# APPENDIX G – RESPONSE TO PUBLIC COMMENTS

## G1.0 PUBLIC COMMENTS AND DEQ RESPONSES

**Montana Fish, Wildlife & Parks (FWP) Comments #1 through #5**

**Comment #1**
**Table 5.1**: This table does not specifically identify Jack Creek or Elkhorn Creek. Were these streams left off the table for a specific reason?

**Response to Comment #1**
**Table 5.1** includes only those streams with a metal impairment cause identified on the 2012 303(d) List. Elkhorn Creek was included in **Table 5.1**, whereas Jack Creek and North Fork Little Boulder River were not included within **Table 5.1** because they did not have metals impairment causes identified on the 2012 303(d) List. The document has been edited to better clarify why Jack Creek and North Fork Little Boulder River are not included within **Table 5-1**.

**Comment #2**
**Section 6.1.1**, Fish Passage Barriers: This section states that fish passage barriers most often occur from channel obstacles (culverts, impoundments, etc.). A discussion of toxic barriers due to mine discharge seems warranted, and FWP is aware of at least three tributaries where the toxic barrier resulted in isolating native cutthroat from non-native trout (Jack Creek, High Ore Creek, Little Boulder River). Also, FWP (along with USFS and BLM) has worked on two projects to improve native cutthroat trout isolation by constructing barriers (Muskrat Creek and High Ore Creek). In addition, mine reclamation associated with Jack Creek was conducted in a manner to improve distribution of native cutthroat while maintaining the isolated fishery upstream of the toxic reach of stream.

**Response to Comment #2**
The suggested information along with most of the language provided within the comment has been added to the Fish Passage Barrier discussion within **Section 6.2** (formally **Section 6.1.1**) as follows:

***Fish Passage Barrier***
*Impairment caused by fish passage barriers is most often related to channel obstacles such as impoundments or perched culverts at road crossings. The impairments are addressed by modification or removal of the barriers or operational changes to allow migration of fish and other aquatic life. Any fish barrier removal must be done in coordination with state and federal fishery representatives since fish passage barriers can beneficially isolate native fish populations, protecting them from non-native invasive species. For example, the Montana FWP has worked with the USFS and the BLM on two projects to improve native cutthroat trout isolation by constructing physical barriers in Muskrat Creek and High Ore Creek.*

*In the Boulder watershed toxic barriers due to mine discharge create another form of fish barrier. Toxic fish barriers have been identified within at least three tributaries where the toxic barrier isolates native cutthroat from non-native trout (Jack Creek, High Ore Creek, Little Boulder River).*

*Although maintenance of toxic stream conditions does not represent a desirable method for isolating native fish species, future projects to address toxic stream conditions should incorporate necessary barrier construction or other methods to maintain appropriate native fish isolation. For example, mine reclamation work associated with Jack Creek was conducted in a manner to improve distribution of native cutthroat while maintaining the isolated fishery upstream of the toxic reach of stream.*

**Comment #3**

**Section 7.1**, Water Quality Restoration Objectives: FWP believes that this section should include a more complete discussion to prioritize restoration objectives for aquatic life, including fish. For example, Jack Creek restoration related to the Bullion Mine has positive and negative implications for improving water quality in Jack Creek and Basin Creek, but such a project could eliminate a toxic barrier currently protecting a native cutthroat trout fishery upstream of the Bullion Mine. Therefore, water quality improvements in various tributaries may have unforeseen consequences on the fishery and these should be identified in a prioritized manner.

**Response to Comment #3**

Development of the specific priority details is outside the scope of this TMDL document. As stated in **Section 7.1**, *once TMDLs are established, restoration begins with development of a watershed restoration plan (WRP). A WRP is an analytical framework for restoring water quality in impaired waters by reducing loading from pollutant sources (U.S. Environmental Protection Agency, 2008). A WRP focuses on achieving the TMDLs presented in this document, addresses related water quality problems with local interest, and helps develop a detailed and locally organized process for prioritizing, funding, and completing restoration projects.*

**Section 7.1.1** goes on present a bullet list of essential WRP elements that includes *expressed support for meeting other natural resource goals linked to water quality such as riparian grazing controls, timber harvest management, and road erosion abatement.* To address specific elements of your comment, the following bullet has been added to the list of essential WRP elements: ***Development of detailed restoration objectives focused on protection of native aquatic life species, including consideration of native fish isolation goals (see Section 6.2).***

Note that the above response to Comment #1 results in edits to **Section 6.2** (formally **Section 6.1.1**) that address some aspects of Comment #2. Also, within **Section 7.2.1** the Montana Department of Fish, Wildlife, and Parks (FWP) is identified as one of the agencies vital to restoration efforts in the Boulder-Elkhorn TPA. This should help provide significant opportunity for FWP involvement with restoration planning and priority setting within a WRP or other restoration/remediation planning documents.

**Comment #4**

**Section 7.2.2**, Metals Restoration Strategy: FWP believes that incremental clean-up of mine waste throughout various tributaries cumulatively improves water quality in the Boulder River upstream of the town of Boulder, and monitoring of the fishery from the 1970's to the 1990's has shown gradual improvements. The strategy of implementing streamside tailing removal seems to have been a priority during this work. However, adit discharge of toxic water remains to be a difficult, if not impossible, task. The Metals Restoration Strategy section could benefit from more discussion of streamside tailings, adit discharge, natural reduction in toxicity, new mine activity, or other factors. In addition, past mine reclamation projects have used the Luttrell Pit as a repository for mine waste due to the long term

stability of the site. Some discussion of the long term effectiveness of this repository at the top of the watershed also seems warranted. Specifically, the accountability of the various agencies cooperating with the Luttrell Pit repository would be useful to the long term effectiveness of this strategy for disposing of mine waste.

**Response to Comment #4**

As discussed in the response to Comment #2 (above), development of the specific priority details is outside the scope of this TMDL document and the information provided should be integrated within development of a future WRP and/or within specific remediation plans. This approach is also covered in **Section 7.2.2** where it is stated: *Rather than a detailed discussion of specific BMPs, this section describes general restoration programs and funding sources applicable to mining sources of metals loading. Past efforts have produced abandoned mine site inventories with enough descriptive detail to prioritize the properties contributing the largest metals loads.*

Regarding the Luttrell Pit, the following language has been incorporated into the **Section 8.1** discussion on restoration effectiveness monitoring: *Restoration effectiveness monitoring should not be limited to surface water quality monitoring and should include evaluation of all aspects and assumptions of each remediation activity. For example, the continued use of the Luttrell Pit as a repository should include site stability along with surface and groundwater quality monitoring. A monitoring strategy that clearly identifies the roles and responsibilities of various cooperating agencies needs to be developed and/or maintained for all significant remediation sites.*

**Comment #5**

**Section 8.0**, Monitoring: Fishery studies by F. Nelson (1976) and Farag et al (1997) and invertebrate studies by Gardner (1970's) and Gless (1990's) provide some long term perspective on trends of aquatic health related to mine waste in the Boulder. Context of recovery in future monitoring could benefit from using these data and some of their study locations. FWP could provide fishery monitoring at some of these historic sampling locations, if needed.

**Response to Comment #5**

The language in the above comment has been used to supplement **Section 8.1**, *Restoration Effectiveness Monitoring*. The following paragraph has been added to this section:

*Fishery, invertebrate and other aquatic life studies and associated trend analyses also represent an important monitoring strategy component to evaluate watershed health in relation to mine remediation activities. Fishery studies by F. Nelson (1976) and Farag et al (1997) and invertebrate studies by Gardner (1970's) and Gless (1990's) can provide some long term perspective on trends of aquatic health related to mine waste in the Boulder watershed. Future fishery and aquatic health assessments could benefit from using these data. FWP personnel represent an important resource for coordinating, planning and performing monitoring activities at historical and other sampling locations within the watershed.*

**Private Citizen 1; Comments #6 through #7**

**Comment #6 (paraphrased)**
I find no mention on the mine waste overburden at the first "topographical gravity shelf" on the lower valley; that is from Boulder to about 5-miles south of Boulder along the Boulder riverbanks and extending hundreds of yards from the current river location. This mine waste overburden ranges from 18in to 3ft in depth and has resulted from flood event mine waste transport... particularly due to dam failures upstream and 100-yr flood events. I have soil sample results at various soil depths showing high concentrations of heavy metals including As, Pb and Cd. I also have area photos depicting the damage. For nearly 20-years nothing would grow in this area and in many areas this is still the case. The soils just beneath the surface are contaminated with heavy metals. I would be happy to share these soil sample results in an effort to broaden the scope of this plan.

**Response to Comment #6**
**Section 6.1** of the public comment document includes discussion of breached dams and impacted streams and floodplains, including the Boulder River in the area you mention. Based on this **Section 6.1** information and your comment, the following paragraph has been added to the **Section 5.3.2** general discussion on metals loading from mine sources:

*During the above periods, tailings were often impounded in and adjacent to stream courses. Breached tailings impoundments have delivered tens of thousands of cubic yards of tailings to downstream reaches and floodplain areas of Jack Creek, Basin, Cataract, High Ore Creek, and Elkhorn creeks, and the lowest three segments of the Boulder River. Large flood events have also contributed to the downstream channel and floodplain distribution of contaminated tailings and other mine wastes throughout the Boulder River watershed.*

**Comment #7 (paraphrased)**
There is mine waste along the rail bed extending from Butte to Helena. This mine waste was most likely shipped from Butte or possibly Basin. The ore is clearly visible in many locations near Boulder, Amazon, Wicks and Corbin areas. However these deposits have a reduced effect on the Boulder River when compared to deposits in the river, on the river banks and in the river floodplain.

**Response to Comment #7**
The existence of mine waste along the railroad lines is identified as a potentially significant source for Bison Creek (**Sections 5.7.7** and **Appendix F2.9.1**). Railroad grade fill material consisting of metal-contaminated mine tailings is also identified as a significant source justifying a remediation priority for the Boulder River upstream of the town of Boulder in **Section 7.2.2.3**.

**Private Citizen 2; Comment #8**

**Comment #8 (paraphrased; most of the provided comment was outside the scope of the document)**
As a Montana landowner, we support no increases in regulations that affect our lands or anyone else's lands. There is enough red tape and government regulation.

**Response to Comment #8**
The TMDL does not create new regulation, but can impact how existing regulation is implemented, specifically for permitted surface water point sources. TMDL implementation is discussed in **Section 4.5** where it is stated: *The Clean Water Act (CWA) and Montana state law*

*(Section 75-5-703 of the Montana Water Quality Act) require wasteload allocations to be incorporated into appropriate discharge permits, thereby providing a regulatory mechanism to achieve load reductions from point sources. Nonpoint source reductions linked to load allocations are not required by the CWA or Montana statute, and are primarily implemented through voluntary measures.*