

Olszewski, Rosemarie (DEQ)

From: Prysby, Mike (DEQ)
Sent: Friday, April 03, 2015 2:47 PM
To: 'bwright@cityofflint.com'; Michael Glasgow
Subject: FW: Schematics for LT2 sampling plans
Attachments: Schematics_combined.pdf; SCHEMATIC_01.pdf; SCHEMATIC_02.pdf; SCHEMATIC_03.pdf; SCHEMATIC_04.pdf; SCHEMATIC_05.pdf; SCHEMATIC_06.pdf; SCHEMATIC_07.pdf; SCHEMATIC_08.pdf; SCHEMATIC_09.pdf; SCHEMATIC_10.pdf

Brent, Mike

Attached are the example schematics that the plants on Schedule 2 may use to indicate where the source water sampling location is in relation to the intake, chemical feed points, recycle streams (if any) and the plant. You can select the schematic that best fits your situation and mark the sampling location and other pertinent information on it. If you can't find a schematic that doesn't fit Flint's exact setup, you can use the generic/blank one (schematic 10). Your Schedule 2 Crypto. monitoring letter is being mailed to you today.

Michael Prysby, P.E.
District Engineer
Office of Drinking Water and Municipal Assistance
517 290-8817

Figure 1. Sample Tap before Chemical Treatment and Backwash Water Recycle (if applicable)

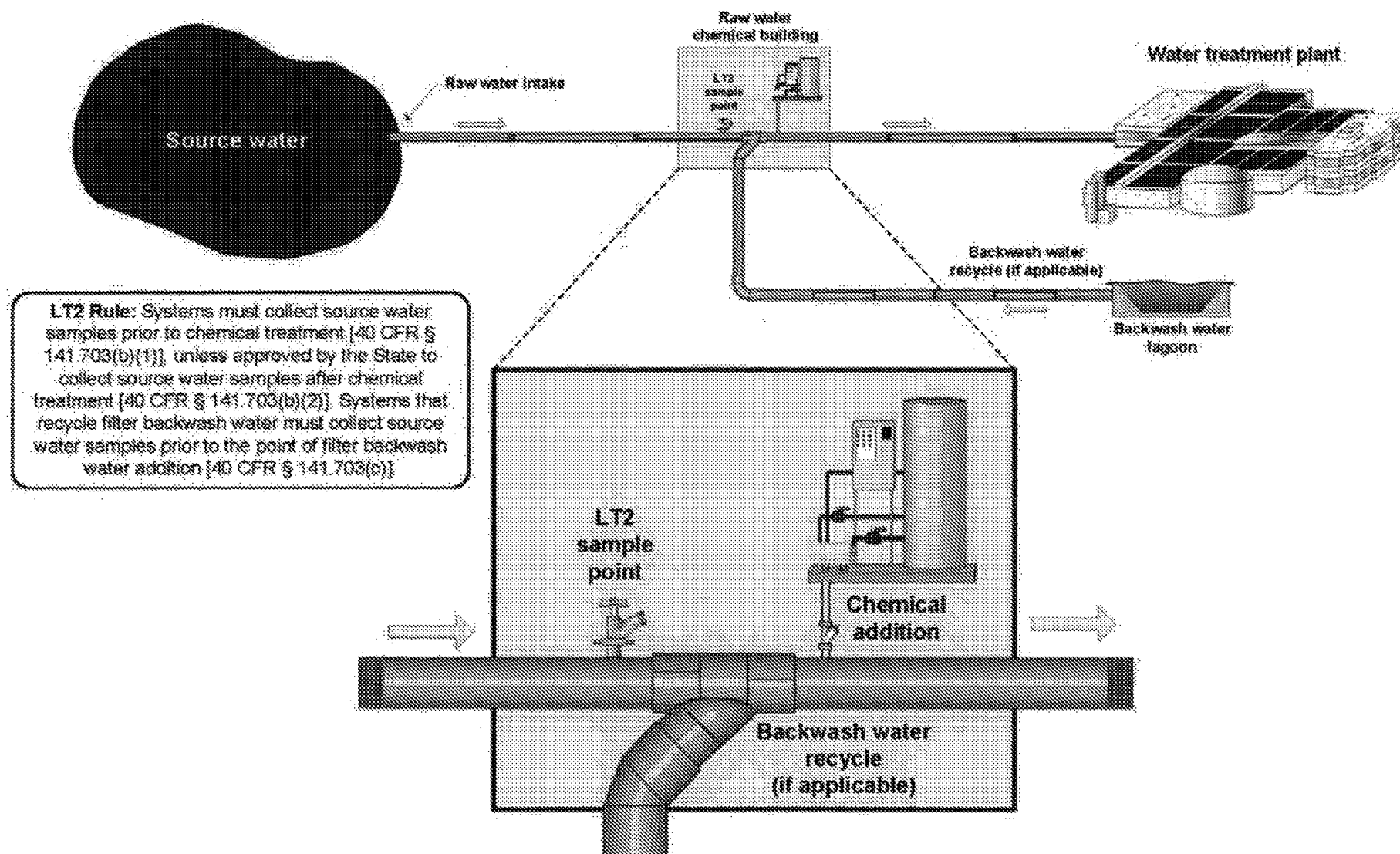


Figure 2. Multiple Sources: Sample Tap after Two Combined Sources

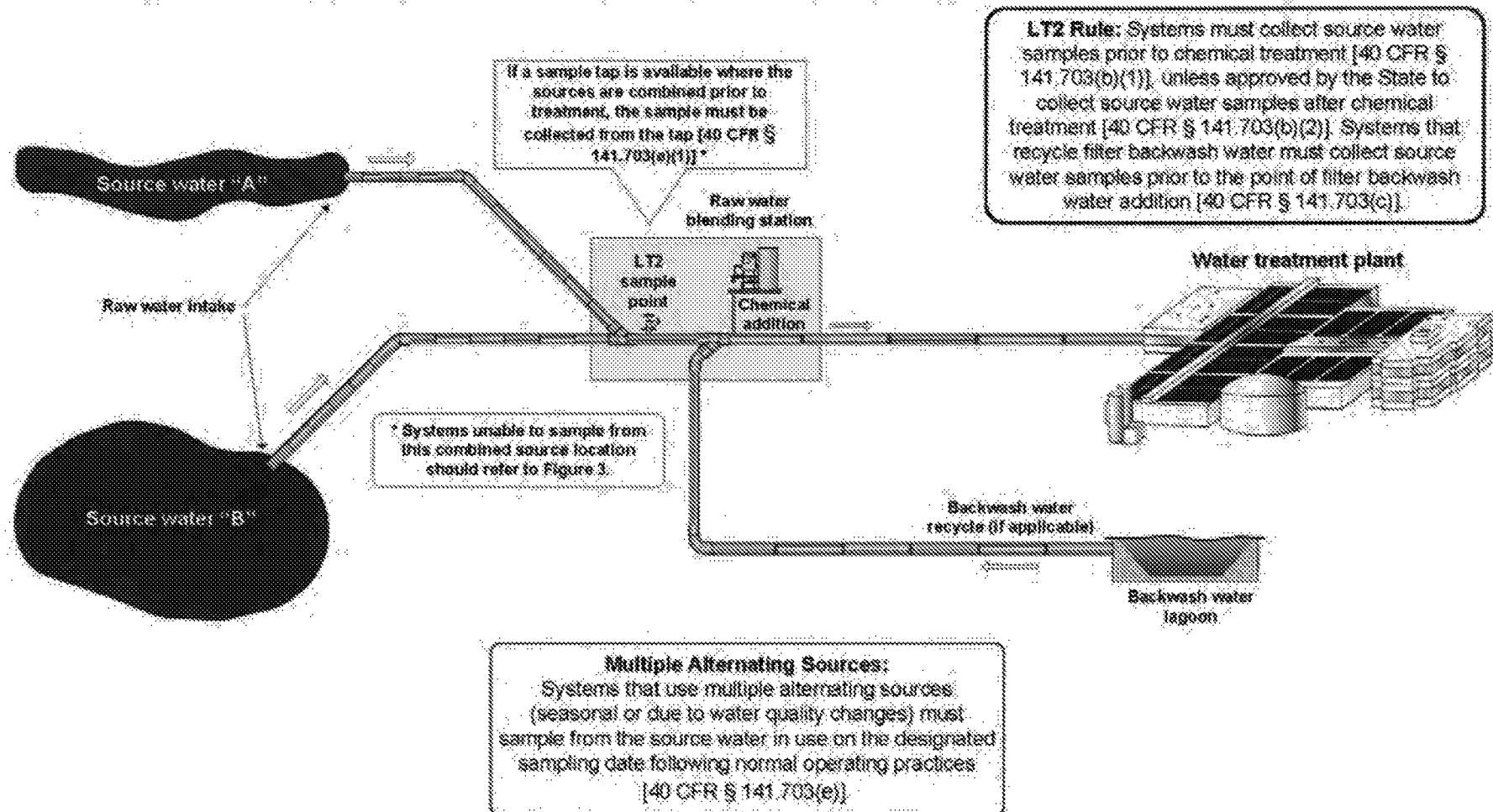
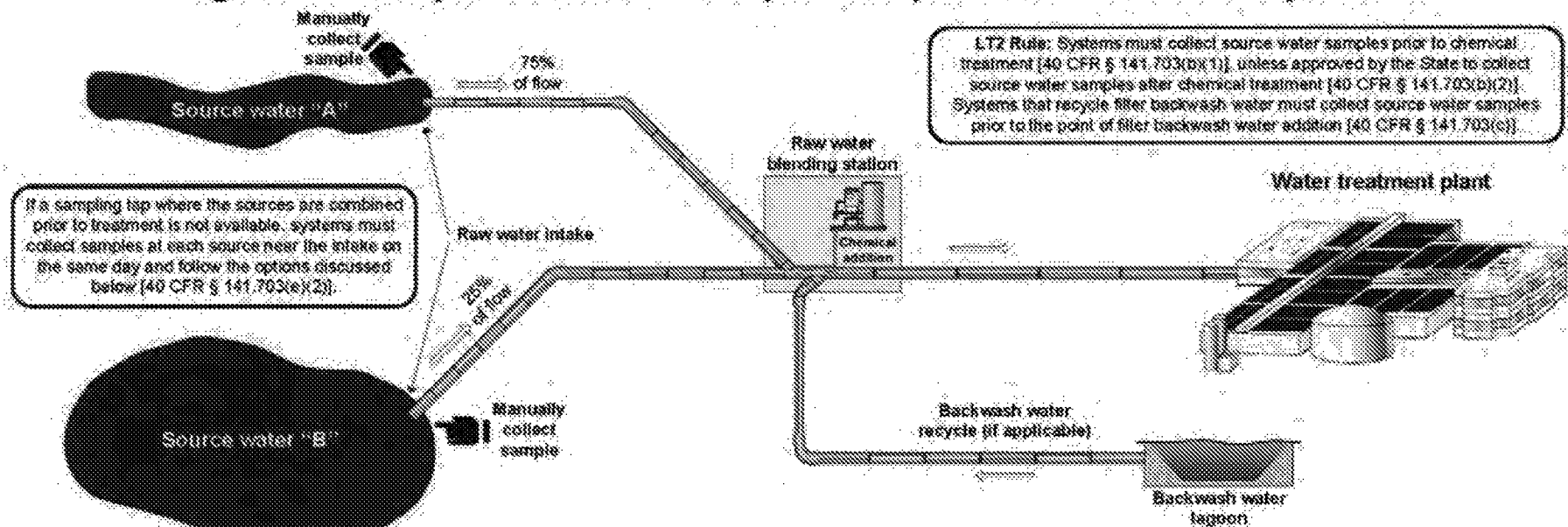
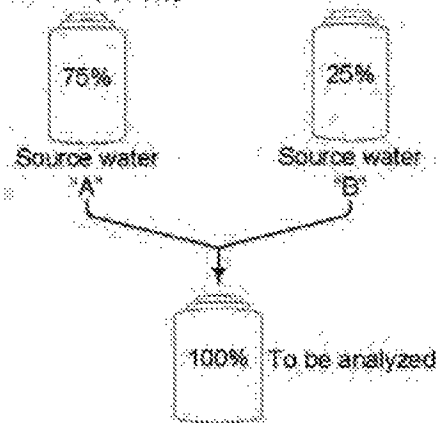


Figure 3. Multiple Sources: Two (or More) Sources to be Composited



OPTION 1 (Recommended Option):

Collect samples manually at each source near the intake on the same day and composite them into one sample to be analyzed. The volume of sample from each source must reflect its proportion of the total plant flow at the time the samples were collected [40 CFR § 141.703(e)(2)(i)].



OPTION 2:

Collect samples manually at each source near the intake on the same day and analyze each independently, then calculate a weighted average of the analysis results. This is done by multiplying the result for each source by the percentage of its contribution to the total plant flow at the time the samples were collected, and then summing these values [40 CFR § 141.703(e)(2)(ii)].

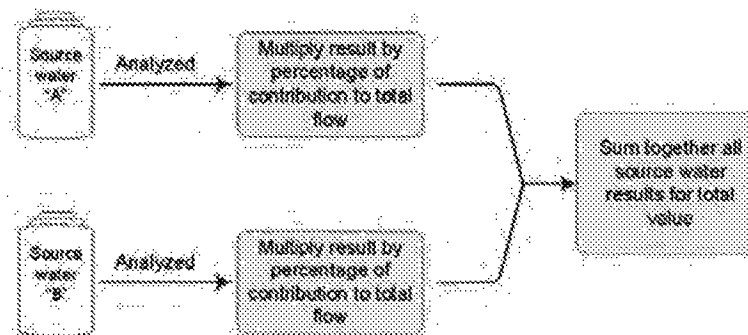


Figure 4. Multiple Plants with the Same Influent

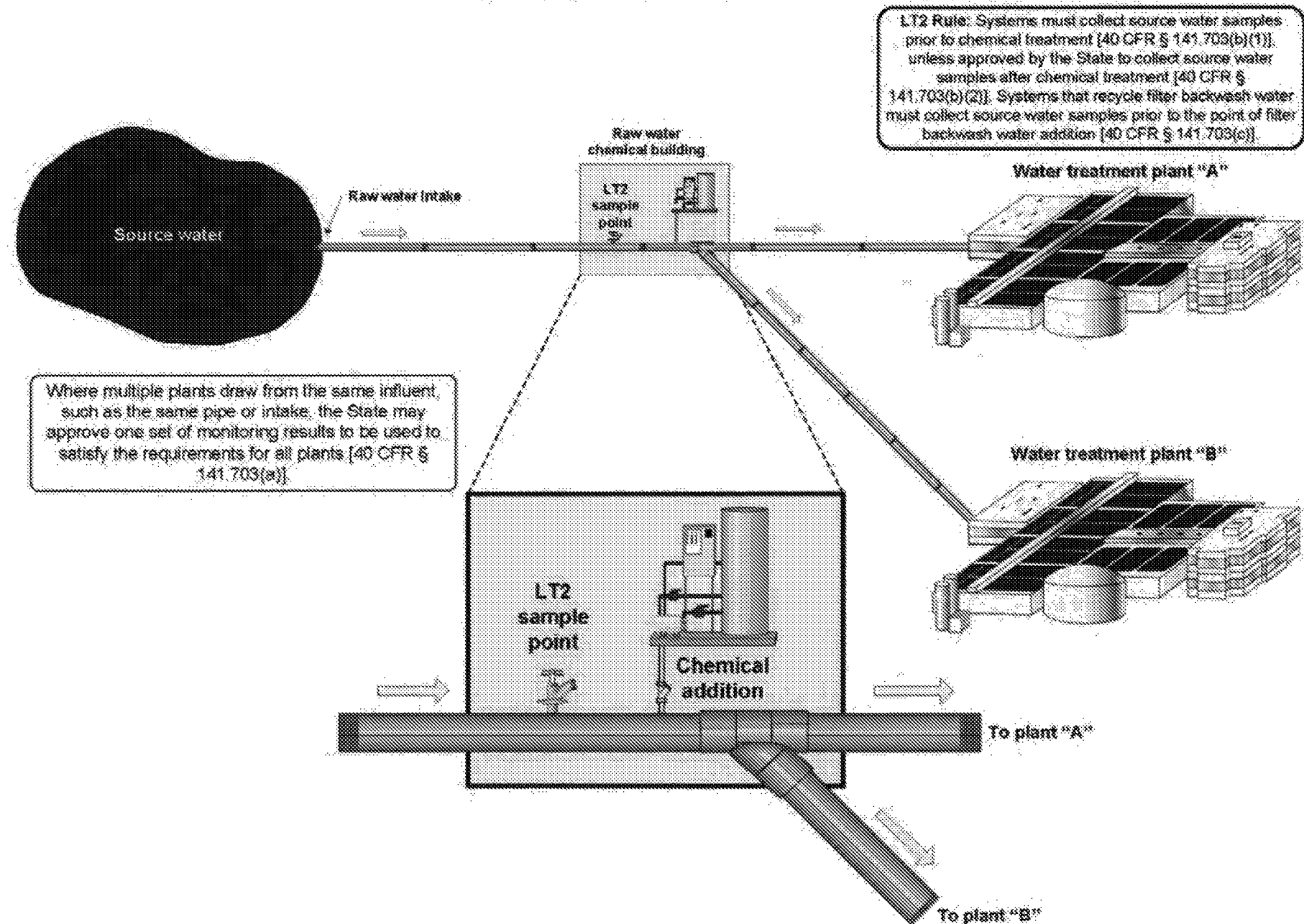
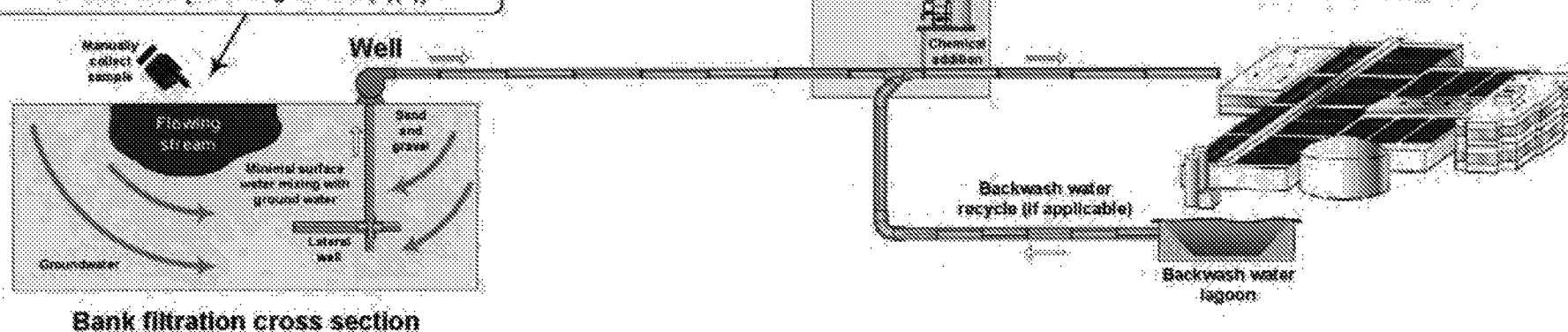


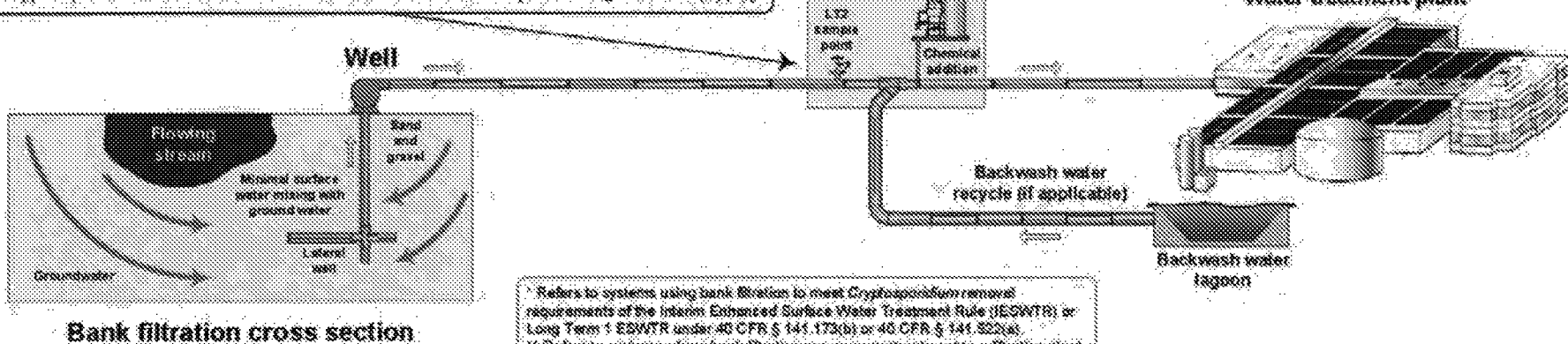
Figure 5. Bank Filtration

The correct sampling location for systems using bank filtration differs depending on whether the bank filtered water is treated by subsequent filtration:

Scenario 1: Systems that receive *Cryptosporidium* treatment credit for bank filtration must collect source water samples in the surface water prior to bank filtration [40 CFR § 141.703(d)(1)] *



Scenario 2: Systems using bank filtered water that is treated by subsequent filtration must collect source water samples from the well source (i.e., after bank filtration) but before any other treatment. ** Use of bank filtration during monitoring should be consistent with routine operational practice. Systems collecting samples after a bank filtration process may not receive *Cryptosporidium* treatment credit for the bank filtration [40 CFR § 141.703(d)(2)]



* Refers to systems using bank filtration to meet *Cryptosporidium* removal requirements of the Interim Enhanced Surface Water Treatment Rule (IESWTR) or Long Term 1 ESWTR under 40 CFR § 141.173(b) or 40 CFR § 141.522(a).
 ** Refers to systems where bank filtration serves as pretreatment to a filtration plant.

Figure 6. Ground Water Under the Direct Influence of Surface Water (GWUDI)

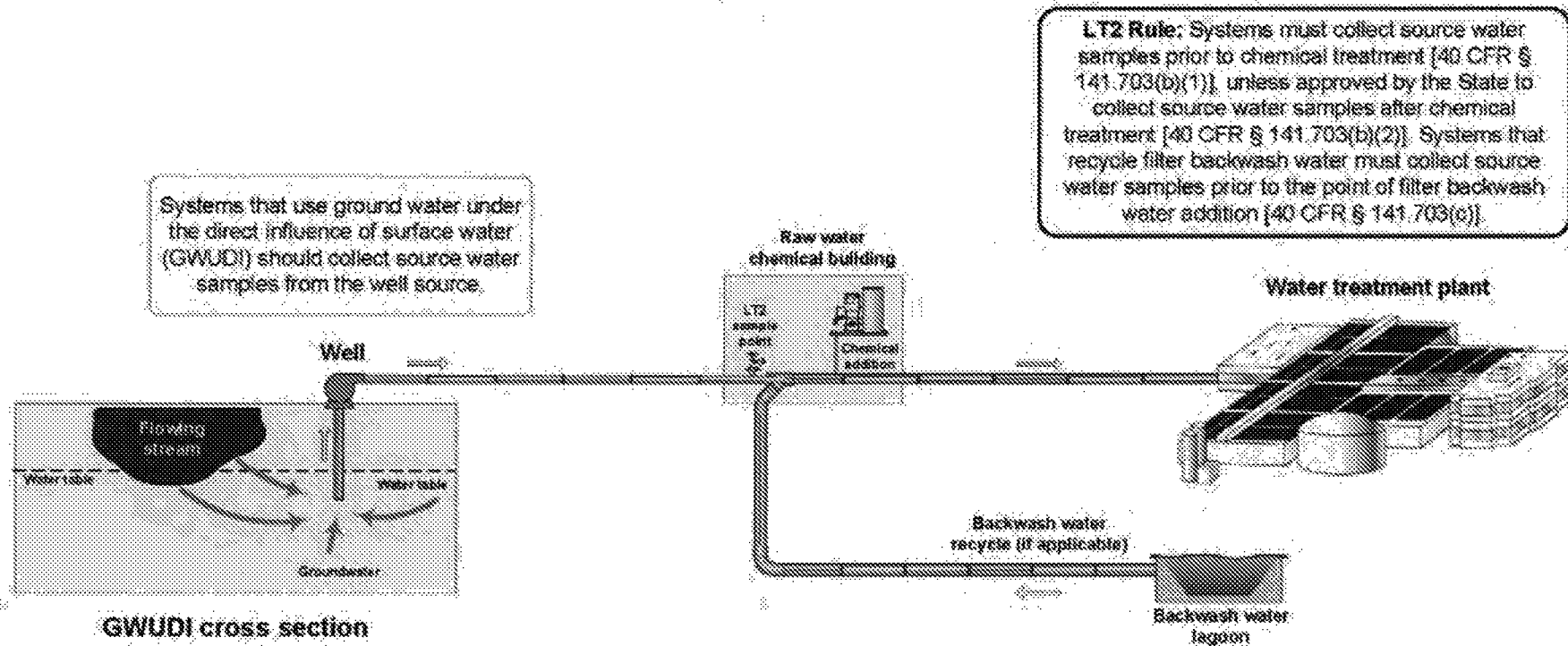
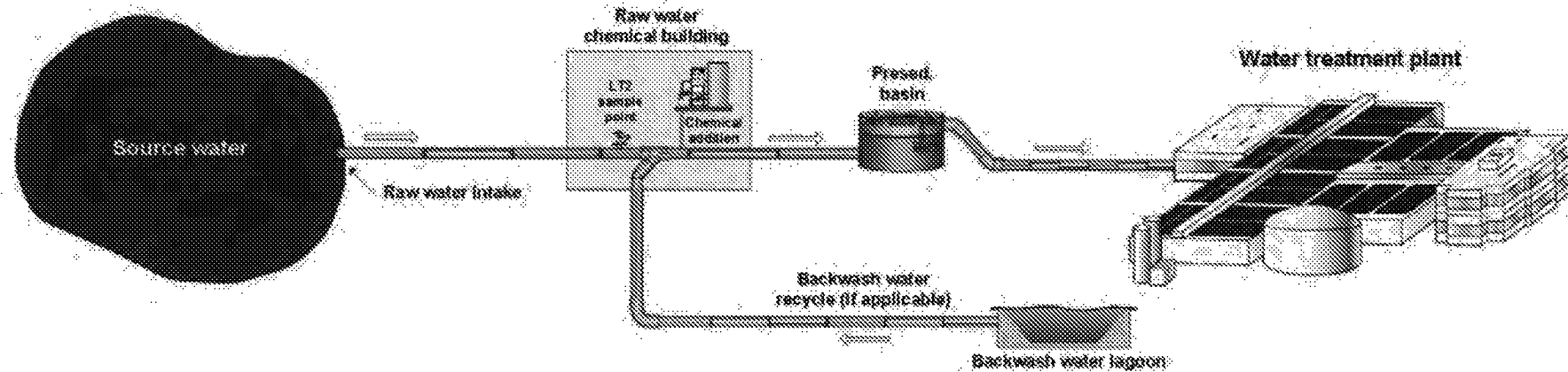


Figure 7. Presedimentation Basin

Scenario 1:

Systems using a presedimentation basin with chemical addition should collect source water samples prior to chemical treatment, unless approved by the State to collect source water samples after chemical treatment. Systems that recycle filter backwash water must collect source water samples prior to the point of filter backwash water addition [40 CFR § 141.703(c)].



Scenario 2:

Systems without chemical addition prior to or in a presedimentation basin, or that have been approved by the State to collect source water samples after chemical treatment, may sample after the presedimentation basin but will not receive any treatment credit for presedimentation.

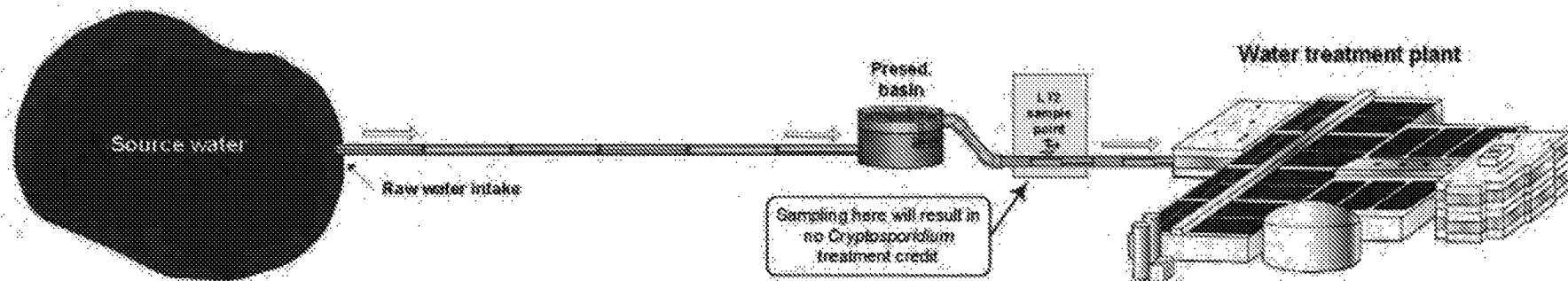


Figure 8. Raw Water Off-Stream Storage

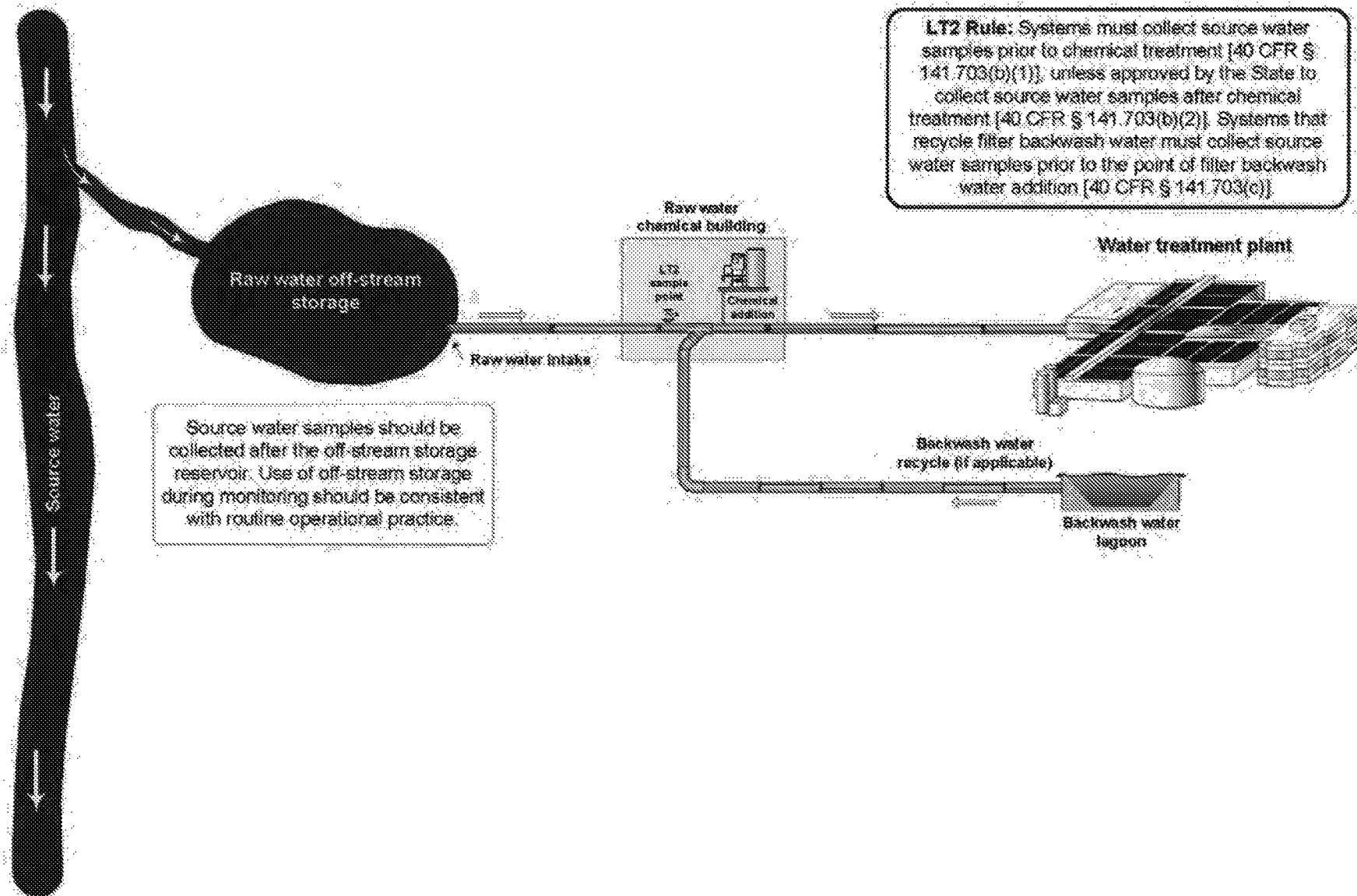


Figure 9. Mixed Source Water: Ground Water and Surface Water Sources

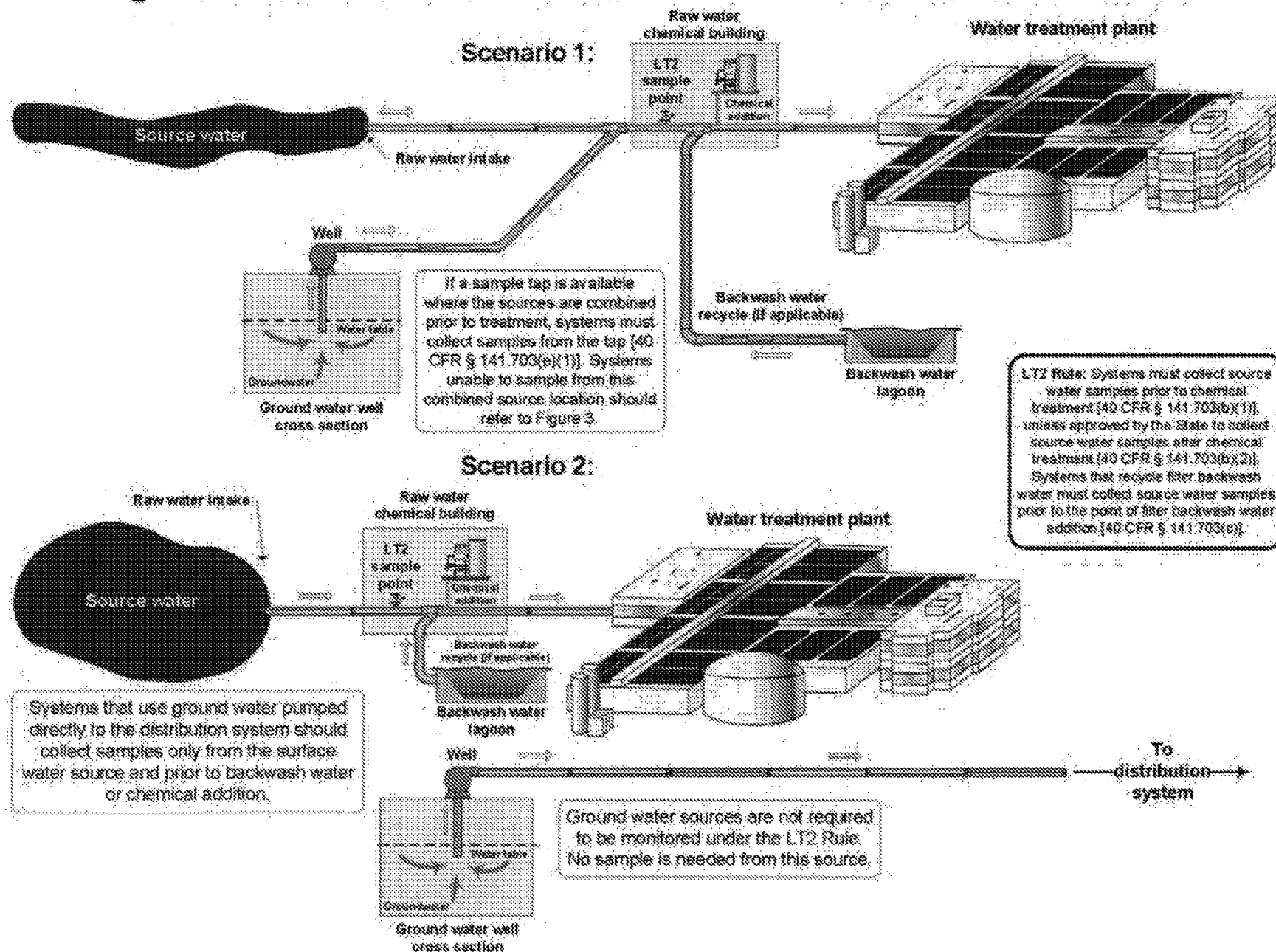


Figure 10. Blank Schematic for Submission to EPA

Public Water System (PWS) name: _____

PWS ID: _____

Water treatment plant name: _____

Water system facility ID: _____

Indicate the following on the diagram that best represents your facility type (if applicable):

1. LT2 sampling location
2. Points of chemical treatment prior to the treatment plant
3. Filter backwash water addition
4. Pretreatment processes (e.g., presedimentation basins, bank filtration)
5. Multiple source waters (show by adding additional sources)

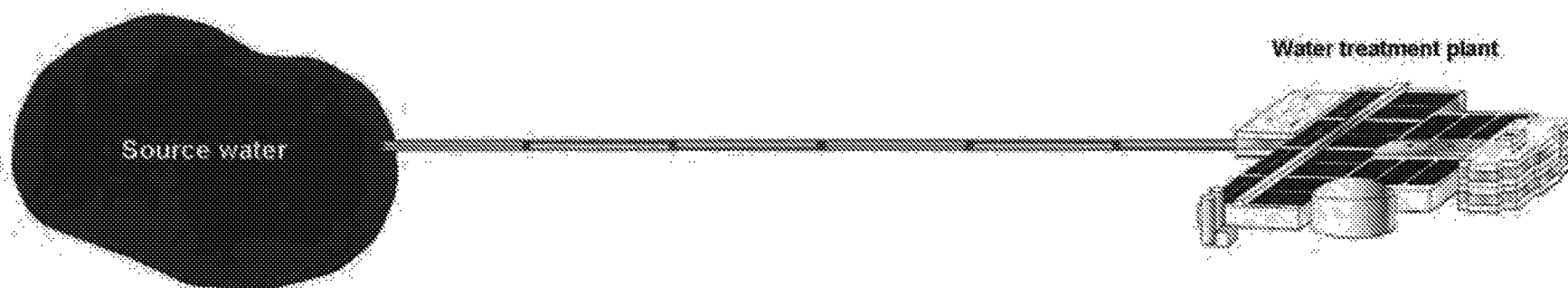


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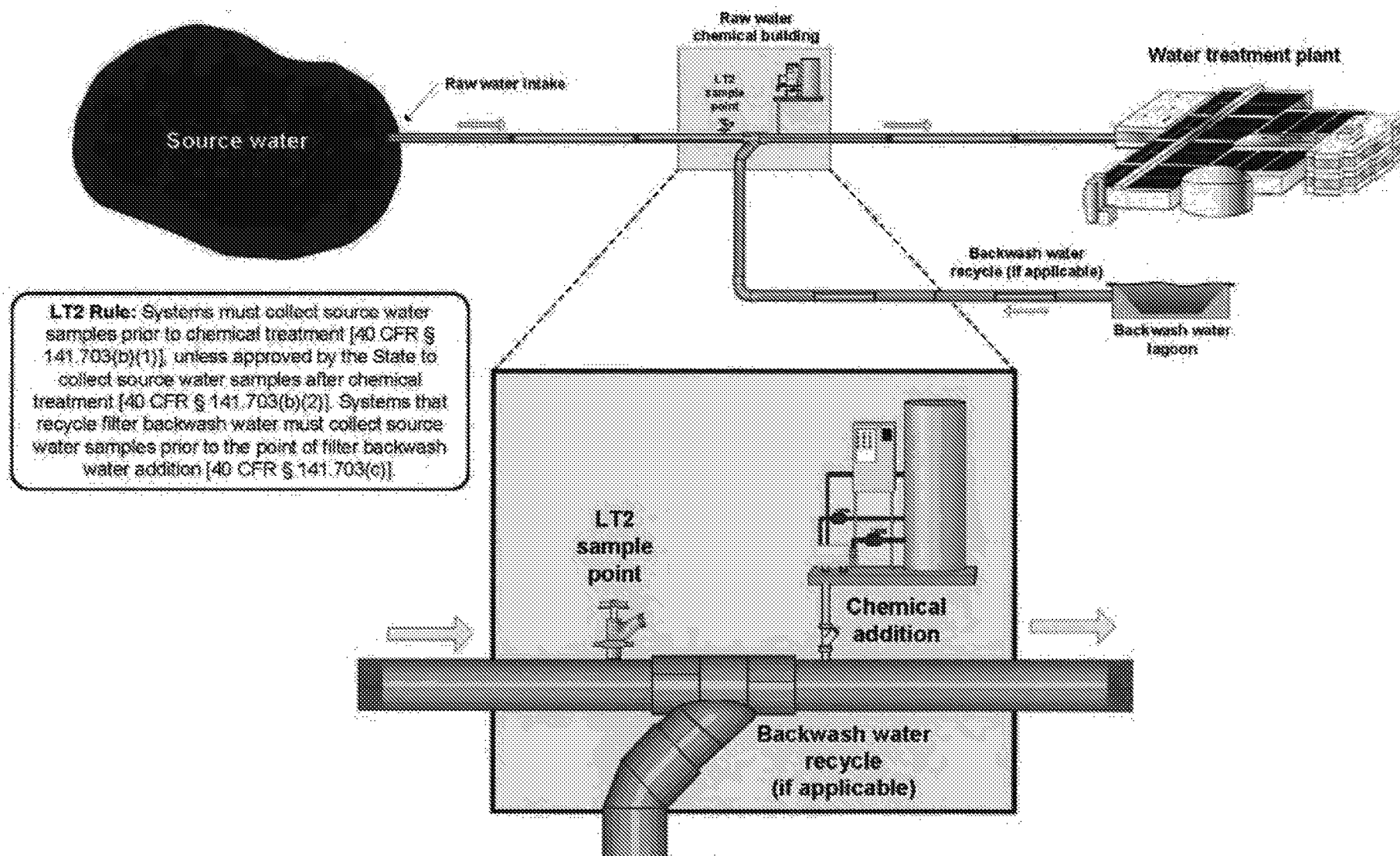


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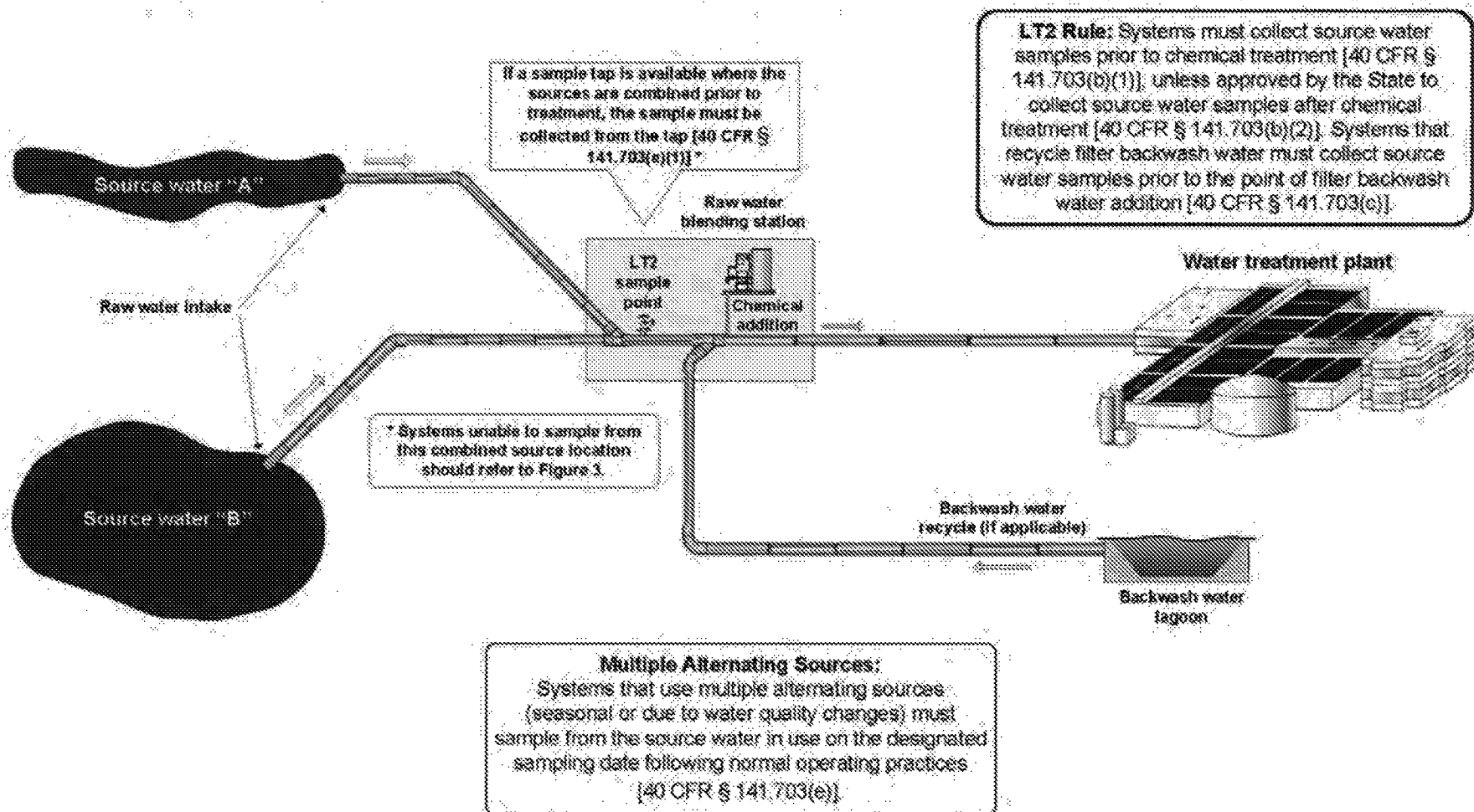


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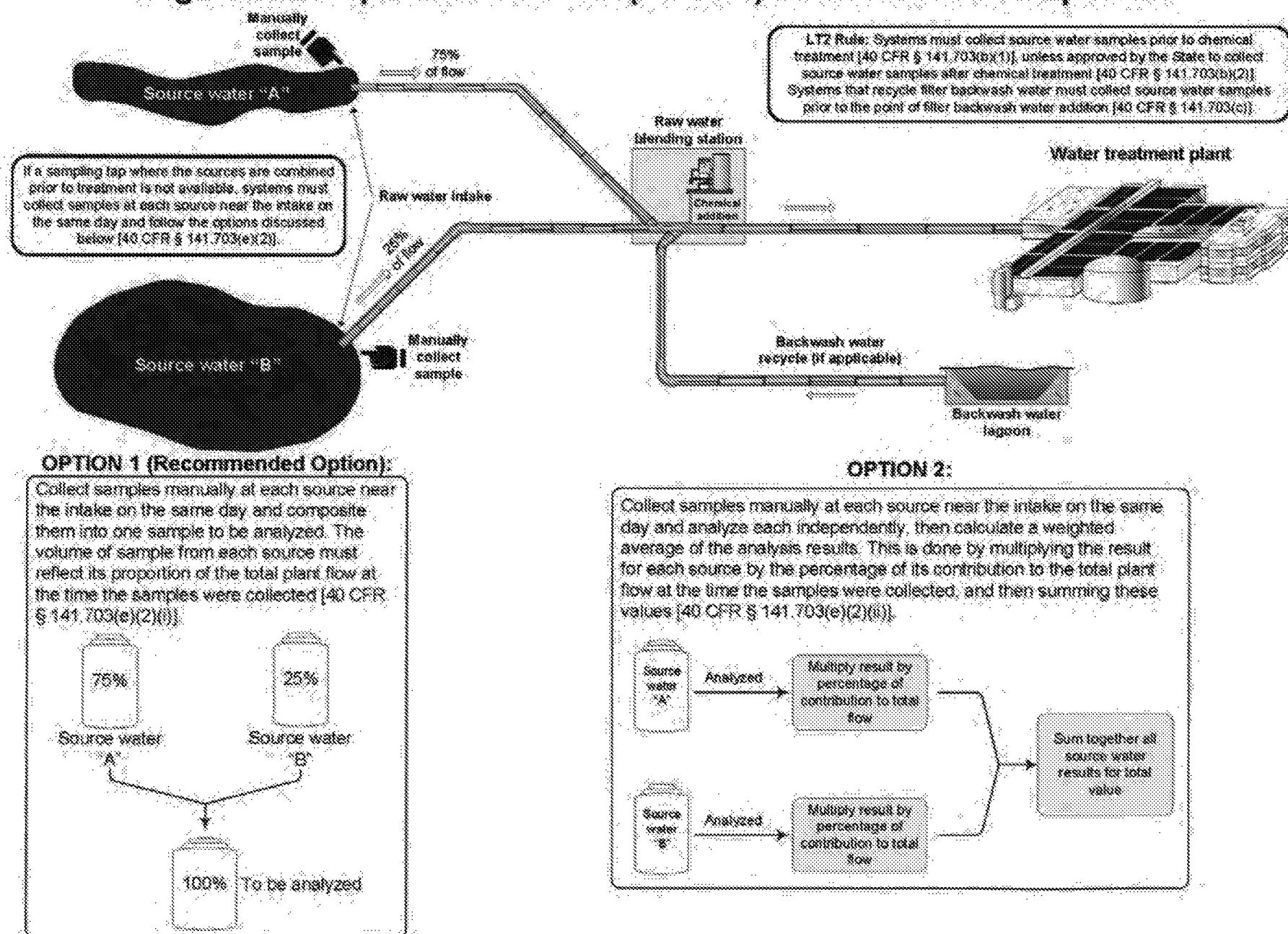


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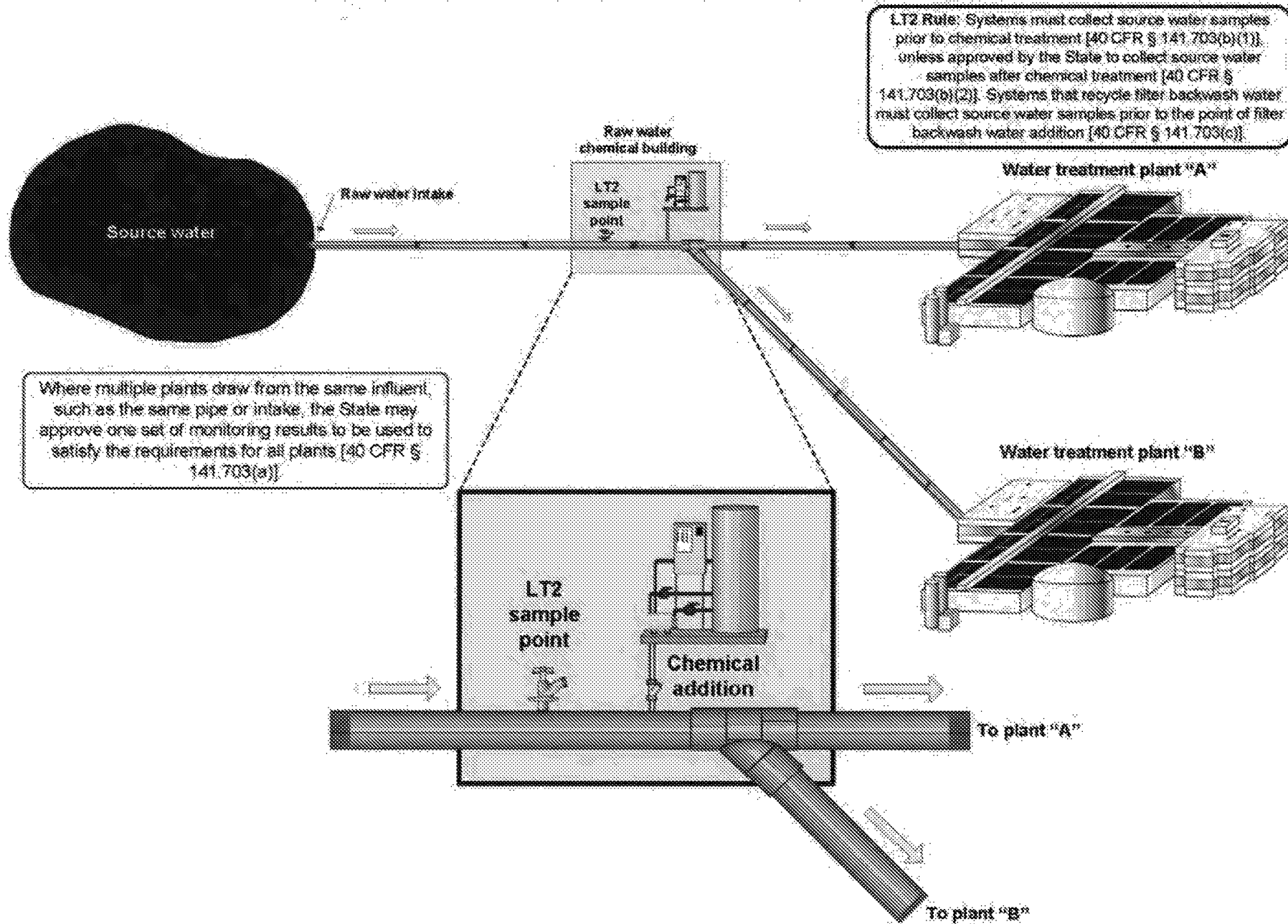
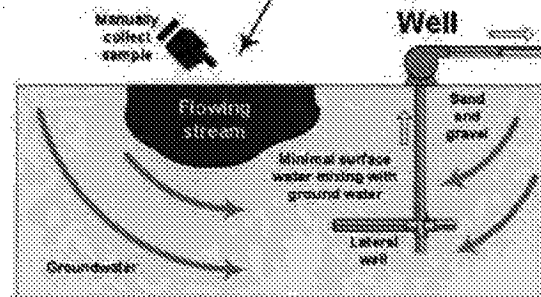


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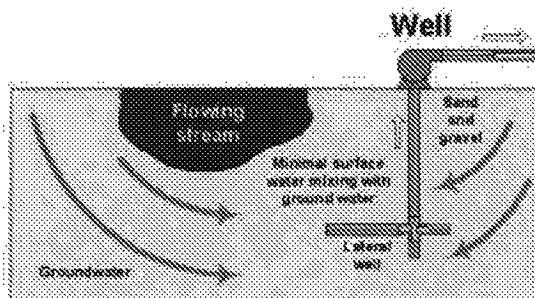
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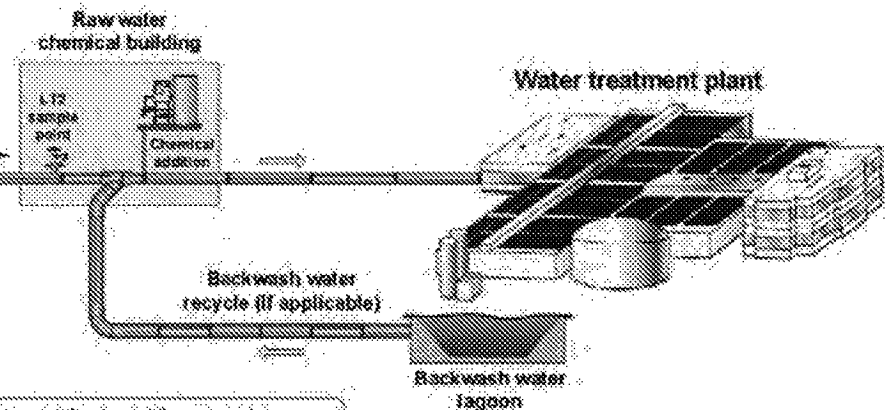
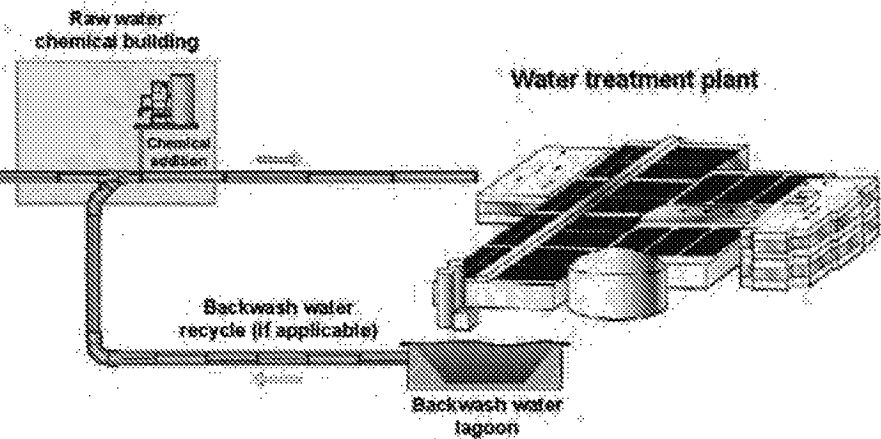


Bank filtration cross section

Scenario 2: Systems using bank filtered water that is treated by subsequent filtration must collect source water samples from the well source (i.e., after bank filtration) but before any other treatment.** Use of bank filtration during monitoring should be consistent with routine operational practice. Systems collecting samples after a bank filtration process may not receive *Cryptosporidium* treatment credit for the bank filtration [40 CFR § 141.703(d)(2)].



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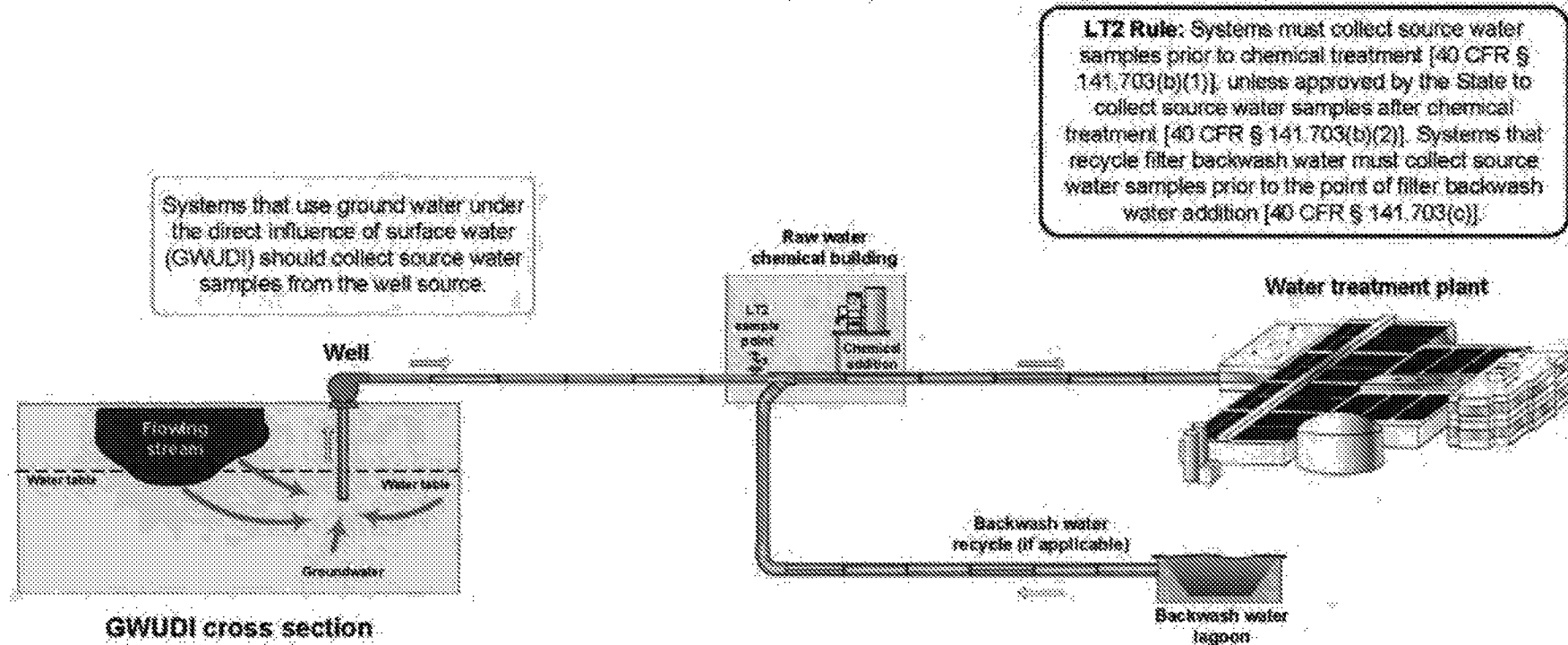
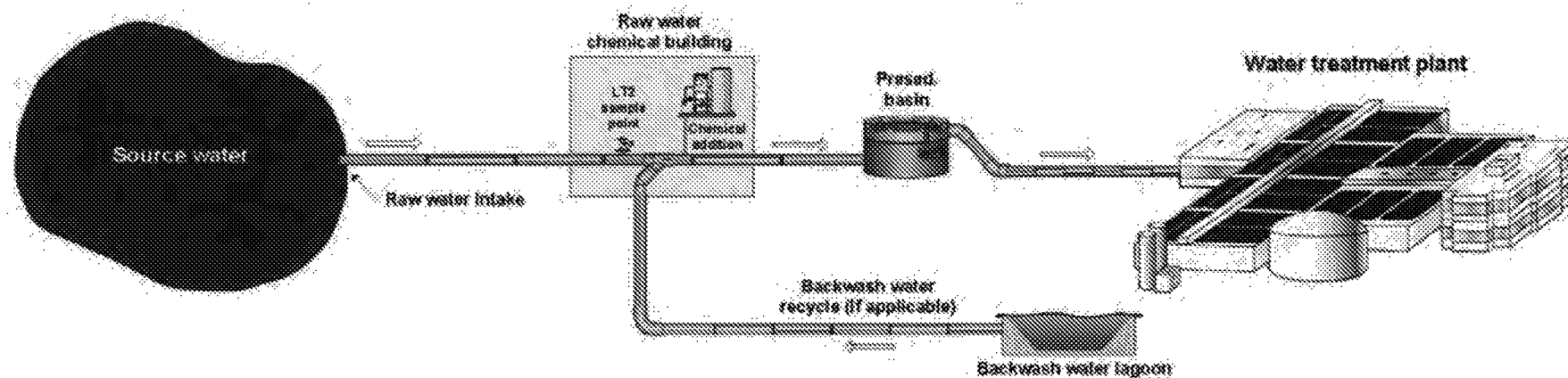


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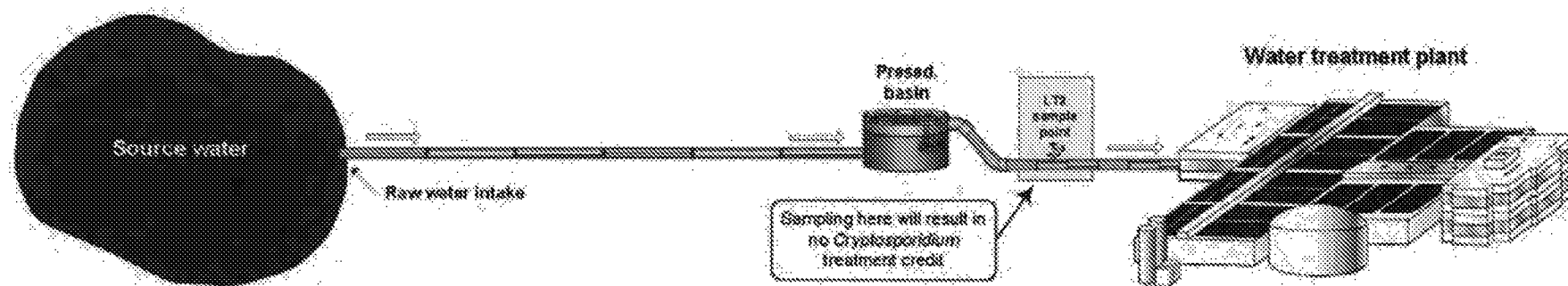


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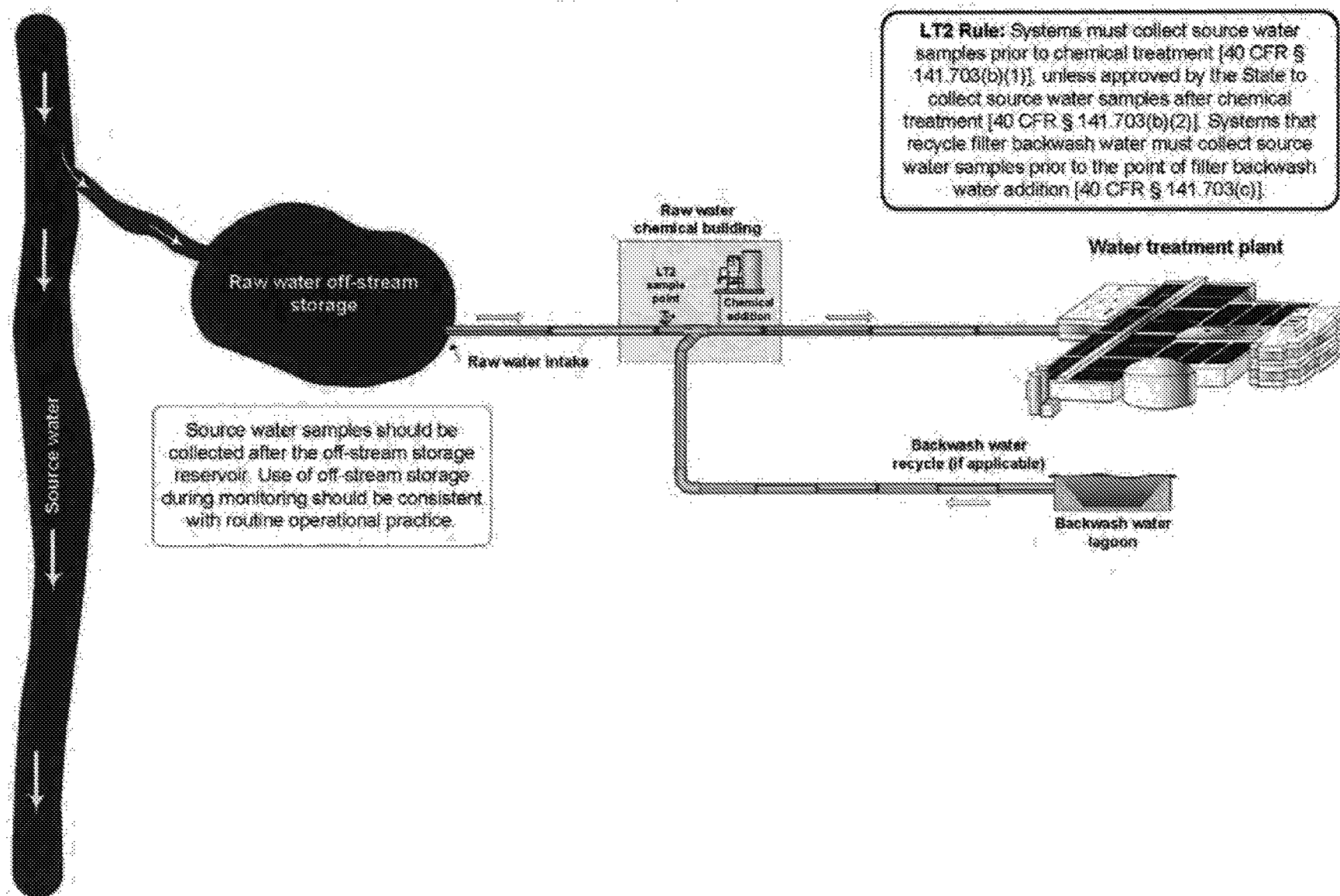


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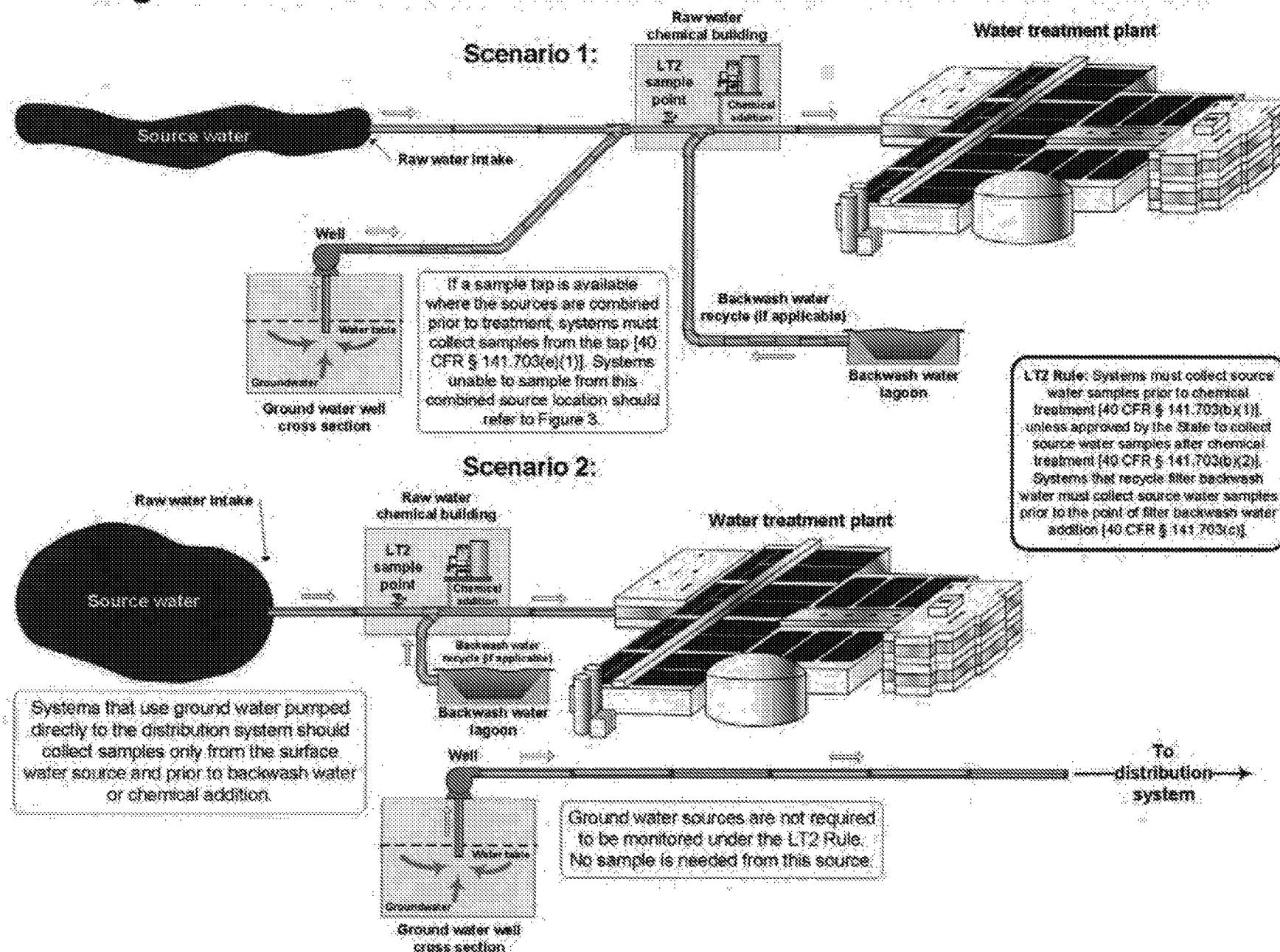


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