1. PRESUMPTION OF NO TUNNEL BLOCKAGE DURING INITIAL DRAWDOWN

Our evaluation concludes the Draft SEIS lacks reasonable assurance that the full magnitude of all reasonably expected impacts is disclosed. There is not a full analysis of all uncertainty and risk in creating and sustaining the debris torrent energy assumed to occur, and from which all analyses of aquatic habitat, fish population, and water quality impacts described in the Draft SEIS are derived. A6-11

1.1. Tunnel Blockage Potential during Initial Drawdown

The analysis in the Draft SEIS assumes there is no blockage of the tunnel by large woody debris or other debris during the initial drawdown. Page 4.1-3 of the Draft SEIS says: *"Absent any obstructions in the tunnel, the reservoir would drain during the first six hours..."* There is no further discussion or analysis of what happens if there are obstructions, even though page 4.1-3 of the Draft SEIS indicates: *"Woody debris likely present in the reservoir sediments may interfere with draining the lake through the drain tunnel; however, provisions have been made before and after breaching to remove debris using blasting techniques or a crane."* There is no reasonable assurance that measures proposed "*before and after breaching*" could prevent likely obstruction during the initial draining, reducing hydraulic energy assumed to carry most sediment out of the reservoir and through White Salmon River. A6-12

All subsequent impact evaluations assume unobstructed passage of water, sediment, large wood, and other debris down the White Salmon River during initial drawdown. There is no analytical consideration that even minor blockage could significantly diminish released energy, causing sediment impacts to persist in the White Salmon and Columbia Rivers far longer than assumed. Table 1-1, the Summary of Impacts and Mitigation Measures on page 1-13 of the Draft SEIS does acknowledge that *"The longer the sediment takes to exit the reservoir, the greater the impacts on water quality and aquatic organisms,"* however no further analysis is provided on what those impacts would be.

Ecology's consultant URS described inadequacies of the FERC FSEIS for the purposes of covering SEPA requirements.[1] URS said *"concern about ongoing erosion depends heavily on the modeling and assumptions in the Beck 1998 report and does not focus on the inherent uncertainties in this kind of modeling"* (page 4). The combined effects of (1) an assumption that no woody or other debris would cause any tunnel blockage during initial drawdown, and (2) failure to analyze a reasonable range of uncertainty in the outcome of models and assumptions of sediment behavior, lead to a reasonable conclusion that impacts could be much longer lasting, and therefore more severe, than the Draft SEIS discloses. A6-13

The Draft SEIS indicates reliance on four aspects of the project to prevent lodging of large wood or other debris in the tunnel, causing blockage and reducing the debris torrent A6-14

[1] URS Corporation. 2002. Condit Dam Project Phase III Final Report to Washington Department of Ecology, Yakima.

A6-11
Ecology disagrees. A number of the flaws in assumptions and logic of the comments are discussed in responses to specific comments below.

A6-12
The DSEIS analysis involved more than the G&G Associates report. As discussed below, there is no basis to conclude that blockages will not be avoided or minimized and that any blockage would not be adequately and timely removed. In addition, mitigation measures to provide active sediment removal after the reservoir is drained would prevent impacts from extending beyond the predictions.

Woody debris is assumed to be present in the sediment behind Condit dam. However, it is not correct to assume that this debris would likely block the drainage tunnel. Larger wood sections, such as those that can be observed in photographs taken prior to reservoir filling, show as freshly cut logs that would have floated to the lake surface as the lake formed. Given the value of these logs, it is highly unlikely that they were left to become waterlogged and sink to the bottom. However, even if larger logs were prevented from floating during reservoir filling or if water-logged logs are present, it is unlikely that the flow velocity during the initial breaching of the dam would have sufficient tractive force to mobilize many of them.

In any event, preventive measures to avoid wood debris blockages and contingency measures to address any blockages that might occur are provided. As described in Section 4.1.3 Geology, Soils and Sediments, Mitigation Measures and Section 4.3.2 Aquatic Resources Impacts in the FSEIS, to prevent large wood fragments from building up, a crane with a clamshell bucket would be used to remove sediment and woody material from the area directly in front of the tunnel prior to opening the tunnel to release the reservoir water. To further prevent trapping of woody debris within the tunnel itself during drawdown, PacifiCorp has proposed to make the tunnel bell-shaped with the larger end of the bell downstream (see FSEIS Section 3.2.2). This geometry would prevent wood pieces from being wedged inside the tunnel and trapping other pieces that could block the tunnel. If debris blocks the tunnel entrance, a crane on the dam

energy the remaining analyses depend on to evaluate impacts of clearing sediments from the reservoir basin and White Salmon River into the in-lieu site, Bonneville Pool, and Columbia River. These are:

- A tunnel diameter size of 12 feet high by 18-feet wide and 100 feet long (page 3-18 of the Draft SEIS);
- Clamshell dredging sediment and debris from the upstream dam face, removing the woody debris, and returning the dredged sediment to the reservoir above the dam (page 3-18 of the Draft SEIS);
- Ability to blast out any obstruction during the debris torrent drawdown (page 3-19 of the Draft SEIS); and
- Construction of a trash rack upstream of the dam tunnel (Table 1-1 on page 1-12, and page 4.3-17 of the Draft SEIS).

There is considerable uncertainty and risk in the ability of these measures to control tunnel blockage in the relatively short span of time (6 hours) that initial reservoir drawdown is expected to occur at the maximum (unobstructed tunnel) drawdown rate of 10,000 cubic feet per second (cfs). If the whole reservoir can drain in 6 hours, an obstruction blocking a significant percentage of flow and thus diminishing hydraulic energy could persist for a considerable period of time during draining, and perhaps for the entire drawdown. A blockage problem would be worst early in the drawdown, when hydraulic head is highest, even if the blockage was eventually removed.

A6-14 Continued

Tunnel Blockage

The presence of abundant woody debris in the reservoir sediment is documented in the March 1997 R.W. Beck report titled Condit Hydroelectric Project Removal Initial Assessment. The caption for photograph No. 2 included with the report states: "*View of Northwestern Lake Sediment; Reservoir is drawn down about 14 feet,* ***note large logs, stumps, debris in sediment deposit****, which is primarily fine sand*" [emphasis added]. Pre-dam photographs (Figures 5 and 6) contained in the *Sediment Behavior Analysis Report* by G&G Associates (May 2004)[2] also show abundant wood debris, much of which is considerably larger than the maximum drain tunnel diameter. The Draft SEIS assumes without support or analysis that the tunnel dimensions are large enough to prevent debris blockage during drawdown. Based on the available data it is reasonable to envision a scenario where the tunnel is blocked early in the drawdown process by woody debris entrained in the sediment slurry. "Pockets" constructed in the sides of the tunnel during its construction to provide resting pockets for fish (after drawdown) are described on page 4.3-17 of the Draft SEIS. These pockets, and the confining tunnel dimensions, including its 100-foot length, can all reasonably be expected to create lodgment sites for debris jams of large woody debris, including root wads, which would at least partially block the tunnel. Even unconfined bridge supports in rivers collect debris jams. Should blockage occur during the initial drawdown, the sediment transport assumptions upon which the duration and severity of environmental impacts have been assessed will extend well beyond any estimates contained in the environmental documents submitted by PacifiCorp that support the conclusions in the Draft SEIS.

A6-15

[2] G&G Associates, May 2004. Condit Dam Sediment Behavior Analysis Report; and Sediment Behavior Effects on Benefiical Uses Report.

could be used to clear it. Should the tunnel block despite these measures, explosives would be used to clear the blockage.

A6-13

The G&G Associates Sediment Behavior Analysis Report (2004a) provides the range of expected sediment movement. The mitigation and contingency measures (described in the FSEIS) to prevent blockage and the proposed active measures to ensure that the sediment moves out of the reservoir in a timely manner provide a greater certainty of the success in a time frame that minimizes impacts.

A6-14

See the responses to Comments A6-12 and A6-13.

A6-15

See response to Comment A6-13.

Clearing of Debris from the Upstream Dam Face

The Six-Month Update for the Condit Hydroelectric Project (September 23, 2005), contains a June 4, 2005 *Condit Project Description* (*Project Description*) prepared by PacifiCorp and referenced in the DSEIS. Page 31 Section 2.3.2.1.7 of the *Project Description,* entitled Removal of Woody Debris Upstream of Tunnel, indicates a barge will be used *"to excavate sediment and debris from the upstream face of the dam in the area where the tunnel will be opened. This will assure the drain tunnel does not become blocked by woody debris that has* ***accumulated directly in front of the tunnel****"*. Section 2.3.2.2.1 states: *Within hours the reservoir will drain, causing substantial amounts of the sediment and* ***woody debris*** *currently trapped behind the dam to be flushed downstream"* [emphasis added]. The last paragraph of page 32 states: "*Absent* ***unanticipated obstructions****, the reservoir should drain completely in approximately 6 hours..."* [emphasis added]. Page 51 of the *Project Description* estimates total large woody debris loading in the reservoir is 24,000 cubic yards, and indicates that most of this large debris is expected to be washed through the tunnel with the initial reservoir draining. The project proposal is, in other words, to create a debris torrent delivering wood and sediment and other debris through the tunnel and downstream, driven by the hydraulic head in the reservoir. The volume of large woody debris is very uncertain. The June 4, 2004 *Project Description* cited in the Draft SEIS says *"because the volume of woody debris is unknown, PacifiCorp can only make assumptions as to its actual volume. For discussion and planning, however, PacifiCorp assumes that one percent of the sediment volume will be large woody debris."* The 24,000 cubic yards was estimated from this 1 percent assumption. There could be more wood. Even if the estimate turns out to be accurate, it is certain that removal of some wood on the upstream dam face is not reasonably expected to remove all wood debris with potential to cause debris jam at or in the tunnel during drawdown. A6-16

Ability to Remove Obstruction through Blasting

The Draft SEIS indicates (page 3-19) that *"..if a plug occurs, explosives would be lowered into the plugged area and blasted to open the tunnel."* The ability to discover blockage significantly impeding release energy, prepare response, and feasibly and safely implement it under conditions of partial blockage and the hydraulic energy near and/or in the tunnel is not reasonably demonstrated in the Draft SEIS. Accurately directing heavy equipment or explosives into a torrent consisting of high velocity, turbid, debris-laden flow to dislodge blockages at unknown locations and possibly within the dam interior is questionable and should not be assumed the most likely scenario in the Draft SEIS. Inability to remove a blockage during the initial drawdown would cause a significant fraction of the reservoir to drain at significantly lower rate. That would increase the sediment load retained in the system, and increase the time to flush the sediment load, and thereby increase the impacts beyond those that the analyses in the Draft SEIS assume. A6-17

Trash Rack

After dredging at the dam face where the tunnel would be blasted open, the project proposes to construct a *"trash rack...installed on the upstream side of the tunnel to* A6-18

A6-16

Please see response to Comment A6-12. Note that it is not the hydraulic head that would move the wood, but the movement of the water. The design, mitigation, and contingency measures are expected to be adequate to overcome the debris jams or the consequences if they occur.

A6-17

Please see responses to Comments A6-12 and A6-16. In addition, consider that there are further opportunities to refine the plan to avoid or mitigate problems. Final design of the drain tunnel is likely to further reduce the likelihood of plugging. In addition, the contractor will have the opportunity to use any experts he chooses to solve the problems, including demolition experts.

A6-18

Please see responses to Comments A6-12, A6-13, and A6-16.

collect woody debris that might plug the tunnel *and interfere with sediment transport and fish passage*" [emphasis added] (page 4.3-17 of the Draft SEIS). We assume this trash rack would be installed after drawdown, since trash rack placement prior to tunnel opening would certainly lead to debris jam blockage. We also agree that, with maintenance, a trash rack could prevent woody debris from plugging the tunnel. However, anticipation of the need of a trash rack to prevent tunnel plugging after drawdown highlights the high probability of tunnel plugging during drawdown, when energy to convey large wood debris, and the amount of wood debris expected to be passed through a confined area in a short time, is highest.

A6-18 Continued

1.2. Increased Impacts from Tunnel Blockage During Drawdown

The analysis of impacts is fully dependent on the tunnel opening remaining unobstructed for the six hour drawdown period so that the majority of sediment currently trapped behind Condit Dam is sluiced downstream. If blockage of the 12-foot high by 18-foot wide by 100-foot long tunnel by woody debris occurs, then sediment entrainment and downstream transport will not occur as described in the Draft SEIS and supporting analyses. It is likely that at least partial blockage of the tunnel would occur due to the documented presence of woody debris in the reservoir sediment. If a partial blockage occurred early in the drawdown phase, the ability to entrain sediment and sluice the material out of the reservoir will be substantially reduced. The result of blockage on remaining sediment volumes could be significant, dramatically increasing the amount of unstable deposits contributing to long term mass wasting and adverse water quality conditions in the White Salmon River.

A6-19

The *Sediment Behavior Analysis Report* (p.40) assumes 90% of fines will erode *"with reservoir drawdown within 2,000 feet of the dam."* This fundamental assumption of initial sediment transport is dependent on an unobstructed tunnel opening, and assumes initial drawdown erosional processes will not result in steeply incised channels leaving larger than estimated volumes of sediment in the reservoir. For comparison purposes, the amount of sediment transport associated with the Cowlitz PUD Swift No. 2 embankment failure[3] was relatively limited. Most of the accumulated sediment remained in the reservoir.

The analyses completed also do not address the potential for drawdown induced landslides of the pre-dam slopes. The U.S. Bureau of Reclamation (BOR) reported over 200 landslides were trigged in the reservoir canyon upstream of Teton Dam following the failure of the dam in 1976.[4] Landslides included shallow surface slumps, earth flows, debris flows and rockfalls. Landslide debris reportedly buried the original river channel in some locations. Effects from the landslides on sediment transport, water travel times and temperatures are projected to last for centuries.

A6-20

[3] CH_2MHill, April 28, 2002, Report on Failure of Swift No. 2 Power Canal Embankment (FERC Project No. 2213), Consultant Report prepared for Cowlitz County PUD No. 1, 7 pages plus photographs.

[4] Randle, T.J.; Bountry, J.A.; Klinger, R.; and Lockhart, A., May 2000, Geomorphology and River Hydraulics of the Teton River Upstream of Teton Dam, Teton River, Idaho, U.S. Department of the Interior, Bureau of Reclamation, Denver, Colorado, 50 pages.

A6-19

Please see responses to Comments A6-12, A6-13, and A6-16. In addition, please note that because of the preventative, mitigative, and contingency measures, the assessment of impacts is not "fully dependent" on the tunnel remaining open during the initial flushing of the reservoir. The modeling assumptions can be met if the fine sediments in the lower part of the reservoir are flushed during the days and weeks after the draining of the reservoir or are compensated for with other active mitigation measures if needed.

A6-20

Landslides like those that occurred after the failure of the Teton Dam are not expected with the removal of Condit Dam. The reservoir canyon upstream of Teton Dam is located in a steppe/shrub environment with very little vegetative cover to anchor soils. Although both the Teton and White Salmon River Canyons have cliffs of volcanic rock present, their geological histories and morphologies are quite different. The rim of the Teton River Canyon is surrounded by irrigated fields. In addition, the Teton River Canyon has a much wider floodplain than the White Salmon River Canyon, which is largely composed of basalt cliffs. The Teton River Canyon has extensive terraces of loose soil that are poorly anchored by vegetation. There are far fewer terraces present in the White Salmon River Canyon and they are covered with both conifer and hardwood forests, which help to stabilize the underlying soil.

As for the sediments deposited in the lake bed, the major objective of dam removal is to rapidly drain the sediments into the river canyon below Condit Dam and release any terraces of loose sediments as quickly as possible until they reach a stable angle of repose. Remaining soil would be revegetated to stabilize it (this was not practical in the high desert of the Teton River Canyon). The wider floodplain of the Teton River Canyon allowed more lateral migration of the river channel, which undercut sediment deposits, than would be possible in the narrower White Salmon River Canyon.

Using the Teton Dam failure as an analog for sediment transport phenomena at Condit Dam ignores differences in bedrock strength, distribution of

Based on the available data it is reasonable to envision a scenario that includes blockage of the dam tunnel during the initial drawdown of the reservoir, combined with drawdown induced landslides of the pre-dam slopes to create a sediment rich environment that would be capable of delivering potentially lethal episodic turbidity impacts from fine sediment to the White Salmon River over a period of 5 to 10 years. The analyses completed to date assume no blockage of the tunnel, effective sediment transport of reservoir deposits during and immediately following drawdown, and no drawdown induced landslides, although these are likely to occur. In addition there are no analyses that address admitted limitations to HEC-6 modeling. *The Sediment Behavior Analysis Report* states (p.41) *"Several sediment erosion processes observed in field studies are not fully represented in the model. These include head cutting, embankment failure, lateral migration, varied sediment layers, multiple channels, and changes in stream width."* In our opinion, likely impacts associated with the alternative analyzed in the Draft SEIS have not been acknowledged or analyzed.

A6-20 Continued

A6-21

1.3. Conclusion: Reasonable Assurance Requires Reasonable Risk Assessment

Because none of the reasonable factors pertaining to the likelihood of tunnel blockage have been included in the Draft SEIS and supporting technical analyses, there is no reasonable assurance that:

- The duration of high turbidity and drawdown would not be extended beyond that described on page 4.2-8 of the Draft SEIS;
- Violation of water quality standards would not occur longer than described on page 4.2-8 of the Draft SEIS;
- Regeneration of clean spawning gravels would not take longer than described, with more salmon, trout, and char year classes lost;
- Direct impacts to all salmonid life stages and year classes would not be sustained longer than described;
- Thermal refuge upon which large numbers of regional fish depend to escape high water temperatures in the Columbia River would not be impacted longer than described;
- Sediment flushing, unstable slope removal with water cannons and associated noise/disturbance (i.e., water cannons and explosives), and reservoir revegetation would not take longer than described; and
- The duration of impacts to sediment accumulation in the in lieu site and Bonneville Pool would not be sustained longer than described, with secondary impacts possible from dredging in the Bonneville Pool.

A6-22

2. SEDIMENT VOLUMES AND DURATION OF IMPACTS ARE UNDERESTIMATED BY THE SUPPORTING TECHNICAL ANALYSIS

There is reasonable expectation of greater impacts due to errors or underestimates in underlying assumptions to the sediment transport analysis in the Draft SEIS. The duration of all impacts to aquatic habitat, salmonids, and water quality stem from these analyses, and are therefore also underestimated. These errors or underestimates are in addition to

A6-23

surficial deposits, and hydraulic differences between the two sites. The strong nature of the bedrock in the area of Condit Dam is evidenced by the narrow bedrock channels present downstream of the dam and the steep bedrock cliffs evident in pre-dam photographs. The relative lack of surficial deposits surrounding the Condit reservoir is related to the steep river gradient, the steep topography surrounding the White Salmon River in the reservoir area, and the size and geologic characteristics of the drainage basin. All of these factors make the situation at Condit Dam substantially different from the margins of the former Teton reservoir where river terraces and other low shear-strength surficial deposits are common. Also, many of the more than 200 landslides that occurred at Teton Dam were induced when the reservoir filled rather than during and after the failure. The continuing blockage of the Teton River channel with slide debris related to the dam failure retards sediment transport, providing yet another difference between the two sites. As a mitigation measure, PacifiCorp has agreed to dislodge unstable sediment once the drawdown has been completed. Removal of unstable sediment is not limited to reservoir sediment.

A6-21

The kinds of sediment erosion processes mentioned in the comment, if applied as variations in the modeling, would provide relatively narrow variations in model results. Much more important to the downstream impacts is the active sediment mitigation measures proposed.

A6-22

Following the 1980 eruption of Mount St. Helens, many fishery managers predicted that the recovery of aquatic organisms and salmonid populations would take decades because riverine habitats had been extensively damaged. Major sections of the Mount St. Helens volcano rushed downslope as debris flows into the Toutle River and its tributaries. These debris flows dwarf by many orders of magnitude any possible release of sediments from behind Condit Dam. The two major Toutle River tributaries (South Fork Toutle River and Green River) eroded through mudflow or tephra-fall deposits and returned to preeruption streambeds within a few years (Bisson et al. 2005). Therefore, suitable spawning gravel

should be present in the White Salmon River within a few years. The estimate of one to three years for recovery of spawning gravels is consistent with the recovery of larger streams in the Toutle River basin following the eruption of Mount St. Helens.

Returning adult salmon and steelhead were scarce for the first 3 years after the eruption (Lieder 1989). Peak suspended sediment concentrations of 1,770,000 mgLl were recorded in the Toutle River and were often greater than 10,000 mgLl for several years after the eruption, yet some adult steelhead returned to the river during the first year after the eruption (Bisson et al. 2005). Mudflows continued in the Toutle River system for many years following the 1980 eruption. Numbers of steelhead redds (egg deposition sites) observed in the mainstem of the south fork of the Toutle River rose from 0 in 1980 to an average of 5.7 redds/km in 1984 and further to 21.5 redds/km in 1987 (Lucas and Pointer 1987).

After an initial population crash due to direct mortality from debris flows, exposure to high temperatures, and the levels of suspended sediments, a rapid posteruption rebound in primary productivity, aquatic and terrestrial invertebrate populations, and rearing salmonid populations occurred (Bisson et al. 2005). Within 2 to 3 years, productivity and the abundance of invertebrates and rearing fish reached preeruption levels and by 5 years, productivity and abundances exceeded preeruption levels. A gradual return to the range of preeruption abundance occurred after the initial spike in abundance, with a return to the natural range approximately 15 years after the eruption (Bisson et al. 2005).

As described in the responses to Comments A6-12 and A6-13, reasonable measures to prevent tunnel blockage would be taken and the hypothetical follow-on effects in the comments are speculative.

A6-23

See the responses to Comments A6-12 and A6-13. In addition, PacifiCorp had a new bathymetric survey conducted and the accumulated sediment recalculated in 2006 (Finley Engineering Company 2006). The calculated quantity in the reservoir, based on comparing the 1912 contours with the 2006 contours, is 2,296,218 cubic yards, which is very

the unsupported assumption of no tunnel blockage described in Section 1 above, as described below.

A6-23 Continued

2.1. Prior Comment on Sediment Analyses

Prior comment on the analytical methods of estimating sediment impacts have not been adequately answered in the Draft SEIS or supporting documents. The comments are reiterated below.

A6-24

The analysis in the Draft SEIS depends on information developed by G&G Associates (May 2004) on behalf of PacifiCorp to determine sediment volumes and duration of impacts. Two documents were prepared by G&G Associates including the *Condit Dam Sediment Behavior Analysis Report* and the *Sediment Behavior Effects on Beneficial Uses Report*. The Counties expressed a number of concerns with the analyses contained in the reports in a November 19, 2004 letter prepared by A.C. Kindig & Co. and Associated Earth Sciences, Inc.[5] The issues identified in the comment letter have not been addressed in the Draft SEIS. The *Sediment Behavior Analysis Report* provides analyses of Short-term, Mid-term and Long-term erosion. The Short-term erosion analysis does not include any information related to the effects of blockage of the drain tunnel during the initial drawdown phase (see Section 1 above), and fails to consider any effects of landslides of the pre-dam slopes as a result of drawdown. The Mid-term erosion analysis underestimated total erosion by: 1) using steep slope calculations that assumed an average gradient of 20% when the stated range of values was 20% to 100%, 2) assuming full forest cover of exposed slopes in only 3 years, and 3) failing to quantify the impacts of ongoing mass wasting events. The Long-term erosion analysis underestimated total erosion potential intensity and duration since 1) it assumed an angle of repose of 1.73H:1V for embankment sediments, whereas actual angle of repose for the fine grained sediments will be less, and 2) did not account for sediment input from ongoing mass wasting events.

A6-25

A6-26

The Six-Month Update for the Condit Hydroelectric Project (September 23, 2005) contains PacifiCorp's Reply to Public Comments dated May 9, 2005. The responses developed by PacifiCorp leave the issues identified in the Counties' comment letter unaddressed and unresolved. Specific comments on some of PacifiCorp's Reply to Public Comments are summarized below.

A6-27

- P. 13 of 26 – 4a. Sediment Quantity
  Response 4a (p. 13 & 14) states: " *...a narrow width was used to conservatively estimate the smallest volume of sediment that would erode in the* ***first year*** *after dam removal. This is a conservative estimate....Using the narrow stream width, G&G Associates predicted that 1.6 mcy of sediment would erode in the first year...using a wider stream width makes little difference in the predicted eroded volume"* [emphasis added].

[5] Attachment to Klickitat and Skamania Counties' November 23, 2004 letter to U.S. Army Corps of Engineers, Portland District, Re: Corps Project No. 200400523, Condit Dam Removal.

similar, but slightly less than the 2.4 million cubic yards used in the G&G Associates analyses (2004a).

A6-24
See responses to Comments A6-12, A6-13, A6-16, and A6-20.

A6-25
Implicitly, this comment continues to make the incorrect assumption of long-term mass wasting as observed at Teton Dam. As discussed in Section 4.1 Geology, Soils and Sediments in the FSEIS, there would be unstable sediments once the dam is removed and those unstable sediments from any source would be removed. Also see the responses to Comments A6-12, A6-13, and A6-16. Particularly note that the active measures of dislodging unstable sediment slopes would limit the length of time when high sediment load in the river could be expected.

A6-26
The specific volume of sediment that would be eroded is unknown, because the sediment and flow at the time of dam breach are unknown. For this reason, upper and lower estimates of eroded sediment were given to bracket the potential volume of sediment eroded. Several different time periods after dam removal were analyzed, including near, mid-, and long term. The volume of eroded sediment used to analyze suspended sediment impacts for each of these was the volume that created the largest effect for each time period.

The Sediment Behavior Analysis Report (G&G Associates 2004a) gave the range of potential eroded sediment volume for the first year after dam breaching of 2.2 to 1.6 million cubic yards. Details are thoroughly discussed in the Sediment Behavior Analysis Report starting at page 38. When considering near-term (first year) total suspended sediment (TSS) concentrations it would be *conservative* to assume the higher volume of 2.2 million cubic yards would be eroded. When considering long term (beyond three years after dam removal) TSS affects, it would be *conservative* to assume the lower volume (1.6 million cubic yards) of sediment would be eroded in the first year, thereby, leaving a larger volume of sediment available for erosion in the long term erosion analysis.