrastructure footprint. The Best Environmental Option surface footprint is accordingly contained within the original surface footprint

⁵⁰ See http://awsassets.wwf.org.za/downloads/wwf_sa_watersource_area10_lo.pdf

users and ecosystems are dependent on the healthy functioning of these areas to sustain good quality water supplies ... Disrupting water supply from these 16 strategic WSAs would effectively turn off the taps to our economy and seriously impact our food and water security' (pg 14). WWF-SA further explains that *'water is provided to us by healthy and functioning ecosystems'* (pg 2) and *'the health of our rivers and wetlands is measured by the diversity and health of the species ['microbes, plants and animals'] we share these resources with'* (pg 10). With respect to the Enkangala Drakensberg Strategic Water Source Area, WWF-SA explains that *'this source area supplies water to South Africa's economic hub, Gauteng, and it is also an important source for the agricultural sector in the KwaZulu-Natal and Free State provinces'* (pg 46).

28. From all of the above it is evident that, on account of the inadequate and inaccurate information in Atha's WULA (particularly the IWWMP, the EIAR and the SAS wetland delineation letter) about the environmental sensitivity, vulnerability and importance of the proposed mining area and its surrounds, the DG failed to adequately take into account the strategic importance of the water resource and its efficient and beneficial use in the public interest as required in terms of section 27(1)(c) of the NWA.

29. It is particularly evident from various conditions of the WUL that the DG failed to appreciate the severity of the impacts of the water-uses that she authorised. See for example the following:

29.1. The WUL stipulates the condition that *'the activities must be conducted in a manner that does not negatively affect catchment yield, hydrology and hydraulics. The Licensee must ensure that the overall magnitude and frequency of flow in the watercourse(s) does not decrease, other than for natural evaporative losses and authorised attenuation volumes'* (WUL para 2.4.2, pg 26).

29.2. In respect of riparian and in-stream habitat (vegetation and morphology), the WUL stipulates the conditions that *'existing vegetation composition must be maintained or*

improved by maintaining the natural variability in flow fluctuations...' (para 2.5.5, pg 27) and *'the current level of diversity of biotopes and communities of animals, plants and micro-organisms must be maintained'* (WUL para 2.6.3, pg 30).

29.3. In respect of rehabilitation and management, the WUL stipulates the condition that *'the rehabilitation of all wetlands on site as well as wetlands that were destroyed during mining must be reinstated as follows: The integrity (PES) score of any Category A and Category B wetland must not drop below 20% from the baseline. Prior to the end of Life of Mine, the condition of those wetlands must be brought back to baseline condition'* (WUL para 3.3, pg 30).

30. The findings of the NSS ecological assessment and the SAS 2014 assessment make it clear that none of these conditions are capable of being met.

E.2 The failure to consider, alternatively adequately consider, the likely effects of the water uses to be authorised on the water resource and on other water users, as required in terms of section 27(1)(f) of the NWA (second ground of appeal)

31. Inadequate and inaccurate information is included in the WULA about the risks and consequences posed by the proposed colliery pertaining to dewatering of aquifers and the decant of contaminated groundwater and acid mine drainage ('AMD'), cumulative impacts of the proposed colliery, as well as the impacts of the proposed colliery on downstream water users. This necessarily had the consequence that the DG failed to adequately take into account the likely effect of the proposed water uses on the quality and quantity of the water resource and impacts on other water users within the meaning of section 27(1)(f).

E.2.1 Inadequate and inaccurate information in the WULA about the risks and consequences of the dewatering of aquifers

32. Both the Delta H groundwater assessment and the WSP groundwater assessment conceptualise the following three aquifer systems underlying the mining (surface and underground) footprint: localised perched aquifer systems, a shallow weathered Karoo aquifer system and a deep fractured Karoo aquifer system.⁵¹ The perched aquifer systems are conceptualised as localised shallow-lying aquifers, which are directly recharged by rainfall and formed by the presence of low-permeability layers of clay, silt or rock, which confine the groundwater to shallow, lateral flow. The shallow aquifer is conceptualised as varying in depth between 5 to 20 metres below ground level and as being hydraulically connected to surface drainages and directly recharged by rainfall. The shallow aquifer is underlain by a deep aquifer of larger areal extent and long term yield.⁵²
33. The WSP and Delta H groundwater assessments conceptualise the presence of an aquitard⁵³ in the form of a semi-permeable dolerite sill between the shallow and deep aquifers.⁵⁴ According to Delta H the presence of this dolerite sill means that there is limited groundwater flow (leakage) from the shallow aquifer into the deep aquifer.⁵⁵ Any leakage would occur through structural discontinuities (e.g. fault planes or fracture zones) in the dolerite sill; however in its conceptual groundwater model Delta H assumes that the dolerite sill is ‘continuous and un-

⁵¹ Delta H paras 4.1 and 4.2, pgs 12 and 13; WSP para 4.1, pg 10

⁵² Delta H pg 15

⁵³ Aquitards are “*compacted layers of clay, silt or rock that retard water flow underground; that is, they act as a barrier for groundwater. Aquitards separate aquifers and partially disconnect the flow of water underground.*” (http://www.groundwater.com.au/media/W1siZiIsIjIwMTMvMDEvMTcvMjFfMDNfMjIjNzg0X1VuZGVyc3RhbmRpbmdfYXF1aXRhcmRzX2FuZF9hcXVpY2x1ZGVzX0ZlJTkfMlNkZiJdXQ/Understanding+aquitards+and+aquicludes_FINAL.pdf)

⁵⁴ Delta H paras 4.1 and 4.2, pgs 12 and 13; WSP paras 4.1 and 4.2, pgs 10 and 11

⁵⁵ Delta H para 8.1.1, pg 49: ‘The assigned low hydraulic conductivity of the dolerite sill overlying the proposed underground coal mine limits the vertical infiltration of water and hence the mine inflows.’

fractured'.⁵⁶ As explained below, the hydraulic connectivity of the shallow and deep aquifers is highly significant to the severity of the environmental impacts of the proposed colliery.

34. Atha intends to mine (underground) in the deep aquifer. This digging out of the deep aquifer would create an inflow of groundwater into the underground mine workings. During the construction and operational phases of the mine, the groundwater (inflow) would be pumped out of the underground workings (to enable operations). After the cessation of operations, the inflow would be allowed to occur and, over time, the mine voids would fill up/flood (the environmental impacts of this will be specifically and separately dealt with in section E.2.2 below).

35. Both the Delta H and the WSP groundwater assessments estimated the quantity of groundwater inflows into the underground mine workings and the groundwater impacts associated with the inflows coupled with the pumping out. According to Delta H and WSP, the groundwater inflow and pumping will result in reduced groundwater levels in (also called the 'dewatering' of) the aquifers above and in the vicinity of the workings.⁵⁷ Delta H predicts a maximum drawdown of 9 metres in the shallow aquifer and 50 metres in the deep aquifer,⁵⁸ while WSP predicts a maximum drawdown of 10 metres in the shallow aquifer and 55 metres in the deep aquifer.⁵⁹ Both Delta H⁶⁰ and WSP generated diagrams of the simulated dewatering (also called 'cones of depression' or 'cones of dewatering') of the shallow and deep aquifers, which are attached marked '11' and '12' respectively. These diagrams show that cones of dewatering in both the

⁵⁶ Delta H para 8.1.1, pg 49 and also pg 45: 'The low permeability of the dolerite intrusions and assumed closed faults limit flow across these structures.'

⁵⁷ Delta H para 8.2.1, pg 51; WSP para 5.2.1.2, pg 15

⁵⁸ Delta H figure 8.2, pg 52 and figure 8.3, pg 53

⁵⁹ WSP figures 11 to 14, pgs 38 to 41

⁶⁰ The varied tones of green shading on the diagrams depict the simulated cones of dewatering in metres, the underground mining footprint is depicted as a grid of black lines, and the springs are indicated by red dots

shallow and deep aquifers would extend for several kilometres away from the mine. The cones of dewatering generated by Delta H and WSP are comparable.⁶¹

E.2.1.1 Consequences of dewatering of the aquifers

36. The NSS ecological assessment assessed (in detail) the consequent impacts of the dewatering of the aquifers on the wetlands in the surface and underground mining areas⁶² on the basis of WSP's simulated cones of depression and reported the following findings:

36.1. *'This lowering in groundwater level will have a **negative impact** on all wetlands fed by the shallow aquifer and the springs within the cone of depression. These springs are one of the main sources of water for the wetlands in the area, supplying water during the drier winter months when the wetlands are not fed by rainfall. As the source of water supplying the wetlands is unknown, and the fact that the groundwater levels will be lowered in the shallow and deeper aquifers, one must assume that the wetlands within the cone of depression will be impacted upon and **may possibly dry out.**'*⁶³ [own emphasis]

36.2. *'The decrease in water input to the wetlands within the study area and surrounds, and the resultant reduction in flow, and potential drying up of wetlands will have a **HIGH significance on Biodiversity as a minimum of 40% of the underground mining area and surface infrastructure footprint area constitutes wetland habitat. The impact will also extend into and beyond the greater mine lease area.**'*^{64 65} [own emphasis]

⁶¹ See the Dennis review (Annexure F hereto) at pg 7 and the GCS review (Annexure G hereto) at pg 29

⁶² Note that although the NSS ecological assessment was based on an outdated layout of the mine surface infrastructure (i.e. it was composed prior to the determination of the 'Best Environmental Option'), the 'study area' of the assessment includes the current surface and underground mine footprint (see NSS figure 3-8, pg 195 in comparison to Annexure C hereto)

⁶³ NSS pgs 243 and 246

⁶⁴ See a diagrammatic depiction of the greater mine lease area in the NSS ecological assessment figure 2-1, pg 3

⁶⁵ NSS pgs 243 and 246

36.3. *'The loss or deterioration of the wetlands will extend beyond the study area and will extend into the **wetland FEPAs within the mine lease area and the wetland FEPAs and Wetland Clusters in the immediate surrounds** ... These systems are also the start of the catchment that feeds the **Assegaai River FEPA**, and a decline in water input will, therefore, result in a **decrease in flow of this river system.**'⁶⁶ [own emphasis]*

36.4. *'Approximately 40% [of the vegetation communities identified] within the mine lease area are moisture dependent. ... If the dewatering activities have a major effect on the wetland systems identified, these vegetation communities and the potential CI species found within these habitats will be affected and may change in structure in the long term.'*⁶⁷

36.5. *'Due to the **HIGH and long-term (if not irreversible) status of this impact in an area far exceeding the study area, the project should be a NO GO.**'⁶⁸ [own emphasis] NSS records this impact as having a 'HIGH' significance (NSS's highest significance rating) both without mitigation and with mitigation (in other words, NSS regards mitigation as being impossible).⁶⁹*

37. Referring to the Delta H groundwater assessment, Atha's IWWMP provides the following information regarding groundwater impacts:

*'The groundwater study indicates that two aquifer systems exist in the area: the shallow aquifer in the weathered zone and a deeper fractured Karoo aquifer on fracture zones. The link between these two aquifers is limited to intrusions and faults with a **low hydraulic connectivity**. The cone of water drawdown for the shallow aquifer is predicted to be about 8 m at its worst area of impact, due to mine dewatering and **could potentially have a limited impact on the wetlands in***

⁶⁶ NSS pg 246

⁶⁷ NSS pg 251

⁶⁸ NSS pg 253

⁶⁹ NSS para 4.2, pg 242

*the mine target area. The drawdown in the deeper aquifer is predicted to be more pronounced due the mining excavation into these rock formations.*⁷⁰ [own emphasis]

38. This information is based on a poorly-substantiated and highly risky assumption by Delta H of a continuous, un-fractured dolerite sill between the shallow and deep aquifers and is inconsistent with the findings of the NSS ecological assessment:

38.1. Delta H did not conduct any site-specific tests of the hydraulic conductivity (capacity to transmit water) of the dolerite sill and therefore, as Delta H itself admits,⁷¹ the conceptualisation of a continuous, un-fractured dolerite sill (and limited hydraulic connectivity between the aquifers) is merely an assumption. Rather, Delta H used its groundwater model to generate a ‘calibrated’ hydraulic conductivity value for the dolerite sill, and accepted this value because it falls within ‘literature ranges’.⁷² The GCS review records that the failure by Atha and Delta H to assess the hydrogeological characteristics of the dolerite sill means that the anticipated dewatering impact could not have been – and has not been – established sufficiently.⁷³

38.2. WSP also based its conceptualisation of the hydraulic conductivity of the dolerite sill on an assumption ‘based on similar experience’⁷⁴; however conceptualises greater connectivity between the shallow and deep aquifers.⁷⁵

38.3. Delta H itself records that it was not able to verify its groundwater model and considers the model to be of ‘low confidence’ due to, amongst other things, the lack of data in respect of the hydraulic conductivities of ‘faults and contact zones to dolerite dykes or

⁷⁰ IWWMP pg 3

⁷¹ Delta H para 8.1.1, pg 49

⁷² Delta H pg 45

⁷³ GCS review (Annexure G hereto) pgs 6 and 7. See also the GCS review section 7.1, pg 9

⁷⁴ WSP para 4.2, pg 11

⁷⁵ WSP para 4.2, pg 11; para 5.2.1.2, pg 15

sills'.⁷⁶ The Australian groundwater modelling guidelines (Barnett et al, 2012)⁷⁷ state that a low confidence (also referred to as a 'Class 1') model *'has relatively low confidence associated with any predictions and is therefore best suited for managing low-value resources (i.e. few groundwater users with few or low-value groundwater dependent ecosystems) for assessing impacts of low-risk developments or when the modelling objectives are relatively modest'*.⁷⁸ The GCS review comments that based on the results of Atha's specialist studies, as well as various statements in Atha's IWWMP and EIAR, *'it is evident that the area of and surrounding the proposed mining activity is a moderate to high value groundwater-dependant ecosystem. In light of this, a Class 3 model with a high level of confidence is required before a decision may be taken which will affect the resource'*.⁷⁹

38.4. In an attempt to address the uncertainty associated with the assumption of a continuous, un-fractured dolerite sill, Delta H conducted a sensitivity analysis on its groundwater model by varying the hydraulic conductivity of the dolerite sill. The results of this sensitivity analysis are that the anticipated groundwater inflows into the underground mine workings are *'highly sensitive to larger than expected conductivity values of the dolerite sill ... Should the dolerite sill ... be more permeable (e.g. fractured or weathered) than assumed, mine inflows are expected to increase substantially'*.⁸⁰ In other words, Delta H found that the dewatering of the shallow aquifer could in fact be substantially greater than predicted if the hydraulic conductivity of the dolerite sill is greater than assumed.

38.5. As explained in paragraph 36 above, the NSS ecological assessment recorded that the source of water supplying the wetlands is unknown, in other words it is unknown whether

⁷⁶ Delta H para 7.1, pg 47 and para 8.7, pg 69

⁷⁷ Which were referenced by Delta H

⁷⁸ GCS review (Annexure G hereto) pg 13

⁷⁹ GCS review (Annexure G hereto) pg 13

⁸⁰ Delta H para 8.1.1, pgs 49-50

the water source of the wetlands is the shallow aquifer, the deep aquifer and/or the localised perched aquifer systems referred to in paragraph 32 above. Accordingly, NSS concluded that it must be assumed that the wetlands within the cones of depression of the shallow and deep aquifers would be impacted upon and may possibly dry out.

E.2.1.2 Proposed mitigation measures

39. In Atha's 'Table 5-7: Identified risks and mitigation measures associated with each water use' submitted as part of its WULA, Atha identifies, amongst others, the following impacts pertaining to the underground mining activities and voids associated with the construction and mining (operational) phases of the proposed colliery,⁸¹ coupled with the following mitigation measures:⁸²

Impacts	Mitigation measures
'Cone of groundwater draw down could affect wetlands' 'Formation of groundwater cone of dewatering, leading to reduced recharge of wetland resources'	'Grout excessive inflows' 'Cover drilling to detect potential zones of high inflow' 'Pre-grout zones of potential excessive inflow'

40. Atha's proposed mitigation measures of grouting and pre-grouting any excessive (and potential excessive) inflows must be considered in light of GCS's comments as regards this method.⁸³ GCS makes two points in this regard. The first is that grouting has not been assessed by any of Atha's groundwater specialists and it may have its own impacts which have not been assessed. The

⁸¹ See paragraph 20.2.1 above

⁸² Table 5-7 pgs 61, 69, 70, 71 and 72

⁸³ GCS review (Annexure G hereto) pg 47

second is that although it is possible that grouting may reduce the anticipated inflows into the underground workings and therefore also reduce the anticipated drawdowns, this was not assessed or simulated by Delta H and it is therefore simply not known whether this proposed measure will reduce the dewatering impacts.

E.2.1.3 Conclusion under this head

41. In explaining its understanding of the project description in the WUL reasons (Annexure B hereto), the DG repeats Atha's abovementioned statement in its IWWMP (see paragraph 37 above), namely:

*'The groundwater study indicates that two aquifer systems exist in the area: the shallow aquifer in the weathered zone and a deeper fractured Karoo aquifer on fracture zones. The link between these two aquifers is limited to intrusions and faults with a **low hydraulic connectivity**. The cone of water drawdown for the shallow aquifer is predicted to be about 8 m at its worst area of impact, due to mine dewatering and **could potentially have a limited impact on the wetlands in the mine target area**. The drawdown in the deeper aquifer is predicted to be more pronounced due the mining excavation into these rock formations.'*⁸⁴ [own emphasis]

42. Furthermore, if one considers the following condition of the WUL, it is evident that the DG failed to sufficiently comprehend the anticipated dewatering impacts of the proposed colliery. The WUL stipulates the condition that *'the activities must be conducted in a manner that does not negatively affect catchment yield, hydrology and hydraulics. The Licensee must ensure that the overall magnitude and frequency of flow in the watercourse(s) does not decrease, other than for natural evaporative losses and authorised attenuation volumes'* (WUL para 2.4.2, pg 26). This is wholly out of touch with the findings of the NSS ecological assessment described above (see paragraph 36 above) that the dewatering will result in a decrease in water input into, and a

⁸⁴ WUL reasons (Annexure B hereto) pg 6

reduction in flow in the wetlands within the study area and surrounds (including the nearby FEPA wetlands), and consequently a decrease in flow in the Assegaai River FEPA. Importantly, NSS found these impacts to have 'HIGH' significance (NSS's highest significance rating) both without mitigation and with mitigation.

43. From all of the above it is evident that, on account of the inadequate and inaccurate information in Atha's WULA about the risks and consequences pertaining to the anticipated dewatering of the shallow and deep aquifers, the DG failed to adequately take into account the likely effect of the proposed water uses on the quantity of the water resource and impacts on other water users within the meaning of section 27(1)(f) of the NWA.

E.2.2 Inadequate and inaccurate information in the WULA about the risks and consequences of the decant of contaminated groundwater and AMD

44. As explained above, after the cessation of the proposed mining operations, the inflow of groundwater into the underground mine workings would be allowed to occur and, over time, the mine voids would fill up/flood.
45. The Delta H groundwater assessment indicates that *'it will take around 45 years for the mine voids ... to be completely flooded once active dewatering [pumping out] is stopped. Thereafter, decant from the underground mine voids via the adit and/or unsealed exploration boreholes in the vicinity are [highly]⁸⁵ likely to occur.'⁸⁶ Delta H also assessed the acid production and neutralisation potential of coal samples from a neighbouring mine and found that the majority of the coal samples were potentially acid generating.⁸⁷ AMD can occur after closure of coal mines when the mine voids fill with groundwater and contaminants released during the mining process pass into that water, which may then 'decant' to the surface.*

⁸⁵ Delta H para 8.6.2, pg 69

⁸⁶ Delta H pg 68

⁸⁷ Delta H pg 29

46. The SAS 2014 assessment reports that: *'The potential for post-closure decant of water from the underground mine void via the adit and/or unsealed exploration boreholes (Delta H, 2014) is of particular concern, as this will have a long term effect on surface water quality of not only on the wetlands within the study area, but also on aquatic resources within the greater catchment with special mention of the Assegaai River. ... Based on the findings of this study, it is the opinion of the ecologists that the project is regarded as having extremely high impacts; unless it is considered economically feasible to treat the decant water post-closure until water quality stabilizes, which could take many decades, to pre-mining water quality standards in such a way as to support the post closure land use, which is envisaged to be protected wilderness.'*⁸⁸

47. The NSS ecological assessment reports that:⁸⁹

47.1. *'The current groundwater and surface quality within the region of the study area is good ... Based on the predicted groundwater plume, and the surface water resources, the receiving environment for any surface or groundwater contamination is the Assegaai River. This river is a FEPA river. The NFEPA guidelines state that water quality must support keeping wetland FEPAs in good condition (equivalent to an A or B ecological category) for those currently in a good condition ...'*⁹⁰ (Note that the Assegaai River is classified as a B ecological category FEPA river i.e. it is currently in a good condition.⁹¹)

47.2. *'AMD represents the most severe impact of coal mining on water resources. ... The elevated location of the mine will lead to drainage of contaminated water away from the*

⁸⁸ SAS pg vi

⁸⁹ It is also worth noting that the authors of the NSS ecological assessment were concerned enough about the Yzermyn project to take the unusual step of registering as an interested and affected party in order to provide further input to Atha, and the further input which NSS did provide on 27 October 2014 was in unequivocal terms. Amongst other things, NSS (having now reviewed the Delta H groundwater assessment) said that the impact of the post closure decant of the mine alone could not justify the short-term economic gains of the mine

⁹⁰ NSS pg 260

⁹¹ SAS para 3.1.2, pg 41

*mine. Since the ... mine will be located in the headwaters of the Assegaai River ... it will threaten more than one water resource and thus users ... in the lower catchment’.*⁹²

47.3. Contamination of groundwater will impact on surface water quality downstream. *‘This contamination will impact on the PES of the wetlands and the eco-services the wetland sic can provide, the main one of which is the maintenance of Biodiversity.’*⁹³

47.4. *‘Severe deterioration in [water quality] can lead to a dramatic decrease in aquatic biota and ceased aquatic ecosystem functionality.’*⁹⁴

47.5. *‘Impacts of ... contamination on faunal species can include aspects such as a decline in general health, reduction in fecundity rates and birth defects.’*⁹⁵

47.6. The anticipated impact of decant of contaminated groundwater and the resultant impacts on surface water quality, wetlands, aquatic ecology and biodiversity is of ‘HIGH’ significance (NSS’s highest significance rating) both without mitigation and with mitigation (in other words, NSS regards mitigation of this impact as being impossible).⁹⁶

48. With apparent disregard of the scientific evidence detailed above, Atha’s EIAR asserts that *‘the scientific evidence indicates no risk on the [water] quality during the 15 year life of mine with limited risk post closure that can effectively be mitigated’.*⁹⁷ In Atha’s ‘Table 5-7: Identified risks and mitigation measures associated with each water use’ submitted as part of its WULA, Atha identifies, amongst others, the following impact pertaining to the underground mining activities

⁹² NSS pg 255

⁹³ NSS pg 255

⁹⁴ NSS pg 256

⁹⁵ NSS pg 259

⁹⁶ NSS pg 254

⁹⁷ EIAR (Annexure H hereto) pg 7

and voids associated with the post-mining phase of the proposed colliery,⁹⁸ coupled with the following mitigation measures:⁹⁹

Impacts	Mitigation measures
'Cone of groundwater draw down recovers'	'Treat and release decant water from underground workings.'

49. Atha's IWWMP further states that, *'It is anticipated that water containing contaminants will be generated; therefore, a water treatment plant will be required for the mine. The water treatment plant may be contracted to a third party and constructed with capacity to treat excess water to discharge quality. It is anticipated that the water treatment plant will also be required to be operational following mine closure in order to treat decant from the mine. It is proposed that a modular water treatment plant be installed during the operational phase to meet the requirements of the mine. ...'*¹⁰⁰

50. Atha's EIAR provides further that, *'It is recommended that the treated decant emanating from the treatment plant must be discharged to the adjacent hillslope seepage wetlands making use of a spigot which then drains into a sand filter along the edge of the hillslope seepage wetland ... This mitigation method will impact on wetlands (positively and negatively).'*¹⁰¹

⁹⁸ See paragraph 20.2.1 above

⁹⁹ Table 5-7 pgs 61, 69, 70, 71 and 72

¹⁰⁰ IWWMP pg 20

¹⁰¹ EIAR (Annexure H hereto) pg viii

51. Commenting on the Delta H groundwater assessment, as well as the above statements in Atha's IWWMP and EIAR, the GCS review found that although Delta H, the IWWMP and the EIAR record that decant is expected:¹⁰²

51.1. Delta H failed to simulate the anticipated contaminant plume from the mine workings.

The contaminant plume is likely to migrate down-gradient in the shallow aquifer from the location of the underground mining. As is evident from the Delta H groundwater assessment, the post-closure mine water quality, and accordingly the contaminant plume, is likely to be characteristic of AMD. In the absence of a simulated contaminant plume, it is not possible to identify the water users, wetlands and areas most likely to be affected by groundwater contamination.¹⁰³

51.2. Delta H failed to assess the hydrogeological characteristics of the dolerite sill which it conceptualised to be present between the shallow and deep aquifers,¹⁰⁴ accordingly the migration of potential contaminant plumes from the underground mine workings could not have been – and has not been – established sufficiently.¹⁰⁵ According to GCS, a sill with a higher hydraulic conductivity than that used in the Delta H groundwater assessment could result in higher decant volumes.¹⁰⁶

51.3. Delta H failed to utilise geochemical modelling and failed to conduct a site-specific assessment to determine the anticipated post-closure decant water qualities and quantities. Accordingly this information – which is necessary for the conceptual design of the water treatment plant – is not available.¹⁰⁷

¹⁰² GCS review (Annexure G hereto) pg 19

¹⁰³ GCS review (Annexure G hereto) pg 15

¹⁰⁴ See paragraph 38.1 above

¹⁰⁵ GCS review (Annexure G hereto) pg 7

¹⁰⁶ GCS review (Annexure G hereto) section 8.1.1, pg 11

¹⁰⁷ GCS review (Annexure G hereto) pgs 14 and 19

51.4. The concept design of the water treatment plant (as described in Atha's IWWMP¹⁰⁸) has not been reviewed by any environmental specialists. The design of the water treatment plant should have been reviewed and finalised pre-mining in order to determine whether the mine is financially viable (the water treatment plant and decant management system are usually large expenses, which could influence the financial viability of the mine project). This information should have been before the DG in order to make a decision on the WULA, particularly considering condition 14.1 of the WUL (pg 48) which states that: *'The water user must ensure that there is a budget sufficient to complete and maintain the water use and for successful implementation of the rehabilitation programme'*.¹⁰⁹

51.5. The mitigation measure of discharging treated water into the wetlands may be plausible but has not been assessed by any environmental specialists and it is unknown what the environmental consequences of the impact will be (positive or negative).¹¹⁰

51.6. On account of the absence of any proper assessment of the risks posed by AMD, the statement in Atha's IWWMP that, *'[v]ery little direct impact on surface water is expected from the mining operation ... All water management infrastructure will be in place to stop polluted water from reaching any surface water resource'* is unsubstantiated.¹¹¹ GCS advises that *'[w]ere AMD taken into account, the water quality-related risks and mitigation measures would change. Accordingly, the existing water quantity-related and water-quality risks and mitigation methods are potentially inaccurate and inappropriate.'*¹¹²

52. Commenting on Atha's EIAR, the Brownlie review found that the *'long-term treatment of decant water is not addressed'*, *inter alia*, because *'according to ... [Atha's environmental management*

¹⁰⁸ IWWMP pg 20

¹⁰⁹ GCS review (Annexure G hereto) pg 14 and 20

¹¹⁰ GCS review (Annexure G hereto) pg 16

¹¹¹ GCS review (Annexure G hereto) pg 38

¹¹² GCS review (Annexure G hereto) pg 48

programme], *monitoring is recommended only for two years post mine closure, which is wholly inadequate in light of the anticipated long-term burden of AMD decant into receiving freshwater systems.*¹¹³

53. From all of the above it is evident that, on account of the inadequate and inaccurate information in Atha's WULA about the risks and consequences pertaining to the decant of contaminated groundwater and AMD, the DG failed to adequately take into account the likely effect of the proposed water uses on the quality of the water resource and impacts on other water users within the meaning of section 27(1)(f) of the NWA.
54. The DG's failure to sufficiently consider the risks and consequences pertaining to the decant of contaminated groundwater and AMD is particularly evident if one has reference to the following conditions of the WUL:
- 54.1. In respect of riparian and in-stream habitat (vegetation and morphology), the WUL stipulates the conditions that *'existing vegetation composition must be maintained or improved by maintaining the natural variability in flow fluctuations...'* (para 2.5.5, pg 27) and *'the current level of diversity of biotopes and communities of animals, plants and micro-organisms must be maintained'* (WUL para 2.6.3, pg 30).
- 54.2. In respect of rehabilitation and management, the WUL stipulates the condition that *'the rehabilitation of all wetlands on site as well as wetlands that were destroyed during mining must be reinstated as follows: The integrity (PES) score of any Category A and Category B wetland must not drop below 20% from the baseline. Prior to the end of Life of Mine, the condition of those wetlands must be brought back to baseline condition'* (WUL para 3.3, pg 30).

¹¹³ Brownlie (Annexure E hereto) pg 7. See pg 737 of the EIAR (Annexure H hereto), where it is envisaged that that *'[c]ontinued groundwater quality and groundwater level monitoring for a period of two years after mining ceases is required to establish post-closure groundwater level and quality trends'*, despite Delta H's finding that decant will commence approximately 45 years post-closure (see paragraph 45 above)

54.3. The WUL stipulates the condition that *'The Licensee must ensure that the wetlands must not be polluted or destroyed because of the activities occurring within the Yzermyn Underground Coal Mine site'* (WUL para 12.7, pg 47).

55. These conditions are wholly out of touch with the findings of the SAS 2014 assessment and the NSS ecological assessment (see paragraphs 46 and 47 above) that the post-closure decant of contaminated water and AMD from the underground mine voids will have a long term negative effect on the surface water quality of the wetlands within the study area and aquatic resources within the greater catchment (including the Assegaii River FEPA), and consequently a negative impact on the PES of the wetlands (which presently have a Category A PES¹¹⁴) and on aquatic and terrestrial biodiversity. Importantly, NSS found these impacts to have 'HIGH' significance (NSS's highest significance rating) both without mitigation and with mitigation.

E.2.3 Inadequate and inaccurate information in the WULA about cumulative impacts

56. The Environmental Impact Assessment Regulations¹¹⁵ under NEMA define cumulative impact as *'the past, current and reasonably foreseeable future impact of an activity ... that in itself may not be significant, but may become significant when added to the existing and reasonably foreseeable impacts eventuating from similar or diverse activities'*.

57. Atha's IWWMP states that, *'[t]he cumulative impacts of the proposed development (underground mining and surface infrastructure), current agricultural and tourism, and future mining activities have been assessed. Although the proposed project will impact on most of the environmental parameters **the cumulative impact of the mine and other activities is not considered to be significant**. This can mainly be attributed to the low level of impact that the tourism and scattered agricultural activities have on the environment, as well as the limited*

¹¹⁴ See paragraph 23.3 above

¹¹⁵ GN. R. 982 of GG. 38282 dated 4 December 2014

*disturbance of the proposed new underground coal mine when all mitigation measures are effectively implemented.*¹¹⁶ [own emphasis]

58. This broad statement that *'the cumulative impact of the mine and other activities is not considered to be significant'* is unsubstantiated and inaccurate, and in fact contradicts various information in Atha's IWWMP and EIAR, as well as the specialist assessments commissioned by Atha:

58.1. The IWWMP and EIAR fail to take the Loskop Coal Mine into consideration in assessing cumulative impacts, although this mine is 2km east of the proposed Yzermyn project and falls in the Mabola Protected Environment.¹¹⁷ According to Brownlie, *'[t]his omission is serious and negates any conclusions drawn about the severity of cumulative impacts on biodiversity and water resources'*.¹¹⁸

58.2. Atha's IWWMP quotes the following findings of the NSS ecological assessment regarding cumulative impacts: there are currently numerous applications for mining within the greater southern Mpumalanga study region and, if a significant portion of these are approved, the potential cumulative impacts of anthropogenic land use in the region would include *'reduction and deterioration of regional groundwater'*, *'deterioration and loss of wetland habitat, species, ecosystem functioning and services'* and *'reduction in the richness and abundance of floral and faunal species'*.¹¹⁹

58.3. The WSP groundwater assessment, Delta H groundwater assessment and SAS 2014 assessment did not assess cumulative impacts. The surface water assessment commissioned by Atha, which was conducted by WSP and is Annexure E1 to the WULA ('WSP surface water assessment') briefly assessed cumulative impacts and asserted that

¹¹⁶ IWWMP pg 4

¹¹⁷ Curiously, this information is provided in the EIAR (Annexure H hereto) pg 95

¹¹⁸ Brownlie review (Annexure E hereto) pg 9

¹¹⁹ IWWMP pg 214, NSS pg 267

'the cumulative impacts with regards to water quality and quantity are expected to be limited'.¹²⁰ This assertion was quoted in Atha's EIAR.¹²¹ However WSP's brief analysis, and consequently its assertion of limited cumulative impacts with regards to water quality and quantity, is flawed for the following reasons:

58.3.1. WSP did not assess any cumulative impacts associated with other mining activity, including the Loskop Coal Mine, and only took into account the proposed Yzermyn project and urban and agricultural activities.¹²²

58.3.2. The WSP surface water assessment was conducted on the basis of inaccurate and outdated assumptions regarding the dewatering¹²³ and decant¹²⁴ impacts of the proposed colliery.

59. From all of the above it is evident that, on account of the inadequate and inaccurate information in Atha's WULA about cumulative impacts, the DG failed to adequately take into account the likely effect of the proposed water uses on the water resource and impacts on other water users within the meaning of section 27(1)(f) of the NWA .

E.2.4 Inadequate information in the WULA about impacts on downstream water users

60. This ground of appeal asserts that the DG could not have, and accordingly failed to, adequately consider the likely effects of the water uses to be authorised on other water users as required in terms of section 27(1)(f) of the NWA, because of a fundamental lack of information about the anticipated impacts of the proposed colliery on downstream water users.

¹²⁰ WSP surface water assessment pg 30

¹²¹ EIAR (Annexure H hereto) pg 298

¹²² Brownlie review (Annexure E hereto) pg 9 and WSP surface water assessment para 10.4, pg 29

¹²³ See section E.2.1 above versus WSP surface water assessment para 7.1.2, pg 8

¹²⁴ See section E.2.2 above versus WSP surface water assessment para 7.1.2, pg 8

61. EcoPartners CC ('EcoPartners'), one of Atha's environmental assessment practitioners, prepared the Downstream Water Usage report¹²⁵ for the proposed colliery (annexure G to the WULA), despite lacking the necessary expertise and experience of a specialist in this area. The Brownlie review makes the following observations, amongst others, in respect of the Downstream Water Usage report.¹²⁶

61.1. the report is *'unacceptable' – 'it lacks rigour and a systematic analysis' and 'makes a number of vague and wholly inadequate and inconclusive statements'*;

61.2. *'it gives information on the present ecological state of the affected river systems, and on potential risks of pollution and flow changes, without quantifying the predicted effects on economic activities'*;

61.3. *'impacts on springs, boreholes, floods and droughts are not assessed'*; and

61.4. *'the study focuses only on surface water resources, ignoring the potential influence of groundwater recharge (the process whereby water moves from the surface to underground) affecting water users'*.

62. The inadequacy of the Downstream Water Usage report is particularly concerning given the findings of Atha's environmental specialists (the Delta H groundwater assessment, the WSP groundwater assessment, the NSS ecological assessment and the SAS 2014 assessment) of significant environmental impacts well beyond the mining area (see paragraphs 23.20, 25.1.2, 25.2.3, 35, 36, 46 and 47 above). Consequently, it is also concerning that the assessment of downstream water usage in Atha's IWWMP is entirely based on the inadequate Downstream Water Usage report.¹²⁷

¹²⁵ Dated August 2014

¹²⁶ Brownlie review (Annexure E hereto) pgs 4 and 5

¹²⁷ IWWMP pgs 76 to 77 and 226 to 233

63. It is evident from the WUL¹²⁸ and the WUL reasons¹²⁹ that the Downstream Water Usage report was relied upon by the DG in deciding whether to grant the WUL. However, given the inadequacy of the Downstream Water Usage report, the DG could not have, and accordingly failed to, adequately consider the likely effects of the water uses to be authorised on other water users as required in terms of section 27(1)(f) of the NWA.

E.3 The failure to consider, alternatively adequately consider, the ‘precautionary’ environmental management principle of NEMA (third ground of appeal)

64. Section 2(4)(a)(vii) of NEMA provides that sustainable development requires the consideration of all relevant factors including that *‘a risk-averse and cautious approach is applied, which takes into account the **limits of current knowledge** about the consequences of decisions and actions’* (the so-called ‘precautionary principle’) [own emphasis]. In terms of section 2(1) of NEMA, NEMA’s national environmental management principles, including the precautionary principle, apply throughout South Africa to the actions of all organs of state that may significantly affect the environment and:-

64.1. serve as guidelines by reference to which any organ of state must exercise any function when taking any decision in terms of, amongst others, the NWA; and

64.2. serve as principles by reference to which a conciliator appointed under, amongst others, the NWA must make recommendations.

65. The precautionary principle is significant to the decision to issue a WUL to Atha in respect of the proposed colliery due to the fundamental deficiencies in the environmental impact assessments (specialist studies) which form the backbone of Atha’s WULA.

¹²⁸ WUL (Annexure A hereto) para 1.2.1.4, pg 19

¹²⁹ WUL reasons (Annexure B hereto) 2.1.4, pg 5

66. An understanding of the groundwater impacts of the proposed colliery is the keystone of any meaningful assessment of the surface water, wetland and biodiversity-related impacts of the proposed colliery. This is because the most significant impacts of the proposed colliery are, and are related to, the dewatering of the groundwater aquifers below and in the vicinity of the proposed mining area and the decant of contaminated groundwater water and AMD from the underground mine workings.¹³⁰ The Delta H groundwater assessment is Atha's most recent and sophisticated groundwater study. However, as explained extensively in the GCS review, the results (predictions) of the Delta H groundwater model are of a low confidence for the following reasons:

66.1. Delta H itself admits that its model is low confidence because it is based on dry-season groundwater information only, and accordingly does not account for the seasonal variability of water levels and attendant impacts;¹³¹

66.2. Delta H failed to sufficiently establish the hydraulic conductivity of the dolerite sill, but nonetheless relied on an assumption of a continuous, un-fractured dolerite sill (and limited hydraulic connectivity between the shallow and deep aquifers) in generating results regarding dewatering of the aquifers and decant of contaminated water. Delta H relied on this assumption of a continuous, un-fractured dolerite sill despite its own sensitivity analysis revealing that anticipated groundwater inflows into the underground mine workings increase substantially with a more hydraulically conductive dolerite sill (see paragraphs 38.1 to 38.4 above). Furthermore, according to GCS, a sill with higher hydraulic conductivity than that used in the Delta H groundwater assessment could result in higher decant volumes;¹³²

¹³⁰ See sections E.2.1 and E.2.2 above, as well as paragraph 23.20 above

¹³¹ GCS review (Annexure G hereto) section 1.3, pg 6; section 6.3.1, pgs 7 and 8; section 6.5, pgs 8 and 9

¹³² GCS review (Annexure G hereto) section 8.1.1, pg 11

- 66.3. Delta H failed to assess the cumulative drawdown impact of the dewatering of the aquifers due to the pumping out of groundwater from the underground mine workings as well as the abstraction of groundwater from two specified boreholes (which abstraction has been authorised as part of the WUL – see paragraph 20.1 above);¹³³
- 66.4. Delta H failed to simulate the anticipated contaminant plume from the underground mine workings (see paragraph 51.1 above);¹³⁴ and
- 66.5. Delta H failed to determine the anticipated post-closure qualities and quantities of groundwater decant from the underground mine workings (see paragraph 51.1above).
67. As explained in paragraph 38.3 above, the Australian groundwater modelling guidelines (Barnett et al, 2012)¹³⁵ state that a low confidence (also referred to as a ‘Class 1’) model *‘has relatively low confidence associated with any predictions and is therefore best suited for managing low-value resources (i.e. few groundwater users with few or low-value groundwater dependent ecosystems) for assessing impacts of low-risk developments or when the modelling objectives are relatively modest’*.¹³⁶
68. The GCS review comments that, based on the results of Atha’s specialist studies, as well as various statements in Atha’s IWWMP and EIAR, *‘it is evident that the area of and surrounding the proposed mining activity is a moderate to high value groundwater-dependant ecosystem. In light of this, a Class 3 model with a high level of confidence is required before a decision may be taken which will affect the resource’*.¹³⁷ GCS states unequivocally that, due to the low confidence of the

¹³³ GCS review (Annexure G hereto) section 6.3.2, pg 8

¹³⁴ See also the Dennis review (Annexure F hereto) pg 7

¹³⁵ Which were referenced by Delta H

¹³⁶ GCS review (Annexure G hereto) pg 13

¹³⁷ GCS review (Annexure G hereto) pg 13

Delta H groundwater model, it *'should not be used in its current state for any decision-making'*.¹³⁸

69. The deficiencies in the Delta H groundwater assessment represent a fundamental limitation in the current knowledge of the environmental impacts of the proposed colliery. This limitation in current knowledge extends beyond limitations in knowledge about the groundwater impacts of the proposed colliery, to limitations in current knowledge about the surface water, wetland and biodiversity-related impacts.¹³⁹ Furthermore, the current knowledge of the groundwater, surface water, wetland and biodiversity-related impacts of the proposed colliery – which is based on a conservative understanding of the groundwater impacts of the proposed colliery¹⁴⁰ – indicates a high likelihood that the proposed colliery would have significant environmental impacts on an environmentally sensitive, vulnerable and important area,¹⁴¹ well beyond the footprint of the proposed mining area.¹⁴²

70. It is evident from the WUL reasons that the DG (and the Environment and Recreation Section of the DWS), also regarded the current information in the WULA to be inadequate insofar as it recommended the following conditions be included in the WUL:

70.1. *'The old information of the studies and the application forms must be updated as per the presentation and inputs provided'*; and

70.2. *'A 2-3 page written motivation must be provided that the ecological risks and impacts posed to the characteristics (surface flow, interflow, groundwater flow, water quality,*

¹³⁸ GCS review (Annexure G hereto) pg 13

¹³⁹ The Delta H groundwater assessment, NSS ecological assessment and the SAS 2014 assessment, as well as the WSP surface water assessment (despite it having been conducted on the basis of inaccurate and outdated assumptions regarding the dewatering and decant impacts of the proposed colliery), are unequivocal in their findings that the groundwater dewatering and decant impacts are highly likely to have attendant impacts on surface water, wetlands and biodiversity – see paragraphs 23.20, 25.2.3, **Error! Reference source not found.**, 36, 46 and 47 above and the WSP surface water assessment para 7.1.2, pg 8

¹⁴⁰ This is primarily due to Delta H's assumption of a continuous, un-fractured dolerite sill - see paragraphs 38.1 to 38.4 and 51.2 above

¹⁴¹ See paragraph 23 above

¹⁴² See paragraphs 23.20, 25.1.2, 25.2.3, **Error! Reference source not found.**, 36, 46 and 47 above

geomorphology, habitat and biota) of the watercourses involved are minimal and that the mine will have no negative impacts on the Mabolo sic Protected Area' (para 3.2.1, pgs 41 and 42).

71. On the basis of the current knowledge of the groundwater, surface water, wetland and biodiversity-related impacts of the proposed colliery '*a risk-averse and cautious approach ... which takes into account the limits of current knowledge about the consequences of decisions and actions'*, within the meaning of the precautionary principle, undoubtedly requires that Atha be denied a WUL in respect of the proposed colliery. Accordingly, it is evident that the DG failed to adequately consider the precautionary principle in deciding to issue the WUL. Furthermore, it was wholly inappropriate for the Environment and Recreation Section of the DWS to recommend that the obvious deficiencies in current knowledge of the environmental impacts of the proposed colliery be addressed by, amongst others, the aforesaid '*2-3 page written motivation'* to be provided to the DWS after the issue of the WUL. It was inappropriate to issue the WUL in the face of such deficiencies.

E.4 The grant of exemption in terms of Government Notice 704 was unjustifiable (fourth ground of appeal)

72. The WUL granted Atha exemption from the requirement in regulation 4(b) of Government Notice 704, being the *Regulations on use of Water for Mining and Related Activities aimed at the Protection of Water Resources* in terms of the NWA (the NWA Regulations),¹⁴³ that no person in control of a mine may carry on any underground mining within a horizontal distance of 100 metres from any watercourse or estuary in order for Atha to conduct underground mining below various specified wetlands.

¹⁴³ GG 20119, 4 June 1999

73. Under this ground of appeal the Appellants contend that the DG's decision to grant this exemption to Atha was unjustifiable. In making this submission, the Appellants are not suggesting that to succeed on appeal they have to meet the same standard as they would in a judicial review application in order to have the impugned decision set aside. On the contrary, this matter constitutes an appeal and the Water Tribunal is entitled to consider the entire matter afresh and replace the decision of the DG with its own decision.

74. In its IWWMP Atha proposed, amongst others, the following mitigation measures in motivation for the grant of the exemption:¹⁴⁴

74.1. *'Any significant water ingress into the underground workings will be reduced by grouting';*
and

74.2. *'All impacted wetlands will be rehabilitated after mine closure. As a contingency, the mine will discharge treated (clean) mine water into effected wetlands, should the undermined wetlands experience reduced functionality due to proven mining impacts.'*

75. Atha's proposed mitigation measure of grouting any significant water ingress must be considered in light of GCS's comments as regards this method.¹⁴⁵ As pointed out above, GCS makes two points in this regard. The first is that grouting has not been assessed by any of Atha's groundwater specialists and it may have its own impacts which have not been assessed. The second is that although it is possible that grouting may reduce the anticipated inflows into the underground workings and therefore also reduce the anticipated drawdowns, this was not assessed or simulated in the Delta H groundwater assessment and it is therefore simply not known whether this proposed measure will reduce the dewatering impacts.

¹⁴⁴ IWWMP pg 225

¹⁴⁵ GCS review (Annexure G hereto) pg 47

76. GCS further commented that the mitigation measure of discharging treated water into the wetlands may be plausible but has not been assessed by any environmental specialists and it is unknown what the environmental consequences of the impact will be (positive or negative).¹⁴⁶

77. In respect of the bald statement by Atha that *'all impacted wetlands will be rehabilitated after mine closure'*, attention is drawn to the following information in the environmental assessments commissioned by Atha which reveals that meaningful rehabilitation is likely not possible:

77.1. the wetlands in the proposed mining area have a 'VERY HIGH' Ecological Importance and Sensitivity ('EIS'), meaning, amongst others, that the biodiversity of these wetlands is likely to be very sensitive to flow and habitat modifications;¹⁴⁷

77.2. the Yzermyn project *'is fatally flawed, and should be NO GO in terms of Biodiversity ... largely because of the impact of the proposed underground mining on the supply of water to the surface water resources (due to the de-watering activities) and the potential groundwater contamination. These aspects will have a significant impact on aquatic and wetland ecosystem functioning and biodiversity in a far greater area than the underground mining area'*;¹⁴⁸

77.3. *'both the cone of depression and the groundwater contamination plume extend to the wetland FEPA's in the near vicinity'* of the proposed colliery;¹⁴⁹

77.4. NSS's findings are that the anticipated impact of dewatering of the aquifers and the resultant impacts on wetlands, aquatic ecology and biodiversity is of 'HIGH' significance

¹⁴⁶ GCS review (Annexure G hereto) pg 16

¹⁴⁷ NSS pg 199; SAS pg 67

¹⁴⁸ NSS pg 269

¹⁴⁹ NSS pg 209

(NSS's highest significance rating) both without mitigation and with mitigation (in other words, NSS regards mitigation of this impact as being impossible);¹⁵⁰

77.5. NSS's findings are that the anticipated impact of decant of contaminated groundwater and the resultant impacts on surface water quality, wetlands, aquatic ecology and biodiversity is of 'HIGH' significance both without mitigation and with mitigation (in other words, NSS regards mitigation of this impact as being impossible);¹⁵¹ and

77.6. *'construction of the proposed surface infrastructure will result in **complete removal of vegetation and levelling of the area** ... The impact will be **long-term** as it will continue from the construction phase until de-commissioning ... **The main recommended mitigation measure is to avoid all areas of Very High and High sensitivity.** This would make the project a **No Go** as almost the entire ... area is rated as having a Very High or High sensitivity'* [own emphasis]. NSS records this impact as having a 'HIGH' significance (NSS's highest significance rating) without mitigation, with mitigation only lowering the impact significance to 'MEDIUM-HIGH'.¹⁵²

78. In light of the above, it is evident that the decision to grant exemption was unjustifiable by reason that the DG failed to adequately take into account that the effectiveness of Atha's proposed mitigations in respect of the exemption (namely grouting, the discharge of treated mine water into wetlands and the bald assertion of rehabilitating all impacted wetlands after mine closure) is entirely unsubstantiated.

¹⁵⁰ NSS pg 242

¹⁵¹ NSS pg 254

¹⁵² NSS para 4.1, pg 239 to 241

E.5 The failure to consider, alternatively adequately consider, the socio-economic impact of the water uses, if authorised, as required in terms of section 27(1)(d) of the NWA (fifth ground of appeal)

79. This ground of appeal asserts that Atha's IWWMP and EIAR failed to report objectively and fully on the possible effects of the proposed colliery on people living in the area, with the consequence that the DG was not in a position to adequately consider the socio-economic impact of the water uses, if authorised, as required in terms of section 27(1)(d) of the NWA.

80. According to Atha the mine would generate 576 employment opportunities when fully operational.¹⁵³ It is stated in the IWWMP that *'these employees are anticipated to be sourced from the surrounding local communities as far as practicable'*¹⁵⁴, which statement is repeated in the WUL reasons.¹⁵⁵ However, the socio-economic specialist study conducted by WSP¹⁵⁶ as part of the social and environmental impact assessment of the proposed colliery ('the Socio-Economic Study'), which does not form part of the WULA and is attached marked 'J', casts doubt on the likelihood of any substantial number of the mine's employees being sourced from the surrounding local communities:

80.1. As regards employment in the construction phase, the report provides that: *'[s]killed labour is likely to be sourced from outside the [Area of Direct Influence], either regionally or nationally. In addition, management level staff are likely to be sourced in India (Atha's current mining operations), and brought into manage local operations and transfer skills to local employees/trainees on an on-going basis.'*¹⁵⁷

¹⁵³ IWWMP pgs 237 and 238; EIAR (Annexure H hereto) pg 136 and 137

¹⁵⁴ IWWMP pg 237

¹⁵⁵ WUL reasons (Annexure B hereto) pg 49. Accordingly it is apparent that the DWS relied on this information in deciding to issue the WUL

¹⁵⁶ Dated 19 August 2013

¹⁵⁷ Socio-Economic Study (Annexure J hereto) pg 29

- 80.2. The Socio-Economic Study says further that *'[a]lthough there may be a small number of additional unskilled opportunities (e.g. security, community liaisons, general labourers and cleaners) that could arise, there is unlikely to be significant opportunities for the local population to be employed during the construction phase, and the opportunities are likely to be temporary.'*^{158 159}
- 80.3. In respect of the operational phase of the time, the Socio-Economic Study says that *'there are low skills levels within the [Area of Direct Influence] [a]nd therefore the local population may not meet the labour requirements of the mine ... A small number of opportunities may be sourced from the immediate area; however these are likely to be mainly unskilled, such as security and cleaning staff.'*¹⁶⁰
81. By way of contrast, the EIA reports that eco-tourism contributes materially to job-creation in the area and that if mitigation measures are not implemented, environmental impacts resulting from the proposed mine may degrade surrounding surface and groundwater sources resulting in a reduction of biodiversity in the area and a decline in eco-tourism.¹⁶¹
82. The proposed mining area also supports agricultural employment opportunities. The farm on which the mine will be established is itself currently used for the commercial grazing of livestock (sheep and cattle). Several subsistence farmers have also made their home on the proposed mining site, which has good to excellent grazing capacity.¹⁶²
83. There are approximately eight homesteads situated on the proposed mining site which are occupied by low-income families with between eight and thirty people living in each homestead.

¹⁵⁸ Socio-Economic Study (Annexure J hereto) pg 29

¹⁵⁹ In respect of paragraphs 80.1 and 80.2 above, the lack of creation of local employment opportunities during the construction phase is not communicated in the IWWMP

¹⁶⁰ Socio-Economic Study (Annexure J hereto) pgs 29 and 30. The lack of creation of local employment opportunities during the operational phase is also not communicated in the IWWMP

¹⁶¹ EIA (Annexure H hereto) pg 97 (see also the Socio-Economic Study (Annexure J hereto) pg 20)

¹⁶² EIA (Annexure H hereto) pgs 83 and 84

The households generally rely on limited income from a single family member who works on the host farm, as well as on social grants. This community *'is vulnerable from a livelihood perspective, as they do not have access to finances or other resources should their current income come to an end (i.e. farm work) or access to natural resources, such as water and grazing land, be prevented'*.¹⁶³ It is clear from the IWWMP¹⁶⁴ and the WUL reasons¹⁶⁵ that the mining area will be surrounded by security wire fencing which is 2.1 metres high.

84. The IWWMP and EIAR do not assess with any precision what the likelihood of the loss of this livelihood is, or what the likelihood of loss of agricultural income and resources in the larger area may be should the mine have any adverse impact on the water sources used by commercial and subsistence farmers in the area.

85. The EIAR records that water is sourced by farmers in the area from springs (referred to locally as 'fonteine') which are used for both domestic and livestock watering purposes.¹⁶⁶ There are twenty-three such springs in the project area. The springs are also a water source for the wetlands.¹⁶⁷ According to the Delta H groundwater assessment and the NSS ecological assessment, the dewatering of the aquifers will have a negative impact on, among other things, the springs within the cone of depression of the mine, and some may dry up during the life of mine.¹⁶⁸

86. The Brownlie review contains a detailed analysis of how the socioeconomic impacts of the proposed project have been dealt with in the EIAR. Brownlie's assessment is that *'[t]he socioeconomic impacts of the proposed project are not addressed in a balanced and objective way, and fail to incorporate relevant findings of the socioeconomic specialist report The*

¹⁶³ Socio-Economic Study (Annexure J hereto) pgs 17 and 18

¹⁶⁴ IWWMP pg 16

¹⁶⁵ WUL reasons (Annexure B hereto) pg 10

¹⁶⁶ EIAR (Annexure H hereto) pg 181 and 182

¹⁶⁷ NSS ecological assessment pg 243

¹⁶⁸ Delta H pg 53; NSS pg 243

*assessment of these impacts, and conclusions drawn [in the EIAR], are thus highly questionable.*¹⁶⁹ Brownlie points out, among other things, that:

- 86.1. *'[T]he main livelihoods prior to mining – agriculture and tourism – may be significantly negatively affected; eco-tourism has created about 400 jobs in the Wakkerstroom region (4.13.7 of the EIAR, p. 97) and "The Wakkerstroom and surrounding conservation areas are significant townscapes with a strong future natural based tourist industry" (7.18.2, p. 242)';*
- 86.2. *'Impacts of mining on tourism to the wider area and associated economic factors, income generation and employment have not been adequately assessed. Numerous sections in the EIAR refer to the moderate to high potential for expansion of tourism and recreation in the affected area, as well as the diversity of natural resources and aesthetic attributes of the area that serve as the foundation for this sector to grow (e.g. 8.10.3.3, 8.16.3.5, 8.16.4.3, 8.16.4.5) ... (p. 466 of the EIAR)';*
- 86.3. *'The EIAR (8.16.4.5) notes that the return of the local economy to agriculture and tourism is likely to take up to 10 years (or longer depending on the degree of impact of the mine on the local physical environment) (p. 468)'; and*
- 86.4. *'The potential influx of labour and job seekers, with associated negative impacts (e.g. 8.16.3.4, p. 455; 8.16.4.2, p. 457-8; 8.16.4.3, pp. 462, 465, 466-468) is inadequately assessed: most communities and local municipalities expressed concern regarding the potential influx of job seekers and labour into the area, which could affect accessibility to social and basic services, specifically healthcare, housing, water and sanitation, sense of place and social conflict'.*

¹⁶⁹ Brownlie review (Annexure E hereto) pgs 16 and 17

87. The failure of the IWWMP and the EIAR to report objectively and fully on the possible effects of the proposed colliery on people living in the area has the consequence that the DG was not in a position to adequately consider the socio-economic impact of the water uses, if authorised, as required in terms of section 27(1)(d) of the NWA.
88. The information which *is* contained in the specialist studies suggests furthermore that the greatest environmental impact of the mine is likely to be felt mainly by vulnerable and disadvantaged persons in the area, namely subsistence farmers and poor rural communities who depend on the natural soil and water resources in the area to sustain themselves.
89. If the WUL were to be upheld by the Water Tribunal it would be a decision which is in direct conflict with section 2(4)(c) of NEMA which provides that *'[e]nvironmental justice must be pursued so that adverse environmental impacts shall not be distributed in such a manner as to unfairly discriminate against any person, particularly vulnerable and disadvantaged people'*.¹⁷⁰ Whereas the negative impact of the project will be borne by poor communities in the area, the wealth of the natural resource removed from the ground will accrue predominantly to a foreign corporation and its shareholders.
90. Any such decision would also be in conflict with:
- 90.1. Section 2(4)(i) of NEMA which provides that *'[t]he social, economic and environmental impacts of activities, including disadvantages and benefits, must be considered, assessed and evaluated, and decisions must be appropriate in the light of such consideration and assessment'*; and

¹⁷⁰ The NEMA national environmental management principles are applicable to the DG's decision to issue the WUL and this appeal to the Water Tribunal in terms of section 2(1) of NEMA – see paragraph 64 above

90.2. Section 2(4)(a)(viii) of NEMA which requires that negative impacts on the environment and on people's environmental rights be anticipated and prevented and only where they cannot be altogether prevented, minimised and remedied.

E.6 The failure to give effect to the right to procedurally fair administrative action in terms of section 33 of the Constitution and sections 3 and 4 of the Promotion of Administrative Justice Act, 2000 (sixth ground of appeal)

91. Atha conducted a public participation process for the WULA in terms of section 41(4) of the National Water Act from 19 June 2015 to 20 August 2015, during which time various WULA documents ('the public participation WULA documents') were made available for comment to Interested and/or Affected Parties ('I&APs'). The Centre for Environmental Rights ('CER') obtained the public participation WULA documents from Savannah Environmental (Pty) Ltd, the public participation consultant appointed by Atha in respect of the WULA, on 3 August 2015.

92. On 26 October 2015 the DWS addressed a letter to Atha requesting '*information ... either incomplete or missing*' from the WULA. This letter is attached marked 'K'. On 10 November 2015 Atha responded to the DWS's letter and submitted various additional WULA documents to the DWS. Atha's letter is attached marked 'L'.

93. On 13 July 2016 the CER submitted a request to the DWS in terms of the Promotion of Access to Information Act, 2000 ('PAIA') and the DWS's Promotion of Access to Information Manual for access to all documentation submitted to the DWS as part of the WULA after 3 August 2015. The CER obtained, amongst others, the DWS's 26 October 2015 letter (Annexure K hereto), Atha's 10 November 2015 letter (Annexure L hereto), and the additional WULA documents submitted to the DWS on 10 November 2015.

94. The additional WULA documents submitted on 10 November 2015 include, amongst others, the following documents which were not part of the public participation WULA documents:

- 94.1. A motivation letter by Atha *'relating to the logicity of not having to undertake a provincial road wetland survey and the irrelevance of a wetland offset requirement given the specific circumstances of the Yzermyn underground mining project'* (attached marked **'M'**);
- 94.2. Atha's final table stating *'Identified risks and mitigation measures associated with each water use'* (Table 5-7) (attached marked **'N'**); and
- 94.3. Application forms for a new water use in terms of section 21(g) of the NWA (disposing of waste in a manner which may detrimentally impact on a water resource) in the form of using pollution control dam ('PCD')-process water for dust suppression on roads within the mining footprint within 500 metres of various wetland systems on Yzermyn 96 HT: Portion 1 (attached marked **'O'**). This water use was subsequently authorised by the DWS in the WUL.
95. No additional public participation process was conducted in respect of the additional WULA documents submitted on 10 November 2015. Accordingly the DG made a decision on the WULA (to issue the WUL) without the additional WULA documents submitted on 10 November 2015 having been made available for comment to I&APs.
96. The Promotion of Administrative Justice Act, 2000 ('PAJA'), in giving effect to the Constitutional right to procedurally fair administrative action¹⁷¹, requires that *'[a]dministrative action which materially and adversely affects the rights or legitimate expectations of any person must be procedurally fair'*¹⁷² and that the right to procedurally fair administrative action includes *'a reasonable opportunity to make representations'*¹⁷³.

¹⁷¹ Section 33(1) of the Constitution of the Republic of South Africa, 1996

¹⁷² Section 3(1) of PAJA

¹⁷³ Section 3(2)(b)(ii) of PAJA

97. The failure by Atha to conduct a public participation process in respect of the additional WULA documents submitted on 10 November 2015 means that I&APs did not have a reasonable opportunity to make representations in respect of the additional WULA documents and accordingly the WULA, as well as the WUL issued, fall foul of the procedural fairness requirements of the Constitution and PAJA and should be set aside as unjust administrative action.
98. Of particular concern is the additional authorised water use of using PCD-process water for dust suppression on roads within the mining footprint within 500 metres of various wetland systems. In respect of this water use Atha's IWWMP states that *'process water will consist of dirty water being used for dust suppression'*¹⁷⁴ and furthermore *'water not needed at potable standard will by-pass the water treatment plant and be used for dust suppression'*¹⁷⁵. The WUL specifies water quality ranges (in respect of various constituents) with which the PCD-process water utilised for dust suppression must comply.¹⁷⁶ However, the environmental assessments which form part of the WULA do not assess the environmental impacts of this use of the PCD-process water on local and regional water quality, the wetlands or biodiversity, amongst other things. It was inappropriate and unlawful for the DG to authorise this additional water use without proper analysis of its environmental impacts and public participation in respect of the water use.

CONCLUSION

99. In the premises the Appellants request that the appeal be upheld.
100. The Appellants also request, in order to facilitate the orderly hearing of the appeal, that the DG send to the offices of their representatives a detailed index of all documents provided to the Water Tribunal in terms of section 5(3)(a) of Schedule 6 to the National Water Act.

¹⁷⁴ IWWMP pg 152

¹⁷⁵ IWWMP pg 154. This information is repeated in the WUL reasons (pg 30), accordingly it is apparent that the DWS relied on this information in deciding to issue the WUL

¹⁷⁶ WUL (Annexure A hereto) para 4.4, pgs 39 and 40