APPENDIX A

Montana Water Quality Law

As directed by the Clean Water Act, the State of Montana developed a water quality classification system, developed water quality standards to be applied to various water classes and identified water bodies that do not meet standards.

The Montana Department of Environmental Quality has classified all waters within the project area as B-1 waters with the exception of one. The Summit Creek drainage on the north end of the project area is classified as A-Closed from the headwaters to the Summit water supply intake. The beneficial uses associated with B-1 waters include drinking, culinary and food processing purposes, after conventional treatment; bathing, swimming, and recreation; growth and propagation of salmonid fishes and associated aquatic life, waterfowl, and furbearers; and agricultural and industrial water supply (Administrative Rules of Montana (ARM) 17.30.620/623). Waters classified A-Closed are to be maintained suitable for drinking, culinary and food processing purposes after simple disinfection. Water quality is to be maintained suitable for swimming, recreation, growth and propagation of fishes and associated aquatic life, although access restrictions to protect public health may limit actual use of A-Closed waters for these uses.

The Montana Water Quality Act – Surface Water Quality Standards require that land management activities must not generate pollutants in excess of those that are naturally occurring, regardless of the stream's classification. Under ARM 17.30.623 (2) (f) No increases are allowed above naturally occurring concentrations of sediment, settleable solids, oils or floating solids, which will or are likely to create a nuisance or render the waters harmful, detrimental, or injurious to public health, recreation, safety, welfare, livestock, wild animals, birds fish, or other wildlife. Naturally occurring is defined in ARM 17.30.602 as: "the water quality condition resulting from runoff or percolation, over which man has no control, or from developed lands where all reasonable land, soil and water conservation practices have been applied." Reasonable land, soil and water conservation practices are commonly called Best Management Practices (BMPs). BMPs are considered reasonable only if beneficial uses are fully supported. The Forest Service will utilize the following BMPs to ensure compliance with State Water Quality Laws:

15.02 – General Guidelines for the Location and Design of Roads and Trails
15.03 – Road and Trail Erosion Control Plan
15.04 – Timing of Construction Activities
15.05 - Slope Stabilization and Prevention of Mass Failures
15.06 – Mitigation of Surface Erosion and Stabilization of Slopes
15.07 – Control of Permanent Road Drainage
15.09 – Timely Erosion Control Measures on Incomplete Roads and Stream-crossing Projects
15.10 – Control of Road Construction Excavation and Sidecast Material
15.12 – Control of Construction in Riparian Areas
15.13 – Controlling In-Channel Excavation
15.16 – Bridge and Culvert Installation (Disposition of Surplus Material/Protection of Fisheries)
15.17 – Regulation of Borrow Pits, Gravel Sources and Quarries
15.19 – Streambank Protection
15.20 -- Water Source Development Consistent with Water Quality Protection
15.21 – Maintenance of Roads
15.23 – Traffic Control During Wet Periods
15.27 – Trail Maintenance and Rehabilitation

These BMPs are further described in the Forest Service Soil and Water Conservation Practices Handbook (USDA Forest Service 1995).

It is important to recognize that the Forest Service does not have authority to develop TMDLs. The authority lies with the State. On streams with multiple ownerships, the Forest Service cooperates with the State and other adjacent landowners in the development process. Additionally, the listing of a stream does not preclude management activities. Montana Code Annotated (MCA) 75-5-703(10)(c), states: (10) Pending completion of a TMDL on a water body listed pursuant to 75-5-702: (c) new or expanded non-point source activities affecting a listed water body may commence and continue their activities provided those activities are conducted in accordance with reasonable land, soil and water conservation practices (Best Management Practices).

Riparian and stream conditions are also assessed by the Montana Department of Environmental Quality to determine water quality limited stream segments (WQLS). Water quality limited streams do not fully support their uses and therefore, do not fully meet water quality standards. The 1996 Montana 303(d) List (MT-DEQ, 1996) identifies seven streams within the project area as being water quality limited; South Fork Two-Medicine River, South Fork Badger Creek, Elbow Creek, North Fork Dupuyer Creek, South Fork Dupuyer Creek, Blackleaf Creek, and Sun River. In addition, impaired portions of the Teton River, Ford Creek and Dearborn River are near the Forest.

Water Quality Limited Streams from 1996 List

Stream Name	Impaired Use	Cause of Impairment	Probable Source of Impairment	Contribution from Forest	Location of Impaired Segment
S. Fk. Two Medicine River	Cold Water Fishery, Trout	Flow Alteration, Suspended Solids	Agriculture	Listed segment on Forest	Sidney Ck mouth to Forest Bndry.
S. Fk. Badger Creek	Cold Water Fishery, Trout	Flow Alteration, Suspended Solids	Agriculture	Listed segment on Forest	Headwaters to mouth (confluence with N. Fk. Badger)
Elbow Creek	Cold Water Fishery, Trout	Flow alteration, siltation	Agriculture	Listed segment on Forest	Headwaters to confluence with S. Fk. Badger Ck.
N. Fk Dupuyer Ck.	Cold Water Fishery, Trout	Flow alteration, siltation, suspended solids	Agriculture, petroleum activities, resource extraction	Approximately ½ listed segment on Forest	Wilderness boundary to confluence with S.Fk. Dupuyer Ck.
S. Fk. Dupuyer Ck.	Cold Water Fishery, Trout	Flow alteration, siltation, suspended solids	Agriculture, petroleum activities, resource extraction	Approximately ½ listed segment on Forest	Rival Creek to confluence with N. Fk. Dupuyer Ck.
Blackleaf Ck.	Not identified	Not identified	Not identified	Approximately 1/5 listed segment on Forest	Headwaters to mouth (Muddy Ck)

Stream Name	Impaired Use	Cause of Impairment	Probable Source of Impairment	Contribution from Forest	Location of Impaired Segment
Sun River	Aquatic Life Support, Cold Water Fishery, Trout, Recreation , Swimmable	Suspended solids, flow alteration, siltation, nutrients,thermal modification	Agriculture, Irrigated crop production, flow regulation/modification	Minimal	Gibson Dam to Off-Forest (confluence with Muddy Creek)
Dearborn River	Aquatic Life, Cold Water Fishery, Trout	Thermal modification, flow alteration and other habitat alteration, siltation	Agriculture, range land, irrigated crop production	Minimal	Segment starts one mile north or two miles east of Forest
Teton River	Aquatic Life Support, Cold Water Fishery, Recreation, Swimmable	Flow alteration, other habitat alterations	Agriculture, irrigated crop production, natural sources	Minimal	Segment begins at confluence of North and South Forks approximately 3 miles downstream of Forest
Ford Creek	Aquatic Live Support, Cold Water Fishery, Trout, Recreation , Swimmable	Flow alterations, Nutrients	Agriculture, irrigated crop production, off-farm animal holding/management areas	Minimal	Segment begins approximately 2.5 miles downstream of Forest

The 2002 Montana 303(d) list (MT-DEQ 2002) is much shorter. This list identifies three streams in or near the project area.

2002 Listing of Water Quality Limited Streams

Stream Name	Impaired Use (1)	Cause of Impairment	Probable Source of Impairment	Contribution from Forest	Location of Impaired Segment
Sun River	Aquatic Life Support (N), Cold Water Fishery, Trout (N),	Bank erosion, dewatering, flow alteration, nutrients, riparian degradation, thermal modification	Grazing related sources, agriculture, crop related sources, flow regulation/modification, channelization	Minimal	Gibson Dam to Off-Forest (confluence with Muddy Creek)
Dearborn River	Aquatic Life Support (N), Cold Water Fishery, Trout (N),Primary Contact (Recr)(P)	Thermal modification, flow alteration, siltation	Grazing Related Sources, Flow Regulation/Modification	Minimal	Segment starts one mile north or two miles east of Forest

Teton River	Aquatic Life Support (P), Warm Water Fishery(P)	Flow alteration, salinity, siltation	Grazing, Agriculture, Highway/Road/Bridge Construction, Habitat Modification, Flow Regulation/Modification	Minimal	Segment begins at confluence of N.& S. Fks. about 3 mi. downstream of Forest

(1) T=Threatened; P=Partially Supporting; N=Not Supporting

The Sun River segment is located from Gibson Dam, downstream to the confluence with Muddy Creek. The major source of impairment on National Forest System lands is due to flow regulation/modification of Gibson Dam. The Dearborn River segment begins approximately 2 miles below the Forest boundary, at the confluence with Falls Creek, downstream to the Missouri River. Although rangeland is identified as a moderate contributor to the source of impairment, grazing impacts on National Forest System lands are low to none. Additionally, the major causes of impairment are thermal modifications and flow alterations. The Teton River segment begins at the confluence of the North and South Forks (approximately 3 miles east of the Forest) and extends to Deep Creek. This segment is listed for partial support of aquatic life and for not supporting a warm water fishery. The sources of impairment are flow alteration, salinity, and siltation. With exception of flow modifications associated with Gibson Dam, all sources of impairment occur on private lands below the Forest boundary.

The Montana Department of Environmental Quality has released an Integrated 2004 Water Quality Report (MT-DEQ 2004). The 2004 report contains revisions to the list of impaired waters, changes in assessment information for waters already on the list, and proposed changes to the schedule for preparing total maximum daily loads or TMDLs. A TMDL is now considered the total amount of a pollutant that a water body may receive from all sources without exceeding water quality standards. The following table summarizes the 2004 Montana 303(d) list.

2004 Listing of Water Quality Limited Streams

Stream Name	Impaired Use	Cause of Impairment	Probable Source of Impairment	Contribution from Forest	Location of Impaired Segment
S. Fk. Two Medicine River	**Lacking Sufficient Credible Data. Assess in 2004-2006.**			Listed segment on Forest	Headwaters to Blackfeet Res.
S. Fk. Badger Creek	**Lacking Sufficient Credible Data. Assess in 2004-2006.**			Listed segment on Forest	Headwaters to mouth (Badger Creek)
N. Fk. Dupuyer Ck.	**Lacking Sufficient Credible Data. Assess in 2004-2006.**			Portion of listed segment on Forest	Wilderness boundary to mouth (Dupuyer Ck.)

Stream Name	Impaired Use	Cause of Impairment	Probable Source of Impairment	Contribution from Forest	Location of Impaired Segment
S. Fk. Dupuyer Creek	**Lacking Sufficient Credible Data. Assess in 2004-2006.**			Portion of listed segment on Forest	Wilderness boundary to mouth (Dupuyer Ck)
Blackleaf Ck.	**Aquatic life support (P), Cold water fishery (P)**	**Other habitat alteration, bank erosion, riparian degradation**	**Agriculture, grazing related sources, hydromodification, bridge construction, removal of riparian vegetation, other habitat modification**	**Minimal, listed segment begins approx 2.5 miles off Forest**	**Cow Ck. To mouth (Muddy Ck)**
Teton River	**Aquatic Life Support (P), Warm Water Fishery (P)**	**Siltation, Flow Alterations, Salinity/TDS/sulfates**	**Grazing, Agriculture, Channelization, flow regulation/modification, hydromodification, habitat modification, highway/road/bridge construction**	**Minimal, listed segment begins approx 3 miles off Forest**	Segment begins at confluence of North and South Forks approximately 3 miles downstream of Forest
Willow Creek	**Aquatic Life Support (P), Cold water Fishery (P)**	**Riparian degradation, fish habitat degradation, siltation, other habitat degradation**	**Agriculture, habitat modification, modification/destabilization**	**Minimal, listed segment begins approx 4 miles off Forest**	**Headwaters to mouth**
Gibson Reservoir	**Lacking Sufficient Credible Data**			Reservoir and headwaters on Forest	Gibson Reservoir
Sun River	Aquatic Life Support (N), Cold Water Fishery (N)	Bank erosion, dewatering, flow alteration, nutrients, other habitat alterations, phosphorus, riparian degradation, thermal modification	Agriculture crop and grazing related sources, hydromodification, channelization, flow regulation/modification	**Minimal, approximately 4 of 80 miles of listed segment occurs on Forest**	Gibson Dam to Muddy Creek
Ford Creek	**Impaired and TMDL scheduled for completion by 2006. Cold water fishery (P), Aquatic Life Support (P)**	**Siltation, bank erosion, channel incisement, riparian degradation, fish habitat degradation, other habitat degradation**	**Hydromodification, agriculture, grazing related sources**	**Minimal, listed segment begins approx 5 miles off Forest**	**2 miles above the mouth**
Dearborn River	Cold water fishery (N), Aquatic Life Support (N), Primary Contact (Rec) (P)	Flow alteration, siltation, thermal modifications	Agriculture, grazing related sources, hydromodification, flow regulation and modification	**Minimal, listed segment begins approx 1 mile off Forest**	Falls Creek to the mouth (Missouri River)

T=Threatened; P=Partially Supporting; N=Not Supporting

Four stream segments (S. Fk. Two Medicine, S. Fk. Badger Creek, N. and S. Fks. Dupuyer Creek) and Gibson Reservoir do not have an impaired beneficial use identified **with assessment to be completed by 2006. The listed segments of Blackleaf Creek, Teton River, Willow Creek, Ford Creek and Dearborn River are all below the Forest from 1 to 5 miles. The agriculture and habitat modification impacts to Willow Creek are unlikely to be occurring on Ear Mountain Wildlife Management area or in the highest headwaters occurring on the Forest. 12.4 miles of streams in the Ford Creek drainage on the Forest were assessed for stream functioning in the 1997 Sun Canyon Range Analysis. All but one 0.3 mile reach on upper North Fork Ford Creek was rated as Functioning with low livestock grazing impacts. The 0.3 mile reach on North Fork Ford Creek was rated as Functioning at Risk with high livestock impacts, but this reach is nearly 4 miles above the Forest boundary and all the reaches below it were rated as Functioning. 10 miles of streams in the Falls Creek drainage on the Forest (tributary to Dearborn River 1 mile below Forest) were assessed for stream functioning in the 1997 Sun Canyon Range Analysis. All 10 miles were found to be in Functioning Condition with low livestock grazing impacts. The Dearborn River from the wilderness boundary to the Forest boundary (approximately 3.5 miles is not grazed or part of a grazing allotment.**

The Sun River segment is from Gibson Dam downstream to the confluence with Muddy Creek. The major source of impairment of the Sun River on National Forest lands is due to flow regulation/modification of Gibson Dam. The sources of impairment on the 2004 list include agriculture and hydromodification in addition to the 2002 causes of livestock grazing and flow regulation and modification. The causes of impairment are similar between the 2002 and 2004 lists. Impacts from grazing on National Forest Lands are still thought to be low to none.

Once again, with exception of flow modifications associated with Gibson Dam, all sources of impairment are thought to occur on private lands below the Forest boundary.

Forest Plan Consistency

Erosion Control F-1

Standard	If Standard applies, how is standard being met, and where in the project file is the documentation?
1) Utilize adequate soil and water conservation practices to protect soil productivity and to control nonpoint water pollution from project activities, using as a minimum, practices specified in any State-developed "Best Management Practices."	Soil and Water Conservation Practices have been incorporated into Action Alternatives and are described in Appendix G of the DEIS. Lack of maintenance of roads and trails is a concern.
2) Develop and update watershed management and erosion control handbooks and supplements.	Not applicable to Travel Planning Proposed Actions
3) Eliminate the backlog of soil and water restoration needs by 1995 (373 acres). Watershed improvement projects will be identified, prioritized and developed on a watershed basis.	Forest Plan goal of 100 percent accomplishment by 1995 has been met.

Data Collection F-2

Standard	If Standard applies, how is standard being met, and where in the project file is the documentation?
1) Collect soil and water data needed to validate assumptions important in both long-range and project planning.	Summaries and results of data collection found in Hydrology and Soils specialist reports.
2) Decide how to get the needed data. Consider extrapolating from other studies, working with existing projects of other agencies, and the capabilities of the Forest Service.	Research data and limited modeling used to support data gaps where possible. Information found in Hydrology and Soils Specialists reports.
3) Determine the data needed to predict and monitor soil and water impacts from the following activities. a) Oil and gas exploration and development b) Timber harvest c) Commercial special uses d) Grazing e) Subdivision of adjacent private lands f) Development of recreation sites g) Mining	Monitoring data summarized in Soil and Hydrology specialist reports.
4) Display the results of the data and analysis in appropriate reports. Use this information to improve predictions of watershed impacts and to validate monitoring requirements.	Data summaries and analysis found in Soil and Hydrology specialist reports.
5) Protect snow courses, snotel and other hydrometerological data collection sites from activities that would affect the validity of data from these sites. Provide appropriate access for winter measurement and summer maintenance.	Incorporated in Action Alternatives.

Soil, Water and Air Protection F-3

Standard	If Standard applies, how is standard being met, and where in the project file is the documentation?
1) Require application of Best Management Practices to project activities to ensure meeting or exceeding State water quality standards.	Soil and Water Conservation practices have been incorporated into Action Alternatives and are described in Appendix G. Lack of maintenance on roads and trails is a concern.
2) Develop additional Best Management Practices during the environmental analysis process and incorporate them into all land use and project plans as a principal mechanism for controlling non-point pollution sources and meeting soil and water quality or other resource goals.	Not applicable to Travel Planning Proposed Actions until scaled down to individual projects such as road or trail rehabilitation.
3) Meet State water quality standards as required by the Clean Water Act (33 UCS 1323), and as detailed in the Memorandum of Understanding to Implement the 208 Program on National Forests in the State of Montana. Coordinate with the State of Montana concerning stream channels as agreed to in the Memorandum of Understanding with Montana Fish and Game Commission.	As directed in the MOU the Forest will meet State requirements respecting control and abatement of pollution.
4) Require a watershed analysis of projects involving significant vegetative removal to ensure that the project, considered with other activities, will not increase water yields or sediment beyond acceptable limits. The analysis should identify any opportunities for mitigating adverse effects on water related beneficial uses, including capital investments for fish habitat or watershed improvement.	Travel planning actions have been evaluated for watershed cumulative effects in the Hydrology specialist report.
5) Conduct an environmental analysis for all management actions planned for flood plains, wetlands, riparian areas, or bodies of water prior to implementation. Adopt the necessary mitigation measure to minimize risk of flood loss, to restore and preserve flood plain values and to protect wetlands.	The coarse level analysis of impacts to floodplains, wetlands and riparian areas is found in the Hydrology specialist report.

Standard	If Standard applies, how is standard being met, and where in the project file is the documentation?
6) Claim water rights for non-consumptive water uses (instream flows) necessary for fisheries habitat, recreational uses, or other beneficial water uses on appropriate waterbodies and streams. Instream flows adequate to protect the aquatic environment will be maintained during any project which removes water from any stream.	**Not applicable to Travel Planning proposed actions.**
7) Do not let any waste waters that are thermally polluted or contain sediments beyond state standards, petroleum, and/or other chemicals to enter aquatic systems.	**Incorporated into Action Alternatives through Soil and Water Conservation Practices found in Appendix G.**
8) Require drainage structures on disturbed areas where it is necessary to control erosion.	**Incorporated into Action Alternatives through Soil and Water Conservation Practices found in Appendix G.**
9) Cooperate with other landowners in watersheds of mixed ownership, to develop mutually agreeable watershed management plans.	**Not applicable to Travel Planning Proposed Actions.**
10) In accordance with NFMA, RPA and Multiple Use-Sustained Yield Act, all management activities will be planned to sustain site productivity. During project analysis, ground disturbing activities will be reviewed and needed mitigating actions prescribed.	**Compliance with NFMA mandates to maintain site productivity is discussed in the Hydrology and Soils specialist reports.**
11) Require prompt revegetation of disturbed areas, especially cut and fill slopes, to control surface erosion. To stabilize disturbed areas, seed with grasses, forbs and deep-rooted native shrubs, where natural establishment of native cover is not expected within two years. Ideally the seedbed should be firm with a roughened surface. The slope must be stable, usually less than 2:1. Compacted soils should be ripped from eight to twelve inches.	**Soil and Water Conservation Practices incorporated into Travel Planning action alternatives and described in Appendix G.**
12) Select seeding mixtures based on site conditions, soil protection, ease of establishment, and seed availability. Fertilizer is usually necessary. Native species should be used when available. Mulching will be used only on very critical areas where wind is not a problem or the mulching can be protected.	**Soil and Water Conservation Practices incorporated into Travel Planning action alternatives and described in Appendix G.**
13) Achieve a 70 percent vegetative or litter cover level on cut and fill slopes and other soil disturbance areas within 2 growing seasons or a natural level of vegetative and litter cover when it is less than 70 percent.	**Soil and Water Conservation Practices incorporated into Travel Planning action alternatives and described in Appendix G.**
14) Comply with Federal and State standards and the Montana airshed group's Memorandum of Understanding on any management activity that may affect air quality.	**As directed in the MOU the Forest will meet Federal and State requirements respecting control and abatement of pollution.**
15) Protect air quality by cooperating with Montana Air quality Bureau in the Prevention of Significant Deterioration program and State Implementation Plan.	**As directed in the MOU the Forest will meet State requirements respecting control and abatement of pollution.**