

INDUSTRIAL SURFACE WATER WITHDRAWAL PERMIT APPLICATION

September 2005

**GEORGIA DEPARTMENT OF NATURAL RESOURCES
ENVIRONMENTAL PROTECTION DIVISION
WATERSHED PROTECTION BRANCH
4220 INTERNATIONAL PARKWAY
SUITE 101
ATLANTA, GEORGIA 30354-3902**

APPLICATION FOR A PERMIT TO WITHDRAW OR DIVERT SURFACE WATER

-
1. Name of Applicant: _____ County: _____
Address: _____ Telephone: _____
Email Address: _____
-
2. Source of water supply at point of withdrawal or diversion (*give name of river, stream, etc. and attach U. S. Geologic Survey, 7.5 minute quadrangle map or latest county highway map showing location of same*):
-
3. Latitude and longitude of the withdrawal expressed in degrees, minutes and seconds:
-
4. Quantity of water withdrawn or diverted (*expressed in millions of gallons per day*):
- Maximum Daily: _____ mgd
Monthly Average: _____ mgd
-
5. State place where water withdrawal or diversion will be used (*if inter-basin transfer will result, so state*):
-
6. Use to be made of water withdrawn or diverted:
-
7. Additional explanation or other information (*use additional sheets as necessary*):
-
8. Water conservation Plan (*check one*):

___ Attached

___ To be submitted by _____ . (See Section on Water Conservation)
Date

___ On file at EPD Date of Plan: _____

9. Documentation of Growth:

Current Water Use:

Annual Average: _____ mgd Peak Day: _____ mgd

Projected annual average demand summary of Water Conservation Rules (3)8(ix)
Long Range Planning; (attached pertinent data or complete below):

5 Years	10 years	20 years	30 years	40 years	50 years
(20___)	(20___)	(20___)	(20___)	(20___)	(20___)
_____	_____	_____	_____	_____	_____

10. Current Average Consumptive Loss of Water: _____ %
(Average Annual Withdrawal - Average Annual Discharge)

11. Current and Projected Wastewater Treatment Capacity(ies):

Plant	Capacity
_____	_____ mgd
_____	_____ mgd
_____	_____ mgd

12. Are there any NPDES Permit Enforcement Actions currently pending against the applicant? ____ (Yes/No). If yes, describe and give current status:

13. Water Storage Available (*summary of Drought Contingency Plan*):

Plant/Clearwell _____ mgd

Finished Water: _____ mgd Raw Water: _____ mgd

Other Sources (*interconnections, etc.*):

Storage Characteristics (*fill in below or attach storage analysis*):

Dependable Yield: _____ mgd __ mo avg? __ ann avg? __ peak?
(*Check One*)

Drought Frequency (return period): _____ years

Simulation Period: _____ years

I understand that the Director of the Environmental Protection Division is relying upon the accuracy of the information provided herein and that in accordance with Section 1(d) of the Georgia Water Quality Control Act, as amended through 1997, I shall, upon request of the Director, provide such additional information as may be necessary to complete final disposition of the application. I understand that the Director may revoke a user's permit, in whole or in part, permanently or temporarily, for any material false statement in any report or statement of fact required of the permittee by the conditions contained in a permit granted in response to this application pursuant to the provision of Section 1(k)(1) of the Georgia Water Quality Control Act.

I further understand that no withdrawal or diversion of surface water in excess of the amounts specified in Section 1(a)(1) of the Georgia Water Quality Control Act can be made without a permit from the Georgia Environmental Protection Division of the Georgia Department of Natural Resources.

A permittee may seek renewal of a permit issued by the Director pursuant to Section 1(j) of the Georgia Water Quality Control Act at any time within six (6) months from the date of expiration of the permit.

Company Name (where Applicable)

Date

Official Signature of Owner or Title
of Authorized Official

Date

Printed Name of Above Individual

Legal Authority:

The Georgia Water Quality Control Act (O.C.G.A. 12-5-31, et seq), as amended through 1997.

WATER CONSERVATION OVERVIEW

The Georgia Board of Natural Resources has adopted revised Water Conservation Rules as amendments to the Rules for Water Quality Control and Rules for Ground Water Use in accordance with the requirements of Senate Bill 10 (SB 10), which was passed by the 1994 Georgia General Assembly. The Rules became effective on December 29, 1994.

As required by SB 10, the amendments to the Rules include revisions to the requirements pertaining to the content and submission of water conservation plans by applicants for **new or increased water withdrawal permits (excluding agriculture)**. The following information is provided for guidance purposes to help the applicant develop effective water conservation programs, which are based upon the specific needs and conditions of the water system to which they apply.

The water conservation Rules have been written in general terms to allow water systems flexibility in determining what programs are needed and would be cost effective for their water system. However, all systems are required to prepare and submit to EPD a plan that addresses improvements needed to reduce unaccounted for water (UAW) and/or describe programs already implemented for that purpose. In addition, all systems must address basic water demand management activities in their plan such as public education programs and the use of ultra-low flow plumbing fixtures in accordance with State and federal requirements. Areas experiencing rapid population growth which also have limited water supply alternatives such as many areas of north Georgia and areas where the quality of the water resources are being negatively impacted by high water demands whether by industry or population growth should implement more aggressive, proactive water conservation programs. In general, there are three basic areas which the water conservation plans should address.

1. **WATER LOSS:** Reduce water loss and/or UAW through enhanced system management programs such as meter installation, replacement and calibration; leak detection; theft prevention; etc.
2. **WATER DEMAND MANAGEMENT:** Establish programs to improve long-term management of the water system demand. Equitable, cost based water billing based on metered use is desirable for all water systems. Compliance with plumbing code provisions requiring the use of ultra - low flow plumbing fixtures is also an essential component of a comprehensive demand management strategy. Some areas with high peak demands, very high growth rates, etc. may benefit from implementing more proactive measures such as peak demand surcharges, intensive public education programs, recycling, retrofitting of ultra-low flow plumbing fixtures, etc. To be successful, public education and involvement must be included as high priority components of the water conservation plan.
3. **LONG RANGE PLANNING:** Develop long term water demand projections which reflect demand reductions based on the implementation of continuous water conservation measures as outlined in your plan.

Planned improvements and/or activities that address the above goals should be outlined in the water conservation plan with specific objectives for each activity along with proposed implementation schedules. The programs should be designed to maximize use of available resources, while protecting the quality of our limited water resources. The above information is discussed in greater detail in the attached "Water Conservation - A Guide for Georgia". EPD will provide additional information and assistance to the applicant as requested.

WATER CONSERVATION RULES WITH COMMENTARY

391-3-6-.07 Surface Water Withdrawals. Amended

Rule (3)8. In the preparation of a permit application for a new permit or modification of an existing permit which includes an increase in the permitted water use (except for a farm use permit application), the applicant must submit to the Director for approval a water conservation plan prepared in accordance with the following guidelines. The plan must address the following items (or contain a statement why the item is not an appropriate part of the plan):

GUIDELINES	COMMENTARY
<p>(i) System management;</p> <p style="padding-left: 40px;">(I) Within the most recent 24 month period, a minimum of twelve consecutive months of UAW data*;</p> <p style="padding-left: 40px;">(II) A description of any current or planned programs to reduce UAW such as those listed below (include proposed schedules for planned activities):</p> <ul style="list-style-type: none"> I. Leak detection and elimination; II. Availability of accurate maps of the water system; III. Meter maintenance, testing, replacement, calibration, etc; IV. Prevention of tank overflows; V. Flushing programs without degradation of water quality; VI. Prevention of unauthorized water use - fire hydrants, fire lines, etc.; VII. A list of unmetered service connections including publicly owned facilities, churches, etc.; VIII. Other; <p style="padding-left: 40px;">(III) A list of inter-connections with other water systems and a description of any contractual agreements, type (emergency back-up, wholesale sale or purchase) and purchase amounts;</p> <p style="padding-left: 40px;">(IV) Any additional current or planned activities pertaining to system management that will contribute to water conservation.</p> <p style="font-size: small; margin-top: 20px;">*As defined in the Rules for Ground Water Use, UAW (unaccounted for water) is the difference between the total amount of water pumped into the water system from the source(s) and the amount of metered use by the customers of the water system expressed as a percentage of the total water pumped into the system. UAW generally includes system leakage and unmetered use such as fire fighting, line flushing, broken water mains, etc...</p>	<p>In general, water systems should develop programs and adhere to sound management practices in operation of their systems to insure that maximum beneficial use is obtained from the permitted withdrawal. To accomplish this goal, water system management must be optimized to reduce UAW to the lowest practical level. A standard water industry goal is to achieve an UAW level of 10 %. As a first step in reducing UAW, a water audits should be conducted to identify how water is being used. Also of primary importance in reducing UAW is to insure that system meters are properly calibrated, tested or replaced in accordance with AWWA and manufacturers recommendations - annual calibration for larger meters and testing and/or replacement every 10 -15 years for small commercial and residential meters.</p> <p>Other programs which can help reduce UAW such as scheduled replacement of old water lines that experience frequent line breaks or require frequent flushing due red water, valve maintenance programs, etc., should be implemented as needed.</p> <p>Water systems with excessive UAW may not receive the requested withdrawal increase, unless programs to reduce UAW are adequately addressed in the plan.</p>

<p>(ii) Treatment plant management;</p> <p>(I) The condition, calibration frequency, type, etc. of raw and finished water metering;</p> <p>(II) An analysis of in-plant water use for filter backwashing, overflows, laboratory use, etc. as a percentage of total plant production. Also, the plan must outline any ongoing or planned plant improvements (including schedules for planned improvements) and/or revised operational procedures to reduce in-plant use;</p> <p>(III) A description of any recycling or reuse of filter backwash water.</p>	<p>Water use and losses in a water treatment plant can be a significant percentage of the total source water withdrawn and therefore should not be overlooked as a potential water conservation measure. Backwash rates and procedures should be evaluated for potential savings. Overflows from basins, storage tanks as well as leakage should also be considered.</p> <p>Water conservation should be considered in the design and selection of new treatment facilities, processes, components, etc. However, under future federal drinking water regulations, recycling of filter backwash water may not be approved or may require special treatment considerations due to the potential for concentrating and recycling of pathogenic organisms. Appropriate regulatory authorities should be consulted before implementing any new recycling of filter backwash water.</p>
<p>(iii) Rate making policies;</p> <p>(I) A list of non-billed service connections. Also, if available, a breakdown by number of meters or % of total production for each class of customer, e.g., residential, commercial, industrial, wholesale;</p> <p>(II) A copy of the water rate structure currently in use including any surcharges, demand charges, etc., which may apply to certain customers and a description of the effects of this rate structure on water conservation;</p> <p>(III) A description of any system policies concerning second meters for landscape irrigation and any use of sewer meters for billing;</p> <p>(IV) A statement in response to the following questions:</p> <p>I. Is the water system financially self-supporting?</p> <p>II. Are water system expenditures subsidized by non-water/sewer system revenues?</p>	<p>Water systems with limited supply options which are experiencing rapid growth, high peak demands, etc., should consider developing more proactive programs to address demand management. Before selecting any specific conservation alternative, an analysis of water use by customer category should be performed to determine what types of programs to consider based on the specific needs of the system. The goal of demand management is to improve the efficiency of customer water usage, which results in a reduction of long term water demand projections for a particular system.</p> <p>Although equitable, cost based water rates based on metered usage are recommended for all water systems, water rates which incorporate peak demand surcharges or other conservation incentives can be an effective demand management strategy.</p> <p>All water systems should be financially self-supporting.</p> <p>NOTE: Although metering is desirable for all water usage, there may be circumstances that render metering impractical and uneconomical.</p>

<p>(iv) Plumbing ordinances and/or codes;</p> <p>(I) A description of compliance with State Water Conservation Law, which requires the use of ultra-low flow plumbing fixtures. The applicant may include copies of adopted ordinances if applicable;</p> <p>(II) Ordinances/codes or other special requirements pertaining to outside water use such as landscape irrigation systems, commercial car washes, etc.</p>	<p>Water systems must verify compliance with State law requiring the installation of ultra-low flow plumbing fixtures - 1.6 gallon toilets, 2.0 gpm lavatory faucets, 2.5 gpm kitchen faucets, 2.5 gpm showerheads and 1.0 gallon urinals. Compliance with these standards will result in long term water savings, which can be estimated based on projected growth rates for a water system.</p> <p>Systems with very high growth rates may want to consider the cost effectiveness of retrofit or rebate programs for customer replacement older high flow plumbing fixtures such as 5.0 gallon toilets, etc.</p> <p>Any other ordinances such as requirements for recycling by commercial car washes, etc., should be outlined in the plan.</p>
<p>(v) Recycle - reuse;</p> <p>(I) A description or accounting of any recycling or reuse of treated wastewater.</p>	<p>Any current or planned use of recycled water should be outlined in the plan.</p>
<p>(vi) A description of current and planned education programs for the promotion of water conservation.</p>	<p>To be successful, a water conservation plan must incorporate programs for public education and involvement. The scope of these programs will vary according to the needs of the individual water system; however, programs which encourage the xeriscape landscape methods, involve schools, community groups, etc., should be developed where possible. Use of outside resources (promotional materials, expertise) can facilitate the implementation of these programs.</p>
<p>(vii) Progress report;</p> <p>(I) Five years after issuance of a new or modified Surface Water Withdrawal Permit, the permittee must submit to the Director a progress report that outlines actions and/or improvements made to conserve water and reduce water loss, e.g., leak detection/repair, meter installation, calibration, or replacement, summer and/or peak use surcharges, enforcement of ultra-low flow plumbing fixture requirements, etc. Permittees with a total permitted withdrawal less than one million gallons per day on a monthly average may use a simplified reporting format supplied by the Division.</p>	<p>The report should outline improvements and include an estimate of the resulting water savings such as reduction of UAW, installation of ultra flow plumbing fixtures in new construction or retrofits, etc. The report should also summarize other conservation related activities such as public education programs and any new activities should be outlined in the progress report.</p>

<p>(viii) Water use data;</p> <p>Permittees must submit to the Director an annual water use data report that includes information on unaccounted for water for the past 12 months. This report will be submitted in conjunction with the annual water use report that is required pursuant to subsection 391-3-6-.07(15).</p>	<p>Collection and dissemination of UAW data and related technical information will help improve the overall efficiency of water systems in the State which will contribute to the enhanced protection of the water resources.</p>
<p>(ix) Long range planning;</p> <p>All permittees must incorporate water conservation into long-term water demand and supply planning. Permittees must develop water demand projections covering a 20-year time period using a method or methods approved by the Director. The demand projections must reflect the effects (demand reductions) inherent in the implementation of new or enhanced water conservation programs.</p>	<p>Water demand projections will demonstrate a utility's long-term ongoing commitment to the implementation of effective water conservation programs, which will produce beneficial results for the water system and its customers while enhancing the protection of the water resources of the State.</p>
<p>(x) A description of any additional water conservation activities.</p>	

**DROUGHT CONTINGENCY RULES
WITH COMMENTARY**

391-3-6-.07 Surface Water Withdrawals. Amended

Rule (3)9. The applicant or permittee must provide to the Director for approval a drought contingency plan prepared in accordance with the following guidelines. The plan should include alternative system and resource management strategies to be implemented under drought conditions that may severely reduce the availability of the resource. The applicant must provide the following items in the plan (or a statement as to why the item is not an appropriate part of the plan):

GUIDELINES	COMMENTARY
<p>(i) Drought condition indicators;</p> <p>(I) The applicant or permittee must develop a system for determining drought severity based on some approved indicator, e.g.:</p> <ul style="list-style-type: none"> I. Streamflow levels; II. Ground water levels; III. Reservoir storage or levels; IV. Other. 	<p>Item (i) should describe various conditions, which would require the implementation of the drought contingency plan (DCP). These conditions are usually drought related indicators such as high system demands, low pressure, withdrawals approaching or exceeding permitted limits, etc. However, shortages may also be caused by natural disasters, equipment failures, etc.</p> <p>The permittee can track drought severity with the use of gages to indicate streamflow volume and/or reservoir levels. Such gages range from the simple surface water level staff gage to continuous surface level/flow volume stream gage. Side channel stilling wells can also be used to measure surface water levels and flow volume.</p>
<p>(ii) Potable water use priorities program;</p> <p>(I) The following order of potable water use priorities is generally recommended but may be modified as needed based on local conditions:</p> <ul style="list-style-type: none"> I. Emergency facilities for essential life support measures; II. Domestic and personal uses, including drinking, cooking, washing, sanitary and health related; III. Farm uses; IV. Industrial uses (including those industries on public water systems); V. Other uses such as lawn sprinkling, non-commercial car washing, garden watering, etc.; VI. Outdoor recreational uses. <p>(II) Conditions or events that put priority use system into effect;</p> <p>(III) Adopted priority use system for service during periods of water shortages;</p> <p>(IV) Restrictions on lower priority uses (including enforcement procedures);</p> <p>(V) Rationing and/or other emergency procedures</p>	<p>For long-term drought related conditions a multi-phase program of restrictions on non-essential water use is recommended. Initial phases can be voluntary progressing to mandatory based on the duration and severity of the drought. Indicators such as those listed under item (I) should be identified which would trigger each phase of restrictions should be included in the plan as well as enforcement procedures and penalties for violations of restrictions.</p> <p>Examples of restrictions on lower priority uses include odd/even, time of day, restrictions on nonessential outdoor water uses (washing of driveways, lawn watering, non-commercial car washing, etc..).</p> <p>An extended, severe drought or natural disaster which affects the ability of the water system to meet normal demands could lead to restrictions on commercial/industrial usage and eventual curtailment of all service except for essential sanitary, health related and emergency facilities.</p> <p>The success of priority use will be reflected in the % reduction in water treated at the raw water treatment plant.</p>

(iii) Low flow protection;

(I) For applications for new or modified permits to withdraw, impound or divert surface water:

No permit will be issued by the Director which authorizes the depletion of the instream flow established for the withdrawal, diversion or impoundment of surface water, except for periods of Emergency Water Shortage as described in Subsection 391-3-6-.07(12);

(II) For applications for new or modified permits, the applicant will be required to pass instream flow at or immediately downstream of the point of withdrawal, diversion or impoundment so long as it is available from upstream. When upstream flows drop below the required instream flow at the point of withdrawal, diversion or impoundment, the applicant will be required to pass that upstream flow. The Instream Flow required for new or modified permits in this subsection shall be:

I. The 7Q10 flow, if no unreasonable adverse effects to the stream or other water users will occur from the withdrawal, diversion or impoundment; or

II. The Non-Depletable Flow, as established by the Director, if probable impacts of the withdrawal, diversion or impoundment would occur to other water users; or

III. Other appropriate instream flow limit, as established by the Director;

(III) Low-flow monitoring plan that outlines applicant's procedure to monitor and protect instream flow below the point of withdrawal. Where applicable, the applicant must develop a plan for monitoring stream flow so that the instream flow limit can be protected. The monitoring plan must determine stream flow based on one of the following:

I. U.S.G.S staff gage or continuous recording station;

II. Other staff gage as approved by the Director;

III. Weir;

IV. Other.

Permittees with grandfathered withdrawals (withdrawals existing when legislation requiring surface water withdrawal permits was passed) can normally withdraw at their permitted rate if the water is available. Permittees seeking to increase withdrawal must protect streamflow for the incremental increase.

For new withdrawals, the applicant must allow a set instream flow to pass below the withdrawal point. This flow may be the 7Q10 (the minimum average flow for 7 consecutive days with a 10-year recurrence interval) or some other Non-Depletable Flow (NDF) as determined by the Director. This NDF may include downstream demand from prior permitted water users and/or downstream needs associated with minimizing environmental impacts.

The low-flow monitoring plan can be tied in with the device or devices used as drought indicators and should serve as a tool that allows the permittee to maximize system efficiency while protecting the resource.

The applicant should detail any wastewater discharge (if to the same source) that may serve to reduce withdrawal impacts.

(iv) Water storage available to ensure availability of raw water to applicant through a critical drought period. Examples of suitable critical drought periods include but are not limited to: 50-year recurrence interval; 1954-1956 drought; 1984-1988 drought. The definition of available storage should include:

- (I) Yield vs. drought return period;
- (II) Storage type, e.g., main stream or off-stream supplemental;
- (III) Any available alternate sources of finished and raw water such as ground water, interconnections, contractual agreements.

Where storage of water is used to increase water withdrawal reliability, the permittee must analyze the storage/withdrawal system using a proven engineering method. An example would be to route selected drought flows through the system to determine either the maximum withdrawal quantity that can be sustained through the drought or to determine the amount of storage required for a desired withdrawal. Such an analysis may be for a single on-stream reservoir, for multiple reservoirs or for off-stream storage with high flow pumping.

The applicant must also demonstrate the reliability of any alternative sources such as those listed in (III). The applicant must provide evidence that any contracted water supplier must have the capacity to provide water continuously through drought periods.