

Wyoming Surface Water Quality Standards

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Jim Ruby, Executive Secretary
Environmental Quality Council



Implementation Policies
for

Antidegradation
Mixing Zones and Dilution Allowances
Turbidity
Use Attainability Analysis

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ANTIDegradation Implementation Policy
(Chapter 1, Section 8)

Section 1. Purpose. Section 8 of the Wyoming Surface Water Quality Standards (Water Quality Rules and Regulations, Chapter 1) establishes a regulatory policy concerning antidegradation. Section 8 provides:

(a) *Water uses in existence on or after November 28, 1975 and the level of water quality necessary to protect those uses shall be maintained and protected. Those surface waters not designated as Class 1, but whose quality is better than the standards contained in these regulations, shall be maintained at that higher quality. However, after full intergovernmental coordination and public participation, the department may issue a permit for or allow any project or development which would constitute a new source of pollution, or an increased source of pollution, to these waters as long as the following conditions are met:*

- (i) *The quality is not lowered below these standards;*
- (ii) *All existing water uses are fully maintained and protected;*
- (iii) *The highest statutory and regulatory requirements for all new and existing point sources and all cost effective and reasonable best management practices for nonpoint sources have been achieved; and*
- (iv) *The lowered water quality is necessary to accommodate important economic or social development in the area in which the waters are located.*

(b) *The Water Quality Administrator (administrator) may require an applicant to submit additional information, including, but not limited to, an analysis of alternatives to any proposed discharge and relevant economic information before making a determination under this section.*

(c) *The procedures used to implement this section are described in the Antidegradation Implementation Policy.*

Antidegradation protection is one of the essential elements of state surface water quality standards programs and is required under Section 303(d)(4)(B) of the Clean Water Act. The purpose of this implementation procedure is to disclose the decision-making and public participation processes that will be employed by the Water Quality Division in order to ensure compliance with Section 8.

A secondary purpose of this implementation policy is to ensure federal approval of Wyoming's surface water quality standards. Although Wyoming has primary authority to establish standards, the EPA has a responsibility to determine whether such standards meet the goals and requirements of the Clean Water Act. To a large extent, approval of the standards relies on approval of an antidegradation implementation procedure.

Section 2. Concepts. Water quality standards designate the uses which are protected on waters of the state and establish criteria that describe the maximum pollutant concentrations and other water quality conditions necessary to maintain those uses. Many waters in the state have an existing level of water quality that is better than the criteria established to support designated uses. The antidegradation requirements are designed to maintain water quality at the higher levels unless there are good reasons for lowering the water quality.

Federal regulations (40 CFR 131.12) require state standards programs to address 3 levels or “tiers” of antidegradation protection. “Tier 1” is the basic level of protection which applies to all waters. Waters which are afforded tier 1 protection are waters not generally considered to be high quality, are not currently supporting designated uses, or where assimilative capacity does not exist for parameters that would be affected by a proposed activity.

“Tier 2” protections apply to high quality waters. These are waters which have an existing quality that is better than the established use-support criteria and where an assimilative capacity exists for parameters that would be affected by a proposed activity. Under tier 2, a lowering of water quality may be allowed if it is determined that the amount of degradation is insignificant or if the lowered water quality is necessary to accommodate important economic or social development in the area. Under no circumstances, however, may water quality be lowered below the criteria established in the standards or below a level that would impair an existing use.

“Tier 3” protections apply to waters that constitute “outstanding national resource waters” (ONRWs)¹. Tier 3 requires maintenance of existing quality with no consideration of assimilative capacity or economic or social development. In certain circumstances, temporary lowering of water quality is allowable; however, the general rule is that no new point sources or increased pollutant loading from existing point sources is allowed.

The antidegradation implementation procedures that follow shall apply to the review of regulated activities involving new or increased discharges of pollution. Regulated activities include individual Wyoming Pollution Discharge Elimination System (WYPDES) effluent discharge permits, WYPDES storm water permits for industrial and construction activities and Section 401 water quality certifications. The procedure is organized starting with the highest level of protection applied to Class 1 waters to the basic minimum level applicable to all waters.

Section 3. Outstanding Aquatic Resources (Class 1). The qualification requirements for Class 1 waters are listed in Chapter 1, Section 4(a). In addition, the general categories of waters (e.g. waters in national parks, etc.) and specific waters designated as Class 1 are listed in Chapter 1, Appendix A.

¹The Wyoming water quality protection program has no provision for designating waters that have “national” significance; however, waters designated as Class 1 under the surface water standards are considered to be outstanding resources. Though not designated as ONRWs, Class 1 waters are afforded a level of antidegradation protection which is a functional equivalent of EPA’s tier 3 concept.

Class 1 waters are designated by the Environmental Quality Council in rulemaking hearings. Both the Wyoming Administrative Procedures Act and the department's continuing planning process (CPP) provide for public input during regulatory and planning processes. Any interested person may nominate a water for Class 1 designation through the procedures outlined in those documents.

(a) Point Source Discharges. The Wyoming surface water quality standards prohibit new or increased "end-of-the-pipe" effluent discharges of pollution to Class 1 waters but allow limited discharges associated with storm water runoff and temporary discharges associated with construction activities. Permits issued by the department for storm water or construction-related discharges will contain the following safeguards: changes in water quality will be limited to temporary increases in turbidity; turbidity increases will be limited to those allowed in Chapter 1, Section 23, unless a temporary turbidity waiver as been granted by the administrator; and necessary controls and monitoring will be required to ensure existing water quality and uses are maintained and protected.

Furthermore, the department will impose whatever controls are necessary on regulated point source discharges to tributaries of Class 1 waters to the extent that the existing quality and uses of the downstream Class 1 segment will be protected and maintained. It is the department's interpretation that "tributary" means any waters feeding the mainstem and any upstream mainstem segments.

The following procedures and decision-making processes will be used for each of the Water Quality Division's discharge permitting authorizations on Class 1 waters:

(i) WYPDES End Of The Pipe Permits. Permits for new or increased effluent discharges to Class 1 waters will not be issued. This prohibition is not intended to include temporary construction-related discharges or industrial storm water permits for which effluent limits have been established where there is no reasonable potential for a discharge of the associated effluent limitations.

(ii) WYPDES Storm Water Permits (*Industrial Activities*).

(A) Storm water permits for industrial activities may be issued with appropriate conditions and monitoring requirements on a case-by-case basis on Class 1 waters. An application for an industrial storm water permit must contain:

(I) A list of all pollutants which can reasonably be expected to occur on-site and be exposed to runoff events; and

(II) A map showing the location of the industrial facility in relation to the Class 1 receiving water and/or tributaries; and

(III) Water quality data that characterizes the existing quality of the receiving Class 1 water and/or its tributaries in relation to the potential on-site pollutants; and

(IV) A storm water pollution prevention plan that provides:

(1.) Runoff from the industrial site resulting from up to a 100-year storm event will not discharge to a Class 1 water; or

(2.) Runoff which may discharge to a Class 1 water as the result of any storm event will be of equal or better quality than the receiving water; and

(V) A monitoring plan designed to ensure compliance with item (IV).

(B) Prior to issuing an industrial storm water permit, the department will make a determination based upon the information submitted in the application that the potential effects on the Class 1 receiving stream, if any, will be temporary in nature and limited to discharges of clean sediment and turbidity. The department may also include any additional construction practices, treatment processes, monitoring and reporting requirements or other special conditions as necessary to achieve and demonstrate that existing water quality and uses will be maintained.

(C) The department will conduct a 30-day public notice and comment period prior to the issuance of any industrial storm water permit on Class 1 waters disclosing its intent to issue a permit for industrial storm water discharges. Information received as a result of the public notice will be considered by the department and may affect the final determination regarding permit approval.

(D) Existing general storm water permits for industrial activities will remain in effect for the remainder of their terms. The reauthorization of these permits, however, is not guaranteed and will be subject to the provisions of the revised rule and the implementation policy described above.

(iii) WYPDES Storm Water Permits (*Construction Activities*).

(A) General storm water permits for construction activities may be issued with appropriate conditions and monitoring requirements on Class 1 waters. Public comment is solicited prior to establishment of general permits and at each subsequent renewal (at least once every five years). Small construction general permits (SCGP) cover construction projects that disturb between one and five acres (includes sum of disturbed acres that are part of a common plan of development or sale) and large construction general permits (LCGP) cover construction projects that disturb five acres or more (includes sum of disturbed acres that are part of a common plan of development or sale). The SCGP is a “no application” permit, where a project is automatically covered when the operator complies with the provisions of the SCGP. An application for a LCGP must contain a notice of intent (NOI) to discharge storm water prepared according to the provisions of the Wyoming General Permit to Discharge Storm Water Associated with Large Construction Activities. The applicant must submit along with the NOI, a detailed storm water pollution prevention plan (SWPPP) that includes sufficient controls on all

potential sources of pollution. The SWPPP must demonstrate that the only types of pollution that could reasonably be expected to reach a Class 1 water during a runoff event are turbidity and sediment. Although the SCGP does not require an application, the requirements are generally identical to those in the LCGP.

(B) Runoff from ancillary, construction-related facilities such as borrow areas, gravel processing areas, asphalt processing plants, concrete mixing, fuel and solvent storage areas, equipment staging and maintenance areas, and any area which may be a source of pollutants other than turbidity and sediment must be controlled so as not to discharge to any Class 1 water. This provision applies to runoff resulting from up to a 100-year storm event.

(C) The department shall conduct an in-house review of the NOI and pollution control plan prior to approving coverage under the LCGP. The department may also include any additional construction practices, monitoring and reporting requirements, or other special conditions that may be necessary to achieve and demonstrate that existing water quality and uses will be maintained. Upon issuance, the department accepts comments on all general permit authorizations for a period of 30 days following the authorization. Any aggrieved party may appeal an authorization under a general permit pursuant to W.S. 35-11-801(d). Parties considering an appeal should provide comments to the department. Upon review of any application for a construction storm water permit, the department may also choose to deny authorization under the general permit and require an individual permit. In such instances, a 30-day public notice will be conducted.

(b) Clean Water Act Section 401 Water Quality Certifications. This section outlines procedures used by the department to implement tier 3 antidegradation protections that ensure existing quality and uses of Class 1 waters will be maintained for activities subject to 401 certifications. Certifications are required for federal licenses or permits to discharge and include Section 404 permits issued by the U.S. Army Corps of Engineers and hydropower licenses issued by the Federal Energy Regulatory Commission (FERC).

(i) Federal licenses or permits can be certified by the department if activities authorized by the license or permit meet the following requirements:

(A) Any resultant water quality degradation shall be temporary and all potential negative effects cease at the end of the construction period;

(B) Potential contaminants are limited to turbidity and sediment. Increases in downstream turbidity are limited to 10 NTUs above the upstream condition at all times on streams that support cold water game fisheries and/or drinking water supplies and 15 NTUs on streams that support warm water fisheries, unless a temporary turbidity waiver has been granted by the administrator. Sediment cannot be discharged in amounts that will adversely affect existing or designated uses as described in Chapter 1, Sections 15 and 16;

(C) Long term or permanent degradation of stream channel stability and aquatic habitat will not occur;

(D) Long-term or permanent degradation of aesthetic properties will not occur; and

(E) Process water from construction activities (e.g. hydrostatic testing, gravel washing, etc.) will not discharge to a Class 1 water.

(ii) 401 Certification shall be denied for federal licenses or permits authorizing discharge to Class 1 waters if any of the following apply:

(A) The activity may result in degradation of water chemistry or long-term or permanent loss or reduction of: channel stability, aquatic habitat, or existing or designated uses;

(B) Sediment will be discharged in amounts that settle to form sludge, bank or bottom deposits;

(C) Existing ambient conditions will be degraded by the activity; or

(D) Any surface discharge of process water to a Class 1 water will occur.

(iii) The applicant may be asked to consider multiple reasonable alternatives for accomplishing the project objectives and justify the chosen alternative with consideration of environmental, economic and social factors. The chosen alternative must not have significant adverse affects to existing or designated uses.

(iv) Wyoming Game and Fish Department (WGFD) must be consulted for comments prior to certification of the activity. If evidence of consultation with WGFD is not provided with the application materials, the department may consult with WGFD on behalf of the applicant. Results of the consultation will be considered in the decision to approve, approve with conditions or deny certification;

(v) In addition to the general requirements above, the following measures apply on an activity-specific basis on Class 1 waters:

(A) Aquatic Habitat Improvement Activities.

(I) Projects shall maintain existing and designated uses and should generally not convert one habitat type to another unless all aquatic habitat functions are retained (e.g. instream habitat structures may not impede movement of resident fish species; existing wetlands may not be excavated or inundated to create deep water habitat; spawning, rearing or feeding habitat may not be converted to holding areas for adult fish);

(II) Project plans must be based on sound scientific principles, data and analyses that are commensurate with project complexity and risk of degradation; and

(III) The department shall use discretion and professional judgment in determining whether existing and designated uses will be degraded by the activity.

(B) Repair/Maintenance Activities. Currently serviceable structures may be repaired, rehabilitated or replaced, provided that the proposed work does not deviate from the original plans, purpose or use of the structure and the general requirements for certification on Class 1 waters are met.

(C) Streambed and Streambank Stabilization and Flood Control Activities. Streambank stabilization and flood control structures can be approved if the objectives are to reduce existing environmental degradation, protect human health and safety, or prevent substantial loss of property.

(iv) Public Notice. A joint WDEQ/Corps of Engineers public notice is issued by the Corps prior to the issuance of all individual Section 404 permits. The department shall conduct a separate public notice and comment period prior to certifying all FERC or other federal licenses. With the exception of minor projects with minimal effects, the department shall conduct a separate public notice and comment period prior to certifying all nationwide or regional general Section 404 permits.

(c) Nonpoint Sources. Nonpoint sources of pollution are not regulated by permits issued by the department, but are controlled by the voluntary application of cost effective and reasonable best management practices. For Class 1 waters, best management practices will maintain existing quality and water uses.

Section 4. High Quality Waters (Class 2AB, 2A, 2B and 2C). Waters classified as 2AB, 2A, 2B or 2C are known to support populations of fish and/or drinking water supplies and are considered to be high quality waters. The Water Quality Division may issue a permit or certification for new or increased discharges to these waters upon making a finding that the amount of resultant degradation is insignificant or that the discharge is necessary to accommodate important economic or social development in the area where the waters are located. The department must also ensure that the highest statutory and regulatory requirements for all new and existing point sources and all cost effective and reasonable best management practices for nonpoint sources have been achieved. For purposes of antidegradation implementation these may be referred to as "reviewable waters".

Where there are existing regulated point or nonpoint sources located in the area, the Water Quality Division will ensure that compliance with the required controls has been or will be achieved prior to authorizing the proposed regulated activity. This requirement is primarily intended to ensure that proposed activities that will result in water quality degradation for a particular parameter will not be authorized where there are existing unresolved compliance problems involving the same parameter in the zone of influence of the proposed activity. The "zone of influence" is determined as appropriate for the parameter of concern, the characteristics of the receiving water (e.g. lake versus river, etc.) and other relevant factors. Where available, a Total Maximum Daily Load (TMDL) analysis or other watershed-scale plan will be the basis for

identifying the appropriate zone of influence. The Water Quality Division may conclude that such compliance has not been assured where existing sources are violating their WYPDES permit requirements. However, the existence of schedules of compliance for purposes of WYPDES permit requirements may be taken into consideration in such cases. In other words, required controls on existing regulated sources need not be finally achieved prior to authorizing a proposed activity provided there is reasonable assurance of future compliance.

(a) WYPDES Effluent Permits and Storm Water Permits (Industrial and Construction Activities). The antidegradation review under this part consists of three sequential evaluations: determination of significance; economic evaluation; and examination of alternatives.

(i) Determination of Significance.

(A) Based on information submitted in an application for a water quality permit, the administrator shall make a determination of whether the proposed discharge will result in a significant lowering of water quality with respect to adopted numeric water quality criteria. The significance determination will be based on the chronic numeric standard and flow for the pollutant of concern except for those pollutants which have only acute numeric standards in which case the acute standard and flow will be used. Significance determination shall be made with respect to the net effect of the new or increased water quality impacts of the proposed activity, taking into account any environmental benefits resulting from the activity and any water quality-enhancing mitigation measures impacting the segment or segments under review, if such measures are incorporated with the proposed activity. The activity shall be considered not to result in significant degradation if:

(I) The activity may be permitted under a general permit established by the state for discharges regulated under section 402; or

(II) The new or increased loading from the source under review is less than 10 percent of the existing total load to that segment for critical constituents (e.g. those for which there are stream standards and which are present in the discharge), provided that the cumulative impact of increased loadings from all sources does not exceed 10 percent of the baseline total load established for the segment (the baseline total load shall be determined at the time of the first proposed new or increased water quality impacts to the reviewable waters); or

(III) The new or increased loading from the source under review will consume, after mixing, less than 20 percent of the available increment between low flow pollutant concentrations and the relevant standards (assimilative capacity), for critical constituents; or

(IV) The activity will result in only temporary or short term changes in water quality.

(B) If an activity is considered not to result in significant degradation, no further review will be conducted. General WYPDES permits will be issued at this point. In

the case of individual WYPDES permits, the Water Quality Division shall prepare a draft permit and provide opportunity for public comment before the permit is issued. Such public notices shall contain a statement describing the rationale for the determination of non-significance. If the permit is issued, the determination may be appealed to the Environmental Quality Council under the provisions of the Wyoming Administrative Procedures Act.

(C) If a determination is made that a proposed activity is likely to result in significant degradation of reviewable waters, an evaluation shall be made as to whether the degradation is necessary to accommodate important economic or social development in the area in which the waters are located.

(ii) Economic Evaluation.

(A) The "area in which the waters are located" shall be determined from the facts on a case-by-case basis. The area shall include all areas directly impacted by the proposed activity.

(B) A determination shall be made on the facts on a case-by-case basis whether the proposed activity is important economic or social development. If the applicant submits evidence that the activity is an important development, it shall be presumed important unless information to the contrary is submitted in the public review process. The determination shall take into account information received during the public comment period and shall give substantial weight to any applicable determinations by local governments or land use planning authorities.

(C) If the proposed activity is determined not to be important for economic or social development, authorization for the associated discharge(s) will be denied.

(D) If the proposed activity is determined to be important economic or social development, a determination shall be made whether the degradation that would result from such activity is necessary to accommodate that development.

(iii) Examination of Alternatives. The degradation shall be considered acceptable if there are no other water quality control alternatives available that:

(A) Would result in no degradation or less degradation of state waters;
and

(B) Are determined to be economically, environmentally and technologically reasonable.

(C) Determination of whether such alternatives are available shall be based upon a reasonable level of analysis by the project proponent, consistent with accepted engineering practices, and information submitted by the public or otherwise available to the administrator. The assessment shall, at a minimum, address practical water quality control

technologies, the feasibility and availability of which has been demonstrated under field conditions similar to those of the activity under review. The scope of alternatives considered shall be limited to those that would accomplish the proposed activity's purpose.

(D) In determining the economic reasonableness of water quality control alternatives, the administrator may use some of the following factors to weigh the reasonableness of the various alternatives.

(I) Whether the costs of the alternative significantly exceed the costs of the proposal;

(II) For publicly owned treatment works (POTWs), whether user charges resulting from the alternative would significantly exceed user charges for similarly situated POTWs or public water supply projects;

(III) For any discharger into waters of the state, whether the treatment alternative represents costs that significantly exceed costs for other similar dischargers to similar stream classes, or standard industry practices.

(IV) Any other environmental benefits, unrelated to water quality which may result from each of the alternatives examined.

(E) Upon conclusion of the alternatives analysis, the administrator shall select a preferred alternative and prepare a draft permit and public notice proposing to authorize the selected alternative. The selected alternative shall be the least degrading, reasonable alternative consistent with the social and economic benefits. The public notice shall contain a statement describing the results of the antidegradation review. If the permit is issued, all administrative decisions relating to the antidegradation review or permit issuance may be appealed to the Environmental Quality Council under the provisions of the Wyoming Administrative Procedures Act.

(b) Clean Water Act Section 401 Certifications. This section outlines procedures used by the department to implement tier 2 antidegradation protections on high quality waters for activities subject to 401 certifications. Certifications are required for federal licenses or permits to discharge and include Section 404 permits issued by the Army Corps of Engineers and hydropower licenses issued by the Federal Regulatory Commission (FERC).

(i) Individual Section 404 Permits Issued by the U.S. Army Corps of Engineers. Activities involving a discharge of dredged or fill materials that are considered to have more than minor adverse effects on the aquatic environment are regulated by individual Section 404 Permits. The decision making process relative to the 404 permitting program are contained in the 404(b)(1) guidelines (*40 CFR Part 230*). Prior to issuing a permit under the 404(b)(1) guidelines, the Corps of Engineers must: (1) make a determination that the proposed discharges are unavoidable (*i.e. necessary*); (2) examine alternatives to the proposed activity and authorize only the least damaging practicable alternative; and (3) require mitigation for all

impacts associated with the activity. A 404(b)(1) findings document is produced as a result of this procedure and is the basis for the permit decision. Public participation is also provided for in this process. Section 401 certifications of individual 404 permits will rely upon the information contained in the 404(b)(1) findings document. The department may add permit-specific conditions to a certification to ensure tier 2 antidegradation protections are met. If all narrative and numeric water quality criteria are likely to be met (with or without permit-specific conditions), certification will be granted. If any narrative or numeric criterion will not be met, certification will be denied.

(ii) Certification of Nationwide and Regional General 404 Permits Issued by the U.S. Army Corps of Engineers. Section 404 nationwide general permits are reissued by the Corps every five years. At the time of reissuance, the department will review the permit to determine if certification can be categorically granted or whether project-specific certification review is necessary. The department may add conditions to the certifications that apply broadly to all nationwide permits or add conditions that are permit-specific. When categorical certification is granted for a specific permit (with or without permit-specific conditions), the department considers the terms and conditions of the permit to fulfill the tier 2 antidegradation provisions of Wyoming's Surface Water Quality Standards. If categorical certification is not granted, a project-specific tier 2 antidegradation review will be conducted.

(iii) FERC and other federal licenses or permits. Certification is required for any FERC or other federal license or permit that involves a discharge to a water of the US. FERC or the applicable federal agency will submit a request for certification to the department. The department shall conduct a separate public notice and comment period prior to certifying all FERC or other federal licenses. The department may also add permit-specific conditions to the certification to ensure tier 2 antidegradation protections are met.

(iv) For certification of FERC and other federal licenses or permits and nationwide or regional general 404 permits (categorical or individual), the following requirements must be met:

(A) Any significant water quality degradation and potential negative effects shall be temporary and cease at the end of the project or following reclamation, if applicable;

(B) Significant long-term or permanent degradation of stream channel stability and aquatic habitat will not occur; and

(C) Significant long-term or permanent degradation of aesthetic properties will not occur.

(v) 401 Certification Shall Be Denied on Class 2 waters if any of the following apply:

(A) The project results in significant long term or permanent degradation of water chemistry;

(B) Sediment will be discharged in amounts that settle to form sludge, bank or bottom deposits;

(C) The project may result in significant long-term or permanent loss of channel stability or aquatic habitat; or

(D) The project may result in degradation of existing or designated uses. The department shall use discretion and professional judgment to determine whether existing or designated uses will be degraded by the activity.

(vi) For activities that require an individual certification review by the department, evidence of consultation with WGFD should be included with preconstruction notification documents. If evidence of the consultation is not included, the department may consult with WGFD on behalf of the applicant. Results of the consultation will be considered in the decision to approve, approve with conditions or deny certification.

Section 5. Use Protected Waters (Classes 2D, 3 and 4). In general, Class 2D, 3 and 4 waters do not warrant the special protection provided to high quality waters and shall be afforded a basic level of antidegradation protection (EPA tier 1 equivalent). This level of protection is focused on maintaining existing uses and may allow lowering water quality as long as the established criterion for any parameter is not exceeded. The issuance of water quality permits and certifications shall not normally involve an examination of economic necessity or alternatives to the proposed activity; however, the administrator may determine on a case-by-case basis that special circumstances exist and a High Quality Water (See Section 4, above) review of the proposed discharge may be conducted prior to authorizing the activity. Special circumstances may include, but are not limited to, exceptional recreational or ecological significance (e.g. location in a park or urban greenway, presence of rare or sensitive plant and animal species, contains unique aquatic features such as wetland fens or geothermal springs, etc.).

Section 6. Existing Use Protection (All Wyoming Surface Waters). Except for the special considerations provided in Chapter 1 and regulations regarding Class 2D, 3D and 4C waters, existing in-stream water uses shall be maintained and protected in all Wyoming surface waters. For Class 1 waters, existing uses will be protected by implementing the requirements described in Section 3 of this implementation policy. For high quality and use protected waters, this implementation policy assumes that attainment of the criteria assigned to protect the current water body classification will serve to maintain and protect all existing uses. In some cases, however, water quality may have improved in the segment since the classifications were assigned, resulting in an existing use that is higher than the current classification. In other cases, the classifications may have been assigned based on inadequate information, resulting in classifications that do not fully encompass the existing uses of the segment. Where the antidegradation review results in the identification of an existing use that has protection

requirements that are clearly defined, but are not addressed in the current classification and criteria, the division will ensure that such existing uses are fully protected based on implementation of appropriate numeric or narrative water quality criteria or criteria guidance. For example, where a proposed activity will result in the discharge of a substance for which sufficient data to derive appropriate criteria are available (e.g. Clean Water Act Section 304(a) criteria), but numeric criteria have not been adopted in the Chapter 1, the division will develop effluent limitations that will protect the existing use. In cases where there is a proposed discharge where federally-listed threatened or endangered species are present (i.e. aquatic species), the division will work with the U.S. Fish and Wildlife Service and EPA to gather available information and evaluate whether special existing use protection requirements are necessary to protect the listed species. Where there is a question regarding the appropriate classification of a segment, the applicant may be required to provide information regarding existing uses.

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MIXING ZONES AND DILUTION ALLOWANCES IMPLEMENTATION POLICY (Chapter 1, Section 9)

Section 1. Purpose. Section 9 of the Wyoming Surface Water Quality Standards (Water Quality Rules and Regulations, Chapter 1) provides for the establishment of a zone of dilution in the vicinity of point source discharges where acute and chronic aquatic life criteria and human health criteria may be exceeded. Section 9 provides:

Except for acute whole effluent toxicity (WET) values and Sections 14, 15, 16, 17, 28 and 29(b) of these regulations, compliance with water quality standards shall be determined after allowing reasonable time for mixing. Except for the zone of initial dilution, which is the initial 10% of the mixing zone, the mixing zone shall not contain pollutant concentrations that exceed the aquatic life acute values (see Appendix B). In addition, there shall be a zone of passage around the mixing zone which shall not contain pollutant concentrations that exceed the aquatic life chronic values (see Appendix B). Under no circumstance may a mixing zone be established which would allow human health criteria (see Appendix B) to be exceeded within 500 yards of a drinking water supply intake or result in acute lethality to aquatic life. The procedures used to implement this section are described in the Mixing Zones and Dilution Allowances Implementation Policy.

This policy addresses how mixing and dilution of point source discharges in receiving waters will be addressed in developing chemical-specific and whole effluent toxicity discharge limitations for point sources. In all cases, mixing zone and dilution allowances shall be limited as necessary to protect the integrity and designated uses of the receiving water.

Section 2. Concepts. A mixing zone is a limited area within the receiving water body where initial dilution of a point source discharge of pollution takes place. The establishment of a mixing zone is not appropriate in all circumstances. For example, in non-perennial or low flow streams, there may not be any dilution available to mix with the discharge. Also, there may be instances where background concentrations of specific pollutants in the receiving stream provide no assimilative capacity. In circumstances like these, acute and chronic criteria would have to be met in the discharge itself.

Where the establishment of a mixing zone is appropriate and possible, the design needs to be based on the following 3 concepts:

- (a) The size and configuration of the mixing zone shall not impair the integrity of the water body as a whole;
- (b) There shall be no lethality to aquatic organisms through the mixing zone; and
- (c) There shall be no significant health risks to human populations associated with the mixing zone (*e.g. proximity to recreation areas or drinking water intakes*).

The size, configuration and other relevant design considerations shall be based on critical flow conditions for both the receiving water and the effluent. Effluent critical conditions include effluent flow and pollutant concentrations; receiving water critical conditions include receiving water flow, background pollutant concentrations and other characteristics of the receiving water that affect pollutant concentrations (e.g. temperature, pH, reaction rates, etc.) This policy addresses mixing zones and dilution allowances where mixing is complete and near instantaneous at the point of discharge (Section 3) and mixing is incomplete at the point of discharge (Section 4).

Section 3. Complete Mixing.

(a) Where the discharge is to a river or stream and available information is sufficient to conclude that there is near instantaneous and complete mixing of the discharge with the receiving water at critical conditions, an appropriate dilution allowance may be provided in calculating chemical-specific discharge limitations. An assumption of complete mixing may be based on any of the following:

- (i) Mean daily flow of the discharge exceeds the critical in-stream flow;
- (ii) An effluent diffuser covers the entire stream width at critical flow;
- (iii) Demonstration by the permittee, based on in-stream studies, that shows no more than a 10% difference in bank to bank concentrations within a longitudinal distance not greater than 2 stream/river widths; or
- (iv) Other defensible discharge outlet designs and configurations provided by the permittee.

(b) The basis for concluding that complete mixing occurs will be documented in the rationale for the discharge permit.

(c) The dilution allowance for continuous discharges shall be based on the critical low flow of the receiving stream. Critical low flow can be determined using the methods provided in Chapter 1, Section 11.

(d) For controlled discharges, such as lagoon facilities that discharge only during high ambient flows, the stream flow to be used in determining a dilution allowance shall be the lowest flow expected to occur during the period of discharge.

(e) Where a discharger has installed a diffuser in the receiving stream, that portion of the stream flow affected by the diffuser may be used to calculate a dilution allowance. For example, 50% of the 7Q10 low flow may be used for a diffuser extending halfway across the stream bottom.

Section 4. Incomplete Mixing.

(a) Where dilution is available at critical conditions and the discharge does not mix at a near instantaneous and complete rate, an appropriate mixing zone may be designated for purposes of implementing aquatic life and human health criteria in the receiving stream. Where a mixing zone is allowed, its size and shape will be determined on a case-by-case basis as follows:

(i) Mixing zones for streams and rivers shall not exceed one-half of the cross-sectional area or a length 10 times the stream width at critical low flow, whichever is more limiting; and

(ii) Mixing zones in lakes shall not exceed 5% of the lake surface area or 200 feet in radius, whichever is more limiting.

(b) The above limits are intended to establish the maximum allowable size of mixing zones; however, individual mixing zones may be further limited or denied due to concerns about designated and existing uses or the following in the area affected by the discharge:

- (i) Bioaccumulation in fish tissues or wildlife;
- (ii) Biologically important areas such as fish spawning or nursery areas;
- (iii) Low acute to chronic ratio;
- (iv) Potential human exposure to pollutants resulting from drinking water or recreational activities;
- (v) Attraction of aquatic life to the effluent plume;
- (vi) Toxicity/persistence of the substance discharged;
- (vii) Zone of passage for migrating fish or other species, including access to tributaries; and
- (viii) Cumulative effects of multiple discharges and mixing zones.

(c) Within the mixing zone designated for a particular substance, the numeric water quality criteria contained in Chapter 1, Appendix B may not apply. However, all mixing zones shall be free from materials that:

- (i) Settle to form objectionable deposits (Chapter 1, Sections 14 and 15);
- (ii) Float as debris, scum, oil or other matter (Chapter 1, Section 16);

- (iii) Produce objectionable color, odor or taste (Chapter 1, Section 17);
- (iv) Are acutely lethal (Chapter 1, Section 9);
- (v) Produce undesirable aquatic life (Chapter 1, Section 28); and
- (vi) Form visible sheens or deposits or damage or impair the normal growth, function or reproduction of human, animal, plant or aquatic life (Chapter 1, Section 29(b)).

(d) In incomplete mixing situations, permit limitations to implement acute whole effluent toxicity (WET) criteria shall be based on meeting such criteria at the end-of-pipe (i.e. without an allowance for dilution). For chemical-specific acute aquatic life criteria, discharge limitations will be based upon meeting such criteria at the edge of the zone of initial dilution (Chapter 1, Section 9).

(e) The dilution allowance for continuous discharges shall be based on the critical low flow of the receiving stream. Critical low flow can be determined using the methods provided in Chapter 1, Section 11.

(f) For controlled discharges, such as lagoon facilities that discharge only during high ambient flows, the stream flow to be used in determining a dilution allowance shall be the lowest flow expected to occur during the period of discharge.

(g) The requirements and concerns identified in Sections 4(b) and 4(c), above, may be considered in deciding the portion, if any, of the critical low flow to provide as dilution. The environmental concerns listed in Section 4(b) are not intended to establish any bright line tests in which to make risk determinations. Rather, such decisions should be made in consideration of designated and existing uses and relevant site-specific conditions. Each of the concerns is further explained as follows:

(i) Bioaccumulation in fish tissues or wildlife. Both potential and existing bioaccumulation concerns should be evaluated. As a general guideline, pollutants with bioconcentration factors (BCF) greater than 300 indicate a potential risk of downstream bioaccumulation;

(ii) Biologically important areas such as fish spawning or nursery areas. Information on either the existence of spawning areas within the proposed zone of influence or a "shore hugging" effluent plume in an aquatic life segment could support a conclusion that allowing dilution or a mixing zone would pose significant risk to a biologically important area. Presence of a threatened or endangered species downstream should also be considered in light of the duration and magnitude of potential exposure of the particular species;

(iii) Low acute to chronic ratio. For substances with low acute to chronic ratios, indicating that acute effects may occur at concentrations "close" to those that have been demonstrated to result in chronic effects, restricting or denying a mixing zone or dilution

allowance may be appropriate in order to avoid acutely toxic concentrations outside of the zone of initial dilution;

(iv) Potential human exposure to pollutants resulting from drinking water or recreational activities. Existence of a drinking water intake or a recreational area within or near the proposed zone of influence would strongly suggest that an allowance for dilution is not appropriate for substances with established human health criteria;

(v) Attraction of aquatic life to the effluent plume. Where available data support a conclusion that fish or other aquatic life are attracted to the effluent plume, it may be appropriate to set discharge limitations at the end-of-pipe;

(vi) Toxicity/persistence of the substance discharged. It may be appropriate to deny dilution or a mixing zone for particularly toxic or persistent substances. This factor should be given added weight where the discharge is to an isolated aquatic system where the substance is expected to remain biologically available;

(vii) Zone of passage for migrating fish or other species, including access to tributaries. Where available data suggest that allowing dilution or a mixing zone would inhibit migration of fish or other species, it may be appropriate to set discharge limitations at the end-of-pipe. This factor includes consideration of whether the effluent plume will block migration into tributary segments;

(viii) Cumulative effects of multiple discharges and mixing zones. In some cases, existence of overlapping effluent plumes may necessitate denying dilution or mixing zones for discharging facilities. Any allowances for dilution should be restricted as necessary to protect the integrity of the receiving water ecosystem and designated water uses.

(h) The mixing zone size limits shall be implemented by calculating allowable dilution consistent with one of the following methods:

(i) Default Method. In general, the default method provides a conservative level of allowable dilution and can be used where available data on potential environmental impacts suggest that a full mixing zone should not be allowed, or available data on the receiving stream or downstream uses are insufficient to determine the appropriate mixing zone dimensions.

(A) Stream/River Discharges. As a general guideline, dilution calculations which use up 10% of the critical low flow may be used to develop effluent limits for aquatic life chronic criteria and human health consumption criteria. For numeric aquatic life acute criteria, 1% of the critical low flow may be used.

(B) Lake/Reservoir Discharges. As a general guideline, dilution up to 4:1 (20% effluent) may be provided for developing effluent limitations for aquatic life chronic criteria and human health consumption criteria. For numeric aquatic life acute criteria, a 0.4:1 dilution ratio may be used.

(ii) Modeling Method. Mixing zones should not exceed one-half the cross-sectional area of the receiving stream or a length 10 times the stream width, whichever is less. These restrictions apply to the stream at critical low flow.

A calculation must first be performed to determine if the discharge mixes within one-half area before or after the length limit. This calculation as well as other mixing zone calculations can be performed using any number of appropriate models including, but not limited to, STREAMIX I, CORMIX, PLUMES, etc.

(iii) Field Study Method. Field studies which document the actual field characteristics in the receiving water can be used to determine the dilution allowance at critical low flows.

Section 5. Other Considerations.

(a) Where dilution flow is not available at critical flow conditions, neither a mixing zone or an allowance for dilution will be provided.

(b) All mixing zone and dilution assumptions are subject to review and revision as information on the nature and impacts of the discharge becomes available. Mixing zone and dilution decisions are subject to review and revision along with all other aspects of the discharge permit upon expiration of the permit.

(c) For certain pollutants (e.g. ammonia, dissolved oxygen, metals) that may exhibit increased toxicity after dilution and complete mixing within the receiving water, the wasteload allocation shall address such toxicity as necessary to fully protect designated and existing uses.

TURBIDITY IMPLEMENTATION POLICY
(Chapter 1, Section 23)

Section 1. Purpose. Section 23 of the Wyoming Surface Water Quality Standards (Water Quality Rules and Regulations, Chapter 1) places the following limits on increases of turbidity in waters of the state:

(a) *In all cold water fisheries and/or drinking water supplies (Classes 1, 2AB, 2A and 2B), the discharge of substances attributable to or influenced by the activities of man shall not be present in quantities which would result in a turbidity increase of more than ten (10) nephelometric turbidity units (NTUs).*

(b) *In all warm water or nongame fisheries (Classes 1, 2AB, 2B and 2C), the discharge of substances attributable to or influenced by the activities of man shall not be present in quantities which would result in a turbidity increase of more than 15 NTUs.*

(c) *An exception to paragraphs (a) and (b) of this section shall apply to:*

(i) *The North Platte River from Guernsey Dam to the Nebraska line during the annual "silt run" from Guernsey Dam; and*

(ii) *Short-term increases of turbidity that have been determined by the administrator to have only a minimal effect on water uses. Such determinations shall be made on a case-by-case basis and shall be subject to whatever controls, monitoring and best management practices are necessary to fully maintain and protect all water uses. The procedures used to implement this section are described in the Turbidity Implementation Policy.*

When the department is considering the regulation of any point source (through the WYPDES or 401 certification processes), compliance with the numeric turbidity criteria for the various classes of waters has always been required and will continue to be required. The department also recognizes that short-term, construction-related exceedances of these standards are often unavoidable and do not necessarily result in significant degradation of water quality or loss of existing or designated uses. In fact, there are many construction activities in streams and rivers that have long-term beneficial effects or provide important economic or social benefits that may temporarily increase turbidity during the construction period.

Section 2. Policy. In accordance with Section 23(c)(ii), the administrator may authorize temporary increases in turbidity above the numeric criteria in Section 23(a) and 23(b) in response to an individual application for a specific activity. It is intended that temporary increases in turbidity will be limited to construction-related activities rather than effluent or storm water discharges. Such authorization may be issued independently or included in a WYPDES permit or 401 water quality certification, provided that the applicant can demonstrate and accept the following conditions:

(a) The activities causing the increased turbidity will be limited in time and duration;

- (b) All existing and designated uses will be fully maintained and protected throughout the duration of the activity;
- (c) Best available technology and/or best management practices will be employed to maintain turbidity and sedimentation at the lowest practical level;
- (d) The authorization for increased turbidity will specify the limits of the authorization and may include a monitoring and reporting schedule to demonstrate compliance with those limits;
- (e) Mitigation or stream restoration requirements may be included as conditions in conjunction with any authorization for a temporary increase in turbidity;
- (f) An authorization issued under this section does not relieve the applicant of any liability for damages to aquatic life, habitat, or other existing or designated uses that may result from an increase in turbidity;
- (g) An authorization issued under this section does not exempt the applicant from any other federal, state or local laws or regulations, nor does it provide exemption from legal action by private citizens for damage to property that the activity may cause.
- (h) The administrator shall publish a notice of intent to authorize a temporary increase of turbidity in a paper of local circulation for a minimum of fourteen days prior to authorizing the increase. Interested persons may request a public hearing on the proposed authorization. In circumstances where the activity is necessary to address unforeseen acts of nature and cannot be delayed, the administrator may authorize a temporary increase without publishing a notice of intent.

USE ATTAINABILITY ANALYSIS (UAA) IMPLEMENTATION POLICY (Chapter 1, Sections 33 and 34)

Section 1. Purpose. The purpose of this document is to describe the process and provide guidance relative to the development of use attainability analyses (UAA) where they are required under various sections of the Wyoming Surface Water Quality Standards (Water Quality Rules and Regulations, Chapter 1). A use attainability analysis is defined in Chapter 1, Section 2(b)(li) as:

"Use attainability analysis (UAA)" means a structured scientific assessment of the factors affecting the attainment of the use. The factors may include physical, chemical, biological and economic factors as described in Section 33 of these regulations.

A use attainability analysis is generally required prior to changing a water classification or designated use or establishing site-specific criteria that is different than the adopted statewide criteria for any pollutant.

Section 2. Concepts. Chapter 1 establishes use designations on all waters of the state and the criteria necessary to achieve and maintain those uses. Use designations are the goals set for each water and criteria are elements of the standards, expressed as constituent concentrations, levels or narrative statements, representing a quality of water that supports a particular use. When criteria are met, water quality will generally protect the designated use. The use designations and criteria adopted in state standards are intended to comply with the requirements of the Clean Water Act and related federal regulations.

At a minimum, uses must be designated in a manner which serve the purposes of the Clean Water Act, as defined in Sections 101(a)(2) and 303(c). These sections provide that water quality standards should: provide wherever attainable, water quality for the protection and propagation of fish, shellfish and wildlife and recreation in and on the water (fishable/swimmable uses, Section 101(a)(2)); and consider the use and value of state waters for public water supplies, propagation of fish and wildlife, recreation, agriculture and industrial purposes, and navigation (Section 303(c)).

Every use is not protected on every water; however, the Clean Water Act requires that each water be designated for those uses actually supported on the water as of November 28, 1975 (existing uses) or would be achieved by the imposition of effluent limits under Sections 301(b) and 306 of the Clean Water Act and best management practices for nonpoint source control. Furthermore, the federal regulations at 40 Code of Federal Regulations (CFR) 131 require that all waters be protected for the fishable/swimmable uses contained in Section 101(a)(2) of the Clean Water Act unless it is specifically demonstrated that those uses are not attainable.

The uses that are protected on Wyoming waters are listed and described in Chapter 1, Section 3 and include drinking water, game fish, non-game fish, fish consumption, aquatic life other than fish, recreation, wildlife, agriculture, industry and scenic value. There are also numerous classifications for surface waters of the state. Except for Class 1, waters are classified

according to their designated uses. Class 1 waters are specially designated waters on which the existing water quality is protected regardless of the uses supported by the water. The table below shows the uses designated for each classification.

	Drinking Water	Game Fish	Non-Game Fish	Fish Consumption	Other Aquatic Life	Recreation	Wildlife	Agriculture	Industry	Scenic Value
1*	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
2AB	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
2A	Yes	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes
2B	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
2C	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
2D	No	When Present	When Present	Yes	Yes	Yes	Yes	Yes	Yes	Yes
3A	No	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes
3B	No	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes
3C	No	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes
3D	No	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes
4A	No	No	No	No	No	Yes	Yes	Yes	Yes	Yes
4B	No	No	No	No	No	Yes	Yes	Yes	Yes	Yes
4C	No	No	No	No	No	Yes	Yes	Yes	Yes	Yes

*Class 1 waters are not protected for all uses in all circumstances. For example, all waters in National Parks and Wilderness are Class 1; however, all do not support fisheries or other aquatic life uses (e.g. hot springs, ephemeral waters, wet meadows, etc.). For storm water permitting, 401 certification and water quality assessment purposes, the actual uses on each particular water must be determined independently.

Use attainability analyses are required under the following circumstances:

(a) Use attainability analyses are required prior to designating any water as Class 4 since these waters are not protected for all the uses specified in Section 101(a)(2) of the Clean Water Act.

(b) A use attainability analysis is required prior to reclassifying a water by the addition, removal or modification of a use designation. Most classification changes generally result in a corresponding change in use designations, but not necessarily. For example, a reclassification from 2B to 2A would involve the removal of the fisheries use and would therefore require a UAA. Changes completely within the Class 3 or Class 4 subcategories, however, do not always involve a change in use protection and may not require a UAA. For example, a change in classification from Class 3A to 3B does not involve a change in use designations, applicable criteria or antidegradation protections; it is simply a correction based on

information that the water is part of a surface tributary system rather than an isolated water.

(c) A use attainability analysis is required prior to modifying use designations even if the action does not result in a change in classification. For example, the removal of an agricultural, wildlife or recreation use from any water would not involve a classification change but does need to be based on a UAA. Also, a UAA is required when changing from a primary contact recreation designation to secondary contact.

(d) A use attainability analysis is required prior to establishing a site-specific criterion or water body condition that is different than the established statewide standards associated with the water's classification. For example, background concentrations of particular pollutants may exceed the established aquatic life criteria, however, aquatic life may still exist in the water. In these circumstances it would be appropriate to adjust the criteria to be at or near the background conditions rather than remove all aquatic life protections. Because criteria are generally established under laboratory conditions, these situations may occur for any designated use in natural settings. This circumstance occurs on all Class 2D and 3D designations. A UAA is required to demonstrate that a water body is effluent dependent, whether or not it supports a resident fish population and whether there are potential bioconcentrating or bioaccumulating hazards associated with the discharge. Ambient-based criteria may then be established for those waters that are shown to be effluent dependent with no associated hazard.

(e) Use attainability analyses are not required when assigning or removing a Class 1 designation.

Section 3. Process. Each use attainability analysis involves a site-specific or categorical evaluation with varying information requirements. Depending upon individual circumstances and public interest, one may involve an exhaustive study while another may only require simple and cursory information. For example, Class 4A waters are man-made canals and ditches, yet a UAA is required prior to classification because these waters are not protected for aquatic life uses. This type of classification change would normally involve a minimal amount of information, often as little as a demonstration that a waterway is an artificially constructed conveyance for agricultural or industrial uses. On the other hand, a use may be removed because natural levels of pollution or human caused pollution that cannot be remedied prevent the attainment of the use. In either of those cases, showing that pollution levels are natural or cannot be remedied may involve a detailed assessment and evaluation of watershed conditions and an economic analysis. In all circumstances the following general administrative procedures will apply:

(a) A petition is made for a change in classification, designated use or criteria. The petition may be made by a person, entity or may originate with Water Quality Division based on information available to the administrator. If the proposal would result in a removal of a designated use, the petition must address one or more of the factors listed in Chapter 1, Section 33(b)(i) through Section 33(b)(vi).

(b) The Water Quality Division reviews the petition for completeness and provides

feedback to the petitioner on the status of the petition and may make requests for additional information or studies if necessary. Petitioners are encouraged to contact the Water Quality Division early in the process to ensure the UAA, study design, data collection, etc. are appropriate and consistent with Chapter 1 and this policy.

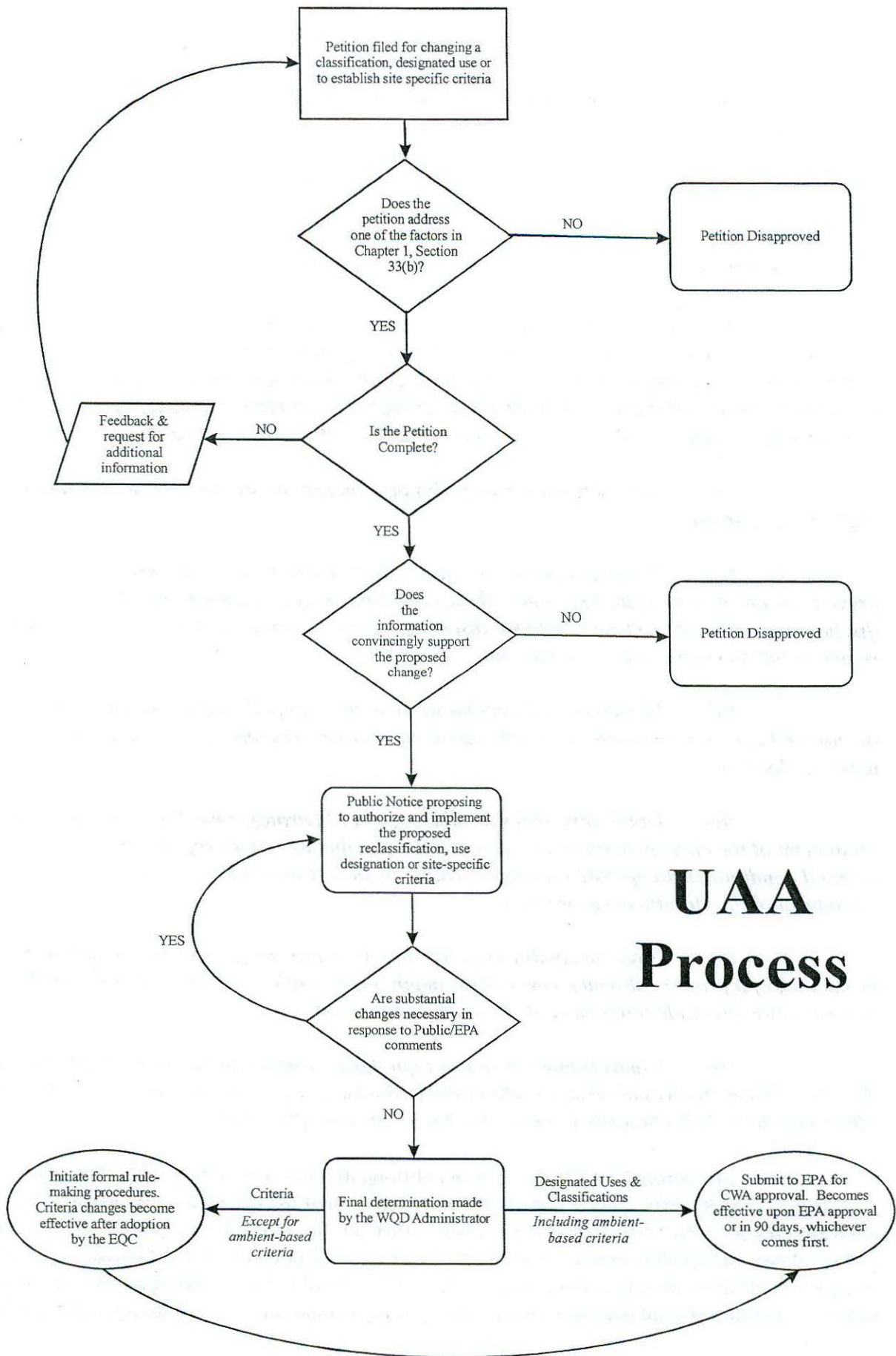
(c) Once a petition has been accepted as complete, the Water Quality Division evaluates the petition and approves or disapproves the proposed change in use designation, classification or site-specific criteria. In instances where a petition is disapproved, the decision may be appealed to the Wyoming Environmental Quality Council pursuant to the provisions of the Wyoming Administrative Procedures Act, Wyoming Statutes (W.S.) 16-3-101 through 16-3-115.

(d) In instances where a petition for a revised classification or use is approved, the administrator shall prepare a public notice proposing to authorize and implement the proposed change. The public notice shall provide a 45-day public review period, contain the rationale supporting the decision and be submitted to EPA for comment and recommendations. The Water Quality Division may modify its initial determination based on public comments and EPA recommendations and issue a final administrative decision.

(e) If the final administrative decision is substantially changed from that which was proposed, the administrator shall prepare a second 45-day public notice. Otherwise, the administrative decision shall be considered final and submitted to EPA for approval as a revised standard for Clean Water Act purposes as provided in Chapter 1, Section 34. This decision may be appealed to the Wyoming Environmental Quality Council pursuant to the provisions of the Wyoming Administrative Procedures Act, (W.S. 16-3-101 through 16-3-115) and Rules of Practice and Procedure, Chapter 1, Section 16.

(f) In instances where a petition for revised water quality criteria is approved, the department may initiate formal rule making procedures to amend the appropriate section(s) of Chapter 1, include the revised criteria in an ongoing rule revision or include the revised criteria in a subsequent rule revision. Changes in criteria shall not become effective until adopted by the Environmental Quality Council and filed with the Secretary of State. This administrative process does not apply to the establishment of site-specific criteria on Class 2D and 3D waters.

(g) Site-specific criteria may be established by the administrator on Class 2D and 3D waters without additional rule making procedures, as provided in Chapter 1, Section 36.



UAA Process

Section 4. Petitions. Except for Class 1 designations, all petitions for water reclassifications must be made in accordance with the provisions of Chapter 1, Section 33.

(a) Lowering Protections. Those petitions that involve lowering a classification, removing a use designation or establishing site-specific criteria that are less stringent than the adopted statewide standards must contain a use attainability analysis (UAA) addressing one or more of the factors listed in Section 33(b) (i) through (vi), which states:

(b) *The administrator may lower a classification, remove a designated use which is not an existing use nor attainable use, establish ambient-based criteria on effluent dependent waters, make a recommendation to the council to establish sub-categories of a use or establish site-specific criteria if it can be demonstrated through a use attainability analysis (UAA) that the original classification, designated use or water quality criteria are not feasible because:*

(i) *Naturally occurring pollutant concentrations prevent the attainment of the classification or use; or*

(ii) *Natural, ephemeral, intermittent or low flow conditions or water levels prevent the attainment of the use, unless these conditions may be compensated for by the discharge of sufficient volume of effluent discharges without violating state water conservation requirements to enable uses to be met; or*

(iii) *Human caused conditions or sources of pollution prevent the attainment of the use and cannot be remedied or would cause more environmental damage to correct than to leave in place; or*

(iv) *Dams, diversions or other types of hydrologic modifications preclude the attainment of the classification or use, and it is not feasible to restore the water body to its original condition or to operate such modification in such a way that would result in the attainment of the classification or use; or*

(v) *Physical conditions related to the natural features of the water body, such as the lack of a proper substrate, cover, flow, depth, pools, riffles, and the like, unrelated to water quality, preclude attainment of an aquatic life use; or*

(vi) *Controls more stringent than those required by Sections 301(b) and 306 of the Clean Water Act would result in substantial and widespread economic and social impact. This subsection shall not apply to the derivation of site-specific criteria.*

(b) Increasing Protections. Those petitions that involve adding a use designation or establishing site-specific criteria that are more stringent than the established standards are not subject to the Section 33(b) factors listed above. Instead, the UAA must demonstrate that the proposed new designated uses are existing uses or may be attained with the imposition of more stringent controls or management practices. In order to establish more stringent site-specific criteria, a petition should demonstrate that the approved statewide criteria are not sufficiently

protective of the currently designated uses.

Section 5. Completeness. Prior to evaluating a petition on its merits, the Water Quality Division must conclude that a petition is complete and contains the necessary water quality data and other information to make a valid determination. As mentioned in Section 3 above, the degree of information necessary will depend upon the nature of the petition and if necessary, the associated Section 33(b) factor. In most cases, petitions should contain the following general information to be considered complete.

(a) General Requirements.

(i) A narrative explaining the nature and purpose of the petition. As mentioned in Section 4 above, if the proposal would result in the lowering of protections, the narrative must address one of the factors listed in Chapter 1, Section 33(b). The petition should explain the reasons for the requested use removal, classification change or site-specific criteria and include any adverse effects that would occur if the petition is denied. Adverse effects could include any harm to business operations, commerce, private property rights, development opportunities, the environment, or any other public or private interest. Adverse effects should be tangible rather than speculative. For example, an unattainable water quality criterion that obstructs a proposed private or public action or causes unnecessary delay or expense is a tangible adverse effect. Speculative adverse effects would be activities that are neither proposed nor have a reasonable potential to be proposed in the foreseeable future.

This step is necessary to help prioritize the department's actions and resources. Wyoming's water quality standards designate aquatic life uses on all waters by default. It is possible to modify or remove these uses as appropriate following completion of the required use attainability analyses. Though it is not necessary to have a "tangible adverse effect" in order to make an appropriate designation, those with tangible effects will be addressed with more urgency.

(ii) The name and general description of the water body(s). This may be a single stream segment or a collection of stream segments making up a watershed or sub-watershed, lake, pond, or other still water body, or isolated water.

(iii) The specific location of the subject water body(s). Legal descriptions should be provided for the beginning and end of stream segments. Stream segments may also be described from tributary confluence to tributary confluence. Generally, the Water Quality Division will not approve criteria or use designation changes on small segments of main stem streams.

(iv) Maps of the subject water body containing the necessary features and adequate detail to support the proposal. For example, if the intent of the petition is to show that normal stream flows are not sufficient to support aquatic life, National Wetlands Inventory, 7.5 minute quad maps depicting wetland occurrences along the entire water body should be used. However, if the intent of the petition is to remove a fisheries use, a more general map depicting

the stream reach and its tributaries may be adequate. The maps should also indicate sample locations, photo points and any other features relevant to the petition.

(v) Photographs that adequately characterize the water body for the purposes of the petition. These should be taken at points along the water body where there are changes in flow volumes or pattern, springs, wetlands, tributaries, diversions, etc. in a sufficient number to clearly illustrate the resource. Each photo point should also be indicated on the maps submitted under Section (a)(iv) above. Each photograph should be accompanied by information including a photo ID number, name of photographer, date and time taken, location and direction from which the photo was taken and a narrative describing what the photo is intended to depict.

(b) Specific Requirements. In addition to the General Requirements outlined in Section 5(a) of this policy, each UAA must contain information and or data that are specific to the petition being made, including the associated Section 33(b) factor, when necessary. The required detail and quality of this information will vary on a case-by-case basis; therefore, it is not the purpose of this section to provide guidance on every possible situation. The basic requirement is that the UAA contains defensible information that convincingly supports the purpose of the petition.

Except when increasing protections, a use attainability analysis must demonstrate that certain condition(s) exist and that the reason the condition(s) exist is due to one of the factors in Chapter 1, Section 33(b). Most commonly, UAAs will lower a water classification by removing a use designation and/or establish a site-specific adjustment to water quality criteria. The list that follows shows examples of classification changes involving the removal of a use and the general demonstration that must be made. The list presents common examples and is not intended to be exhaustive.

(i) Common Classification and Use Designation Changes:

(A) 2AB to 2A. Demonstration that the source water for an existing drinking water supply does not and cannot support fish for one or more of the reasons provided in Chapter 1, Section 33(b).

(B) 2AB to 2B. Demonstration that a known game fishery or perennial water that is tributary to a known game fishery does not support a drinking water supply for one or more of the reasons provided in Chapter 1, Section 33(b).

(C) 2AB to 2C. Demonstration that the water is known to support only non-game fish species or is a perennial tributary to a water known only to support non-game species; and cannot reasonably support a drinking water supply for one or more of the reasons provided in Chapter 1, Section 33(b).

(D) 2B to 2C. Demonstration that the overwhelming composition of fish species is non-game for one or more of the reasons provided in Chapter 1, Section 33(b). Incidental or occasional use of the water by game species does not require the 2B classification.

(E) Class 2 (*all*) to Class 3A or Class 3B. Demonstration that the water is either isolated or is an intermittent or ephemeral tributary; and is not capable of supporting fish for one or more of the reasons provided in Chapter 1, Section 33(b).

(F) Class 2 (*all*) to Class 3C. Demonstration that the water is a perennial tributary stream that cannot support fish or drinking water supplies for one or more of the reasons provided in Chapter 1, Section 33(b).

(G) Class 2D and 3D Designations. More detailed guidance is provided in Section 6, Effluent Dependent Waters (Classes 2D and 3D).

(I) Demonstration that there is insufficient natural flow to support aquatic life and aquatic life that is present is attributable to permitted effluent discharge(s)(*Chapter 1, Section 33(b)(iii)*);

(II) There is a net environmental benefit (NEB) associated with the created water body;

(III) The quality of the water does not pose a hazard to humans, wildlife or livestock that may be exposed to it; and

(IV) There is a credible threat to remove the discharge.

(H) All Class 4 Designations.

(I) 4A. Demonstration that the water body is an artificially constructed conveyance for an agricultural or industrial water supply.

(II) 4B. Demonstration that the water is not capable of supporting aquatic life because natural, ephemeral, intermittent or low flow conditions or water levels prevent the attainment of the use (*Chapter 1, Section 33(b)(ii)*).

(III) 4C. Demonstration that the water is an isolated water and 100% of the flow or standing water is attributable to permitted effluent discharges except for occasional snow melt and storm events (*Chapter 1, Section 33(b)(iii)*).

(I) Recreation Use Classes. Chapter 1 establishes two categories of recreational use protection applicable to all waters in the state, primary and secondary contact. Chapter 1, Section 27 outlines that during the recreation season, May 1 through September 30, waters may be designated for primary or secondary contact recreation and during the non-recreation season, October 1 through April 30, all waters are protected for secondary contact recreation. Section 27(b) establishes that waters are designated for secondary contact recreation through the reclassification and use attainability analysis process outlined in Chapter 1, Sections 33 and 34 and are identified in the *Wyoming Surface Water Classification List*. Because

changing waters to secondary contact recreation may be a very common practice, Section 7 of this policy describes the implementation of Chapter 1, Section 27.

(J) Site-Specific Criteria. A use attainability analysis is required prior to establishing site-specific criteria that are less stringent than the adopted statewide criteria for a particular use designation or classification. Demonstrations relative to this action must show that the adopted criteria cannot be attained for one or more of the reasons provided in Chapter 1, Section 33(b). Additionally, each specific criterion must be evaluated separately. In order to establish more stringent site-specific criteria, the UAA must demonstrate that the approved statewide criteria are not sufficiently protective of the currently designated uses.

(K) Increasing Protections. Use Attainability Analyses intended to add a designated use must contain sufficient information to conclude that a use is an existing use or otherwise attainable by the imposition of more stringent controls on pollutant sources.

(ii) Section 33(b) Factors. Chapter 1, Section 33(b), paragraphs (i) through (vi) provide the allowable rationale for removing a use designation or establishing less stringent water quality criteria on a site-specific basis. Except when related to a Class 4A designation, all UAAs must address one or more of these factors. A 4A classification is based solely on the fact that the water body is an artificial canal or ditch that is not known to support fish populations and it is not necessary to establish the 33(b) factor beyond that finding. Each factor is discussed below and guidance provided as to the current thinking of the department on what type of information is needed to justify a determination.

(A) Naturally occurring pollutant concentrations prevent the attainment of the classification or use;

The UAA must establish that ambient water quality exceeds the adopted criteria and that the source of the pollution is not attributable to human activities. The natural source of pollution or natural condition that prevents the attainment of the designated use needs to be identified and quantified. Human activities in the area such as land uses, developments, discharges, etc. need to be examined and reasonably eliminated as a cause of non-attainment.

A designated use may be removed on the basis of a single pollutant constituent or condition. For example, naturally occurring levels of copper in the water may prevent the attainment of a fisheries use and when demonstrated, may be sufficient cause to remove that use. A UAA would not necessarily have to evaluate all other potential constituents that might also contribute to the non-attainment. Information on other constituents, however, would help to support a final determination.

The establishment of this factor needs to be supported by sufficient data to characterize pollutant concentrations and water body conditions on a year-round or seasonal basis, depending on the use being evaluated. Consideration must be given to seasonal variations in flow, temperature, climate, land uses, nonpoint sources of pollution and other pertinent factors.

(B) Natural, ephemeral, intermittent or low flow conditions or water levels prevent the attainment of the use, unless these conditions may be compensated for by the discharge of sufficient volume of effluent discharges without violating State water conservation requirements to enable uses to be met;

The establishment of this factor needs to be supported by sufficient data to characterize flow conditions on a year-round or seasonal basis, depending on the use being evaluated. When flow data are not available, surrogate measures such as the presence of wetlands may be used. Consideration must be given to seasonal variations in flow, climate and consumptive water use(s).

In general, this factor applies to the removal of drinking water, fisheries, primary contact recreation or aquatic life uses. In relation to fisheries, it may serve as the basis for establishing seasonal criteria on waters that support fish only part of the year or for removing the fishery designation on intermittent and ephemeral waters that have been "misclassified" in relation to the provisions of Chapter 1, Section 4(b). In relation to drinking water, the UAA needs to demonstrate that water availability is not sufficient to support community or non-community drinking water supplies as defined under the federal Safe Drinking Water Act. In relation to recreation uses, it is an important factor in determining whether a primary or secondary recreation use designation is appropriate.

Most commonly, this is the factor relied on to classify waters as 4B. As provided in Chapter 1, Section 4, the occurrence of wetlands in or adjacent to stream channels will be used as an indicator of whether or not normal flow conditions are sufficient to support aquatic life. In general, areas that are inundated or saturated to the surface for as little as 7 days during the growing season will develop wetland characteristics. Stream channels that lack a significant wetland component may be considered to have insufficient hydrology to support aquatic life.

In order to establish this factor, the UAA should address entire stream reaches, not just isolated segments. The objective is to show that wetlands are either non-existent or occur so infrequently that the hydrologic potential of the stream to support aquatic life is insignificant. Significance is not precisely defined and will be determined on a case-by-case basis after consideration of the ratio of wetland acres to stream length in addition to wetland functions and values.

National Wetland Inventory (NWI) maps produced by the U.S. Fish and Wildlife Service may be used to identify wetland occurrences and to calculate acreages. Wetlands are defined in Wyoming statute as areas having all 3 essential characteristics including hydrophytic vegetation, hydric soils and wetland hydrology. The NWI maps depict and classify both wetlands and deep water habitats and all of the features shown on the maps do not necessarily delineate as wetlands under the Wyoming definition or the delineation methods used by the U.S. Army Corps of Engineers for Clean Water Act purposes. When identifying wetlands using the NWI maps, unvegetated systems need to be separated from the vegetated ones since

unvegetated systems are not wetlands. Unvegetated sub-classes may be found in both the lacustrine and riverine systems classified on the NWI maps. All sub-classes of the palustrine system should be considered wetlands. Interpretation of the Cowardin classification system, photographs and/or on site-delineations may all be used to differentiate between riverine and lacustrine subclasses that are wetlands and those that are not.

After the amount of wetlands has been identified, the significance of that amount needs to be determined. If no wetlands have been identified, the UAA may conclude that aquatic life uses are not attainable. In all other cases, the UAA must present the rationale for determining that the amount of wetlands that are present are of such minor consequence that the stream system as a whole cannot be considered to sustain aquatic life.

When using wetland occurrence to establish this factor, it must be remembered that wetlands are used as a surrogate to determine actual hydrologic conditions over an extended period of time. Wetland occurrence is best used to identify dry stream channels without directly measuring flows through all seasons of the year. This method cannot be used to remove aquatic life protections from water bodies that are known to normally contain water for extended periods even though they do not exhibit a significant amount of wetlands. Examples of these water bodies would be bedrock stream channels and steep-sided rivers, lakes and ponds that have the hydrology to support aquatic life, but not the substrate necessary for wetlands to establish.

(C) Human caused conditions or sources of pollution prevent the attainment of the use and cannot be remedied or would cause more environmental damage to correct than to leave in place;

This factor is relevant when non-attainment of a designated use is known to be caused by human activities or simply when the cause of non-attainment cannot be shown to be natural in origin. It contains two tests, either of which can be used to justify the removal of a designated use.

The first test is to show that a use is not an existing use and the reason(s) for its non-attainment cannot be remedied. An analysis of economic and technological factors must be conducted in order to make a determination under this factor. Other legal, social and cultural factors can also be considered and used as supporting information. The level of analysis and information required may vary from one situation to another depending upon the nature and severity of the source pollution and the overall environmental benefit of restoring the use.

The second test is to show that the available remedy would cause more environmental harm than to leave the pollution source in place. Most commonly, this is the factor relied on to classify waters as 2D, 3D or 4C. These categories of waters are comprised of essentially 100% effluent discharges. Without the discharge, a stream channel would not support aquatic life and would be classified 4B and in the case of isolated ponds, would not exist at all. Since the effluent is the only available water, it is roughly analogous to a natural background condition. It can be assumed that any aquatic life that colonizes the water is tolerant to the

chemical and physical conditions that prevail even if they exceed the adopted aquatic life criteria for particular constituents. Requiring full aquatic life protections in these circumstances would often result in a loss of the discharge and of the aquatic community it supports. Non-aquatic wildlife and livestock are often the greatest beneficiary of these types of systems in the arid areas of Wyoming and these uses would also be lost. Unless there is convincing evidence to the contrary, it will be assumed that removing discharges in effluent dependent waters does result in greater environmental harm than leaving the discharge in place.

The information necessary to establish this factor for the purpose of classifying an isolated pond as 4C or a stream channel as 2D or 3D should consist of sufficient data to show that aquatic life is present due to the permitted effluent discharge and there is no environmental hazard associated with the quality of the discharge.

(D) Dams, diversions or other types of hydrologic modifications preclude the attainment of the classification or use, and it is not feasible to restore the water body to its original condition or to operate such modification in such a way that would result in the attainment of the classification or use;

This factor applies to dams, diversions or other hydrologic modifications that were constructed prior to November 28, 1975 and resulted in the loss of a fisheries, aquatic life or recreational use in the waters on which they were constructed. Uses that existed on the waters after that date would be considered "existing uses" and would still have to be designated. It is not necessary to protect waters for the applicable uses that were lost if it can be shown that restoration is not feasible. The information required to establish this factor is similar to what is required for human caused sources of pollution that cannot be remedied. An analysis of economic and technological factors must be conducted in order to make a determination. Other legal, social and cultural factors can also be considered and used as supporting information. The level of analysis and information required may vary from one situation to another depending upon the nature of the hydrologic modification and the overall environmental benefit of restoring the use.

(E) Physical conditions related to the natural features of the water body, such as the lack of a proper substrate, cover, flow, depth, pools, riffles, and the like, unrelated to water quality, preclude attainment of an aquatic life classification or use;

This factor applies mainly to the removal of fisheries and aquatic life uses since these are normally the only uses where the expressed physical habitat parameters are relevant. The critical point that must be established by the information in the UAA is that the lack of habitat is a natural condition and not caused by hydrologic modifications, land uses or other human activities. In this respect the requirements are similar to those used to establish that naturally occurring pollution prevents the attainment of the use. The basic difference is that one refers primarily to chemical parameters and the other to physical parameters.

(F) Controls more stringent than those required by Sections 301(b) and 306 of the Clean Water Act would result in substantial and widespread economic and social

impact.

This is probably the most difficult factor to establish and has the most limited application. The referenced controls required by Sections 301 and 306 of the Clean Water Act are industry-specific effluent limitations and treatment technologies. They establish basic levels of required water quality treatment that are based on best available technology rather than water quality and water uses. This factor is intended to be applied in circumstances where it is known that the application of the technology-based requirements will not achieve the water quality standards applicable to the receiving water and additional requirements to meet the water quality standards will result in unacceptable social or economic impacts.

The essence of a determination under this factor is that the activity causing the impact is of such great economic or social importance that it supersedes the goal of maintaining the water use. The UAA must establish that the imposition of the water quality standards would result in "widespread" social and economic impacts. This is an extremely subjective term and can only be defined on a case-by-case basis after full public participation. An economic impact analysis must be completed that includes an examination of alternatives that would mitigate both economic and environmental impacts. The level of analysis and information required must be comprehensive since the object is to quantify "widespread" economic or social impact in relation to the value of the water use that would be removed.

Section 6. UAA Procedures for Effluent Dependent Waters (Classes 2D and 3D).

The justification for classifying a water as either 2D or 3D and assigning ambient-based criteria is based on the Section 33(b)(iii) factor described above in Section 5(b)(ii)(C). The specific rationale is that effluent dependent waters create environmental benefits that would be lost if the discharge is discontinued. Since there is no natural source of water, there would be no pre-existing aquatic life that could be damaged by the quality of the discharge. As a result, any aquatic life that develops because of the effluent discharge is tolerant of the ambient conditions.

Though the habitats that are created in effluent dependent circumstances pose no real threat to the species of aquatic life that colonize them, there is a potential that they may pose a hazard to terrestrial and semi-aquatic wildlife species that may be attracted to them. The greatest concern is the possibility of bioconcentrating or bioaccumulating chemicals moving through the food chain at levels that create a risk to livestock, wildlife or humans. Therefore, part of the process of classifying a water body as 2D or 3D involves assessing a discharge for the presence of those types of pollutants and establishing appropriate criteria.

Therefore, the complete process for designating a water as either 2D or 3D contains three parts. The first is completing a use attainability analysis (UAA) that demonstrates that the water body is in fact effluent dependent and eligible for site-specific, ambient-based criteria. This part includes a demonstration that there is an environmental benefit associated with the discharge and a credible threat to remove the discharge. The second part is a hazard analysis that includes a specific screening of the discharge for the presence of bioaccumulating and bioconcentrating pollutants and a more general analysis to identify the pollutants for which ambient-based criteria will be established. The final part is to calculate and establish site-specific ambient-based

criteria for those parameters that exceed the otherwise adopted statewide criteria (Chapter 1, Appendix B).

(a) **Effluent Dependency.** The basic point is to show convincingly, through a weight of evidence approach, that a water body is comprised of essentially 100% permitted effluent and that without the effluent there would be no significant aquatic resource. There is no one best way to make this demonstration, although the determination will be most convincing if multiple factors are assessed. These can include direct flow measurements, vegetation and wetland analysis upstream and downstream of the discharge, precipitation information, paired watershed analysis, historic information, testimony, etc.

This part also involves demonstrating an environmental benefit. It shall be presumed that water on the surface does have an environmental benefit for the aquatic life that colonizes it and for the habitat and food sources that surface water bodies provide to semi-aquatic and terrestrial wildlife species. Other consumptive uses such as livestock watering, irrigation and industrial uses are also important benefits along with non-consumptive recreational and scenic values. Because these benefits are presumed, it is not mandatory that the UAA exhaustively identifies and measures each actual benefit that occurs associated with the water body but should make an effort to generally characterize the natural and human uses of the water.

This presumption of environmental benefits, however, is not absolute and may be overridden where the quality or condition of the effluent dependent water body poses a threat or hazard to non-aquatic wildlife, livestock or industrial uses, or human health.

There is also a requirement to show a credible threat to remove the discharge. The basis for this requirement is in the concept of net environmental benefit (NEB) that weighs the potential for loss of a permitted effluent against the benefits of instream flow. NEB infers there is some possibility that the discharge could be discontinued.

The demonstration of a credible threat to remove the discharge from oil and gas production operations is presumed to be satisfied based on consideration that alternatives to surface discharge is the norm for the industry with an exemption applicable only west of the 98th meridian and an economic analysis done by EPA Headquarters showing that available treatment options for this industry are, as a general matter, more expensive than available non-discharge options.

For other types of discharges, the credible threat demonstration would have to be made either on a case-by-case basis or on a categorical basis as with the oil and gas industry.

(b) **Hazard Analysis and Chemical Screening.** In order to be certain that there are in fact net environmental benefits associated with the creation or continued existence of an effluent dependent water body, the UAA must evaluate actual or probable hazards to wildlife, livestock and human health. This evaluation shall address the potential that the pollutants contained in the effluent may accumulate to levels considered hazardous in the environment or hazardous to wildlife, livestock or humans by means of bioaccumulation through the food chain.

The evaluation of hazards should focus on the level of pollutant (actual or modeled), risk of exposure to the user (e.g. wildlife, livestock and humans; mercury in 2D waters may be a greater hazard than in 3D waters because of potential exposure to humans through fish consumption) and background concentration of the contaminant.

The first step in the hazard evaluation shall consist of an initial screening of the permitted effluent for pollutants of concern. The screening parameters may be different from one type of discharge to another because of differences in the relative probability of the occurrence of bioaccumulating materials associated with the industry or activity. For example, the vast majority of waters in Wyoming that would be candidates for an effluent dependent classification are created by the discharge of groundwater to the surface as a result of oil and gas production or mining activities. The types of pollutants that could reasonably be expected to occur are inorganic metals and salts. Of these, only selenium and mercury need to be investigated to determine the hazard potential to wildlife, livestock or humans.

A relatively small number of 2D and 3D candidate waters may be created from municipal wastewater treatment plants, industrial facilities such as oil refineries or power generating facilities, and various types of manufacturing operations. Depending upon the circumstances of the discharge, effluents from these facilities may have a higher probability of containing synthetic and organic bioaccumulating materials. In these situations, initial screening parameters will be determined on a case-by-case basis. Because effluent dependent waters created by these types of discharges will be relatively uncommon and addressed on a case-by-case basis, the remainder of this guidance will focus on those circumstances involving the discharge of groundwater to the surface.

(i) Selenium. The hazards associated with selenium bioaccumulation are related to mortality and impaired reproduction in waterfowl, shorebirds and piscivorous birds and selenium poisoning in livestock and terrestrial wildlife. Exposure to humans is not a consideration because Class 2D and 3D waters are not designated and protected as drinking water supplies.

(A) Birds. Where the initial screening indicates that the effluent concentration of selenium exceeds the Appendix B aquatic life chronic value, whole body fish and/or macroinvertebrate tissue analysis will be required. If whole body tissue concentrations are less than or equal to 7.9 $\mu\text{g/g}$ dry weight, the water shall not be considered a hazard to waterfowl, shorebirds and piscivorous birds. A whole body tissue criterion of 7.9 $\mu\text{g/g}$ dry weight selenium will be established for the stream segment along with an ambient-based water column value calculated as provided in Section 6(c) of this procedure.

Where the effluent water column concentration exceeds the Appendix B chronic aquatic life criterion and whole body tissue concentrations are greater than 7.9 $\mu\text{g/g}$ dry weight, the water shall be considered a hazard to waterfowl, shorebirds and piscivorous birds. A whole body tissue criterion of 7.9 $\mu\text{g/g}$ dry weight selenium will be established for the stream segment and site-specific ambient-based criteria for selenium shall not be established. The

stream segment shall be listed as impaired on the state 303(d) list and a TMDL developed to address the tissue based criterion.

(B) Livestock and Wildlife. The hazard of selenium poisoning shall be considered to be the same for livestock and wildlife and one group is not considered to be more tolerant or susceptible than the other. This hazard analysis is intended to address the use of the water by mammals.

Selenium poisoning can occur in livestock raised on vegetation grown in selenium bearing soils which are common in Wyoming and in some areas contain up to 30 mg/kg of selenium. "In water, 400 to 500 µg/L of selenium is believed to be non-toxic to cattle. Such water may contribute to selenium poisoning, but the selenium content of the feed is a more critical factor" (McKee and Wolf 1963)¹.

Water used for irrigation may contain up to 10,000 µg/L of selenium with no anticipated toxicity to plants.

Clearly, the identification of environmental hazards associated with selenium in effluent dependent water bodies can be focused on an evaluation of impacts to birds. It can be assumed that where there is little or no hazard to birds, the water is safe for all other designated uses.

(ii) Mercury. Mercury in trace amounts is acutely toxic to aquatic life and also presents a significant health hazard to human populations. The primary exposure pathway to humans is through the consumption of mercury contaminated fish. Most other human exposure pathways such as through drinking water or general environmental exposure are considered negligible, although a safe drinking Water Act Maximum Contaminant Level (MCL) of 2 µg/L has been established for the protection of drinking water supplies. The identification of mercury-related hazards in effluent dependent waters needs to consider the following:

(A) The likelihood of bioaccumulation in fish tissue in the immediate Class 2D receiving waters and downstream Class 2 waters;

(B) The contamination of groundwater aquifers to levels above 2 µg/L;
and

(C) The accumulation of mercury in sediments to levels above the State's guidelines for remediation of contaminated soils.

Where the initial screening indicates that the effluent concentration of mercury exceeds the Appendix B aquatic life chronic value and the discharge can be expected to reach a fish bearing water, whole body fish tissue analysis will be required. If whole body tissue concentrations are less than or equal to 0.3 mg methylmercury/kg fish, the water shall not be

¹ McKee, J.E. and H.W. Wolf. 1963. Water quality criteria (second edition). State Water Quality Control Board, Sacramento, CA. Pub. No. 3-A.,

considered a hazard to fish or fish consumption. A whole body tissue criterion of 0.3 mg methylmercury/kg fish will be established for the stream segment along with an ambient-based water column value calculated as provided in Section 6(c) of this procedure.

Where the effluent water column concentration exceeds the Appendix B chronic aquatic life criterion and whole body tissue concentrations are greater than 0.3 mg methylmercury/kg fish, the water shall be considered a hazard to fish, wildlife and fish consumption. A whole body tissue criterion of 0.3 mg methylmercury/kg fish will be established for the stream segment and site-specific ambient-based criteria for mercury shall not be established. The stream segment shall be listed as impaired on the state 303(d) list and a TMDL developed to address the tissue based criterion.

Where the initial screening indicates that the effluent concentration of mercury exceeds the Appendix B aquatic life chronic value and the discharge is not expected to reach a fish bearing water, sediment analysis may be required. Ambient-based water quality criteria may be established where sediment concentrations are less than or equal to 23 mg/kg inorganic mercury and 26 mg/kg methylmercury. In no circumstance shall an ambient-based water column criterion exceed 2 µg/L total recoverable mercury.

In addition to hazard screening for bioaccumulative constituents, a more general screening of all parameters that could reasonably be expected to be found in the discharge should also be conducted. This information will be used in the subsequent procedure for establishing ambient criteria. Site-specific ambient criteria will only be established for those parameters that exceed the statewide criteria listed in Chapter 1, Appendix B. This screening is important to identify which pollutants require a site-specific modification. The exact list of screening parameters will depend upon the type of discharge. For oil and gas produced water discharges, the following list should be used:

- Arsenic
- Cadmium
- Chromium (III)
- Copper
- Lead
- Mercury*
- Nickel
- Selenium*
- Silver
- Zinc
- Aluminum (pH 6.5-9.0 only)*
- Chloride
- Iron
- Manganese
- Undissociated Hydrogen Sulfide (H₂S)
- Hardness (CaCO₃) mg/L

** Required for hazard analysis*

(c) Establishing Ambient-Based Criteria. Chapter 1, Section 36 provides a procedure by which the adopted statewide numeric criteria may be modified to reflect ambient conditions on effluent dependent waters. Ambient-based criteria can be established only for those parameters where the discharge effluent quality exceeds the values in Chapter 1, Appendix B.

(i) Criteria modification based on a finding of net environmental benefit is authorized where a UAA described in parts 1 and 2 above satisfactorily demonstrates that:

(A) The water body is effluent dependent;

(B) The discharge has been shown to create an environmental benefit and removal of the discharge would cause more environmental harm than leaving it in place;

(C) There is a credible threat to remove the discharge; and

(D) Appropriate safeguards are in place, ensuring that downstream uses will be protected and the discharge will pose no health risk or hazard to humans, livestock or wildlife.

(ii) Pursuant to an approved UAA and reclassification to either Class 2D or 3D, site-specific criteria for eligible constituents shall be calculated to be equal to the background concentration for each constituent plus a margin of error.

(A) The background concentration shall be the highest concentration recorded over the course of a one year period where samples have been taken at least once in each month. In circumstances where water is not present 12 months out of the year, additional samples must be collected in the months when water is present to obtain a minimum data set of at least 12 samples.

(B) The margin of error shall be one standard deviation calculated from the same data set used to establish background.

(C) Depending upon the circumstances, samples may be collected either at the discharge outfall or from a representative point in the stream channel downstream from the permitted outfall. For example, where the effluent dependent water is created by a single discharge, it is acceptable to sample the outfall for this analysis. Where an effluent dependent water is created from multiple outfalls, samples should be collected in-stream at a representative point after mixing of the various outfalls has occurred.

(D) End-of-pipe sampling and analysis shall comply with WYPDES analytical requirements for the particular constituents and in-stream sampling and analysis shall comply with the *Wyoming Manual of Standard Operating Procedures for Sample Collection and Analysis*.

(E) The WYPDES permittee responsible for the discharge shall be

required to collect and submit the water quality data necessary to make the above calculations.

Section 7. UAA Procedures for Recreation Designations.

(a) Purpose. Chapter 1, Section 27 identifies two recreational use categories for all bodies of surface water in the state. Primary contact recreation is intended to apply to those waters where there is a reasonable potential for people to engage in full body contact with the water and/or a potential to ingest small quantities. Secondary contact recreation is intended to apply to all other waters where those circumstances do not occur.

The purpose of this policy is to provide guidance on how to appropriately designate specific waters as either primary or secondary contact waters.

(b) Concepts. The basic concept of recreational use protection is to ensure that surface waters of the state are maintained at a quality that does not pose a significant risk of disease to human populations that may be exposed to them. The factors contributing to human health risk include the concentration of disease causing organisms in the water and the relative level of human exposure to that water.

Along with the use classification categories, Section 27 also provides the criteria that apply to each. The criteria are based on concentrations of *E. coli* bacteria which serve as an indicator of the probability that the water may also contain populations of other waterborne disease causing bacteria and viruses. These criteria are used as the basis for effluent limits on permitted discharges (WYPDES permits) and Section 303(d) listings and subsequent TMDL or watershed planning targets.

All surface waters are designated for primary contact recreation during the summer recreation season (May 1 through September 30) unless the water has been designated for secondary contact recreation through a use attainability analysis. Recreational use designations are identified in the *Wyoming Surface Water Classification List*.

The decision as to whether a water body is most appropriately designated for primary or secondary recreation protection is not intended to be a difficult one. There are only a few factors relating to water availability, access and recreational opportunity that need to be considered. The entire UAA process will in most cases be very simple and will not require any special expertise to complete.

It is important to note that a recreational use designation is not intended to imply that the owner of property adjacent to any water body would allow access for any kind of recreational use. The application of recreation classifications does not create any rights of access on or across private property for purposes of recreation on such waters. The classification is intended only to affect the water quality criteria that will be used in the implementation of the pollution control programs required under the Clean Water Act and the Wyoming Environmental Quality Act.

(c) Factors Affecting Recreational Use Designations.

(i) All waters, regardless of flow regime, located within federal, state or local parks and recreation areas will be designated for primary contact recreation. Federal, state or local parks should not be construed to mean all public lands, but rather specifically developed and/or designated recreational use areas such as campgrounds, picnic grounds, trailheads, greenways, etc.

(ii) Waters known to be used for primary contact activities such as swimming, rafting, floating, canoeing or kayaking shall be designated as primary contact waters.

(iii) All lakes and reservoirs located in the state already used or have the potential to be used for primary recreation will be designated as such.

(iv) Waters located within or flow through municipalities or high density housing areas will generally be designated as primary contact waters.

(v) Larger perennial streams and game fisheries will generally be designated for primary contact because of their potential to attract sportsmen and other recreationists.

(vi) Except for waters located in or flowing through parks, recreation areas or urban areas, intermittent and ephemeral waters will generally be designated for secondary contact uses.

(vii) Segmentation of streams into multiple primary and secondary designations is possible but will only be approved where the benefits of more specific segmentation outweigh the drawbacks of an increasingly segmented system.

Section 8. Implementation.

(a) Classifications and Use Designations. Upon final approval by the administrator for changes in classifications or use designations, the results of a use attainability analysis will be submitted to EPA for approval as a revised water quality standard for Clean Water Act purposes. The revised standard will become effective upon EPA approval or 90 days after submittal, whichever comes first. The final determination by the administrator is an action that may be appealed to the Environmental Quality Council pursuant to Chapter 1, Section 16 of the Rules of Practice and Procedure.

(b) Criteria. Site-specific changes in water quality criteria can only be implemented administratively by the Water Quality Division on effluent dependent waters. On all other waters where an approved use attainability analysis results in the establishment of site-specific criteria for a pollutant, the department shall recommend such revised criteria to the Wyoming Environmental Quality Council for adoption pursuant to formal rule-making procedures. The revised criteria shall not become effective until adopted by the council and filed with the Secretary of State as revised rules.

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**Recreational Use Designations
Use Attainability Analysis (UAA) Worksheet**

A recreational use attainability analysis (UAA) is required to support any change in the recreational use designation of a surface water of the state, either to a more stringent or less stringent classification. Completion of a UAA is recommended in cases where there is significant uncertainty about whether or not the current classification is appropriate.

I. Name & Location. Identify where the stream segment starts and ends.

Water body name: _____ Watershed (HUC): _____

Upstream Location: ¼, ¼ Section _____; SEC _____; TWP _____; RNG _____

Downstream Location: ¼, ¼ Section _____; SEC _____; TWP _____; RNG _____

II. Maps & Photographs. Attach a map of adequate scale and detail to accurately depict the water body that is the subject of the reclassification proposal. Also attach photographs that adequately characterize the water body for the purposes of the petition. These should be taken at points that are typical of the stream channel or lake in a sufficient number to clearly illustrate the resource. Each photo point location should also be indicated on the UAA map. The photographs should be accompanied by information including a photo ID number, name of photographer, date and time taken, location and direction from which the photo was taken, and a narrative describing what the photo is intended to depict.

III. Primary Use Factors. If any of the following factors apply, the water should be designated for primary contact recreation. If none of the factors apply, the water is a candidate for a secondary use designation.

Check all that apply:

- _____ Water is located within or flows through a federal, state, or local park or recreation area. Federal, state or local parks should not be construed to mean all public lands, but rather specifically developed and/or designated recreational use areas such as campgrounds, picnic grounds, trailheads, greenways, etc.
- _____ Water is a lake, reservoir or other still body of water. (*Exclude small stock watering ponds*).
- _____ Water is within or flows through a municipality or unincorporated high density housing area.
- _____ Water is a larger perennial stream or game fishery known to be used by sportsmen or other recreationists.
- _____ Water is used or can be used for primary contact activities such as swimming, floating, rafting, canoeing or kayaking.

IV. Use Removal Factors (*only necessary when downgrading from a primary to a secondary use designation*).

Chapter 1, Section 33(b) requires that all petitions to lower a classification or criteria must be based on one or more of the use removal factors listed in Section 33(b)(i) through (vi). Most commonly, the factor that apply to reclassifying a water from a primary to a secondary contact designation is 33(b)(ii), though there may be unique circumstances where one of the other factors is most appropriate.

Those petitions intending to raise a classification from secondary to primary contact are not subject to the Section 33(b) factors. Instead, the UAA should demonstrate that primary contact recreation is either an existing use or may be attained with the imposition of more stringent controls or management practices.

Check one or more of the following use removal factors and attach a brief narrative and/or additional information explaining why each checked factor applies to the subject water. If the purpose of the UAA is to raise a classification from secondary to primary, do not check any factor but still provide a narrative explanation of the justification for the increased level of protection.

_____ (i) Naturally occurring pollutant concentrations prevent the attainment of the classification or use; or

_____ (ii) Natural, ephemeral, intermittent or low flow conditions or water levels prevent the attainment of the use, unless these conditions may be compensated for by the discharge of sufficient volume of effluent discharges without violating state water conservation requirements to enable uses to be met; or

_____ (iii) Human caused conditions or sources of pollution prevent the attainment of the use and cannot be remedied or would cause more environmental damage to correct than to leave in place; or

_____ (iv) Dams, diversions or other types of hydrologic modifications preclude the attainment of the classification or use, and it is not feasible to restore the water body to its original condition or to operate such modification in such a way that would result in the attainment of the classification or use; or

_____ (v) Controls more stringent than those required by Sections 301(b) and 306 of the Clean Water Act would result in substantial and widespread economic and social impact. This subsection shall not apply to the derivation of site-specific criteria.

Explanation *(attach additional sheets if necessary)*:

V. Additional Information. Include additional information such as a description of the existing recreational use of the water body, description of or data representative of the flow regime, landowner surveys, etc. that may be useful to the petition.

Petitioner

Date