AguaClara

Water Treatment Technology Selection Guide

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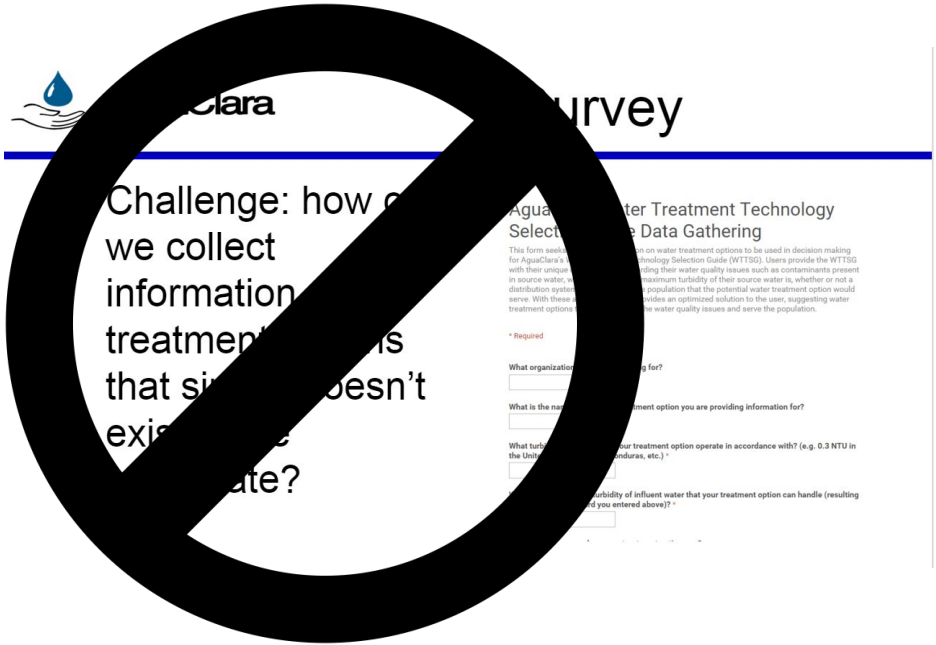
AguaClara

New Mission



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Data and Assumptions

EPA

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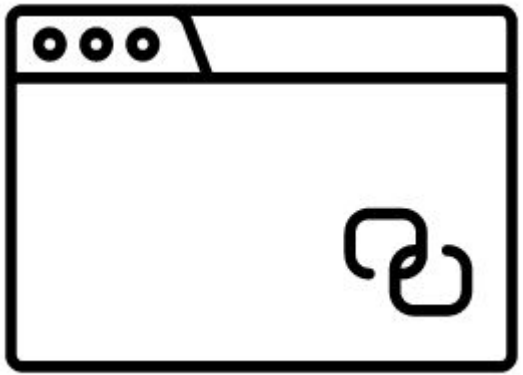
Permalinking



```php
/* Url is of form /results.php?results=5637ba19ae07a (etc.) where the unique id
 * is the GET variable for results. So if someone is trying to reload a previous
 * version of the WTTSG from a permalink, we need to get the correct information
 * out of the database and update the SESSION variables so everything can be
 * displayed properly.
 */
function reloadFromPermalink(){
    if(isset($_GET["results"])){
        if($_GET["results"] != $_SESSION['uniqueUserId']){
            $mysqli = new mysqli(DB_HOST, DB_USERNAME, DB_PASSWORD, DB_NAME);
            $contaminants = $_SESSION['contaminants'];
            //do things for the permalink
            $permalinkID = $mysqli->real_escape_string(strip_tags($_GET["results"]));
            $permalinkQuery = "SELECT * FROM `userdata` WHERE `uniqueUserID` = '".$permalinkID."';";
            $queryResult = $mysqli->query($permalinkQuery);
```

http://aguaclaraserver.cee.cornell.edu/results.php?results=566d8c64e0c76

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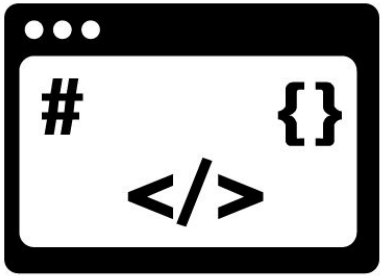
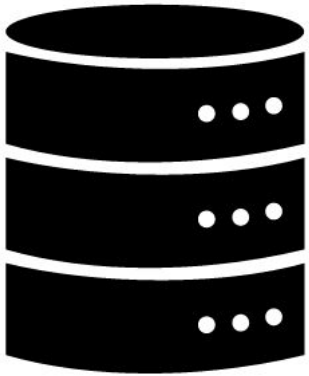
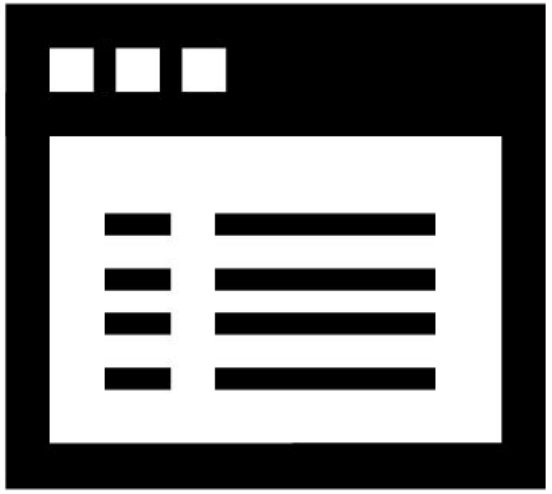
Scalability







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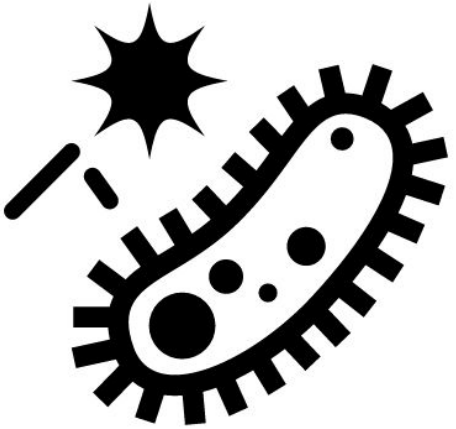
Constraints Data

Which of the following contaminant fields require quantitative (non-boolean) data?

Contaminants	Nitrates	Arsenic	Microbes	Radioactive Nuclides	Organics	Heavy Metals	Iron	Manganese	Calcium or Magnesium	Cyanide	Fluoride
Needs Non Bool Data?	☑	☑	☐	☐	☐	☐	☑	☑	☐	☑	☑
EPA MCL (mg/L)	10.00000	0.01000					0.30000	0.05000		0.02000	2.00000

What substances or chemicals have been identified as a problem in your water source? Quantify the contamination level.

- ☑ **Nitrates** — mg/L
  The EPA's maximum contaminant level (MCL) for Nitrates is 10 mg/L
- ☐ **Arsenic**
  The EPA's maximum contaminant level (MCL) for Arsenic is 0.01 mg/L
- ☐ **Iron**
  The EPA's maximum contaminant level (MCL) for Iron is 0.3 mg/L
- ☑ **Manganese** — mg/L
  The EPA's maximum contaminant level (MCL) for Manganese is 0.05 mg/L
- ☐ **Cyanide**
  The EPA's maximum contaminant level (MCL) for Cyanide is 0.02 mg/L
- ☐ **Fluoride**
  The EPA's maximum contaminant level (MCL) for Fluoride is 2 mg/L



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Recommendation Info

treatmentOption	Nitrates	Arsenic	Microbes	Radioactive Nuclides	Organics	Heavy Metals	Iron	Manganese	Calcium or Magnesium	Cyanide	Fluoride	Population	Turbidity	
AguaClara		40		0	1	0	70	70	0	90	20		1000	delete
eStaRS	4	1		0	0	0	0	0	0	0	0		10	delete
FIME				0	0	0	0	0	0	0	0		150	delete
ironBiosand		1	33	0.3	0	0	0	0	0	0	0		50	delete
kiosks	127		32	1	0	0	0	0	0	0	0			delete

treatmentOption	introText	turbidityText	contaminantText	costText	distributionText	sourceTypeText	flowRateText	
AguaClara	AguaClara plants are sustainable, gravity-powered treatment options capable of serving a	AguaClara plants are good at handling turbidity, processing levels up to 1000 NTUs regularly.	AguaClara plants do not, however, offer significant removal of arsenic or other contaminants.	The plants generally cost around 100,000 USD to construct, and several thousand dollars a month to	AguaClara plants are a centralized water treatment option, and as such, they need distribution	AguaClara plants primarily treat surface water, but there may be some instances in which	AguaClara plants come in a wide variety of flow rates, most between 20 and 70 L/s.	delete
kiosks	Kiosks are a decentralized treatment option.	They cannot handle very high turbidities.	Kiosks are not a very good treatment option if you are looking to remove lots of contaminants.	Kiosks are pretty cheap! There is not a high construction overhead associated with building one.	They are decentralized, and do not require a distribution system to operate. Rather	Kiosks could be configured to treat ground or source water.	Kiosks serve low flow rates. Community members share the same access point.	delete

treatmentOption	altText	Current Picture	Add/Change Photo
AguaClara	Agua Clara Plant		Choose File No file chosen

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Documentation

```php
<?php
    session_start();
    if(!isset($_SESSION['uniqueUserId'])){
        $_SESSION['uniqueUserId'] = uniqid($prefix = "");
    }
    include 'header.php';

    /* RESULTS.PHP
     * =========
     * Saves the session variables to the `userdata` table in the db for review.
     * Allow users to update previously submitted values via a dynamic editing
     * menu. Allow users to reload page from a unique permalink, fetching data
     * from the `userdata` table. Edit menu javascript is in a separate file,
     * required/editMenu.php
     */

    //KNOWN BUGS: Chemical editing does not work for boolean/non boolean cases


    // Processes the data from the last page on the index.php
    if (isset($_POST["distributionType"])){
        $_SESSION["userDistributionType"] = $_POST["distributionType"];
    }

    /* If any POST fields are set, the user submitted a change through the editable
     * menu. We should set the session variable to be equal to the user-submitted content
     */
    function processResubmit(){
        // Processes all the other data since the results form may have been resubmitted
        // through the interactive review form
        if (isset($_POST["distChange"])){
```

Webtool Tour!

http://aguaclaraserver.cee.cornell.edu/

Future Challenges

- Recommendation based on unit process (possibly)
- Having the webtool updated for any new data on AguaClara

Questions