

DATE: October 14, 2008

TO: Office of Drinking Water Technical Staff

THROUGH: J. Wesley Kleene, Ph.D., P.E. Director  
Office of Drinking Water

FROM: John I. Capito, P.E., Chairman  
MDBP Team

SUBJECT: Water – Surveillance & Regulations – Stage 2 D/DBP –  
Initial Distribution System Evaluation (IDSE) Final Reports

REFERENCE: WM 895

TABLE OF CONTENTS:

SUMMARY STATEMENT: ..... 1

BACKGROUND: ..... 1

IDSE REPORT GENERAL REQUIREMENTS:..... 2

STANDARD MONITORING PLAN REPORT REQUIREMENTS: ..... 3

SYSTEM SPECIFIC STUDY REPORT REQUIREMENTS: ..... 6

    Hydraulic Modeling SSS IDSE Report..... 6

    Historical Monitoring SSS IDSE Report ..... 7

TIME ACCOUNTING AND TRACKING ..... 8

APPROVAL LETTER: ..... 8

Appendix A – IDSE Report Review Sheet – Standard Monitoring Plan ..... 9

Appendix B – IDSE Report Review Sheet – System Specific Study – Historical Data..... 12

Appendix C – IDSE Report Review Sheet – System Specific Study – Hydraulic Modeling ..... 15

Appendix D – Approval Letter ..... 18

SUMMARY STATEMENT:

This memo summarizes the procedures for ODW review and approval of IDSE Reports submitted in accordance with the Stage 2 Disinfectants and Disinfection Byproduct Rule (Stage 2) promulgated by EPA on December 15, 2005 and published in the January 4, 2006, Federal Register and effective on March 6, 2006. Information from the EPA Stage 2 DBPR Implementation Guidance Manual was used to develop this memo.

BACKGROUND:

To comply with Stage 2, certain community and nontransient noncommunity waterworks were required to submit an IDSE Plan for approval. These waterworks had the option of a System Specific Study (SSS) or a Standard Monitoring Plan (SMP). The IDSE Plan requirements are detailed in Working Memo 895. Upon approval of the IDSE Plan, the waterworks was required to conduct the IDSE and, upon completion, submit a final IDSE Report for approval. The IDSE Report is used to select Stage 2 Compliance Monitoring Sites and may also serve as the Stage 2 Monitoring Plan if sufficient information is provided. However, a separate Stage 2 Monitoring

Plan must be submitted for approval after the IDSE Report is approved (a separate Working Memo will be developed addressing the Stage 2 Monitoring Plan).

Virginia waterworks were required to submit hard copies of their IDSE Plan to the appropriate ODW Field Office for review and approval. System Specific Study IDSE Plans with hydraulic modeling were forwarded to EPA for technical review prior to ODW Field Office approval.

Those waterworks submitting a System Specific Study IDSE Plan with historical data may submit their IDSE Report simultaneously if the data meets all minimum requirements for completeness.

**IDSE REPORT GENERAL REQUIREMENTS:**

All waterworks to which the IDSE Report requirements apply, must submit their report to the appropriate Field Office in accordance with the following schedule:

<b>POPULATION SERVED*</b>	<b>SCHEDULE</b>	<b>SUBMIT IDSE REPORT BY</b>
≥ 100,000	1	January 1, 2009
50,000 – 99,999	2	July 1, 2009
10,000 – 49,999	3	January 1, 2010
< 10,000	4	July 1, 2010

\*Wholesale waterworks or consecutive waterworks must submit their report at the same time as the waterworks with the earliest compliance date in the combined distribution system.

Three (3) hard copies of the IDSE Report must be submitted. Upon approval, one (1) copy will be retained at the Field Office, one (1) copy will be sent back to the waterworks owner and one (1) copy will be sent to the EPA IPMC. Waterworks should be encouraged to use appropriate EPA IDSE Report templates to ensure that complete information is provided. The IDSE Tool “on CDRom” software, which can be used to generate an IDSE Report, is available for download at:

<http://www.epa.gov/safewater/disinfection/tools/tools-idse.html#three>

Electronic copies of these individual templates are also stored on ODW share drive at:

<Y:\02-Committees\202-Rule Teams\MDBP & ESWT Rules\Stage 2 and LT2 Rules\IDSE Tool\IDSE Report Templates>

The number of Stage 2 Compliance Monitoring Sites is based on the waterworks’ population. The frequency of routine compliance monitoring is based on population and source type. The sampling schedule is further refined based on the month of highest DBP concentrations. The following table, from § 141.621 (a) (2), provides the number of routine compliance monitoring sites required.

SOURCE WATER TYPE	POPULATION SERVED	MONITORING FREQUENCY <sup>1</sup>	STAGE 2 COMPLIANCE MONITORING SITES <sup>2</sup>			
			Total	High TTHM	High HAA5	Existing Stage 1
Surface Water or GWUDI	< 500	per year	2	1	1	-
	500 – 3,300	per quarter	2	1	1	-
	3,301 – 9,999		2	1	1	-
	10,000 – 49,000		4	2	1	1
	50,000 – 249,999		8	3	3	2
	250,000 – 999,999		12	5	4	3
	1,000,000 – 4,999,999		16	6	6	4
	≥ 5,000,000		20	8	7	5
Groundwater	< 500	per year	2	1	1	-
	500 – 9,999	per year	2	1	1	-
	10,000 – 99,999	per quarter	4	2	1	1
	100,000 – 499,999		6	3	2	1
	≥ 500,000		8	3	3	2

<sup>1</sup> Waterworks must monitor during the month of highest DBP concentrations determined by the IDSE.

<sup>2</sup> Waterworks on routine quarterly monitoring must take dual sample sets every 90 days at each location except for Surface Water or GWUDI waterworks serving 500 – 3,300. Those systems are required to take individual TTHM and HAA5 samples at the high TTHM & HAA5 locations respectively. If monitoring annually only 1 location with a dual sample set is needed if the highest TTHM & HAA5 concentrations occur at the sample location and month.

**STANDARD MONITORING PLAN REPORT REQUIREMENTS:**

Per §141.600 (c) (1), Standard Monitoring is required to be completed by these specific dates:

POPULATION SERVED*	SCHEDULE	COMPLETE STANDARD MONITORING BY
≥ 100,000	1	September 20, 2008
50,000 – 99,999	2	March 31, 2009
10,000 – 49,999	3	September 30, 2009
< 10,000	4	March 31, 2010

\*Wholesale waterworks or consecutive waterworks must submit their report at the same time as the waterworks with the earliest compliance date in the combined distribution system

The following items need to be included in an IDSE Report that is based on the completion of a Standard Monitoring Plan:

1. Total Trihalomethane (TTHM) and Total Haloacetic Acid (HAA5) Results from the Standard Monitoring period.

- a. All Stage 1 compliance monitoring sample results from the time period must be included.
  - b. All IDSE site sample results.
  - c. Any special sample results.
  - d. Data to be arranged in table format or spreadsheet.
2. Discussion of any deviation from the approved Standard Monitoring Plan and justification for these changes.
  3. Selection of proposed Stage 2 compliance monitoring sites and schedule with appropriate justification.
  4. Information about specific changes to the waterworks since the IDSE Plan was approved such as significant changes to the distribution system schematic, significant changes in population, addition/removal of sources and resulting changes in waterworks classification.

The Stage 2 Rule requires that Stage 2 compliance monitoring sites be selected based on a prioritized list of criteria to which both the IDSE and Stage 1 locational running annual average results (LRAA) are matched until the required number of Stage 2 Compliance Monitoring Sites are selected. The table below, which shows these criteria, is based on Table 3-15 in the Stage 2 DBPR Implementation Guidance Manual. Note that for Steps 3 and 7 only Stage 1 results are to be used, however the entire pool of results is to be used for the remaining Steps.

**Stage 2 DBPR Compliance Monitoring Site Selection Process**

<b>Step and Criteria</b>		<b>Stage 2 Compliance Monitoring Site Selected</b>
1.	Select the location with the highest TTHM LRAA	1 <sup>st</sup> highest TTHM site
2.	Select remaining location with the highest HAA5 LRAA	1 <sup>st</sup> highest HAA5 site
3.	<u>Surface Water and GWUDI waterworks</u> – Select remaining existing Stage 1 DBPR <b>average</b> resident time compliance monitoring location with highest HAA5 LRAA <u>Groundwater waterworks</u> – Select the remaining existing Stage 1 DBPR <b>maximum</b> residence time compliance monitoring location with the highest HAA5 LRAA If there are no more Stage 1 DBPR monitoring locations skip to Step 8.	1 <sup>st</sup> Stage 1 DBPR site
4.	Select remaining location with next highest TTHM LRAA	2 <sup>nd</sup> highest TTHM site

Step and Criteria		Stage 2 Compliance Monitoring Site Selected
5.	Select remaining location with next highest TTHM LRAA	3 <sup>rd</sup> highest TTHM site
6.	Select remaining location with next highest HAA5 LRAA	2 <sup>nd</sup> highest HAA5 site
7.	<u>Surface Water and GWUDI waterworks</u> – Select remaining existing Stage 1 DBPR <b>average</b> resident time compliance monitoring location with highest TTHM LRAA	2 <sup>nd</sup> Stage 1 DBPR site
	<u>Groundwater waterworks</u> – Select the remaining existing Stage 1 DBPR <b>maximum</b> residence time compliance monitoring location with the highest TTHM LRAA	
	If there are no more Stage 1 DBPR monitoring locations skip to Step 8.	
8.	Select remaining location with the next highest HAA5 LRAA	3 <sup>rd</sup> highest HAA5 site
9.	If more Stage 2 DBPR compliance monitoring locations are needed, return to Step 1 and repeat with remaining results until reaching the total number of required sites.	

The above selection criteria list is to be strictly followed, but there is some room for substituting a different site at ODW discretion if sufficient justification is given. This situation applies where LRAA results are only slightly different at two or more sites. EPA suggests factors listed below as good reasons to substitute a site with a slightly lower LRAA in the Stage 2 Compliance Monitoring Site selection process:

- Alternate site will give better geographic coverage of the overall distribution system when paired with the other sites.
- Alternate site is an existing Stage 1 site and will allow the waterworks to keep continuity in historical records.
- Alternate site is an existing sampling location for other monitoring and will facilitate sample collection procedures.

After selecting the Stage 2 compliance monitoring sites, the waterworks needs to create a compliance sampling schedule. First, the waterworks selects the peak historical month as was done in the IDSE plan. This should be the same month as used previously, unless data collected during IDSE sampling indicates that a different month is more appropriate or other raw water quality changes have occurred. Next, the waterworks schedules the remaining months based on the required compliance sampling frequency.

The intent of the Stage 2 rule is that compliance samples be collected in evenly spaced intervals. For waterworks required to sample quarterly, this would mean sampling in the same week in equally spaced months. *Example:* A waterworks has a peak historical month of August. The waterworks schedules sample collection for the 1<sup>st</sup> week of August. Then, to space evenly, sample collection is scheduled for the 1<sup>st</sup> weeks of November, February and May.

#### SYSTEM SPECIFIC STUDY REPORT REQUIREMENTS:

Waterworks which performed a System Specific Study (SSS) to satisfy IDSE requirements had two options. They could submit historical sample data which met certain criteria or use advanced hydraulic computer modeling. In addition, waterworks opting for a SSS could submit their IDSE Report at the same time as the SSS Plan if all data was complete at the deadline for IDSE Plan submission. Since the IDSE submission deadline for Schedule 4 waterworks has passed, this working memo will address review of SSS IDSE Reports which are submitted later, separately from the SSS Plan.

#### Hydraulic Modeling SSS IDSE Report

Technical review of SSS Plans using hydraulic computer modeling was handled by the EPA in accordance with Working Memo 895. EPA may or may not have specifically approved the hydraulic model calibration during their review. In some instances the hydraulic model may have not been calibrated prior to EPA approval. For situations where model calibration was not addressed by EPA, the review of IDSE Report will need at least partial review and approval by EPA in the same fashion that the SSS Plan was submitted:

1. Waterworks will submit the IDSE Report based on SSS hydraulic modeling with hydraulic model calibration information to the Field Office.
2. Field Office staff will review the IDSE Report for general completeness.
3. The IDSE Report will then be forwarded to EPA Region 3 through the Central Office.
4. EPA will review the IDSE Report to verify that the hydraulic model was properly calibrated and return it to ODW for final review.
5. The Field Office will then review and approve the IDSE Report (and Stage 2 Monitoring Plan if applicable) and return it to the waterworks owner.

If calibration of the hydraulic model was addressed by EPA during IDSE Plan approval, then the Field Office may proceed with review and approval of the IDSE Report without forwarding to EPA Region 3.

The following items need to be included in an IDSE Report that is based on the completion of a SSS Plan based on hydraulic computer modeling:

1. Graphs and Model Output as follows:
  - a. 24 hour time series graph of residence time at all Stage 2 DBPR monitoring sites selected.
  - b. Graph of predicted tank levels vs. measured tank levels for highest residence time storage facility in each pressure zone.

- c. Time series graph of residence time at highest residence time storage facility that shows predictions for entire simulation period.
  - d. Model output that shows 24 hour average residence time predictions throughout the entire distribution system.
2. Total Trihalomethane (TTHM) and Total Haloacetic Acid (HAA5) Results during the SSS Period.
  - a. All Stage 1 compliance monitoring sample results for IDSE period.
  - b. All SSS monitoring results.
  - c. Data to be arranged in table format or spreadsheet with LRAAs calculated.
3. Information about specific changes to the waterworks since the SSS plan was approved such as significant changes to the distribution system, significant changes in population, addition/removal of sources and resulting changes in waterworks classification.
4. Explanation of deviations for the approved SSS plan with justification.
5. Selection of proposed Stage 2 compliance monitoring sites and schedule with appropriate justification.

After assembling the table or spreadsheet, Stage 2 Compliance Monitoring Sites are selected using the same protocol as with Standard Monitoring Plan results. Refer to the Stage 2 Compliance Monitoring Site Selection Process table on Page 4 above. All additional steps are also the same as for a Standard Monitoring Plan.

EPA suggests that the 24 hour residence time graph be used to check and justify compliance monitoring site selection. For example, if a waterworks routinely samples during normal business hours, the selected sites should be predicted to have longer water age during this time of day. If the site would only see longer water ages at night based on operational practices, then it may not be the ideal compliance monitoring site.

EPA also recommends that some discussion and thought be put into whether or not the round of SSS monitoring is consistent with model predictions. If the waterworks used this data to further refine their calibration it should be explained in the Report. If there are significant discrepancies that cannot be explained, then ODW has the right to request that more samples be taken or additional calibration be performed to refine the model.

#### Historical Monitoring SSS IDSE Report

Review of SSS Plans with historical monitoring data is to be handled by the ODW Field Office. If historical data was complete and no additional monitoring was necessary, the waterworks may have submitted their IDSE Report with the SSS Plan. For the purposes of this working memo it is assumed that all IDSE Reports are being submitted later and will be reviewed separately.

The following items need to be included in an IDSE Report that is based on the completion of a SSS Plan based on historical monitoring:

1. Additional Total Trihalomethane (TTHM) and Total Haloacetic Acid (HAA5) Results not reported in the original SSS Plan

- a. Includes Stage 1 compliance monitoring sample results.
  - b. Additional SSS monitoring results.
  - c. Data to be arranged in table format or spreadsheet with LRAAs calculated.
2. Information about specific changes to the waterworks since the SSS plan was approved such as significant changes to the distribution system schematic, significant changes in population, addition/removal of sources and resulting changes in waterworks classification.
  3. Explanation of deviations for the approved SSS plan with justification.
  4. Selection of proposed Stage 2 compliance monitoring sites and schedule with appropriate justification.

SSS plans with historical data may have more than 1 year of data to choose from for compliance monitoring site selection. In these instances the waterworks is expected to first rely on calculated LRAA values for each location to select compliance monitoring sites, rather than individual sample results from the peak month. If the peak historical month was not sampled in one or more calendar years of historical data, then data from any such years should not be used for site selection.

Waterworks should arrange all qualifying data into a table or spreadsheet format, such as the blank tables in the EPA templates. It is recommended that data be organized so that results from the peak historical month line up in the table in the event that sampling frequency varies at some locations. The waterworks then calculates the LRAA values for each 12-month period of qualifying data. The peak historical month must be included in the period for each LRAA calculation. If there are multiple years of data then the 12 month period with the highest LRAA is to be used in compliance monitoring site selection. TTHM and HAA5 are to be evaluated separately. If historical data sites were sampled on different frequencies or in different years, the waterworks should consider using peak historical month data instead for the evaluation, but must justify this clearly in the Report.

After assembling the table or spreadsheet, Stage 2 Compliance Monitoring Sites are selected using the same protocol as with Standard Monitoring Plan results. Refer to the Stage 2 Compliance Monitoring Site Selection Process table on Page 4 above. All additional steps are also the same as for a Standard Monitoring Plan.

#### TIME ACCOUNTING AND TRACKING

All IDSE Reports are to be entered to PT Log as an SDWA Report. Time spent reviewing these reports is to be charged to SDWA Reports.

#### APPROVAL LETTER:

Copies of the final letter (Appendix D) must be sent to:

LT2ESWTR and STAGE 2 DBPR  
US EPA-IPMC  
P O Box 98  
Dayton, OH 45401-0098

END OF MEMO

Appendix A – IDSE Report Review Sheet – Standard Monitoring Plan

**IDSE REPORT REVIEW SHEET  
STANDARD MONITORING PLAN**

City/County \_\_\_\_\_  
Waterworks \_\_\_\_\_  
PWSID # \_\_\_\_\_

	Date
IDSE Report Received	
Reviewed	
Modifications Requested	
Revisions Received	
Approved	

Reviewed By: \_\_\_\_\_

I. GENERAL INFORMATION		COMMENTS
Date IDSE Plan was approved		
Waterworks Schedule		<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4
Report Submitted by Required Date for Schedule?	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Monitoring Completed by Required Date for Schedule?	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Correct no. of copies of Report submitted?	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Stage 1 DBPR Compliance Sample Results Included in Report along with Standard Monitoring Results?	<input type="checkbox"/> Yes <input type="checkbox"/> No	
II. REVIEW OF MONITORING RESULTS		COMMENTS
Samples collected in accordance with approved IDSE Plan		
Correct locations?	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Correct # of samples collected each monitoring period?	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Dual sample sets collected at all locations?	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Sample(s) collected during peak historical month?	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Samples collected during the designated weeks in each monitoring period; equally spaced sampling intervals?	<input type="checkbox"/> Yes <input type="checkbox"/> No	

Are deviations from the approved standard monitoring plan explained and justified? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Results of any special samples included? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Certified laboratory used for analyses? <input type="checkbox"/> Yes <input type="checkbox"/> No	Name of lab: _____
All results reported in orderly table format or spreadsheet in Report? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Locational Running Annual Averages (LRAA) correctly computed by waterworks for each site? <input type="checkbox"/> Yes <input type="checkbox"/> No	
<b>III. STAGE 2 SITE &amp; SCHEDULE SELECTION</b>	<b>COMMENTS</b>
Stage 2 Compliance Monitoring Sites	
Selected according to Steps and Criteria Table <input type="checkbox"/> Yes <input type="checkbox"/> No	
Alternate Stage 2 compliance site(s) requested by waterworks? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Sufficient justification for substitution(s)? (explain in comments) <input type="checkbox"/> Yes <input type="checkbox"/> No	
Correct number of compliance sites determined, repeating table steps if necessary? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Peak month identified? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Same as peak historical month in IDSE? <input type="checkbox"/> Yes <input type="checkbox"/> No	
If No, is there sufficient justification for a different peak month? (explain in comments) <input type="checkbox"/> Yes <input type="checkbox"/> No	
Proposed Stage 2 Compliance Monitoring Schedule	
Monitoring frequency correct? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Schedule identifies equally spaced sampling intervals for collection; specific week or days? <input type="checkbox"/> Yes <input type="checkbox"/> No	

Peak month included in schedule? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Has distribution system changed significantly since the IDSE was approved? <input type="checkbox"/> Yes <input type="checkbox"/> No	
If Yes, is an updated schematic included in the Report? <input type="checkbox"/> Yes <input type="checkbox"/> No	

General comments & discussion:

**DETERMINATION:**

IDSE Report (SMP)  **IS**  **IS NOT** acceptable.

Date Review Completed: \_\_\_\_\_

Appendix B – IDSE Report Review Sheet – System Specific Study – Historical Data

**IDSE REPORT REVIEW SHEET  
SYSTEM SPECIFIC STUDY – HISTORICAL DATA**

City/County \_\_\_\_\_  
Waterworks \_\_\_\_\_  
PWSID # \_\_\_\_\_

	Date
IDSE Report Received	
Reviewed	
Modifications Requested	
Revisions Received	
Approved	

Reviewed By: \_\_\_\_\_

I. GENERAL INFORMATION		COMMENTS
Date IDSE Plan was approved		
Waterworks Schedule		<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4
Report submitted by required date for Schedule?	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Correct no. of copies of Report submitted?	<input type="checkbox"/> Yes <input type="checkbox"/> No	
II. REVIEW OF ADDITIONAL RESULTS		COMMENTS
Was the IDSE Report submitted at the same time as the IDSE Plan? <b>If “No” skip to part III.</b>	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Did the waterworks need to perform additional monitoring during the IDSE period to fill in gaps in the historical data?	<input type="checkbox"/> Yes <input type="checkbox"/> No	
If Yes, do the additional results adequately address the gaps?	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Are all Stage 1 Compliance Monitoring Results and any special sample results from the IDSE period included in the Report?	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Certified laboratory used for analyses?	<input type="checkbox"/> Yes <input type="checkbox"/> No	
All results reported in orderly table format or spreadsheet in Report along with the historical data?	<input type="checkbox"/> Yes <input type="checkbox"/> No	

Locational Running Annual Averages (LRAA) correctly computed by waterworks for each site?	<input type="checkbox"/> Yes <input type="checkbox"/> No	
<b>III. STAGE 2 SITE &amp; SCHEDULE SELECTION</b>		<b>COMMENTS</b>
Stage 2 Compliance Monitoring Sites		
Selected according to Steps and Criteria Table	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Alternate Stage 2 compliance site(s) requested by waterworks?	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Sufficient justification for substitution(s)? (explain in comments)	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Correct number of compliance sites determined, repeating table steps if necessary?	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Peak month identified?	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Same as peak historical month in IDSE? (only if additional monitoring was performed)	<input type="checkbox"/> Yes <input type="checkbox"/> No	
If No, is there sufficient justification for a different peak month? (explain in comments)	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Proposed Stage 2 Compliance Monitoring Schedule		
Monitoring frequency correct?	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Schedule identifies equally spaced sampling intervals for collection; specific week or days?	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Peak month included in schedule?	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Has distribution system changed significantly since the IDSE was approved?	<input type="checkbox"/> Yes <input type="checkbox"/> No	
If Yes, is an updated schematic included in the Report?	<input type="checkbox"/> Yes <input type="checkbox"/> No	

General comments & discussion:

**DETERMINATION:**

IDSE Report (SSS-Historical Data)       **IS**       **IS NOT**      acceptable.

Date Review Completed: \_\_\_\_\_

Appendix C – IDSE Report Review Sheet – System Specific Study – Hydraulic Modeling

**IDSE REPORT REVIEW SHEET**  
**SYSTEM SPECIFIC STUDY – HYDRAULIC MODELING**

City/County \_\_\_\_\_  
Waterworks \_\_\_\_\_  
PWSID # \_\_\_\_\_

	Date
IDSE Report Received	
Reviewed	
Modifications Requested	
Revisions Received	
Approved	

Reviewed By: \_\_\_\_\_

I. GENERAL INFORMATION		COMMENTS
Date IDSE Plan was approved		
Waterworks Schedule		<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4
Report submitted by required date for Schedule?	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Correct no. of copies of Report submitted?	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Did EPA approve calibration of the hydraulic model with the SSS Plan?	<input type="checkbox"/> Yes <input type="checkbox"/> No	
If “No” has EPA reviewed and approved the calibration information submitted with the Report?	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Is graph and model output included in the Report?	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Stage 1 DBPR Compliance Sample Results Included in Report?	<input type="checkbox"/> Yes <input type="checkbox"/> No	
II. REVIEW OF HYDRAULIC MODEL		COMMENTS
24 hour time series graph of residence time provided?	<input type="checkbox"/> Yes <input type="checkbox"/> No	
All Stage 2 DBPR monitoring sites covered?	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Graph of predicted tank levels vs. measured tank levels provided?	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Highest residence time tank in each pressure zone covered?	<input type="checkbox"/> Yes <input type="checkbox"/> No	

Time series graph of residence time at highest residence time storage facility for entire simulation period provided? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Model output of 24 hour average residence time predictions provided? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Entire distribution system covered? <input type="checkbox"/> Yes <input type="checkbox"/> No	
<b>III. REVIEW OF SSS MONITORING RESULTS</b>	<b>COMMENTS</b>
Samples collected in accordance with approved IDSE Plan	
Correct locations? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Dual sample sets collected at all locations? <input type="checkbox"/> Yes <input type="checkbox"/> No	
One round of SSS Samples collected during peak historical month? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Are deviations from the approved standard monitoring plan explained and justified? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Are additional samples or additional calibration needed? (discuss in detail in Comments section) <input type="checkbox"/> Yes <input type="checkbox"/> No	
If additional sampling (beyond the peak historical month), was the correct number of samples collected, with all sites sampled? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Results of any special samples included? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Certified laboratory used for analyses? <input type="checkbox"/> Yes <input type="checkbox"/> No	Name of lab: _____
All results reported in orderly table format or spreadsheet in Report? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Locational Running Annual Averages (LRAA) correctly computed by waterworks for each site? <input type="checkbox"/> Yes <input type="checkbox"/> No	
<b>III. STAGE 2 SITE &amp; SCHEDULE SELECTION</b>	<b>COMMENTS</b>
Stage 2 Compliance Monitoring Sites	
Selected according to Steps and Criteria Table <input type="checkbox"/> Yes <input type="checkbox"/> No	

Alternate Stage 2 compliance site(s) requested by waterworks? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Sufficient justification for substitution(s)? (explain in comments) <input type="checkbox"/> Yes <input type="checkbox"/> No	
Correct number of compliance sites determined, repeating table steps if necessary? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Peak month identified? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Same as peak historical month in IDSE? <input type="checkbox"/> Yes <input type="checkbox"/> No	
If No, is sufficient justification for a different peak month? (explain in comments) <input type="checkbox"/> Yes <input type="checkbox"/> No	
<b>Proposed Stage 2 Compliance Monitoring Schedule</b>	
Monitoring frequency correct? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Schedule identifies equally spaced sampling intervals for collection; specific week or days? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Peak month included in schedule? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Has distribution system changed significantly since the IDSE was approved? <input type="checkbox"/> Yes <input type="checkbox"/> No	
If Yes, is an updated schematic included in the Report? <input type="checkbox"/> Yes <input type="checkbox"/> No	
If Yes does the hydraulic model include the changes? <input type="checkbox"/> Yes <input type="checkbox"/> No	

General comments & discussion:

**DETERMINATION:**

IDSE Report (SSS-Hydraulic Model)  **IS**  **IS NOT** acceptable.

Date Review Completed: \_\_\_\_\_

Appendix D – Approval Letter

Date

SUBJECT: (City or County)  
(Waterworks Name)  
PWSID No.:

Waterworks Owner Name  
Address 1  
Address 2  
City/Town, VA ZIP Code

Dear \_\_\_\_\_:

We have received the [(Standard Monitoring Report) (System Specific Study Report for Existing Data) (System Specific Study Report with Hydraulic Model)] for the subject waterworks dated \_\_\_\_\_ prepared in accordance with the Stage 2 Disinfectants and Disinfection Byproducts Rule (Stage 2). This is to advise that the [(Standard Monitoring) (System Specific Study)] Report has been found by the Virginia Department of Health to meet the requirements of [(§§ 141.601) (§§ 141.602)] of the National Primary Drinking Water Regulations, and is hereby provisionally approved. A copy of the Report has been stamped approved by this Office and is enclosed.

The next step is to submit to this Office for review and approval three copies of a Stage 2 Rule Compliance Monitoring Plan in accordance with §§ 141.622. The proposed Plan must be received in this Office prior to [(April 1, 2012) (October 1, 2012) (October 1, 2013) (October 1, 2014)] and include monitoring locations and dates as well as compliance calculation procedures.

If you have any questions regard the above, please do not hesitate to call \_\_\_\_\_, District Engineer.

Sincerely,

Name  
Engineering Field Director

Enclosure

cc: U.S. EPA – Information Processing and Management Center, with enclosure  
VDH – Central Office – ATTN: Mr. Steve Pellei, P.E.  
\_\_\_\_\_ Health Department