
GOVERNMENT NOTICES • GOEWERMENTSKENNISGEWINGS

DEPARTMENT OF WATER AND SANITATION**NO. 139****03 FEBRUARY 2016**

INVITATION TO SUBMIT WRITTEN COMMENTS IN TERMS OF SECTION 110 OF THE NATIONAL WATER ACT 1998 (ACT NO. 36 OF 1998) ON THE PROPOSED CONSTRUCTION OF THE CWABENI OFF-CHANNEL STORAGE DAM AND THE ENVIRONMENTAL IMPACT ASSESSMENT RELATING THERETO

The Minister of Water and Sanitation intends constructing the government water works as contained in the Schedule hereto.

In terms of section 110(1)(b)(iii) interested parties are invited to submit written comments on the proposed water works and the environmental impact assessment by 3 April 2016. Comments must be submitted to the Director-General, Department of Water and Sanitation, Private Bag X313, Pretoria; Fax; 012 336-7399 and marked for attention of Mr. J A Bester, Chief Engineer Options Analysis (East).

SCHEDULE TO THE PROPOSED CONSTRUCTION OF THE CWABENI OFF-CHANNEL STORAGE DAM AS A GOVERNMENT WATER WORKS AND A SUMMARY OF THE ENVIRONMENTAL IMPACT ASSESMENT

A. PROPOSED CONSTRUCTION OF THE SCHEME

The Cwabeni Off-Channel Storage (OCS) Dam will primarily augment the water supply of the Umzimkhulu Regional Water Supply Scheme (RWSS) that currently sources non-regulated flows from the Umzimkhulu River. The RWSS supplies domestic and industrial water to Port Shepstone and surrounds on the Southern Coast of KwaZulu-Natal. The system's main water users are within the Ugu District Municipality, and include the Hibiscus Coast and Umzumbe Local Municipalities. The proposed Cwabeni OCS Dam will also augment supply within the Mhlabatshane bulk Water Supply Scheme, particularly those rural communities in the areas surrounding and north of the proposed dam. Together the proposed scheme will serve a total of around 260 000 people. About 50% of these people are considered poor and cannot easily pay for the water.

The Umzimkhulu River currently has a run-off-river yield of 18 million m³/a, before considering the Ecological Reserve. This will drop to 4 million m³/a if the reserve is implemented without augmenting the system. When constructed the Cwabeni OCS Dam will increase the available yield to 30.5 million m³/a at a 98% assurance of supply, thus increasing the yield by around 26 million m³/a. A locality map of the proposed scheme is attached.

The Cwabeni OCS Dam will consist of:

1. CWABENI OCS DAM AND APPURTENANT WORKS

- *Cwabeni OCS Dam*

The Cwabeni OCS Dam will be situated on the Cwabeni River, a tributary of the Umzimkhulu River, approximately 25 km inland of Port Shepstone on the KwaZulu-Natal South Coast. The dam will be provided with outlet works capable of making river releases that will meet the demands of downstream users. Technical details of the proposed dam are summarised in the table below:

Parameter	Description
General	
River	Cwabeni River
Nearest town	Port Shepstone
Province	KwaZulu-Natal
Location	30° 36' 27.54" S; 30° 14' 22.82" E
Classification: Category	III
Size class	Large
Hazard potential	High
Non-overspill crest level	RL 170.8 masl
Full supply level (FSL)	RL 167.5 masl
Gross storage capacity at FSL	15.5 million m ³
Water surface area at FSL	0.93 km ²
Main dam	
Wall height above river level (Maximum height)	44.5 m
Crest length	541 m
Spillway type	Side channel
Spillway shape	Ogee
Spillway length	50 m
Freeboard	3.3 m
Hydrology and floods	
Catchment area	39.9 km ²
Mean Annual Runoff	4 million m ³ /a
Safety evaluation flood (equal RMF + Δ)	985 m ³ /s
Q _{1:200}	415 m ³ /s
Outlet works	
Dam Outlet	Free-standing tower with dual pipe system of ND 800 mm, 4 intakes, Butterfly and sleeve valves, with emergency gate.

* The above detail is subject to final design which may create minor changes.

- **Construction of new, and relocation of existing roads**

One road will be inundated and must be relocated. This road will be relocated along the toe of the downstream embankment. Additional roads will be required to access the abstraction weir. The road construction includes the following:

- A 1.0 km relocation of the D859; and
- A new 0.8 km gravel access road to the abstraction works.

2. WEIR AND ABSTRACTION WORKS

The weir and abstraction works for pumping to the off-channel dam will comprise the following components:

- *Diversion Weir*

This structure is located on the Umzimkhulu River approximately 600 m downstream from the confluence with the Cwabeni tributary. The co-ordinates of the diversion weir are:

Latitude: 30° 36' 51.00" S, Longitude: 30° 14' 26.75" E

The diversion weir is 2.4 m high (above riverbed level) and 87 m long. The weir will also function as a gauging structure for measuring flows, and includes a low and high level notch. The ability to measure flows at the diversion weir is required to establish when off-channel pumping is possible, as well as determine when releases from the dam need to be made. The measurement of ecological flows will also be possible. The weir height is kept to a minimum to reduce environmental impacts. The hydraulic head of the diversion weir of 1.3 m is used to drive the water through the abstraction works.

- *Abstraction works*

The abstraction works will include gravel, sand and silt traps. The structure is designed to be self-flushing through the inclusion of radial gates, and its position on the river. A fish-way is incorporated into the abstractions works to allow the passage of both fish and various invertebrate species. The structure has been configured to allow future upgrades in abstraction capacity.

- *Pump station*

A raw water pump station integrated with the abstraction works on the left hand bank of the Umzimkhulu River, next to the abstraction works, is designed to pump 0.75 m³/s.

- *Pipeline*

The rising main pipeline to convey the raw water to the dam is 1000 mm in diameter and 670 m long. The pipeline is routed from the pump station along the spillway chute of the dam.

B. SUMMARY OF THE ENVIRONMENTAL IMPACT ASSESSMENT (EIA) (For more information please see full EIA on the website (<https://www.dwa.gov.za/Projects/NCWABENI/>))

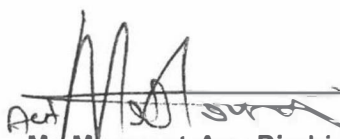
- *Acquisition of land*

The acquisition of land will be done according to best practises in accordance with standing legislation.

- *Impact on quality and quantity of river flow*

As an off-channel dam, the proposed scheme will have less impact on the river flows than an on-channel dam. The dam will be filled in the high flow months only once the flows exceed the requirements of both the downstream users and the ecological reserve. The dam will release water when it is required at St Helens Rock, the abstraction point for the Umzimkhulu Regional Supply Scheme, in the low flow months. When water is released during low flows estuary conditions from a water quantity and quality perspective will improve.

- *Wetlands & Scarp Forest*
No pristine wetlands were found in the project area, however scarp forest was found and the loss of the scarp forest will be mitigated by the implementing agent.
- *Relocation of homesteads*
No people are currently living in the Cwabeni OCS Dam basin, and only the remains of abandoned homesteads exist.
- *Graves*
Six graves have been identified during the EIA specialist study within the Cwabeni OCS Dam basin or associated infrastructure area. They will have to either be protected or exhumed and relocated by a qualified person in-line with the KwaZulu-Natal Heritage Act and other applicable legislation.
- *Cultural Sites*
No archaeological sites were found during the heritage assessment during the EIA. However, a second phase heritage assessment is recommended to systematically check the dam basin for archaeological sites. The tie in of the weir on the right hand bank also needs to be checked for early Iron Age sites. If any historical and cultural sites are identified within the Cwabeni OCS Dam basin area through a formal investigation, these sites will be mitigated.
- *Construction related impacts*
Construction activities result in a range of impacts that are common to most construction sites. Potential impacts include dust, noise, traffic, influx of people, crime and destruction of valuable flora and fauna. The Environmental Management Programme will address and mitigate these impacts.
- *Water for social and economic development*
The existing Umzimkhulu Regional scheme is stressed and during dry years demand outstrips supply. The low river level allows the ingress of seawater, which is then pumped from St Helen's Rock to the purification works. This scheme is urgently required to support the social and economic development in the region.
- *Job creation*
A number of temporary jobs will be created during the construction phase of the project as well some permanent jobs in the subsequent operational phase. It is estimated that a total of 3 900 person years of employment will be created over the four and a half year construction period.
- *Environmental Management Programme*
Detailed environmental and social specifications, described in the Environmental Management Programme in terms of the Environmental Authorisation, will be implemented by the Department of Water and Sanitation.


Ms Margaret-Ann Diedricks
DIRECTOR-GENERAL
DATE: 2016/01/21

