

## **Introduction**

The Outline on the following pages is guidance on the general contents of an antidegradation review report.. The report outline is based on the requirement of the Missouri Antidegradation Rule and Implementation Procedure and completed Antidegradation reviews. Depending on what the pollutants of concern are, your type of facility, the proposed activity, and its receiving stream(s), not all sections of the report outline will be applicable. In some instances, a review will negate the need for a demonstration, and some demonstrations will negate the need for a review. Also, your report may have a combination of demonstrations and reviews for different pollutants of concern.

The outline provided on the following pages does not prevent the Department from requesting more information and/or clarification. There is no requirement to follow the outline below, it is provided to be a service to the public, wastewater treatment plants, and their engineers/consultants.

A pre-submittal meeting is still recommended. The forms that are listed below provide a summary of the information that should be present in the Antidegradation Report. There are seven (7) different forms that may be required to be filled out. Some projects will only need to fill out the no degradation evaluation, while other projects may fill out five of the forms. All of the forms require the Permittee's signature and the Continuing Authority signature. If a consultant prepares the report, their signature must be on the form, also. Attachment A also requires the consulting engineer's signature. Below is a list of the forms to be submitted with your Antidegradation Report.

- [WQRA- Water Quality Review Assistance/ Antidegradation Review Request, Form--MO 780-1893](#)
- [TD- Tier Determination and Effluent Limit Summary, Form--MO 780-2025](#)
- [Attachment A- Tier 2 - Significant Degradation, Form--MO 780-2021](#)
- [Attachment B- Tier 2 - Minimal Degradation, Form--MO 780-2022](#)
- [Attachment C- Temporary Degradation, Form--MO 780-2023](#)
- [Attachment D- Tier 1 Review, Form--MO 780-2024](#)
- [No Degradation Evaluation - Conclusion of Antidegradation Review, Form--MO 780-2026](#)

Please continue to visit the antidegradation website, as we continue to update and provide more resources, <http://www.dnr.mo.gov/env/wpp/permits/antideg-implementation.htm> .

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<b>I. Report Contents of Submittals</b>	<a href="#">AIP</a>	<a href="#">Form Cross Reference</a>	Regulation, Guidance, Reference
a. Introduction			<a href="#">10 CSR 20-7.031(2)</a>
i. Description of Facility and Receiving Stream		WQRA	
b. List of Pollutants of Concern (POCs)	AIP Sec. I Part B (pgs. 11-14)	TD #7 WQRA instructions #1	
c. Proposed Demonstration or Review with Objective Statement.			
d. Tier Levels for POCs	AIP Sec. I Part B Subsec. 1 (pg. 11-14)	TD	
i. Table with list of POC and Tier		TD #7	
e. Existing Water Quality, if applicable	AIP Sec. II Part A Subsec. 1 (pg. 21)	TD #6	<a href="#">10 CSR 20-7.031, Table G and Table H</a>
i. Table of Background Concentrations	AIP Sec. II Part A Subsec. 1 (c) (pg. 21)	TD #6	<a href="#">USGS gaging stations</a>
ii. Sources and description			
f. Water Quality History of Facility and Receiving Stream	AIP Sec. II Part A Subsec. 1 (pg. 16-22)	TD #6	<a href="#">10 CSR 20-7.031</a>
i. Violations or Enforcement Actions			
ii. Pretreatment program, if applicable		WQRA instructions #5	<a href="#">10 CSR 20-6.100</a>
iii. Losing or Gaining Stream			<a href="#">10CSR 20-7.031(1)(N) and (11), Table J</a>
iv. Applicability to 305 (b) or 303 (d) list	AIP Sec. IV Part B and Sec. V (pgs. 38-39)		<a href="#">303 (d) or 305(b) list, 10 CSR 20-7.050</a>
g. Facility Low Flow Design and Receiving Water Body Low Flow Characteristics		WQRA instructions #4 TD #2-4	<a href="#">10CSR 20-7.031 (1)(O)</a>
i. Tables and Derivation Demonstration for Water body for 7Q10, 1Q10, 30Q10, 30Q5		WQRA instructions #4	<a href="#">USGS gaging stations</a>
ii. Wet Weather Considerations		TD #8	<a href="#">40 CFR 122.41(m)(4)</a>
<b>Demonstrations and Reviews</b>		Attach. A-D, No Deg Form	
h. Demonstration of Insignificance	AIP Sec. II Part A (pg. 15)		
i. Demonstration of Loading Reduction or Maintenance for Each POC within Segment			
1. Discussion of Approach			

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for POCs			
2. Table of Current and Proposed Load and Concentrations and Net Change in Loading.		Attach. B #4	
3. Demonstrate that next segment will not be degraded.			
ii. Demonstration of < 10% of Facility Assimilative Capacity (FAC) for Each POC	AIP Sec. II Part A Subsec. 3 (pg. 22-23); Appendix 3	Attach. B #4	
1. Discussion of Approach for POCs			
2. Table Summary of POCS with FAC Calculations	AIP Sec. II Part A Subsec. 3 (pg. 22-23)	Attach. B #4	
3. Segment Assimilative Capacity (SAC), if applicable	AIP Sec. II Part A Subsec. 3 (pg. 22-23)	Attach. B #4	
i. Tier 1 Review	AIP Sec. I Part B Subsec. 1 (pg. 13); Appendix 2	Attach. D	
i. Discussion of Objectives of Review			
ii. Demonstration no further degradation of existing water quality		Attach. D #3/5	
1. Table (s) and Discussion of Reduction or Maintenance of Loading		Attach. D #3-5	
2. Table (s) and Discussion of Method for Attainment of Beneficial Uses with Water Quality based Effluent Limits		Attach. D #3	
j. Tier 2 Review	AIP Sec. I Part B Subsec. 2 (pg. 14); Appendix 3	Attach. A	
i. Alternatives Analysis evaluates a range of options that can be reasonably expected to achieve greater pollution reduction.		Attach. A #4	
ii. Note: Alternatives are considered practicable until an evaluation to the contrary is provided			
1. Non-degrading Alternatives	AIP Sec. II Part B Subsec. 1 (pg. 24)	Attach. A #4	

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2.Less Degrading Alternatives	AIP Sec. II Part B Subsec. 1 (pg. 24)	Attach. A #4	
3.Degrading Alternatives	AIP Sec. II Part B Subsec. 2 (pg. 24-28)	Attach. A #4	
4. Table Summary Comparison of Alternatives	AIP Sec. II Part B Subsec. 2 (pg. 24-28)	Attach. A #4	
iii. Practicability	AIP Sec. II Part B Subsec. 2(a) (pg. 25)	Attach. A #5	
1. Effectiveness and Reliability of the treatment options and any environmental factors.		Attach. A #5	
2. Alternatives that do or do not meet Missouri Water Quality Standards should be noted.		Attach. A #5	<a href="#">10 CSR20- 7.015, Tables A and B</a>
iv. Economic Efficiency for Practicable Alternatives	AIP Sec. II Part B Subsec. 2(b) (pg. 25-27)	Attach. A #5	
1. Graphics showing optimization of water quality benefits with project costs	AIP Sec. II Part B Subsec. 2(b) (pg. 25-27)	Attach. A #5	
2. Identify the base case among the set of treatment options and show that it meets water quality standards		Attach. A #5	
3. We recommend the present worth framework for reporting cost information. See page 26 of the AIP for explanation of the cost comparison procedures.	AIP Sec. II Part B Subsec.2(b) (pg. 26);	Attach. A #5	<a href="#">EPA's Interim Economic Guidance</a>
v. Affordability, if needed	AIP Sec. II Part B Subsec. 2(c)(pg. 27-28)	Attach. A #5	<a href="#">EPA's Interim Economic Guidance</a>
vi. Socio-Economic Evaluation	AIP Sec. II Part E (pg. 29-31)	Attach. A #6	
1. Over that design life the long-term benefit to the affect community discussed.	AIP Sec. II Part E (pg. 29)	Attach. A #6	
2. Social and Economic Benefits section provide	AIP Sec. II Part E (pg. 29-30)	Attach. A #6	<a href="#">10 CSR 20-7.031(2)(B)</a>

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subheadings composed of these factors.			
k. Dissolved Oxygen Modeling of Proposed Discharge		WQRA instructions #2	<a href="#">Streeter Phelps or Qual2K/Qual2E (Q2K/Q2E)</a>
l. Derivations and Discussion of Proposed Limits	AIP Sec. II Part C (pg. 28) or Sec. III (pg. 34-37)	TD #9	
i. Each POC should be discussed			
ii. Water Quality-based Effluent Limits, if applicable			
iii. Table of Proposed Effluent Limits for Facility			
m. Reasonable Potential Analysis (RPA), if needed		TD #9	<a href="#">40 CFR Part 122.44(d)(1)(i); EPA's Technical Support Document</a>
n. Geohydrological Evaluation		WQRA instructions #9	<a href="#">10 CSR 20-6.030(2), Division of Geology and Land Survey</a>
o. Heritage Review showing the discussion from Missouri Department of Conservation		WQRA instructions #8	<a href="#">Missouri Department of Conservation-Heritage</a>
p. Summary/Conclusion of Demonstration or Review			
q. References			
<b>II. Additional Tables</b>			
a. Current Tier Level Analysis	AIP Appendix 2	TD #7	
b. Summary Sheets of Economic Efficiency Analysis	AIP Sec. II Part B Subsec. 1(b) (pg. 25-27)	Attach. A #5	<a href="#">EPA's Interim Economic Guidance</a>
c. Summary Sheets of Proposed Limits		TD #9	
d. Additional Calculations for Existing Water Quality, FAC or SAC	AIP Sec. II Part A Subsec. 3 (pg. 22-23), Appendix 3	Attach. B #4	
<b>III. Figures</b>			
a. Map of Outfall Locations		WQRA instructions #1	<a href="#">DNR Maps</a>
b. Dissolved Oxygen vs. Distance from Outfall Plot		WQRA instructions #2	<a href="#">Streeter Phelps or Qual2K/Qual2E (Q2K/Q2E)</a>
<b>IV. Appendices</b>			
a. Raw Water Quality Data and Low Flow Data			
b. Raw and Summarized Discharge Monitoring Data			
c. Time of Travel Determinations			Worksheets available upon request

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d. Base Case and/or Chosen Alternative Water Quality Modeling Documentation			
i. Water Quality-based Effluent Limit Calculations for Ammonia		WQRA instructions #3	<a href="#">Total Ammonia Nitrogen Criteria Implementation Guidance Policy</a>
ii. Dissolved Oxygen Modeling Output		WQRA instructions #2	<a href="#">Streeter Phelps or Qual2K/Qual2E (Q2K/Q2E)</a>
e. RPA Calculations, if applicable			<a href="#">EPA's Technical Support Document</a>
f. FAC Calculations, if applicable	AIP Sec. II Part A Subsec. 3 (pg. 22-23), Appendix 3	Attach. B #4	
g. Present Worth Analysis of Alternatives	AIP Sec. II Part B Subsec. 2(b) (pg. 25-26)	Attach. A #5	<a href="#">EPA's Interim Economic Guidance</a>
h. Manufacturer's Equipment Summary			
i. If desired, Pre and/or Post-Submittal Meeting Minutes			