

Appendix 5C-B

Model Water Conservation Plan for Industrial Entities

This appendix includes a Model Water Conservation Plan for Industrial water users in the ETRWPA. The model plan addresses the latest Texas Commission on Environment Quality requirements and is intended to be modified by each user to best reflect the activities appropriate to the entity. The model plan also includes sample appendices required:

- Appendix A – List of References
- Appendix B – Texas Commission on Environmental Quality Rules on Water Conservation Plans for Industrial or Mining Use
- Appendix C – Water Conservation Implementation Report

This page intentionally left blank

Water Conservation Plan for [Industrial Entity]

Date

TABLE OF CONTENTS

1. Objectives
2. Description of Water Use
3. Specification of Water Conservation Goals
4. Metering of Industrial and Mining Water Users
5. Leak Detection and Repair and Water Loss Accounting
6. Improving, Modifying, and Auditing Processes and Equipment
7. Other Water Conservation Methods, Practices, or Techniques
8. Implementation and Modifications to Water Conservation Plan

APPENDICES

- | | |
|------------|--|
| Appendix A | List of References |
| Appendix B | Texas Commission on Environmental Quality Rules on Water Conservation Plans for Industrial or Mining Use |
| Appendix C | Water Conservation Implementation Report |

Water Conservation Plan for [Industrial Entity]

1. Objectives

The Texas Commission on Environmental Quality has developed guidelines and requirements governing the development of water conservation plans for industrial or mining use in Title 30, Part 1, Chapter 288, Subchapter A, Rule 288.4 of the Texas Administrative Code (TAC). The minimum requirements are:

TAC Reference	Subject	Plan Location
30 TAC §288.3(a)(1)	Water Use in the Production Process	Section 2
30 TAC §288.3(a)(2)	Water Conservation Goals	Section 3
30 TAC §288.3(a)(3)	Accurate Metering	Section 4
30 TAC §288.3(a)(4)	Leak Detection, Repair, and Water Loss Accounting	Section 5
30 TAC §288.3(a)(5)	Water Use Efficiency Process and/or Equipment Upgrades	Section 6
30 TAC §288.3(a)(6)	Other Conservation Practices	Section 7
30 TAC §288.3(b)	Review and Update of Plan	Section 8
30 TAC §288.30(1)	Water Conservation Implementation Report	Section 8

The purpose of this water conservation plan is to:

- To reduce water consumption from the levels that would exist without conservation efforts.
- To reduce the loss and waste of water.
- To encourage improvement of processes that inefficiently consume water.
- To extend the life of current supplies by reducing the rate of growth in demand.
- To document the level of recycling and reuse in the water supply.

This water conservation plan is intended to serve as a guide to [entity]. The following plan includes all conservation measures required by TCEQ.

2. Description of Water Use

The TCEQ requires that each mining or industrial water user must document how water is used in the production process.

- *[Entity provides information including:*
 - *How water is diverted and transported from the source(s) of supply*
 - *How water is utilized in the production process*
 - *How much water is consumed in the production process and not available for reuse, discharge, or other means of disposal]*

3. Specification of Water Conservation Goals

The TCEQ regulations require that each industrial and mining user adopt quantifiable water conservation goals in their water conservation plan. *[Entity]* has specified a five-year and ten-year target for water savings. *[Include quantifiable water savings targets and the details of the basis for the development of these goals. The goals established by industrial or mining water users under this paragraph are not enforceable.]*

The goals for this water conservation plan include the following:

- *[Name goals.] Potential goals are:*
 - *Meter water use to decrease water loss through leaks*
 - *Regularly inspect systems for leaks and promptly repair in order to control unaccounted water*
 - *Improve, modify, or audit processes in order to increase efficient water use*

4. Metering of Industrial and Mining Water Users

[Entity]'s water use is metered at *[description of location]*. Submetering is a good strategy for some industrial water users. Processes or equipment that consume large quantities of water could

be usefully submetered. Submetering is an effective way to account for all water use by process, subprocess, or piece of equipment in a facility.

[Identify processes and/or equipment that are currently submetered. This section must include a description of the device(s) and/or method(s) within an accuracy of plus or minus five percent to be used to measure and account for the amount of water diverted from the source of supply.]

5. Leak Detection and Repair and Water Loss Accounting

[Describe leak-detection, repair, and accounting for water loss in the water distribution system.]

Careful metering of water use, detection, and repair of leaks in the distribution system and regular monitoring of water loss are important in controlling losses.

Water loss can be attributed to several things including:

- Inaccuracies in meters. Older meters tend to run slowly and therefore under-report actual use.
- Loss due to leaks and main breaks in the system.
- [Other].

In order to control water loss, personnel are asked to watch for and report water main breaks and leaks. Broken and leaking lines should be replaced or repaired in a timely manner.

[Entity] will implement and maintain a water loss program. This program will serve to reduce losses due to leakage. The measures of the water loss program include *[select applicable measure]*:

- Conducting regular inspections of aboveground piping and pump packing.
- Logging flowmeter readings on a daily basis.

- Metering individual pressure zones
- Controlling pressure just above the minimum standard-of-service level
- Limiting surges in pressure.
- [Other]

6. Improving, Modifying, and Auditing Processes and Equipment

[Entity] can increase water efficiency by improving, modifying, and auditing facility processes and equipment. Water can be conserved through the following measures

[select appropriate measure]:

- Implementing a Water Waste Reduction Program
- Optimizing the water-use efficiency of cooling systems (other than cooling towers)
- Reducing water loss in cooling towers

Water Waste Reduction Programs cause [Entity] personnel to be more aware of wasteful activities. Measures resulting from a Water Waste Reduction Program include:

- Install water saving devices on equipment.
- Replace current equipment with more water-efficient equipment.
- Recycle water within a process.
- Change to waterless equipment or process.

7. Other Water Conservation Methods, Practices, or Techniques

[This section must include any other water conservation practice, method, or technique which the user shows to be appropriate for achieving the stated goal(s) of the water conservation plan.

Other sections emphasize process water usage, equipment upgrades, and process modifications. This section should report on proposed conservation practices, methods, or techniques that address other water uses, such as domestic water use, housekeeping water use, and landscape irrigation. Potential

conservation methods include retrofit of water-efficient toilets, showerheads, and faucet aerators; water-wise landscaping; employee education; and other methods.]

8. Implementation and Modifications to Water Conservation Plan

Upon implementation of this water conservation plan, [Entity] will update the plan at least every five years. New goals will be based on previous five-year and ten-year goals and any new information.

[Entity] has prepared a water conservation implementation report that details its water conservation efforts and achievements. The implementation report is included in Appendix C.

This report includes:

- The list of dates and descriptions of conservation measures implemented
- Amount of water saved
- Data about whether or not targets in the plan are met
- If targets are not met, an explanation as to why the target was not met and a discussion of the progress to meet the target.

Appendix A

List of References

APPENDIX A

List of References

Title 30 of the Texas Administrative Code, Part 1, Chapter 288, Subchapter B, Rule 288.3, downloaded from <http://www.sos.state.tx.us/tac>, Effective December 6, 2012.

Texas Commission on Environmental Quality, *Water Conservation Implementation Report Non Public Water Supplier*, TCEQ Form No. 20645, Revised September 18, 2013.

Appendix B

*Texas Commission on Environmental Quality
Rules on Water Conservation Plans for
Industrial or Mining Use*

SUBCHAPTER A: WATER CONSERVATION PLANS

§§288.1 - 288.7

Effective December 6, 2012

§288.3. Water Conservation Plans for Industrial or Mining Use.

(a) A water conservation plan for industrial or mining uses of water must provide information in response to each of the following elements. If the plan does not provide information for each requirement, the industrial or mining water user shall include in the plan an explanation of why the requirement is not applicable.

(1) a description of the use of the water in the production process, including how the water is diverted and transported from the source(s) of supply, how the water is utilized in the production process, and the estimated quantity of water consumed in the production process and therefore unavailable for reuse, discharge, or other means of disposal;

(2) specific, quantified five-year and ten-year targets for water savings and the basis for the development of such goals. The goals established by industrial or mining water users under this paragraph are not enforceable;

(3) a description of the device(s) and/or method(s) within an accuracy of plus or minus 5.0% to be used in order to measure and account for the amount of water diverted from the source of supply;

(4) leak-detection, repair, and accounting for water loss in the water distribution system;

(5) application of state-of-the-art equipment and/or process modifications to improve water use efficiency; and

(6) any other water conservation practice, method, or technique which the user shows to be appropriate for achieving the stated goal or goals of the water conservation plan.

(b) An industrial or mining water user shall review and update its water conservation plan, as appropriate, based on an assessment of previous five-year and ten-year targets and any other new or updated information. The industrial or mining water user shall review and update the next revision of its water conservation plan every five years to coincide with the regional water planning group.

Adopted November 14, 2012

Effective December 6, 2012

Appendix C

Water Conservation Implementation Report



Texas Commission on Environmental Quality

Water Conservation Implementation Report

Non Public Water Supplier

This report must be completed by entities that are required to submit a water conservation plan to the TCEQ in accordance with Title 30 Texas Administrative Code, Chapter 288. Please complete this report and submit it to the TCEQ. If you need assistance in completing this form, please contact the Resource Protection Team in the Water Availability Division at (512) 239-4691.

CONTACT INFORMATION

Name of Entity: [Click here to enter text.](#)

Water Rights Permit numbers: [Click here to enter text.](#)

Address: [Click here to enter text.](#)

City: [Click here to enter text.](#)

Zip Code: [Click here to enter text.](#)

Email: [Click here to enter text.](#)

Telephone Number: [Click here to enter text.](#)

Regional Water Planning Group: _____ [Map](#)

Groundwater Conservation District: _____ [Map](#)

Form Completed By: [Click here to enter text.](#)

Title: [Click here to enter text.](#)

Signature: _____

Date: [Click here to enter a date.](#)

Contact information for the person or department responsible for implementing the water conservation plan:

Name: [Click here to enter text.](#)

Phone: [Click here to enter text.](#)

Email: [Click here to enter text.](#)

Report Completed on Date: dd/mm/yyyy

Reporting Period (**check only one**):

Fiscal Period Begin dd/mm/yyyy Period End dd/mm/yyyy

Calendar Period Begin dd/mm/yyyy Period End dd/mm/yyyy

Please check all of the following that apply to your entity:

An entity that has a non-irrigation surface water right greater than 1,000 acre-feet/year

An entity that has an irrigation surface water right greater than 10,000 acre-feet/year

System Data

Fields that are gray are entered by the user.
Highlight the 0's that are in white and press F9 to populate these fields.

	Total Gallons During the Reporting Period.
Water Produced: Volume produced from own sources	
Wholesale Water Imported : Purchased wholesale water imported from other sources into the distribution system	
TOTAL System Input : Total water input into the system	0 [Produced + Imported = System Input]
TOTAL System Output : Water used, sold, exported or transferred out of the system	
TOTAL Authorized Water Use: All water that has been authorized for use or consumption.	0 [System Output ÷ 365 = Average Gallons per day]

In the table below please provide the **specific and quantified five and ten-year targets for water savings** as listed in your most current water conservation plan.

Date	Target for: Water Savings	Target for: Water Loss
Five-year target date: dd/mm/yyyy		
Ten-year target date: dd/mm/yyyy		

Are targets in the water conservation plan being met? Yes No

If these targets are not being met, provide an explanation as to why, including any progress on these targets. [Click here to enter text.](#)

Water Conservation Programs and Activities

As you complete this section, please review your entity's water conservation plan to see if you are making progress towards meeting your stated goals.

Fields that are gray are entered by the user.
Highlight the 0's that are in white and press F9 to populate these fields.

1. Water Conservation Plan

What year did your entity adopt, or revise, their most recent water conservation plan?

[Click here to enter a date.](#)

Does the plan incorporate [Best Management Practices](#)? Yes No

2. Water Conservation Programs

Has your entity implemented any type of water conservation activities or programs?

Yes No

If yes: For this reporting period, please select the types of activities and programs that your entity actively administered and estimated volume of water conserved.

Agricultural Activities and Practices	Estimated Volume (in gallons)
<input type="checkbox"/> Irrigation Audit	
<input type="checkbox"/> Information Gathering and Education Practices	
<input type="checkbox"/> Cropping and Management Practices	
<input type="checkbox"/> Scheduling Practices	
<input type="checkbox"/> Land Management Systems	
<input type="checkbox"/> On-Farm Water Delivery Systems	
<input type="checkbox"/> Water District Delivery Systems	
Industrial Activities and Practices	
<input type="checkbox"/> Industrial Water Audit	
<input type="checkbox"/> Conservation Analysis and Planning	
<input type="checkbox"/> Education Practices	
<input type="checkbox"/> System Operations	
<input type="checkbox"/> Cooling System Management	
<input type="checkbox"/> Landscaping	
<input type="checkbox"/> Sector Specific Practices	
Estimated Volume of Water Conserved	0

Other Activities? Please list or describe: [Click here to enter text.](#)

3. Reuse (Water or Wastewater Effluent)

For this reporting period, please provide the following data regarding the types of direct and indirect reuse activities that were administered:

Fields that are gray are entered by the user. Highlight the 0's that are in white and press F9 to nonulate these fields.

Reuse Activity	Estimated Volume (in gallons)
On-site irrigation	
Plant wash down	
Chlorination/de-chlorination	
Industrial	
Landscape irrigation (parks, golf courses)	
Agricultural	
Other, please describe:	
Estimated Volume of Recycled or Reuse	0

4. Water Savings

For this reporting period, estimate the savings that resulted from your overall water conservation activities and programs?

Estimated Gallons Saved (Total from Conservation Programs Table)	Estimated Gallons Recycled or Reused (Total from Reuse Table)	Total Volume of Water Saved ¹	Dollar Value of Water Saved ²
		0	

1. [Estimated gallons saved + Estimated gallons recycled or reused = Total Volume Saved]
2. Estimate this value by taking into account water savings, the cost of treatment or purchase of your water, and any deferred capital costs due to conservation.

5. In your opinion, how would you rank the overall effectiveness of your conservation programs and activities, if applicable? [Click here to enter text.](#)

Please List Activities and Practices listed in the Water Conservation Activities Tables	Less Than Effective	Somewhat Effective	Highly Effective
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

6. What might your entity do to expand water conservation efforts? [Click here to enter text.](#)

If you have any questions on how to fill out this form or about the Water Conservation program, please contact us at 512/239-4691.

Individuals are entitled to request and review their personal information that the agency gathers on its forms. They may also have any errors in their information corrected. To review such information, contact us at 512-239-3282.