RESPONSE TO EXTENDED COMMENTS

Tentative Order No. R1-2012-0087
Waste Discharge Requirements
For
Discharges Related to Green Diamond Resource Company's Forest Management Activities Conducted within the Area Covered by its Aquatic Habitat Conservation Plan
In the
North Coast Region

Prepared by:
North Coast Regional Water Quality Control Board
September 18, 2012

The comments received during the extended comment period focus on details of a document titled "*Review of Green Diamond Resource Company's Timber Harvest Operations and Forest Management Activities as they Relate to Rate of Harvest and Cumulative Watershed Effects; June 2012"* (White Paper), which was prepared solely by staff of Green Diamond Resource Company and submitted as part of a packet of information for its Report of Waste Discharge (ROWD) for preparation of Waste Discharge Requirements (WDRs). In the White Paper, Green Diamond explains the reasoning behind the development of the management measures included in their Aquatic Habitat Conservation Plan (AHCP). Green Diamond also addressed the latest information regarding concerns about cumulative impacts and rate of harvest. Two other documents were also included in the ROWD, the Project Description and the Covered Activities Matrix. No additional comments were received on these other two documents.

Documents supporting the development of the Green Diamond Forest Management WDR have always been available upon request. There is no legal requirement to publish all materials on the Regional Water Board website, and the White Paper was provided and posted in response to a member of the public who spoke at the August 23 workshop. As a courtesy, the Regional Water Board allowed an additional seven (7) days for limited review of the documents associated only with the ROWD, with a new close of public comment date of 5:00 p.m. on September 12, 2012.

Most of the comments were written with the erroneous assumption that Regional Board staff had written the White Paper. A clarification was issued to the commenters regarding the authorship of the White Paper on September 13, 2012.

The following are response to written comments received during the public comment period on the subject tentative order.

CONTENTS: All comments received during the extended comment period are listed below, followed by Regional Board Staff response

Comments received during the extended comment period:

Randy Klein	September 11, 2012
Bill Trush	September 12, 2012
Leslie Reid, (forwarded from Randy Klein)	September 12, 2012
Andrew Orahoske, EPIC	September 12, 2012
Dave Feral, Mad River Alliance	September 12, 2012
Randy Klein, revised	September 13, 2012
Andrew Orahoske, EPIC	September 13, 2012

Comments from Randy Klein, September 11, 2012; revised September 13, 2012

1. *"The comments that follow respond to a document written, I believe, by Kaete King, staff engineer with the North Coast regional Water Quality Control Board…"* [This statement was changed in the revised letter to reflect that Green Diamond wrote the document. However, multiple people provided comments based on this misunderstanding so we address the comment here.]

Response: There appears to be some misinformation regarding authorship of the document titled, "Review of Green Diamond Resource Company's Timber Harvest Operations and Forest Management Activities as They Relate to Rate of Harvest and Cumulative Watershed Effects". This document was written by Green Diamond and not by any member of the Regional Water Board staff.

2. *"The 'Review' [White Paper] argues that forest practices in current use by Green Diamond Resource Company (GDRC) keep cumulative effects to a minimum, or at least to a level that meets the limits set forth in the North Coast Basin Plan. It advocates for granting of a 'Waiver of Waste Discharge Requirements' (WWDR) for GDRC while ignoring recent research demonstrating the importance of considering and regulating harvest rate in protecting water quality."*

Response: This is not a comment on the tentative order. Moreover, as explained above, the comment addresses a document not prepared by the Regional Water Board, although, it appears from other comments herein that the commenter believed that Regional Water Board staff had written the referenced document.

On February 16, 2012, pursuant to Water Code section 13260(a), Green Diamond submitted a draft ROWD for discharges related to its forest management activities that occur within the area covered by its AHCP. The ROWD was deemed complete on July 26, 2012, at which time it became available to the public. Green Diamond's ROWD includes a project description, covered activities matrix, and the White Paper. The project description identifies the project area and the activities to be covered under the proposed Forest Management Waste Discharge Requirements (FMWDRs). The covered activities matrix provides a crosswalk of the conservation measures that Green Diamond implements to the CEQA and NEPA reviews that provided impacts analysis. In developing the draft FMWDRs,

the Regional Water Board relied on the project description and primary documents, including the NEPA and CEQA reviews, AHCP section 6.2, and the Department of Fish and Game Master Agreement for Timber Operations (MATO). The White Paper was provided as a reference document only and was not relied upon in developing the FMWDRs.

Much of the extended comments focus on the White Paper's response to Klein et al., 2012. Klein et al. is a scientific paper that analyzed various turbidity data from North Coast streams. Based on the analyses, the authors conclude that high harvest rates can trigger cumulative watershed effects, even when implementing modern best management practices. The White Paper argues that the benefits from HCP-type landscape plans will require more time to manifest. In its paper, Green Diamond acknowledges that over time better ways to manage watersheds may be developed and its AHCP includes a mechanism to incorporate such new information into practice as it becomes available through the Effectiveness Monitoring and Adaptive Management Programs. While the Regional Water Board does rely in part on the monitoring and adaptive management components of the AHCP, the findings and conclusions of the draft Order do not rest on either the White Paper or the Klein paper. While the Klein paper contains interesting information and analyses, rate of harvest is only one of many factors that represent potential impacts that are addressed through the management measures and conditions of the draft Order. The Klein paper does not contain sufficient evidence to change the staff recommendation to the Regional Water Board regarding the ability of the FMWDRs to improve water quality, control cumulative impacts, and properly regulate water quality in accordance with the law without imposing limits on rate of harvest.

In development of the draft FMWDRs and analysis of Green Diamond's proposed activities, the Regional Water Board executes its authority to establish compliance with the Basin Plan. The EIS analysis concludes that implementation of the conservation measures included in the AHCP will achieve increased benefits to water quality overall (FEIS Chapter 4). In this Order, we rely on a robust combination of extensive management measures, protective riparian buffers, and inventory and treatment of legacy sediment. Verification of proper implementation and effectiveness is achieved with a comprehensive monitoring program. This Order contains requirements that are significantly stronger than what is required from other timber harvest plan proponents in the north coast region, including enhanced riparian and geology buffers, seasonal restrictions, and yarding restrictions. We believe the permit, as drafted, addresses cumulative impacts, including those from rate of harvest, through the required management measures and through the monitoring program.

3. *"Roads are being appropriately re-engineered by GDRC to reduce sediment threats. However, that cannot be used to justify ignoring the well-documented sediment threats triggered by removing trees from steep hillslopes."*

Response: The Order includes a suite of management measures that address and limit harvesting on steep streamside slopes. Slope stability measures include identification of geologic features, buffer zone widths, harvest limitations, and site-specific evaluations by a professional geologist.

4. *"The CFPR codes cited above do not explicitly provide for harvest rate limits at a watershed scale. If harvest rates are indeed limited, how could the clearly excessive harvest rates have been applied in Elk River and Freshwater Creek under Palco ownership in the 1990s-2000s? Back then, the Regional Board actually imposed harvest rate limitations through the WWDR process, in direct contradiction to the proposed WWDRs for GRDC lands without such limitations."*

Response: Refer to response to comment 2. Also, the Regional Water Board has not imposed harvest rate limitations on Green Diamond in the South Fork Elk River Watershed-wide WDRs because Green Diamond proposed a rate of harvest limitation for its South Fork Elk River property based on site specific conditions which the Regional Water Board deemed was acceptable.. The same harvest rate limitation for Green Diamond's South Fork Elk River property is maintained in the current version of their South Fork Elk River Management Plan, which is included as Attachment C of the Order.

The Regional Water Board has issued only two watershed-specific permits that limit rate of harvest. Harvest rates were specified on Palco's Elk River and Freshwater Creek properties because there was overwhelming evidence of cumulative watershed effects from timber harvesting activities in these two watersheds. While Palco had an approved HCP that contained stringent interim management measures at the time, it failed to account for unique site-specific characteristics of these watersheds. Section 2.6 of the EIS explains differences in the Palco HCP. (EIS, 2-50.) Moreover, Palco had a history of non-compliance with forest management conditions from various state and federal agencies which led to a need for more stringent permits. In contrast, Green Diamond has a record of cooperation and compliance with the Regional Water Board.

5. *"If indeed the AHCP is improving conditions for fish despite high harvest rates on their lands, then it would seem beneficial to release those data to verify this. Instead, they chose to keep their data unavailable to the public and scientific community."*

Response: Green Diamond's AHCP effectiveness monitoring program is included in the Monitoring and Reporting Program (MRP) for this Order. Monitoring summaries will be provided to the RWB as requirement of the MRP and raw data will be made available upon request. Also refer to response to comment 2.

6. *"In summary, the 'review' relies almost entirely on verbage to advocate for approval of the WWDR on GDRC lands, despite the fact that data exist to make a quantitative evaluation. With all the TTS monitoring Green Diamond Resource Company has done, they are in a great position to demonstrate whether or not their watersheds are recovering, or if there is degradation of water quality in areas with high rates of recent harvest."*

Response: See responses to comments 2 and 5.

7. *"I urge you to defer approval of the WWDR for GRDC lands until reasonable limits on the rate of timber harvest are incorporated."*

Response: See response to comment 2 and 4.

Comments from Bill Trush, September 12, 2012

8. *"The recent North Coast RWQCB study, Review of Green Diamond Resource Company's Timber Harvest Operations and Forest Management Activities as They Relate to Rate of Harvest and Cumulative Watershed Effects does not warrant concluding that implementation of Green Diamond's management practices, and the current regulatory provisions in place, "avoid, minimize and mitigate potential negative impacts of Green Diamond's operations on the aquatic system and protect, and in some cases improve, water quality."*

Response: See response to comment 2.

9. *"I am not saying that Green Diamond engages in poor forest management practices (given my first-hand experience living in Fieldbrook Valley the last 20 years), but that potential cumulative watershed effects have not been assessed adequately. This remains the greatest threat to salmon/steelhead population recovery and general stream/river ecosystem health in coastal Northern California watersheds."*

Response: See response to comment 2.

10. *"An analysis based on individual annual turbidigraphs with quantitative thresholds could have been a major step taken toward transparency and objectivity. What I found most disappointing, however, was the absence (and it is so glaring that 'avoidance' rather than 'absence' is more appropriate) of any quantitative threshold upon which the turbidity analysis was performed and evaluated."*

Response: See response to comment 2. The turbidity data that Green Diamond collects as part of the monitoring program will be available to the Regional Water Board for analysis.

11. *"Could the NCRWQCB authors of this review give us an example of what a hypothetically unacceptable Figure 4 might look like, and outline what actions would have been recommended if that was the actual outcome?"*

Response: See response to comment 1 and 2. Turbidity monitoring data, as well as other monitoring data, will be made available to the Regional Water Board for analysis as a condition of this Order and the associated MRP.

Comments from Leslie Reid (forwarded from Randy Klein), September 12, 2012

12. *"Those statements regarding paired watershed studies are the equivalent of an assertion that 'you no longer need to believe in gravity because Newton used an old-fashioned apple.' Paired watershed studies are powerful in part because they allow certain variables to be controlled for, and this facilitates better understanding of the underlying causes of observable treatment effects."*

Response: It is unclear exactly which statements Ms. Reid is referring to in Green Diamond's White Paper. Please refer to the MRP for details regarding the monitoring that will be required as part of this Order.

13. *"In particular, the observed peakflow changes for the clearcutting are predictable on the basis of measurements of changes in rainfall interception and estimates of transpiration changes after logging. In other words, it doesn't matter what practices were used to clearcut and yard the trees, since it's the absence of the trees that generated the effect."*

Response: Green Diamond's White Paper discusses the potential forest management effects on the hydrologic cycle, including peak flow effects. The cumulative impacts on hydrologic conditions were fully analyzed in the EIS and the proposed implementation of the AHCP was not found to result in a significant change.

Comments from Andrew Orahoske, EPIC, September 12, 2012

14. *"EPIC disagrees with the water board staff's assertion in the Green Diamond Review that existing regulatory restrictions on timber harvest are sufficient to meet water quality objectives. See Green Diamond Review at 1-2."*

Response: See response to comment 1 and 2.

15. *"The case study provided in the Review focuses on the Maple Creek watershed. EPIC contends that this watershed is not a good representation of the sediment & temperature impaired watersheds on Green Diamond's property. This is because the geology in Maple Creek is not as erodible and prone to increased turbidity as other watersheds, such as the entire Mad River. By choosing to focus on Maple Creek and giving a summary of turbidity data from that watershed, the Review cannot credibly support a conclusion that other watersheds have seen similar results."*

Response: The Order relies, in part, on Green Diamond's AHCP. The AHCP area is divided into 4 hydrographic planning area groups with geologic similarities. Management measures in the AHCP are tailored site-specifically to the characteristics of the hydrographic planning areas. Further, effectiveness monitoring is not limited to the Maple Creek watersehd, but is spread across Green Diamond's ownership.

16. *"We incorporate by reference all comments provided to the water board on the Green Diamond Review by Randy Klein and attached to these comments."*

Response: See responses to comments 1-8, above.

17. *"We would also like to bring to the water board's attention that turbidity and sediment are not the only concerns with clearcutting and short rotation forestry as practiced by Green Diamond. Also attached, we argue that Stubblefield et al (2012) clearly shows that Green Diamond's forestry practices reduce the overall summer flow in watersheds because the regenerating stands of densely stocked trees simple use more water than forests that are more complex in structure. This reduction in summer flow is not addresses in the Green Diamond Review. A reduction in summer flow directly impacts water quality, especially temperature at critical times of the year when aquatic species may be at risk due to a combination of high temperatures and low flow."*

Response: Regarding the conclusions in Stubblefield et al 2012 (presented at the Coast Redwood Forests in a Changing California Science Symposium was held June 21-23, 2011 at UC Santa Cruz), this general technical report from the Pacific Southwest Research Station makes no conclusions about Green Diamond's forestry. The paper demonstrates a model that was developed specifically in the context of the Douglas fir dominated parts of the Mattole River watershed. Using assumptions including the lack of any interim forestry, the model evaluates the water usage of "thickets" of high density Douglas fir regeneration under 5cm diameter at breast height. There is no basis for correlating the findings in the paper with the conditions on Green Diamond's ownership. The covered area covers a wide variety of vegetation communities, climates, and stand age classes. The narrow scope of the findings in Stubblefield preclude extrapolation to these diverse habitats. Also, the silvicultural practices that Green Diamond employs include the use of planting and thinning prescriptions that reduce overall density and encourage growth of larger trees, reducing the potential for dominance of high density thickets of small trees. Further, the EIS evaluated the hydrologic effects of Green Diamond's operations, including effects on low summer base flows. It found that summer base flows would be increased for a few years after clearcutting and the increase would then generally diminish. Conservation measures included in the proposed action were found to minimize adverse impacts to hydrology.

18. *"In conclusion, we urge the water board to reopen the public process and start over on developing the Green Diamond WDR for timber harvest operations. We cannot support the proposed permit because it does not ensure compliance with the Clean Water Act or the Porter-Cologne Act. In the interests of efficiency, we respectfully request that the water board staff engage with EPIC and other local stakeholders to develop a proposed order that more appropriately addresses the best available science."*

Response: Ample opportunity for public involvement has been provided. This item was discussed as an informational item at the June 2012 board meeting in Willow Creek. As required, a 30-day public comment period was provided for review of the draft permit and associated documents, starting on August 3, 2012 and closing on September 3, 2012. To further public involvement, a public workshop was conducted on August 23, 2012. And, an extended public comment period for reviewing items in Green Diamond's ROWD was opened until September 12, 2012.

Comments from Dave Feral, Mad River Alliance, September 12, 2012

19. *"Given that my e-mail on April 23rd and my phone conversation with Ms. King on April 24, 2012, was in regards to the Green Diamond FWDR, then you may understand my dismay when a document prepared and substantially completed by her by June, 2012 was not made available to me until after I had made a presentation to the North Coast Regional Water Quality Control Board roughly three months later on August 23, 2012. The clear intention of my e-mail on April 24th was that Ms. King should please send me any relevant papers or updates…"*

Response: See response to comment 1. It was not clear to Regional Water Board staff at the time that Mr. Feral's request would apply to Green Diamond's White Paper. As stated above, the draft Order does not rely on the analyses and conclusions contained in the White Paper. Staff did provide a copy of the White Paper to Mr. Feral at the workshop, and provided additional time for public comment.

20. *"Given the disparity of opinion on this I suggest we work toward a reasonable solution to this matter. As is I suggested in my last letter and presentation on August 23rd, an annual rate of harvest of < 1.5 % selective cut is recommended to reduce the cumulative ill effects for salmonids living in the Mad River Watershed."*

Response: This comment was addressed when it was originally submitted in the regular comment period and is found as responses to numbers 5 and 6 in those responses to comments.

21. *"Please also consider this letter a formal request to receive all future data, reports and documentation prepared for, which relate to, or which could impact policymaking in regard to sediment delivery rates and waste discharge rates of timber harvesting operations taking place in the Mad River Watershed."*

Response: It is Regional Water Board's policy to provide all members of the public broad and convenient access to its records and to promptly make the fullest possible disclosure of its records. Specific files may be requested and reviewed at our office during regular office hours, which are generally weekdays from 8:00 a.m. to 5:00 p.m., excluding holidays. Persons interested in reviewing or obtaining copies of public records are encouraged to make a file review appointment in advance. An appointment can be made by email, fax, telephone, or in person.

Contact information is below:
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Phone (707) 576-2220 FAX (707) 523-0135

In addition, it is recommended that interested parties subscribe to our email lists through our website:
http://www.swrcb.ca.gov/resources/email_subscriptions/reg1_subscribe.shtml

Comments from Andrew Orahoske, EPIC, September 13, 2012

22. *"The document fails to identify the authors, and the water board failed in identifying the document from the outset, so I am even more confused about this process now than before. If, as you say, Green Diamond provided this disputed document to the water board as part of 'package' of materials, then why haven't you provided that full package of materials to the public for consideration? Even more baffling is the partial release late in the process, and then more confusion about its origin, only to attempt clarification after the public comment period has closed again. This is absolutely astonishing considering numerous well paid staff are supposedly responsible."*

Response: See response to comments 1 and 2. The White Paper, Project Description, and Covered Activities Matrix, which are the documents that make up the ROWD, were listed and specifically described to you in a letter dated September 5, 2012. The letter

unambiguously stated that the White Paper "is part of the Report of Waste Discharge provided by Green Diamond in its application for Waste Discharge Requirements."