MINISTRY OF AGRICULTURE, IRRIGATION AND WATER DEVELOPMENT

Standard Operating Procedures for Groundwater Use Permitting

Document NoGW06/2012

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Contents

1.0 GENERAL INFORMATION

1.1 Introduction

Water plays a vital role in the socio-economic growth and development of Malawi. Based on this importance, there is need for integrated water resources management. One of the key aspects of integrated water resources management is the assessment and grant of water use licences.

The legal and policy framework for water resources management is outlined in the National Water Resources Management Policy of 2005, the Water Resources Act and other regulations such as the Pollution Control. The Ministry of Water Development is responsible for the overall management of water resources in Malawi while the Water Resources Board (WRB) approves and issues water rights certificates (water permits). Some of the important water resources management features of the National Water Resources Management Policy are:

- water should be managed and used efficiently and effectively in order to promote its conservation and future availability in sufficient quantity and acceptable quality;
- all programmes related to water should be implemented in a manner that mitigates environmental degradation and at the same time promotes enjoyment of the asset by all beneficiaries;
- water allocation should recognise that water is not only a social but an economic asset, and in a manner that achieves maximum benefit to the country;
- in planning and providing water services, consideration should be given to safe disposal of the resultant waste water;
- the government shall facilitate the participation of stakeholders in water management programmes (including users and special target groups) both in the public and private sectors to ensure that the needs of their relevant interests are taken into account; and
- The pricing of water should reflect demand and the cost of water services. Pricing should aim at the reduction of government financial support to the sector over time.

1.1 Purpose

The purpose of this document is to guide WRB permitting officers on all aspects of ground water permitting system procedures within the framework of Integrated Water Resources Management. The procedures are designed to ensure uniformity in the permitting procedures nationally.

1.2 Application

This document provides an operational guideline, which is intended to standardise the water use application process and water licencing by the Water Resources Board (WRB). This document serves as a framework on guidelines that should be followed by WRB officials during the process of assessing water use licence application. The document outlines general operational rules, applicable to all water uses, and provides specific guideline details for specific water uses.

1.3 Scope

The Standard Operating Procedures (SOPs) pertains to general water permitting. The applicant for a licence to abstract water must consider any potential impacts to adjacent and dependent water bodies, where applicable, during permit application process.

1.4 Water licensing objectives

The objectives of water licensing are to:

(1) Avoid depletion of groundwater and surface water resources
(2) Enhance equitable access to water;
(3) Curb environmental degradation;
(4) Provide for social and economic development;
(5) Protect aquatic fauna and flora biodiversity;
(6) Prevent contaminant plume migration;
(7) Share water with neighbouring countries;
(8) Provide for water deficient areas;
(9) Curb soil erosion, desertification, floods and droughts;
(10) Promote efficient and sustainable use of water to meet present and future generation needs; and
(11) Ensure continuity of hydrological cycle.

1.5 Groundwater division SOPs

The following documents form part of the series of Standard Operating Procedures for best management practices in groundwater management:

Document No.	Title
GW01/2012	Standard Operating Procedure: Drilling and Construction of National Boreholes
GW02/2012	Standard Operating Procedure for Aquifer Pumping Tests
GW03/2012	Standard Operating Procedure for groundwater level monitoring
GW04/2012	Standard Operating Procedure for groundwater sampling
GW05/2012	Standard Operating Procedure for operation and management of the national groundwater database
GW06/2012	**Standard Operating Procedures: Water Use Permitting**
GW07/2012	Standard Operating Procedure: Drilling and Construction of Production Boreholes

All official copies of the division's documents are kept, in electronic format and hard copies, by office of the Deputy Director-Groundwater Resources.

1.6 Responsibilities

The WRB is responsible for the administration of the Water Permitting System, formulating and modifying/updating this SOP manual.

1.7 Definitions of terms

Applicant	A person filing an application to initiate or expand a water withdrawal permit/s.
Catchment Area	An area that receives precipitation and naturally drains into a watercourse.
Consumptive use	the withdrawal of water, without recycle of said waters to their source of origin.

Existing user	Those persons that have been granted a water permit and all other persons whose withdrawals are excluded from permit requirements.
Groundwater	Any water, except capillary moisture, beneath the land surface in the zone of saturation or beneath the bed of any stream, lake, reservoir, whatever the subsurface geologic structure in which such water stands, flows, percolates or otherwise occurs.
Human consumptive use	The withdrawal of ground water for private residential domestic use and that portion of ground water withdrawals in a public water supply system that support residential domestic uses and domestic uses at commercial and industrial establishments.
Licensee	A person who currently has an effective Water Permit (water right) issued by the WRB.
Permit	A Water Permit issued by the WRB permitting the withdrawal of a specified quantity of ground water under specified conditions in a ground water management area.
Surface water	All water found on a public stream and includes water in storage works, permanent pools, marshes, springs, swamps and lakes forming the source of or found on the course of a public stream.
Water Resources Management	Water resources development, apportionment, utilisation, conservation, protection and control that incorporate physical, social economic as well as environmental interdependence.

2.0 APPLICATION PROCEDURES

2.1 Introduction

Water use involves any action that has a positive or negative impact on the water resource. Such activities may have an effect on:

- the quantity and occurrence of water in the resource
- the quality of water in the resource

- the environment surrounding the resource
- riparian vegetation

The following aspects need to be considered when applying and issuing water use licences:

- What is a “water use”?
- Who are “water users”?
- When to apply for a water use licence
- Documentation and pre-requisites for a licence application?
- The hydrogeological investigation

WATER USE CATEGORIES:

The following different water uses are distinguished:

a) Water abstraction

Water abstraction entails removal of water from any wetland that may include groundwater and surface water resources for irrigation, mining, industrial, domestic use or for recreational purposes. Abstraction rates and volumes from an aquifer, dam or river should be specified in the water use licence application. Abstraction volumes should be based on the recharge of the specific area. Abstraction should also include water removed from a water resource for dewatering purposes.

b) Water storage

Water storage encompasses water harvested from precipitation, aquifers, lakes or rivers. Water storage structures should conform to Water Storage Structure Safety Regulations that promote environmental and human safety.

c) River flow depletion

Activities that impact on or reduce flow of water into a river are classified under river flow depletion or reduction. Such activities include erection of flow obstruction structures in a watercourse or diverting water flow from a watercourse. The structures that impede or divert water flow can be temporary or permanent and may include canals, channels or spillways erected during dam construction. Gauging weirs are considered to be an impediment. However, it is important to note that if water is retained by a structure, then the water use is considered to be storing water and not impeding or diverting flow. River-bed and bank alteration; and sand mining activities may change river energy, erosion, equilibrium, meandering, water pH, temperature, turbidity and flood dynamics. These activities have

detrimental effects on riparian vegetation. Transfer schemes from one catchment to another also change the characteristics of the donating and receiving water course.

d) Disposal of waste that may pollute water resource

Disposal of waste involves getting rid of garbage from industrial and commercial activities into a watercourse. These activities may have detrimental effects on the water resource. Irrigation of land with wastewater and power generation which alter flow, pose negative impacts on water resources. Air pollution may also alter the hydrological cycle and artificial recharge may change natural groundwater flow characteristics.

e) Using water for recreational purposes

This encompasses use of water for sport, tourism or leisure which may be on personal or commercial terms. Activities which contribute to the general health, well-being and skills development of individuals and society are considered of recreational purposes.

WATER USERS:

Water users are generally grouped in the following categories:

1) Agriculture
2) Industry
3) Mining
4) Bulk storage
5) Forestry
6) Power generation
7) Recreation
8) Water supply (rural; urban)

2.2 Water permitting process

Water use licensing broadly consists of three procedures, which entail the following:

(1) Collating information to assess the proposed water use potential impacts with regard to quantity and quality requirements.
(2) Evaluating information to ascertain whether a licence application should be duly authorised or rejected.
(3) Administrating the application for a licence.

All applications for licences must be made on the relevant forms. Figure 1 shows the steps in the permitting process.

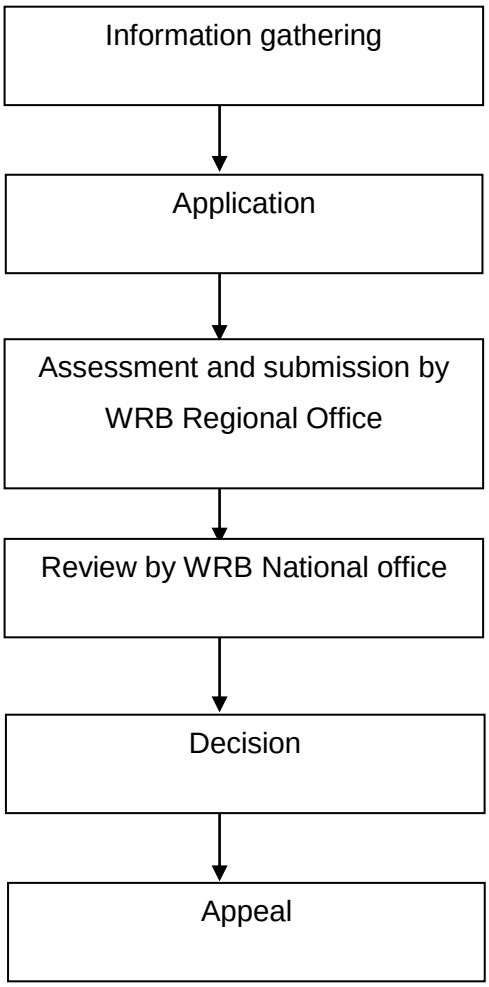

Figure 1: Water permitting process

2.2.1 Consultation before application

It is vital that during the pre-application process, for waste-discharge related water uses, the WRB official consults all stakeholders and will be required to perform a risk assessment in order to determine potential hazards posed by the proposed activity. The risk assessment is based on two criteria, namely the potential impact of the activity on the resource, and the sensitivity of the water resource in the vicinity of the proposed water use activity. The outcome of the risk assessment will dictate the appropriate mechanism required to regulate the water use, which is based on the nature of the likely risk, and the nature and extent of potential impact on a water resource.

2.2.2 Information gathering and licence application

The following should be noted about water licensing:

- Water licences are used to control water use that exceeds the limits outlined in the WRB authorisations.

- Water use licences give existing or new water users formal authorisation to use water for productive and beneficial purposes, and specify the conditions under which the water can be used.
- A licence to use water can only be issued by the WRB.

A complete water use licence application submitted for assessment will consist of the following:

a) Properly completed application forms (refer to Appendix for groundwater abstraction permit application forms), accompanied by:
    - Proof of payment of the prescribed licence application fee
    - A certified copy of applicant's ID document or company registration documents
    - A certified copy of the title deed of the property where the proposed water use is to take place, if applicable

b) Proof that all stakeholders have been informed of the intention to apply for a licence.

There should be physical proof that the neighbours have been identified and informed through individual letters to each, with copies of acknowledgement of receipt. The WRB was established also to hear appeals against certain decisions made by a responsible authority.

c) Documentation from the relevant Regional Office responsible for environment management confirming that exemption has been granted.

d) The applicant must provide a report with the following information:

- The applicant's existing water use licences;
- A detailed description on the benefits of the application to the community;
- A description of the socio-economic impact of the issuing or refusal of the licence;
- The strategic importance of the water use to be granted; and
- An explanation of the duration of the undertaking for which the licence is required.

e) The WRB will consider the following factors:

- Any catchment management strategy applicable to the water resource.
- The water quality class.
- The quantity of the water in the water resource required.
- The quantity of water that should be reserved for the ecosystem.

2.2.3 Assessment

2.2.3.1 Legal assessment

Permissible water uses stipulate that a person may only use water:

(1) Without a licence if it is a:
   a) domestic use;
   b) Continuation of an existing lawful use; or
   c) Use that is authorised under small scale authorisations

(2) If licenced.

a) Domestic use

Domestic use describes ordinary reasonable use of water for the sustenance of life. It is not for commercial gain. Domestic use lists a range of permissible water uses. It is not required to licence a domestic water use. This is water used for drinking, preparation of food, bathing and washing of clothes.

The following are classified under domestic water uses:

- Taking water for reasonable domestic use directly from any water resource to which a person has lawful access.
- Taking water for use on land owned or occupied by a person, for:
  - Reasonable household domestic use
  - Small gardening not for commercial purposes
  - Watering of animals (excluding feedlots) that graze on that land, provided that the use is not excessive in relation to the capacity of the water resource and the needs of other users.
- Storing and using run-off water from a roof.
- Taking water In emergencies from any water resource for basic human needs or fire fighting.
- Recreation, if a person has lawful access to that water resource.
- Discharging of waste, water containing waste or run-off water or storm water in a canal, sea outfall or other conduit, provided these are controlled by persons that have been authorised to purify, treat or dispose of this wastewater.

b) Existing lawful use continuation

Existing lawful use means the use of water authorised by or under any law that took place at any time before the inception of the new law. If a water user discontinued a water use, or

took steps in good faith to implement a water use, but for good reason did not begin the water use before the inception of the new water law, the water use can be declared an existing lawful use, if it was duly authorised.

Stream flow reduction activities also fall under the requirements of existing lawful use. If the abstraction and storage is not included in the licensed water use, the covering letter which accompanies the licence should state that any existing lawful water use can continue, provided that the WRB does not guarantee its lawfulness unless verified in terms of the water law.

c) Small scale authorisations

Small Scale Authorisation allow some use water without a licence, provided that the water use is within certain limits and complies with conditions as set out by the WRB and remains valid, unless:

- It lapses on a date which may be specified by the WRB. If the authorisation lapses and is not replaced, the water use previously authorised through that route needs to be licensed.
- The water user is required to apply for a new authorisation to the WRB.

It should be noted that water users are legally regarded as small scale users and authorised to use water if they comply with the conditions set out by the WRB. If the intended water use does not meet the conditions stipulated by the WRB, the user must apply for a licence. Registration is required regardless of the water use and activity.

d) Commercial water use licencing

A licence must be obtained for any new water use, which:

- Is not permissible in terms of domestic use.
- Does not qualify as an existing lawful use.
- Fails to comply with the conditions of small scale authorisations, or the WRB does not wish to authorise.

2.2.3.2 Technical Assessment

Certain aspects may be of critical and strategic importance, depending on the specific water use, the sensitivity of the area, and other environmental considerations. The following criteria may be used as a guideline when considering the strategic and critical aspects of an application.

1. **The strategic importance of an application**.

   The need for a particular water use can outweigh all other issues if the strategic importance of the activity is critical for economic growth, service delivery, and/or other socio-economic aspects. Examples would be the construction of power stations with associated water supply, as well as wastewater treatment works. It should, however, be noted that the environmental impact of any such strategically important activities must still be minimised or preferably avoided by means of technological, institutional, or mitigatory management practices.

2. **Stressed catchments.**

   In catchments where there is no further water available for allocation, the licence application must be assessed with reference to water resource planning as described in the water resource management strategy.

3. **Water quantity and quality**

   In the case of waste-discharge related water uses, the water quantity and quality must be considered in order to delineate the water quantity and quality classes applicable for a water use in a specific catchment. After evaluating an application against the above, the following criteria should guide the determination of whether a water use licence application can proceed:

   a) A licence cannot be issued in stressed catchments where there is no further water available for allocation.
   b) A licence cannot be issued before a determination of ecosystem reserve.
   c) A licence cannot be issued if the proposed use impacts negatively on the environment.
   d) In the case of applications where the activity is in conflict with land development objectives, no licence can be issued.
   e) In sensitive or geologically unstable areas, the issuing of the licence will depend on specialist reports.
   f) A licence should be issued only after required stakeholder participation.
   g) Where water uses would result in detrimental impacts on major aquifers, the issuing of the licence will depend on specialist and stakeholder input.

If any of the above critical aspects are identified, the WRB must immediately notify the applicant in writing.

Further information requirements

Should any further critical information be required in order for the WRB to continue with the technical assessment process, the applicant must be requested in writing to supply it, so that the authorisation process can continue. In instances where there are no critical aspects to be considered, the WRB official should nevertheless include specific conditions in the licence that will address any need for clarity and/or provide input to the decision-making process, such as a deadline for an outstanding report. This will expedite the issuing of a licence. Information that is considered crucial in the compilation of the draft licence includes:

- All information to address the specific water uses involved.
- Any specific supporting or supplementary information regarding the water use.
- Water quantity.
- Water or effluent quality.
- Property where the use is taking place.
- Documented information that allows the official to evaluate the application.

Factors to consider on technical assessment of licence application

- Existing lawful water uses.
- Is the licence for water use of strategic importance?
- For how long will the water use be authorised?
- What investments is the water user making?
- The impact of the water use on the water resource.
- Which water resource will be utilised – what class is it?
- The catchment management strategy – does the use fit in?
- Effect on other water users.
- Impact if the licence is not approved.

Some of these factors are explained below.

2.2.3.3 Hydrogeological investigations

Hydrogeological investigations are required to determine the quantity and quality of the available groundwater resources. The extent of hydrogeological investigation depends on water use. Common uses for water licence applications are:

  - Mine activities: abstraction, river diversions, underground pumping, tailings dams.

- Water abstraction for irrigation.
- bulk storage and supply.
- Industrial use.

The objective will be to provide the full spectrum of information required for a fully promotable and defensible solution and site selection. Additionally the study will, conform to the requirements of Mineral Development regulations that include:

- The potential rate and quality of seepage from the proposed residue facility,
- The hydrogeological properties of the strata within the zone that could potentially be affected by the quality of seepage,
- The extent of the pumping sphere of influence,
- The vulnerability and existing potential use of the groundwater resource within the zone that could potentially be affected by the residue facility,
- Environmental impact, and
- Groundwater risk determination considering end users and receiving water bodies.

Steps involved in hydrogeological investigation

1. The following steps are involved in the hydrogeological investigation: Data collection and collation.
2. Hydrocensus.
3. Aeromagnetic data or geophysical data interpretation.
4. Ground geophysics.
5. Drilling of pumping and monitoring boreholes.
6. Aquifer Testing.
7. Groundwater sampling.
8. Hydrochemical assessment and analysis.
9. Construction of conceptual model.
10. Construction of numerical groundwater flow and transport model.
11. Identify potential impacts and risks.
12. Determination of management and mitigation measures.
13. Site selection.

14. Report writing.

Quantification of abstraction volumes

The quantification of the following volumes for the respective needs is important:

- Quantification of groundwater volumes that can be abstracted from an aquifer unit without negatively impacting on the groundwater system.
- Quantification of recharge to the unit, groundwater contribution to baseflow.
- Quantification of basic human needs.
- Quantification of ecological needs.

Classification of water usage

Environmental impact indicators

Category	Description	Environment
E1	Pristine conditions	Zero significant impacts
E2	Very low level impacts	
E3	Moderate levels of localised impacts on the environment	
E4	High levels of impacts	Groundwater quantity, Groundwater quality, Groundwater flow, River flow, Vegetation, Land subsidence
E5	Critically high impacts	

Groundwater Usage

Category	Description	Groundwater usage
GU1	Unmodified conditions	< 5% of recharge
GU2	Low volume groundwater usage with no significant impact on the environment	5 – 30% of recharge
GU3	Moderate	30-50% of recharge

GU4	High	50-90% of recharge
GU5	Critical	> 90% of recharge

Groundwater pollution

Category	Description	Determinant
GP1	Pristine	Natural groundwater quality dominant
GP2	Moderate	Some localised contamination detected
GP3	High	High levels of contamination detected in places, aquifer unusable
GP4	Critical	Prohibited groundwater use

Water Committees

The internal assessment process will be streamlined through the establishment of Water Committees (WCs). The WC meetings will be held at Regional and local level, as well as at National level. The frequency, membership, and attendance of these meetings will be determined by the number of applications received, as well as by the water uses applied for and by the delegated powers with regard to the complexity and types of use or activities applied for. The primary objective of the Regional or WC is to provide a platform for technical discussions, and to make recommendations to the Minister regarding water use authorisation applications, or to the official to whom decision-making has been delegated.

- The WC will be guided by the WRB framework
- Authorisations that have been recommended for approval at Regional, local, WC meetings will be tabled at the next scheduled National WC meeting for final approval.

The primary objectives of the National WC meetings are to:

- Ensure consistent application of policy, especially with regard to integrated licences.
- Ensure that licence conditions are legal.
- Facilitate effective processing of water use licence applications.
- Identify policy gaps.
- Make recommendations towards operating rules for licences and policy issues.
- Take note of authorisations issued by delegated offices.

• Address problems and propose solutions associated with the internal assessment process.
• Make recommendations to the WRB on integrated licences.

Integrated Licence Applications

A licence application for more than one water use will comprise of the appropriate application forms for each water use, the payment of one licence application fee, and only one set of supporting documents. The content of the supporting documentation has to comply with the standards set for each of the water uses, and therefore more than one set of internal guidelines will be used to assess the licence application. The integrated water use licensing approach is usually followed for proposed activities with a potentially high impact on the water resource, such as mines and other industries. Approval of such applications is delegated to the Director of Water Resources. Where an application for an integrated licence is received from a mine, the Director will facilitate the process as the lead directorate. Applications made for aquaculture are facilitated by the Director. The sector specific guidelines are intended to assist the departmental official to achieve an appropriate balance between the need to protect and sustain water resources against the need to develop and use water productively through their approach to the assessment of licence applications.

2.2.4 Review and Amendment of Water Use Licences

One of the critical requirements of a licence is the licence review period. This review is undertaken by the relevant responsible authority at the periods stipulated in the licence.

Reviewing of licence

On reviewing a licence, a responsible authority may amend any condition of the licence, other than the period thereof, if:

1) It is necessary to prevent deterioration of the quality of the water resource
2) There is insufficient water in the water resource to accommodate all authorised water uses
3) It is necessary to accommodate demands brought about by changes in socio-economic circumstances

An amendment may only be made if the conditions of other licences for similar water use from the same water resource in the vicinity, all as determined by the responsible authority,

have also been amended in an equitable manner through a general review process. If the amendment or substitution of conditions severely prejudices the economic viability of any undertaking in respect of which the licence was issued, there may be a claim for compensation. A specialist review may be commissioned by the Department in instances when the assessment is highly technical in nature, such as the impact of the water use on the quality of the receiving surface and groundwater resources.

Amendment of licence conditions

Minor amendments to licences (for instance, to correct clerical mistakes, or changes in format) may be made outside of the review process as stipulated in the Water Act. In addition, a licensee may apply to the responsible authority for the renewal or amendment of a licence before it expires. In considering such applications, the responsible authority must again consider the matters dealt with in the initial application. Any condition may be amended by agreement with the licensee. In addition, the responsible authority must afford the licensee an opportunity to be heard before amending any licence condition on review.

2.3.5 Appeals

An appeal to the WRB must be made in writing within 30 days from the date on which the decision was relayed to the applicant. The appeal must detail the facts and the grounds for the appeal and must be accompanied by all relevant documentation.

The WRB shall, after considering all relevant facts and supporting documents:

- uphold the original decision
- uphold the original decision with modifications, or
- reverse the original decision

APPENDIC: WRB FORMS (GROUNDWATER)

FORM WRB 2

APPLICATION FOR A GRANT OF WATER RIGHT/ CERTIFICATE OF EXISTING RIGHTS*

(GROUND WATER)

This form is to be submitted in triplicate

To: The Chairman of the Water Resources Board
Private Bag 390
Lilongwe 3

(1) Full name of applicant …….
Postal address ……..
Occupation ……

(2) Details of land on which borehole*will be/has been sunk ……

……

Give Registered No ……

(3) Give details of land where water will be used if different from (2) above ……

……

……

……

(4) Acreage ……..

(5) Description of borehole/well ……..

(6) Diameter, Depth, etc. ……

Details of Pump (where hand –operated

(a) Type of Pump …….

(b) Type of driving machine and fuel used

……..

……..

……..

(c) Brake horse power of (b)…. . . . . B.H.P.

(d) Approximate elevation of pump above sea-level ……..meters

(e) How pump is connected to driving machine
……
……
……

(f) Internal diameter of suction main ……..
……...cm

(g) Height of suction …….meters (maximum)

(h) Height to which is to be lifted above pump……meters

(i) Internal diameter of delivery pipe……..

(j) Length of delivery pipe ……
…….meters

(k) Pumping hours per day ……hours

(l) Quantity of water to be pumped when plant is working …….litres per hours

6 Details of pump (continued)

7 Purposes for which water is required: Litres per day

Domestic .. .. …….

Public .. .. …….

Industrial .. .. …….

Irrigation .. .. …….

Any other purpose (to be stated) .. ..
……..

_____

Total quantity of water per day _____

8 Alternative source of water available to the applicant (if any)
……
……..
……..

9 The following are the existing boreholes within one- half kilometre of which this application refers:

Borehole no. (If known)	Name of Farm (Reg. No)	Distance from site
……	…….	……
……	…….	……
……	……..	……

…… …….. ……

NOTE: This paragraph is not (10)*

Applicable to applications to

Record an existing right under the act I enclose herewith crossed Cheque/Postal Order/Money Order No …….

For K3000.00 to cover the prescribed fee for this application and undertake to pay the Malawi Government on demand the cost of insertion in the Government Gazette and in at least one newspaper circulating in Malawi of a Notice requiring any person objecting to the issue of a Grant of Rights to lodge such a complaint with the Chairman of the Water Resource Board.

Date …… .....

Signature of applicant or his duly Authorised Agent

NOTE: this form is to be accompanied by a sketch map, in duplicate on a scale of not less than one cm to one kilometre, on which must be shown the farm or holding boundaries, the approximate position of the proposed borehole and existing boreholes within one –half kilometre radius and the position of any body of surface water.

FORM WRB 1A

NOTIFICATION PRIOR TO AN APPLICATION FOR A GRANT OF WATER RIGHT (GROUND WATER)

This form is to be submitted to the Chairman of the Water Resources Board. Private Bag 390, Capital City, Lilongwe 3

(1) Full name of applicant …….
Postal address …….....
Occupation ……

(2) Location of land on which borehole is to be sunk, 1:50,000 sheet No
…….

NGR …….

Traditional Authority …….. District ……
……

(3) Briefly describe purpose for which water will be used ……
…..…….
……...
……
……
……
……
……

Date …… .....

Signature of applicant or his duly Authorised Agent

NOTE: This form is intended to notify the Board of the applicant's intention to drill or sink a borehole. Full details as to the purpose for which water is required will be shown in paragraph (7) of form WRB 2. Having known then yield of his well or borehole. The applicant will be in a position to decide whether water will be abstracted by hand or pump: and if by pump, the applicant may then fill paragraph (6) of the said Form WRB 2 with the necessary details.

REFERENCES

The following documents were consulted in the preparation of this SOP:

http://www.sdnp.org.mw/enviro/soe_report/index.html, State of Environment report for Malawi (1998), retrieved on 3 March 2012.

Ministry of Irrigation and Water Development, 2005. National Water Policy, Capital Printing Press, Malawi.

Mott MacDonald, 2003. Strengthening of the Water Resources Board: Annex 2: Review of Legislation, Malawi.