Friends of Living Oregon Waters (FLOW)

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Sent by email on April 5th at 12:20 PM to Judy Linton, US-ACE, Portland District, judy.l.linton@usace.army.mil (as printed in the public notice) and to Bob Lobdell, Oregon Department of State Lands, bob.lobdell@state.or.us (as printed in the public notice).

Re: Comments on NWP-2008-71

Friends of Living Oregon Waters (FLOW), P.O. Box 2478, Grants Pass, Oregon, 97528, is an IRS-determined 501(c)3 organization comprised of hundreds of individuals dedicated to advocating for the protection and restoration of Oregon's waters. FLOW uses legal oversight, field monitoring and public education to help protect *Oregon Waters* from the impacts of pollution and development. FLOW monitors the ecological health and management of all Wild and Scenic Rivers in the state of Oregon and all activities that may impact their protected values, including working to protect the Chetco River. FLOW members use and enjoy the waters of the Chetco River, including areas that would be impacted by possible gravel mining operations. FLOW members use the Chetco River to raft, hike, swim, photograph, view wildlife and birds, study, and find solitude.

For the reasons stated below FLOW recommends a complete consideration of all relevant issues, as detailed in your list of further issues to be studies, and full analysis of issues contained therein. A full Environmental Impact Statement for this proposal should be prepared, which will provide for the most meaningful input from citizens and agencies working on the project.

In addition, we are encouraged by the appropriate and detailed notice list that you provided these initial review documents to, and please take every effort to meaningfully involve citizens, agencies, and organizations in this process, both through review of written comments and in public meetings.

1. NEPA requires the preparation of an environmental impact statement or EIS if substantial questions are raised whether the proposed action may have a significant effect upon the human environment (Save the Yaak Committee v. Block, 840 F.2d 714 (9th Cir. 1988); Foundation for North American Wild Sheep v. USDA, 681 F.2d 1172, 1178 (9th Cir. 1982)). In deciding whether an agency's decision not to prepare an EIS, pursuant to NEPA, is appropriate, the "responsible agency must have 'reasonably concluded' that the project will have no significant adverse environmental consequences." (San Francisco v. United States, 615 F.2d 498, 500 (9th Cir. 1980). A significant issue presented by the materials is that little to no findings regarding environmental impacts are provided to the public at this point. The true basis of informed public

comment and decisionmaking will come in the issuance of the Draft EIS that reviews these issues in detail. This issue is especially important in Essential Habitat Streams and in waters that contain Threatened and Endangered Species such as the Chetco River.

2. The Chetco River is included under the Wild and Scenic Rivers Act as a protected component. The primary objectives of the Act are to preserve the free flow of rivers and to protect the outstandingly remarkable values of the river that led to their designation. The U.S. Army Corps of Engineers (ACOE) should "protect and enhance" the outstandingly remarkable values of the Chetco River as designated by Congress. These values include: Fisheries, Water Quality and Recreation.

For instance, the fisheries element of the outstandingly remarkable values needs to be analyzed concerning the potential mining impacts including: direct harm to species; loss or degradation of spawning beds and juvenile rearing habitat; migration blockages; channel widening and shallowing; loss of hydrologic and channel stability; loss of pool/riffle structure; increased turbidity and sediment transport; increased bank erosion and/or stream bed downcutting; and loss or degradation of riparian habitat. The impacts can extend far beyond the excavation site, and recovery time can take decades. Increased suspended sediments from mining can adversely affect salmonid fishes. The size of the sediment particles and tidal current velocities typically affect the duration of sediment suspension in the water column. Larger particles, such as sand and gravel, settle rapidly, but silt and very fine sediment may be suspended for several hours. Suspended sediments can adversely affect migratory and social behavior and foraging opportunities (Bisson, P.A and R.E. Bilby, 1982.Avoidance of suspended sediment by juvenile Coho salmon. N.Amer. J. Fish. Manage. 2: 371-374.; Berg L. and T.G. Northcote 1985. Changes in territorial, gill- flaring, and feeding behavior in juvenile Coho salmon following short-term pulses of suspended sediment. Can. J. Fish. Aquat. Sci. 42:1410-1417).

3. Due to past, present and reasonably foreseeable actions in the Chetco River watershed FLOW strongly recommends that extraction operations be judged in the context of their spatial, temporal, and cumulative impacts; and that potential impacts to habitat be viewed from a watershed management perspective.

It is imperative that the Corps work with NMFS to properly gauge the proposed mining operation impacts on fisheries. Their role in providing consultation is critical to understanding the impacts of this project and this information needs to be communicated to the general public through the EIS process.

A federal action is significant where it "is related to other actions with individually insignificant but cumulative significant impacts." 40 C.F.R. § 1508.27(b)(7). The consequence of several "actions [that] will have cumulative or synergistic environmental impacts… must be considered together." Kleppe v. Sierra Club, 427 U.S. 390, 410, 96 S.Ct. 2718, 2730, 49 L.Ed. 2d 576 (1976). The agency must perform a cumulative impact analysis that includes "other past, present, and reasonably foreseeable future actions." 40 C.F.R. § 1508.7. Environmental analysis should analyze the cumulative effects of mining activities in conjunction with other activities (mining, logging, road construction, in-stream gravel removal) in the watershed.

Cumulative effects are defined in 50 CFR 402.02 as “those effects of future State or private activities, not involving Federal activities that are reasonably certain to occur within the action area of the Federal action subject to consultation”.

For example, cumulative impacts on anadromous fish habitat caused by multiple extractions and sites along a given stream or river are compounded by other riverine impacts and land use disturbances in the watershed. FLOW recommends that this gravel mining operation be judged from a perspective that includes their potential adverse cumulative impacts (Kondolf 1997; see also Council on Environmental Quality, Office of Federal Activities 1997 and U.S. EPA 1999 for general cumulative impact guidance).

4. In the deliberative NEPA process, there is an opportunity for governing agencies of the Chetco River to establish important baseline protections for the river, including implementation of a “sediment budget”, as is in place in various Oregon river systems.

5. Instream gravel mining from reaches of DSL-managed streams that support spawning, rearing, and feeding of listed sensitive, threatened or endangered fish species (salmonids or others) should not be allowed. In addition, it is recommended that this restriction be applied to streams that support Coho salmon because of their seriously declining populations, including the Lower Chetco River. The severity of the population declines and the lack of definite information regarding potential impacts of gravel mining operations make this the only reasonable and prudent approach to responsible management of these populations.

6. Instream mining can directly impact salmonids by degrading and simplifying spawning and rearing habitats, increasing turbidity and decreasing substrate stability thereby influencing lower trophic levels upon which salmonids depend on for food (Spence, B.C., G.A. Lomnicky, R.M. Hughes, and R.P. Novitzki. 1996. An ecosystem approach to salmonid conservation. TR-4501-96-6057. ManTech Environmental Research Services Corp., Corvallis, Oregon.)

Instream mining typically alters channel geometry, including local changes in gradient and width-to-depth ratios. Local scouring and erosion can occur as a result of increased water velocity and altered sediment load associated with gravel mining. Changes in channel stability can also cause a loss of riparian vegetation. Channel bed incision can occur upstream or downstream from a mining operation (Kondolf, G.M. 1994. Geomorphic and environmental effects of instream gravel mining. Landscape and Urban Planning. 28: 225–243). The premise that instream mining can be accomplished without affecting the channel may ignore downstream bed load requirements for channel maintenance and the complex physiochemical and biotic responses to changes in bed load (Meador, M.R. and A.O. Layher, 1998. Instream sand and gravel mining: Environmental issues and regulatory process in the United States. Fisheries. 23 (11): 6-13). The majority of the bedload in a river is transported during high flows, particularly floods. Multiple factors can slow water velocity in streams and rivers including decreasing gradient, widening of the channel, and friction of transporting bedload across the streambed. In cases where the bedload is lost upstream due to instream mining, water velocity does not decrease as quickly and as a result the water picks up sediment and new bedloads by eroding banks and removing gravel from other deposits including downstream gravel bars and salmonid spawning beds. This situation is referred to as “hungry water” (Kondolf, G.M. 1997. Hungry

water: effects of dams and gravel mining on river channels. Environmental Management. 21 (4): 533–551).

Extraction of alluvial material from within or near a stream bed has a direct impact on the stream's physical habitat parameters such as channel geometry, bed elevation, substrate composition and stability, instream roughness elements (large woody debris, boulders, etc.) depth, velocity, turbidity, sediment transport, stream discharge, and temperature (Kondolf 1997; OWRRI 1995; Meador and Layher 1998). OWRRI (1995) states that: Channel hydraulics, sediment transport, and morphology are directly affected by human activities such as gravel mining and bank erosion control. The immediate and direct effects are to reshape the boundary, either by removing or adding materials. The subsequent effects are to alter the flow hydraulics when water levels rise and inundate the altered features. This can lead to shifts in flow patterns and patterns of sediment transport. Local effects also lead to upstream and downstream effects. Altering these habitat parameters can have deleterious impacts on instream biota, food webs, and the associated riparian habitat (Spence et al. 1996; Brown, A.V., M.M. Lyttle, and K.B. Brown. 1998. Impacts of gravel mining on gravel bed streams. Trans. Amer. Fish. Soc. 127: 979-994).

Instream gravel operations disrupt the preexisting balance between sediment supply and transporting capacity, and can result in channel incision and bed degradation (Kondolf 1997; Meador and Layher 1998). This is partly because gravel "armors" the bed, stabilizing banks and bars, whereas removing this gravel causes excessive scour and sediment movement (OWRRI 1995; Kondolf 1997). Degradation can deplete the entire depth of gravel on a channel bed, exposing other substrates that may underlie the gravel, which would reduce the amount of usable anadromous spawning habitat (Kondolf 1997; OWRRI 1995). Thus, gravel removal not only impacts the extraction site, but also may reduce gravel delivery to downstream spawning areas (Brown et al. 1998).

Instream gravel operations can cause increases in suspended sediment, sediment transport, water turbidity, and gravel siltation (Kanehl, P. and J. Lyons. 1992. Impacts of in-stream sand and gravel mining on stream habitat and fish communities, including a survey on the Big Rib River, Marathon County, Wisconsin. Wisconsin Depart. Nat. Resour. Res. Rep. 155, Madison, WI. 32 p.); OWRRI 1995; Kondolf 1997). Brown et al. (1998) also note that the fine material can travel long distances downstream as a plume of turbidity while the gravel is being removed, and during floods, turbidity is likely to be higher than normal for even longer distances downstream due to the higher flow rate and increased entrainment of sediments as a result of channel deformation. Fine sediments in particular are detrimental to salmonid redds (nests) because (1) blockage of interstitial spaces by deposited silt prevents oxygenated water from reaching the incubating eggs within the redd, as well as the removal of waste metabolites; (2) embryos or sac fry can be smothered by high concentrations of suspended sediments that enter the redd; and (3) emerging fry can become trapped if enough sediment is deposited on the redd (Reiser, D.W. and R.G. White. 1988. Effects of two sediment size-classes on survival of steelhead and Chinook salmon eggs. N. Amer. J. Fish. Manage. 8: 432-437). High silt loads may also inhibit larval, juvenile and adult behavior, migration, or spawning (Kanehl and Lyons 1992; OWRRI 1995).

Operation of heavy equipment in the channel bed can directly destroy spawning habitat, rearing habitat, the juveniles themselves, and macroinvertebrates, and produce increased turbidity and

suspended sediment downstream (Kondolf 1994). Additional disturbances to redds may occur from increased foot and vehicle access to spawning sites, due to access created initially for gravel extraction purposes (OWRRI 1995). Also, heavy equipment is powered by diesel fuel and lubricated by other hazardous petroleum products, leading to the potential for toxic chemical spills. Petroleum-based contaminants, such as fuel, oil, and some hydraulic fluids, contain harmful polycyclic aromatic hydrocarbons.

Instream roughness elements, including the gravel itself, play a major role in providing structural integrity to the stream or river ecosystem and provide critical habitat for salmonids (OWRRI 1995; Collins, B.D. and D.R. Montgomery. 2002. Forest development, wood jams, and restoration of floodplain rivers in the Puget Lowland. Restoration Ecol. 10:237-247). These elements are important in controlling channel morphology and stream hydraulics, in regulating the storage of sediments, gravel and particulate organic matter, and in creating and maintaining habitat diversity and complexity (OWRRI 1995).

According to Oregon Department of Fish & Wildlife, past Freeman Rock mining operations have resulted in a destabilized river area, which has "created an undefined channel, resulting in shallow riffle crests that limit Chinook salmon migration during low Fall flows, and created potential fish stranding areas where Fall freshets occur."

Instream gravel mining over the last several decades has resulted in significant impacts to the Chetco river estuary. As documented by NMFS, studying a 62-year record over aerial photos, documented that mining operations in this area altered the Chetco river, resulting in a river system "changed from complex with alternating gravel bars to one with a simplified channel where the only shallow water habitat is on the periphery of the channel. Associated with the loss of gravel bars is the loss of backwater habitats which are particularly important for Pacific Salmon."

To satisfy the procedural requirements of NEPA a full Environmental Impact Statement that addresses the above issues must be prepared.

7. Cultural resource impacts should be studied and provided to the public for comment, as required by law.

Summary

FLOW has significant concerns about the implications of forthcoming applications for mining in the Lower Chetco River. The proposed mining must meet the requirements of federal and state law and the impacts of this proposal should be made available for public review and comment before a decision is issued. This project proposal has major impacts to the Chetco River and many citizens are concerned about the findings of the forthcoming Environmental Impact Statement.

Respectfully submitted,

Joe Serres, J.D., M.B.A.
President, Board of Directors
Friends of Living Oregon Waters (FLOW)