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September 14, 2016

By Email to mnapolitano@waterboards.ca.gov

Mike Napolitano
San Francisco Bay Water Quality Board
1515 Clay Street, 14th Floor
Oakland, CA 94612

Re: Comments on Draft EIR for General Waste Discharge Requirements for Vineyard Discharges in the Napa River and Sonoma Creek Watersheds

Dear Mr. Napolitano:

This office represents Living Rivers Council (LRC), a non-profit association, with respect to the General Waste Discharge Requirements for Vineyard Discharges in the Napa River and Sonoma Creek Watershed (GWDR). I write on LRC's behalf to submit comments on the Draft Environmental Impact Report (DEIR) for this project and to object to approval of the GWDR Order.

1. The DEIR's Analysis of the Extent to Which the GWDR's and the Napa River Sediment TMDL's Means of Compliance with Surface Erosion Standards May Increase Runoff and Runoff Related Sedimentation of the Napa River is Informationally Deficient.

The DEIR assumes that the Draft GWDR Order's runoff performance standards will ensure that the runoff and runoff related sedimentation impacts of using engineered drainage facilities to comply with the GWDR's surface erosion standards are less than significant. (DEIR, pp. 245-247.) This assumption reflects multiple failures to proceed in the manner required by law, including unlawfully deferring the development of mitigation measures and conflating project components and mitigation measures. In addition, this assumption is not supported by substantial evidence.

The Board must evaluate the environmental effects of the "means of compliance," including "reasonably foreseeable means of compliance" specified in any TMDL, including performance standards. (*City of Arcadia, supra,* 135 Cal.App.4th at pp. 1424-25; 23 Cal. Code Regs. § 3777(b)(4)(A) & (B).) Where, as here, the impacts of the means of compliance may be significant, the environmental review must be "EIR level." (*City of Arcadia,, supra,* 135 Cal.App.4th at p. 1424,)

The Napa River Sediment TMDL includes a performance standard for controlling surface erosion stating: "Control excessive rates of sediment delivery to channels resulting from vineyards." (Exhibit 1, TMDL, p. 19, Table 4.1.)

As discussed in LRC's previous comments on the Napa River Sediment TMDL and on numerous Erosion Control Plans approved by Napa County for vineyard conversion projects, the installation of engineered drainage facilities to reduce surface erosion often lead to increases in runoff and stream sedimentation by efficiently channeling and directing surface and subsurface flows to downstream channels.[1] This is a primary vector causing channel incision, channel instability, bank failures, and increases in sediment transport to low gradient reaches of Napa River tributary streams and to the Napa River. Thus, landowners' attempts to comply with the Napa River Sediment TMDL's performance standard for controlling surface erosion lead directly to increases in runoff and sedimentation.

In its appeal brief filed in the litigation Living Rivers Council vs. State Water Resources Control Board, Appellate No. A137082, the Board conceded that efforts to control surface erosion to comply with the Napa River Sediment TMDL can increase runoff, which can lead to increased sedimentation of the Napa River. (Exhibit 7, Respondents Brief, pp. 29-30.) The Board also conceded that the TMDL's runoff standard is a mitigation measure that it adopted to reduce the TMDL's significant sedimentation impact caused by efforts to comply with the TMDL's surface erosion standard. (Exhibit 7, Respondents Brief, pp. 29-30.) Yet the DEIR treats the GWDR's runoff standards as if they are project components only, not mitigation measures. This is unlawful under CEQA, because, an EIR cannot incorporate "the proposed mitigation measures into its description of the project and then conclude[] that any potential impacts from the project will be less than significant." (*Lotus v. Department of Transportation* (2014) 223 Cal.App.4th 645, 655-57 (*Lotus*).) The EIR's failure to discuss the runoff standards as mitigation measures rather than as part of the project "precludes both identification of potential environmental consequences arising from the project and also thoughtful analysis of the sufficiency of measures to mitigate those consequences." (*Lotus, supra*, 223 Cal.App.4th 655-57.) CEQA does not allow the EIR to avoid analysis of the relative effectiveness of the runoff standards to mitigate runoff related sedimentation impacts in comparison with other mitigation strategies.

The Napa River Sediment TMDL's performance standard for controlling increases in runoff is "Effectively attenuate significant increases in storm runoff, so that the runoff from vineyards shall not cause or contribute to downstream increases in rates of bank or bed erosion." (Exhibit 1, TMDL, 10, Table 4.1.) The TMDL, however, provides no guidance as to how landowners or the Board would model or measure compliance with this standard. Instead, the TMDL deferred the development of the specifics of this mitigation measure to the adoption of a Report of Waste Discharge (WDR) waiver policy or general permit. (See Exhibit 2, TMDL, p. 19, Table 4.1, Actions; note 4.) The Board's response to this concern in the TMDL process was that "The details of the SF Bay Water Board's analytical approach will be developed in consultation with a Technical Advisory Committee that has been formed to assist SF Bay Water Board with technical issues related to

[1]See LRC comments letters referenced in Appendix.

development of the WDR waiver." (Exhibit 5, TMDL AR 1760-61.)[2]

The DEIR for the proposed GWDR, however, fails to develop sufficient guidance as to how landowners or the Board would model or measure compliance with the TMDL's runoff standard for a number of reasons discussed in the following sections. Therefore, the GWDR DEIR unlawfully defers the development of this mitigation measure.

LRC's scoping comments on the GWDR EIR requested that the EIR analyze the extent to which measures implemented to control surface erosion to comply with the GWDR and the Sediment TMDL may increase runoff and lead to increased sedimentation of the Napa River. Unfortunately, the DEIR's discussion of this topic is insufficient due to legal errors and because its conclusions are not supported by substantial evidence.

In Sections 1.0, 8.7 (Impact 8.2), and 10.2.5, the Draft EIR acknowledges the fact and importance of this type of impact. But instead of assessing the nature and extent of the impact, the DEIR assumes it will not occur because the goal of the TMDL is to reduce sediment loading a by 50% compared to existing conditions. (See e.g. DEIR, Impact 8.1, p. 244: "As described in the discussion of Impact 6.1a, road sediment discharge, and land-use related erosion of headwater channels, gullies, and landslides will all be reduced substantially (on average by 50 percent) within the Vineyard Properties enrolled in the permit"; Impact 8.2, p. 245: "The General Permit requires actions to control sediment discharges and attenuate storm runoff increases that occur as a result of development and management of farms and roads, and also to control pesticide and nutrient discharges from farms (See Section 1.0, Introduction). Actions to control (attenuate) storm runoff increases *by definition* also enhance groundwater recharge.)" (emphasis added); Impact 8.2, p. 245.)

The DEIR also relies on the achievement of two performance standards to avoid significant runoff/sedimentation impacts from efforts to control surface erosion, as follows:

> d) Storm Runoff from an existing Hillslope Vineyard: shall not cause or contribute to downstream increases in bed and/or bank erosion (see below, Bed and Bank Erosion).

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[2]For a CEQA lead agency to defer the development and adoption of specific mitigation measures until after project approval, the EIR must specify a performance standard and meet several additional requirements, including: (1) practical considerations prohibit devising such measures early in the planning process; (2) there be evidence that achieving the performance standard is feasible; (3) the agency commits itself to devising measures that will satisfy the performance criteria (*Gentry v. City of Murrieta* (*Gentry*) (1995) 36 Cal.App.4th 1359, 1393-1396); (4) there be evidence that meeting the performance standard is effective in reducing significant impacts; and (5) there be objective criteria for measuring success." (*Communities for a Better Environment v. City of Richmond* (2010) 184 Cal.App.4th 70, 93, 95 (*CBE*).)

> e) Storm runoff from a new Hillslope Vineyard: a) peak storm runoff in 2-, 10-, 50-, and 100-year (24-hour duration) rainfall events following vineyard development shall not be greater than pre-development peak storm runoff; and b) shall not cause or contribute to downstream increases in bed and/or bank erosion (see below, Bed and Bank Erosion)

(DEIR, pp. 245-47, Impact 8.2; Draft Order, Attachment A, p. 3.)

The first performance standard for new vineyards (i.e., peak storm runoff in 2-, 10-, 50-, and 100-year (24-hour duration) rainfall events following vineyard development shall not be greater than pre-development peak storm runoff) is excellent in concept, but is too uncertain and unspecified to reliably predict its achievement.

For example, as discussed by Mr. Kamman (Exhibit 1), the modeling needed to conduct a pre-project assessment of increases in runoff from new vineyards must include the runoff increase effects of using engineered drainage facilities to reduce surface erosion. This performance standard fails to include this element.

In another example discussed by Mr. Kamman (Exhibit 1), the modeling must include an appropriate sized and located geographic area to disclose runoff increase effects where they may cause environmental harm. This performance standard fails to provide guidance on this critical variable.

The performance standard for existing vineyards and the second performance standard for new vineyards (i.e., shall not cause or contribute to downstream increases in bed and/or bank erosion) is too uncertain and unspecified to reliably predict its achievement. For example, as discussed by Mr. Kamman (Exhibit 1), this standard is entirely dependent on monitoring and comparison to undisturbed sites to disclose whether changes in infiltration rate is causing or has caused increases in runoff, but this method omits other critical factors, such as the use of engineered drainage facilities installed to reduce surface erosion. As a result, the monitoring described under "Bed and Bank Erosion" (See Draft Order, Attachment A, p. 4-5) and in the monitoring protocol (See Draft Order, Attachment E) may disclose whether bed/bank erosion is occurring but will not disclose whether a vineyard is causing or contributing to such increases.

Further, the DEIR's analysis of the runoff/sedimentation impacts of the GWDR's surface erosion standard assumes that the TMDL's and GWDR's means of compliance will actually work to achieve the TMDL's and GWDR's goal of reducing sedimentation of the Napa River. This assumption is based on the DEIR's unlawful deferral of mitigation measures and is not supported by substantial evidence.

As discussed in section 4 below, this assumption is doubly problematic, because—as it proposed when this project was a WDR waiver policy—the Board proposes to defer the hard work of assessing and mitigating increases in runoff to a later, post-approval process. This time, the

GWDR delegates this task to regulated landowners and their retained, private, third party Farm Plan certifiers.

2. The DEIR Fails to Assess Increases in Runoff and Runoff Related Sedimentation from Increases in Subsurface Flow.

As explained by Dennis Jackson in his comment letter on the Mitigated Negative Declaration for the proposed WDR Waiver Policy (Exhibit 4a), and by Mr. Kamman (Exhibit 1), the GWDR will cause vineyard owners to infiltrate precipitation runoff into the ground by using runoff detention basins, but the EIR does not evaluate the extent to which this will lead to channel incision and downstream sedimentation as a result of concentrating and increasing subsurface flows. As explained by Mr. Jackson and Mr. Kamman, this runoff mechanism is likely to cause environmental harm.

3. The DEIR's Analysis of the GWDR's Impacts on Groundwater is Informationally Deficient.

The DEIR concludes that impacts on groundwater are less-than-significant, based entirely on the DEIR's assumption that the GWDR will not increase runoff. As discussed in sections 1 and 2 above, this assumption reflects multiple failures to proceed in the manner required by law and is not supported by substantial evidence.

4. The DEIR's Project Description Is Incomplete and its Analysis of the GWDR's Environmental Impacts Is Unlawfully Segmented.

The Draft EIR's project description is incomplete because its fails to describe the Farm Plans that are critical components of the regulatory program the EIR is intended to evaluate for environmental impact.

The GWDR is a "program" of environmental regulation as described in CEQA Guideline 15168(a). The program includes Farm Plans as described in Appendix A to the Draft Waste Discharge Requirements for Vineyard Properties Order (Draft Order). These farm plans are or relate to "individual activities" which implement the program, as described in paragraph 4 of subdivision (a) of Guideline 15168.

The Farm Plans represent a critical step in the Board's regulation of vineyard discharges. The Farm Plans are the regulatory mechanism by which the GWDR attempts to ensure that enrolled vineyards achieve the performance standards for surface erosion, runoff, and stream bed and bank erosion. These performance standards are intended to achieve both the sediment control objectives of the Napa River TMDL, the Clean Water Act and the Porter Cologne Water Quality Act and the impact reduction objectives of the EIR's mitigation measures for surface erosion, runoff, and stream bed and bank erosion.

Therefore, the Farm Plans are components of the "project description" and must be subject to public environmental review under CEQA. Instead, the GWDR establishes a system whereby the Farm Plans will be prepared after approval of the GWDR and certified by private third parties if such third parties "conclude that upon its [Farm Plan's] full implementation, the Vineyard Property would achieve all applicable performance standards for discharge." (Draft Order, 43.) In essence, the Draft Order attempts to create a "CEQA shelter" by which vineyard owners may shield critical components of their vineyards' environmental analyses and mitigation measures from public scrutiny under CEQA.

Because the GWDR is a "program" under CEQA, it may be permissible to defer the development of the Farm Plans to a later time, after approval of the GWDR—if appropriate performance standards are provided. But it is not permissible for the Board to shield these project/program components from public environmental review under CEQA.

Because this approach out-sources a large share of the burden of regulating vineyard compliance with the Basin Plan to regulated vineyard owners and private non-governmental entities, it also represents an unconstitutional delegation of governmental authority to the regulated community. (*Bayside Timber Co. v. Board of Supervisors* (1971) 20 Cal. App. 3d 1.)

5. The DEIR's Discussion of All Discharge Performance Standards Is Not Supported by Substantial Evidence.

Under the Clean Water Act, states are responsible for developing water quality standards and regulating nonpoint[3] sources of water pollution. (*City of Arcadia, supra,* 135 Cal.App.4th at pp. 1403-1404.) Additionally, states must implement a "water-quality based" program for cleaning up polluted rivers, streams or smaller water segments that regulation of point source pollution (the NPDES permit system) has not adequately addressed. (*Id.* at p. 1404; 33 U.S.C. § 1313(d)(1)(A); 40 C.F.R. § 130.7(b) (2003).) Specifically, states must (1) make a list of polluted water bodies (referred to as a "303(d) list"); (2) rank them in order of priority; and (3) determine the maximum amount of a pollutant, from all sources, that may be discharged or "loaded" into each impaired water body. *City of Arcadia,* 135 Cal.App.4th at pp. 1403.

The maximum amount of permissible pollution is called a "total maximum daily load" or "TMDL" and "must be 'established at a level necessary to implement the applicable water quality

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[3] "Nonpoint" sources are those which do not discharge from a "discernable, confined and discrete conveyance" or "point source." (*City of Arcadia, supra,* 135 Cal.App.4th at p. 1403, citing *Defenders of Wildlife v. EPA* (10th Cir.2005) 415 F.3d 1121, 1123-1124.) Nonpoint pollution sources recognized by the Environmental Protection Agency include sediment from improperly managed construction sites, crop and forest land, and eroding stream banks. (*Id.* at fn 3.)

standards'." (*Ibid.*.) A TMDL assigns a waste load allocation to each point source, and once developed, effluent limitations in NPDES permits must be consistent with the TMDL's waste load allocation. (*Ibid*.) The EPA has authorized California to adopt and administer the NPDES permit program for the state. (*Id.* at p. 1405, citing 54 Fed. Reg. 40664 (Oct. 3, 1989).)

"California implements the Clean Water Act through the Porter–Cologne Act (Wat. Code, § 13000 *et seq*.)." (*City of Arcadia, supra,* 135 Cal.App.4th at p. 1405.) Under the Porter–Cologne Act, regional water boards (operating under the purview of the State Water Board) must "formulate and adopt water quality control plans, commonly called basin plans, which designate the beneficial uses to be protected, water quality objectives and a program to meet the objectives." (*Id.*, citing Wat. Code, §§ 13050, subd. (j), 13240.) "'Water quality objectives' means the limits or levels of water quality constituents or characteristics which are established for the reasonable protection of beneficial uses of water or the prevention of nuisance within a specific area." (*Id.*, quoting Wat. Code, §§ 13050, subd. (j), 13240; § 13050, subd. (h).)

Thus, the Board is required to legally regulate sediment discharges from vineyards to achieve the objectives of the Clean Water Act and the Basin Plan. Therefore, any system of regulation that the Board adopts that fails to achieve these objectives causes environmental harm as compared to Board adoption of a system of regulation that does achieve these objectives.

As discussed above, and in Mr. Kamman's letter regarding additional performance standards described on page 3 of the Draft Order, the proposed GWDR will not achieve the objectives of the Clean Water Act or Basin Plan. But the DEIR fails to identify this as a significant impact and to discuss feasible alternative regulatory approaches that would achieve these objectives.

6. The DEIR's Discussion of Alternative 3 Is Not Supported by Substantial Evidence.

The DEIR's discussion of "Alternative 3: Enroll Vineyards ≥ . 5 acres throughout Project area, except those Upstream of Reservoirs" states:

> This alternative would be as effective as the Proposed Project in achieving the fundamental objective because the Napa River sediment impairment is related to elevated amounts of sand in the bed of the Napa River and in tributary reaches that provide potential habitat for anadromous salmonids. Any sand discharged from land areas located upstream of the municipal reservoirs is trapped in the very large reservoirs, and therefore is not discharged into the Napa River, and/or into tributary reaches that provide habitat for anadromous salmonids.

(DEIR, p. 284.)

These assertions are simply false. For example, a recent EIR for the Walt Ranch Vineyard Conversion Project recognizes that reservoirs in the Napa drainage trap coarse sediments, but that fine sediments pass through, stating:

> The construction of several large dams between 1924 and 1959 on major tributaries in the eastern Napa River watershed and northern headwater areas of Napa River has affected sediment transport processes into the mainstem Napa River by reducing the delivery of the coarse load sediments to the river. Thirty percent of the Napa River watershed drains into dams, such that ponds and reservoirs behind these dams capture a significant fraction of all coarse sediment input to channels (Napolitano et al., 2009).
>
> Historically, the Napa River system has typically been described as a gravel-bed river; more recently, the Napa River has become increasingly dominated by finer sediments. The sources for these finer sediments include a variety of land uses, infrastructure construction, road runoff, and in-stream erosion sediment sources. Dams that trap coarse sediment in the area have not significantly reduced the degree to which finer sediments are being delivered to the mainstem Napa River and its tributaries. As a result of this fine sedimentation, habitats for steelhead, Chinook salmon, and California freshwater shrimp, which rely on more gravel substrate in the river, have been negatively affected from reduced gravel permeability. (Stillwater Sciences and W. Dietrich, 2002). The San Francisco Bay Regional Water Quality Control Board (RWQCB) has released a technical report that proposes a total maximum daily load (TMDL) for the Napa River that calls for substantial reductions in the amount of fine sediment deposits into the watershed to improve water quality and maintain beneficial uses of the river, including spawning and rearing habitat for salmonid species.

(Exhibit 3, Walt Ranch Final EIR, p. 4.6-8.)

The Regional Water Board's final Staff Report for the TMDL describes the impacts of fine sediment loading, stating:

> The limiting factors study documented two adverse impacts of sediment pollution on steelhead and salmon habitat. The first impact is due to a high concentration of fine sediment deposited in the streambed, which adversely affects spawning and rearing habitat for both species. The second impact is due to channel incision, which occurs primarily in the mainstem and lower tributaries and affects Chinook salmon to a much greater extent (because most steelhead spawn further upstream in the tributaries). These sediment-related impacts are discussed below:
>
> • Documentation of low permeability values at potential spawning sites for salmon indicates a high concentration of fine sediment in the streambed. Successful salmon and steelhead reproduction depends on adequate water flow through gravel in order for eggs to hatch and larvae to grow. If fine sediment clogs the gravels, flow is very slow, egg mortality can be very high, and few young fish (fry) may emerge from the streambed. Low gravel permeability is predicted to cause high rates of mortality

between spawning and emergence at potential spawning sites in Napa River and its tributaries.

• High concentration of fine sediment in the streambed also can cause significant decreases in growth and survival of juvenile salmonids during freshwater rearing by reducing availability of vulnerable prey species and increasing activity level, aggressive behavior, and attacks between juvenile salmonids (Suttle et al., 2004).

• Juvenile steelhead use open spaces between clusters of large cobbles and/or boulders as winter refuges from predators and high flows (Hartman, 1965; Chapman and Bjorn, 1969; and Meyer and Griffith, 1997). As the concentration of fine sediment in streambed increases, quality of winter rearing habitat is significantly diminished with consequent adverse impacts to survival.

• Scour of spawning gravel during commonly occurring peak flows (e.g., bankfull) can be a significant source of mortality to incubating eggs and larvae of salmon and trout species (McNeil, 1966; Montgomery et al., 1996). Human actions that increase rate of sediment supply, and/or cause it to become finer, will cause the streambed to become finer, facilitating an increase in mean depth and/or spatial extent of scour (Carling, 1987).

• Active and rapid channel incision in mainstem Napa River and lower reaches of its major tributaries has greatly reduced quantity of gravel bars, riffles, side channels, and sloughs, and has greatly decreased frequency of inundation of adjacent flood plains. These features and processes provide essential spawning and juvenile rearing habitat for Chinook salmon, which reside primarily in the mainstem Napa River. Therefore, channel incision appears to be a key factor limiting Chinook salmon run size. Channel incision, and associated bank erosion in areas underlain by thick alluvial deposits, also appears to be a significant source of sediment delivery to Napa River. Shallow groundwater stored in the valley floor adjacent to incised channel reaches is more rapidly depleted during the spring and summer, causing spring and summer baseflow persistence to be reduced, and the quantity and quality of cold pools (e.g., those fed by groundwater inputs) to be diminished.

(Exhibit 5, TMDL AR 1590-91 [Final TMDL Staff Report, pp. 8-9].)

As a result, the DEIR's analysis of the comparative impacts and benefits of Alternative 3 is not supported by substantial evidence and the EIR fails to analyze a reasonable range of project alternatives.

7. The DEIR Fails to Discuss a Reasonable Range of Alternatives.

Every single project alternative mentioned in the DEIR, including project alternatives

rejected for detailed discussion and the project alternatives accepted for detailed discussion, involves less regulation. Not one involves tighter regulation. This is patently unreasonable.

The DEIR should discuss alternatives regulatory approaches in which private third party certifiers play no role or in which each "covered" vineyards must submit an individual Report of Waste Discharge application rather than enrolling in a General Permit.

Thank you for your attention to these comments.

Very Truly Yours,

Thomas N. Lippe

APPENDIX

LRC has been a committed stakeholder at every step of the process leading to the proposed GWDR. LRC's comment letters relating to the issues raised in this letter include:

1. August 5, 2014, comment letter from Tom Lippe to the Regional Board Re: Scoping Comments re General Waste Discharge Requirements for Vineyard Discharges in the Napa River and Sonoma Creek Watershed.

2. February 1, 2013, comment letter from Tom Lippe to the Regional Board Re: Mitigated Negative Declaration for the proposed "Conditional Waiver of Waste Discharge Requirements For Discharges from Vineyard Properties in the Napa River and Sonoma Creek Watersheds" attached hereto as Exhibit 4.

   a. Letter from Dennis Jackson to Thomas Lippe dated February 1, 2013, attached hereto as Exhibit 4a.

LRC submitted voluminous comments on the Basin Plan Amendment for the Napa River Sediment Total Maximum Daily Load ("Napa River Sediment TMDL") which pertain to the issues raised in this letter. These letters are included in the Administrative Record for the Napa River Sediment TMDL lodged in the Superior Court in the action entitled *Living Rivers Council v. State Water Control Board*, Alameda Superior Court Case No. RG11560171 (attached as Exhibit 5); and include the following:

3. August 18, 2010, comment letter from Tom Lippe to the State Board (Exhibit 5, TMDL AR 10349), including:

   a. Comment letter dated August 5, 2010, from Dennis Jackson (Exhibit 5, TMDL AR

10360);

b. Comment letter dated August 17, 2010, from Patrick Higgins (Exhibit 5, TMDL AR 13077);

4. July 6, 2009, comment letter from my office to the Regional Board (Exhibit 5, TMDL AR 09821), including:

a. Comment letter dated July 5, 2009, from Dennis Jackson (Exhibit 5, TMDL AR 10188);

b. Comment letter dated July 2, 2009, from Dennis Jackson (Exhibit 5, TMDL AR 10166);

c. Comment letter dated July 3, 2009, from Patrick Higgins (Exhibit 5, TMDL AR 10193);

5. October 20, 2008, comment letter from my office to the Regional Board (Exhibit 5, TMDL AR 09592), including:

a. Comment letter dated October 19, 2008, from Dr. Robert Curry (Exhibit 5, TMDL AR 09748);

b. Comment letter dated October 17, 2008, from Dennis Jackson (Exhibit 5, TMDL AR 09755);

6. May 7, 2008, comment letter from my office to the State Board (Exhibit 5, TMDL AR 09470), including:

a. Comment letter dated April 24, 2008, from Dennis Jackson regarding the Napa River Sediment TMDL (Exhibit 5, TMDL AR 09474);

b. Comment letter dated May 6, 2008, from Patrick Higgins regarding the Napa River Sediment TMDL (Exhibit 5, TMDL AR 09511);

c. Comment letter dated May 7, 2008, from Dr. Robert Curry regarding the Napa River Sediment TMDL attached hereto as Exhibit 6 (Exhibit 5, TMDL AR 09563).

7. August 15, 2006, comment letter from my office to the Regional Board (Exhibit 5, TMDL AR 08848), including:

a. Comment letter dated August 11, 2006, from Dr. Robert Curry (Exhibit 5, TMDL AR 08861);

b. Comment letter dated August 11, 2006, from Dennis Jackson (Exhibit 5, TMDL AR 08876);

c. Comment letter dated August 12, 2006, from Patrick Higgins (Exhibit 5, TMDL AR 08902).

LIST OF EXHIBITS

1. Letter from Greg Kamman to Thomas Lippe dated September 14, 2016.

2. Napa River Sediment TMDL, p. 19, Table 4.1.

3. Excerpt of final EIR for Walt Ranch Vineyard Conversion Project, Napa County, p. 4.6-8.

4. February 1, 2013, comment letter from Tom Lippe to the Regional Board Re: MND for "Conditional Waiver of Waste Discharge Requirements For Discharges from Vineyard Properties in the Napa River and Sonoma Creek Watersheds."

4a. Letter from Dennis Jackson to Thomas Lippe dated February 1, 2013.

5. Administrative Record of Proceedings lodged in Living Rivers Council v. State Water Control Board, Alameda Superior Court Case No. RG11560171. [on DVD]

6. LRC's Opening Appeal Brief, filed in *Living Rivers Council v. State Water Control Board*, Appellate No. A137082.

7. Respondents Brief, filed in *Living Rivers Council v. State Water Control Board*, Appellate No. A137082.

8. LRC's Reply Appeal Brief, filed in *Living Rivers Council v. State Water Control Board*, Appellate No. A137082.

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September 14, 2016

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Subject: Review of Draft EIR for General Waste Discharge Requirements for Vineyard Dischargers in the Napa River and Sonoma Creek Watersheds.

Dear Mr. Lippe:

I have reviewed the DEIR dated July 15, 2016 for the General Waste Discharge Requirements for Vineyard Properties located in the Napa River and Sonoma Creek Watersheds and have the following comments.

1. Inadequate Performance Standards

In my professional opinion the DEIR or Draft Order do not present complete or reliable methods that evaluate Performance Standards for Farm Plan BMPs installed and maintained to control runoff and erosion at vineyard properties. The Performance Standards are presented in Attachment A of the Draft Order, while the monitoring and reporting requirements for vineyard Farm Plans at achieving Performance Standards are presented in Attachment E of the Draft Order. The following subsections present the Performance Standard followed by my comments.

a) Soil erosion in the Farm Area: soil loss rate ≤ tolerable soil loss rate. The tolerable soil loss rate is as defined by the USDA Soil Conservation Service (1994).

The 1994 USDA Soil Conservation Service report cited in this Performance Standard reports that the tolerable soil loss rate for most Napa County hillside soils ranges from 2 to 4 tons of tolerable soil loss per acre-year. Nowhere in the DEIR or Draft Order is there an explanation on how the Farm Area "soil loss rate" will be quantified for comparison to the USDA tolerable soil loss rates. Standard methods for quantifying soil loss include monitoring and modeling, however neither of these approaches are presented in the DEIR or Draft Order. Thus, I see no feasible way this Performance Standard can be evaluated or applied given the lack of guidance in the Draft Order.

b) Sediment delivery from existing unpaved roads: a) culvert inlets have a low plug potential; b) critical dips shall be installed at culverted crossings that have a diversion potential; and c) ≤ 25 percent of the total length of unpaved roads are hydrologically connected.

The Performance Standards associated with erosion and sediment transport for existing unpaved roads are qualitative in nature and don't actually evaluate the performance of any independent road BMP. As indicated in Attachment E of the Draft Order, the monitoring of this Performance Standard is referred to as "BMP Implementation Monitoring" for all (Tier 1-3) Dischargers. BMP Implementation Monitoring consists of establishing and monitoring Photo-points, "to document winter readiness, demonstrate annual maintenance practices and BMP implementation, and to document habitat and water quality conditions in receiving waters at and/or near points of discharge from the vineyard" (page 23 Attachment E, Draft Order). Photo-point records and field notes are to be appended to the Farm Plan. This type of monitoring can verify that a BMP measure was installed, but it does not evaluate if the BMP is functioning as intended and reducing sediment loads sourced from the unpaved roads. In short, this Performance Standard assumes that if the BMP is installed, it is functioning to provide the desired erosion control benefits – there is no requirement or guidance in the Monitoring Plan or Performance Standard to actually verify that the BMP is reducing erosion. Even if we assume the monitor makes a qualitative assessment on how the BMP is functioning, this is an unguided subjective opinion made by a "Qualified Professional" hired by the vineyard owner. Clear and more precise success criteria based on site specific monitoring is required in this Performance Standard to make consistent and reproducible determinations amongst different "Qualified Professionals".

c) **Sediment delivery from new roads: all new roads (unpaved and/or paved) shall be storm-proofed roads.**

See comments for item b) above.

d) **Storm Runoff from an existing Hillslope Vineyard: shall not cause or contribute to downstream increases in bed and/or bank erosion.**

To evaluate this storm runoff Performance Standard, Tier 1 Discharges need only comply with the BMP Implementation (Photo-point) Monitoring described above. The Draft Order does not explain how photographs would be used to determine if an existing vineyard is causing or contributing to downstream increases in erosion. I assume such an approach would require comparison of pre- and post-project photographs of receiving channels as a means to identify and estimate changes in bed or bank erosion. Pursuant to this level of qualitative monitoring, only a subjective conclusion, at best, can be made about storm runoff effects on receiving channels for Tier 1 Dischargers. Even if through Photo-point Monitoring it is concluded that the receiving bed or channel is eroding, how does one determine if erosion rates are increasing? This determination can't be made without first determining the existing rate of erosion. Further, how will it be determined if the existing erosion rate is acceptable (i.e., natural) versus elevated as compared to pre-existing vineyard runoff? A literal interpretation of this monitoring method for existing vineyards means that

current erosion rates in channels downstream of vineyard outfalls are acceptable (even if they are elevated above natural levels as a result of vineyard installation or operations and causing adverse impacts) and only further increase in the erosion rate would trigger non-compliance of this Performance Standard. It is my opinion that the BMP Implementation Monitoring approach and methods are not capable of determining: a) existing erosion rates (i.e., existing baseline conditions used to determine change); b) whether the existing erosion rates are elevated above desired levels, causing adverse impacts, or caused by vineyard installation or operations; and c) increases to the existing erosion rate. Therefore, the BMP Implementation Monitoring approach is not capable of evaluating this Performance Standard.

In addition to the BMP Implementation (Photo-point) Monitoring described above, the Monitoring Plans for Tier 2 and 3 Dischargers include requirements for BMP Effectiveness Monitoring. The BMP Effectiveness Monitoring approach for Tier 2 and 3 dischargers as described in Attachment E (pg. 25-26) of the Order only evaluates one of several variables controlling runoff from vineyards. . This effectiveness monitoring approach defines a field method to characterize hillslope vineyard soil infiltration capacity and assumes that once post-project infiltration capacity values are statistically similar or greater than values at paired sites under natural vegetation cover (i.e., representative of pre-project conditions), the performance standards for Hillslope Vineyard storm runoff shall be considered achieved. In summary, the BMP Effectiveness Monitoring assumes that if there is no change in vineyard infiltration capacity between pre- and post-project conditions, there will be no change in storm runoff rates, which, in turn, means no increase in erosion potential. We have demonstrated on the Walt Ranch project (and as described in detail on pages 245-246 of DEIR) that the presence of engineered drainage features can contribute significant increases in storm runoff and erosion potential for vineyards that display no difference in pre- and post-project infiltration rates. As presented in Section 2.0 of my comment letter on the Walt Ranch Erosion Control Plan dated August 26, 2016 (see Attachment A), integrating engineered drainage elements into storm runoff modeling of a new vineyard block results in storm runoff rates significantly higher than those modeled solely with altered and unaltered runoff curve numbers (i.e., infiltration capacity). The integration of engineered drainage features in this example resulted in vineyard runoff rates higher than the pre-project rates. Any analysis of runoff rates and BMP effectiveness that does not factor in the effect of engineered drainages or is based solely on an estimation of soil infiltration capacity of the vineyard does not consider all variables at play in characterizing runoff magnitude and erosion potential. Thus, this BMP Effectiveness monitoring approach should not be considered adequate at evaluating the impacts of runoff rates based on a single (of many) parameter affecting that rate.

The field method for the BMP Effectiveness Monitoring described in Attachment E of the Draft Order that outlines a method to estimate pre- and post-project soil

infiltration capacities is highly subjective and easily manipulated to provide biased outcomes. As someone who could be hired as a "Qualified Professional", I am confident that through preferred soil-testing site selection and/or elimination of "anomalous results" and retesting, I could easily bias results to provide a desired outcome. Therefore, I believe the BMP Effectiveness Monitoring protocol requires refinement or agency field supervision to eliminate what I see as an easily manipulable analysis.

e) **Storm runoff from a new Hillslope Vineyard: a) peak storm runoff in 2-, 10-, 50-, and 100-year (24-hour duration) rainfall events following vineyard development shall not be greater than pre-development peak storm runoff; and b) shall not cause or contribute to downstream increases in bed and/or bank erosion.**

The storm runoff Performance Criteria for new Hillslope Vineyards is expanded over that for existing vineyards to include quantification of peak storm runoff for rainfall events of selected recurrence intervals. I agree that this model-based quantification is a good approach towards identifying, quantifying and guiding mitigation for potential increases in storm runoff. However, in order to avoid the opportunity to manipulate the outcome, the Performance Standard needs to provide further guidance and direction on how to incorporate engineered drainage elements and clarify what drainage areas need to be modeled.

Based on my experience described above under item d), not incorporating engineered drainage elements into the rainfall-runoff modeling can significantly underestimate peak runoff rates. In order to capture the effects of engineered drainage elements, it is important to model runoff from the pre- and post-project watershed area above each proposed vineyard drainage outfall, whether the outfalls discharge on- or off-site. This scale of modeling avoids masking the effects of engineered drainage elements by modeling a larger project drainage, where vineyards do not lie within the primary modeled flow path. This scale of modeling also provides the required level of detail to effectively design runoff and erosion control BMPs.

An example on the importance in selecting representative model areas is provided in Section 10 of my comment letter on the Walt Ranch Project DEIR, dated November 20, 2014 and included as Attachment B. Although this example pertains to soil loss modeling, the concept of masking potential significant impacts through inappropriate sizing of model area is applicable to all types of numerical modeling including storm runoff modeling. The Walt Ranch DEIR conclusions regarding project-induced changes in erosion potential are based on summing vineyard block soil loss subtotals within the Milliken and Capell Creek watersheds and presenting the total (net) change for each watershed (Milliken and Capell). The net results indicate that there are 44- and 13-percent reductions in potential soil loss from the Milliken and Capell Creek watersheds, respectively. However, this type of lumping of results masks localized impacts, which when considered alone, could be considered a significant impact. A more thorough review of changes in modeled soil loss results indicates localized

increases in erosion potential from multiple vineyard blocks that contribute drainage and sediment to onsite Corps designated waters and wetlands located downstream of the proposed vineyards. These downstream creek, riparian and wetland areas host potentially sensitive biological resources, which would be potentially adversely impacted by increases in water and sediment runoff.

f) **f) Pesticide management: An integrated pest management program shall be developed and implemented for the vineyard (UC Statewide IPM Program, 2015), and effective practices shall be implemented to avoid mixing, storage, or application of pesticides near wells and surface waters, or in ways that could contribute to receiving water toxicity.**

The development and implementation of an integrated pest management program (IPMP) does not guarantee the elimination of agrochemical and pesticide loadings to surface waters. This Performance Standard lacks any means (e.g., monitoring) to evaluate if the IPMP is actually working.

g) Stream-Riparian Habitat Protection and Enhancement Actions

A required element of the Farm Plan includes (item 4e. page 5 of Attachment A, Draft Order), "Conservation practices to protect and/or enhance stream-riparian habitat complexity and connectivity." This element is addressed on page 7 (Attachment A, Draft Order) under the heading, "Stream-Riparian Habitat Protection and Enhancement Actions" and includes a list of channel conditions that need to be delineated and "assessed." It is not clear to me how this inventory of channel conditions is supposed to be assessed and translated into "conservation practices" or "habitat protection and enhancement actions." Nor does the Draft Order or DEIR provide Performance Standards with respect to the "actions" directed under this Farm Plan element.

2. Inappropriate Application of Performance Standards to Groundwater Recharge Assessment (DEIR Impact 8.2)

The assumption, presented in discussion of DEIR Impact 8.2, that meeting Performance Standards to reduce storm runoff result in increased infiltration and groundwater recharge is oversimplified and not entirely valid. BMPs such as gravel berms and basins that detain runoff during storm events can lead to increases in infiltration and groundwater recharge. However, these BMPs are commonly installed in response to other vineyard elements such as engineered drainage systems that collect and accelerate runoff through vineyards during all rain events. Engineered drainage systems reduce the residence time and opportunity for infiltration and groundwater recharge. To what degree these competing vineyard drainage enhancements and runoff/erosion BMP elements effect the net increase or reduction in infiltration requires more detailed analysis before making blanket assumptions on the effectiveness of runoff performance standards.

Other professionals reporting on the linkage of hydrologic processes between runoff and infiltration have also called into question the assumption that increased infiltration leads to reduced runoff and increased groundwater recharge. In his January 26, 2013 comment letter on Napa River Sediment TMDL Vineyard Waiver and ISMND (included as Attachment C), Dennis Jackson (hydrologist) provides considerable background and hydrologic explanation on accepted principals of surface and subsurface storm runoff. Mr. Jackson presents several examples of subsurface pipe flow contained in hydrologic literature that demonstrates infiltrated water does not uniformly reduce surface runoff rates, nor does all infiltrated water go to groundwater recharge.

On page 29 of their 2013 Hydrology Report[1] completed on behalf of the Walt Ranch vineyard expansion project EIR, RiverSmith Engineering reports on the fate of additional infiltration gains associated with vineyard development in the Milliken Creek watershed. They state the following.

> *The modeling results show a consistent pattern of a modest reduction in rainfall runoff within the Milliken watershed of Walt Ranch for the proposed vineyard blocks and the associated vineyard development practices. This is consistent for all modeled storm frequencies, 2-yr through the 100-yr event as shown in Tables 5, 6, 7 and 8.*
>
> *The reduction in the runoff peaks and associated runoff volumes is due to an increase in soil infiltration rates, primarily associated with the deep ripping practice. However, credit for the increased rate was only taken in the rocky soil groups where the ripping practice effectively changes the soil classification from Hydrologic Group D to Group C (higher infiltration rate).*
>
> *However, it is believed that much of this additional infiltration volume will return over time as "quick return flow" leading into the local drainages following the storm event. Also see discussion in Section 5.0 regarding rainfall infiltration into the rocky soil groups (Slade, 2013). Based on their estimate that 7% of the rainfall deep percolates into the underlying aquifer, about 90% of the additional infiltration due to ripping is likely to resurface as "quick return flow".*

Although the GWDR Draft Order stipulates that deep ripping of soils cannot be credited for a reduction in peak runoff, the process and fate of subsurface "pipe" or "quick return flow" is what is important here. Similar to the processes reported by Jackson, the RiverSmith findings indicate that significant volumes of infiltrated water actually resurfaces shortly after infiltration and contribute to surface runoff. These examples demonstrate that the assumption that increased infiltration rates reduce runoff is

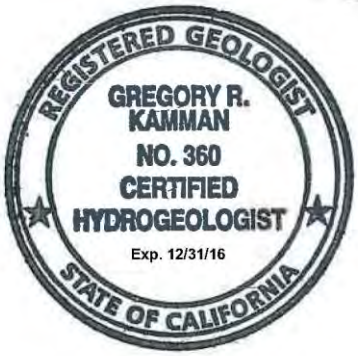
[1] RiverSmith Engineering, 2013, Hydrologic analysis of proposed vineyard blocks within the Walt Ranch Property, Napa County, California. Prepared for: PPI Engineering, March, 130p.

unjustified and certainly should not serve as the sole Performance Standard associated with the GWDR Order runoff BMP Effectiveness Monitoring.

Please feel free to contact me with any questions regarding the material and conclusions contained in this letter report.

Sincerely,

Greg Kamman, PG, CHG
Principal Hydrologist



ATTACHMENT A

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August 26, 2016

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Subject: Landslide Hazard Assessment
Walt Ranch Erosion Control Plan (P11-00205-ECPA)
Walt Ranch Project, Napa, CA

Dear Tom:

I have reviewed the Responses to Final EIR Comments report prepared by Analytical Environmental Services (July 2016) and don't feel there is anything presented that alters my conclusions provided in my prior 2014 and 2016 comment letters. Review of some responses has stimulated more thought and research on my part and I would like to share some new information in the following sections.

1.0 Runoff Curve Number Adjustments by Ripping Soil

A significant assumption made throughout the hydrologic analyses to quantify runoff from the project site is that deep ripping certain soils will alter their hydrologic soil group (HSG) and associated runoff curve number (CN) in a manner that increases infiltration and reduces runoff. This assumption results in reducing the CN and post-project storm runoff in many project areas. As reported in the EIR, this assumption comes from a letter prepared by Ken Oster, soil scientist with the U.S. Department of Agriculture Natural Resources Conservation Service (NRCS) to Dave Steiner of the Napa RCD dated February 28, 2014. Because I could not find Mr. Oster's letter in any of the EIR documents, I contacted him for a copy to review. He responded indicating that his 2014 letter gave only a theoretical effect of ripping and that he sent a clarifying letter to Charles Shembre, Dave Steiner's successor, on June 2, 2016 explaining that any change in HSG in response to ripping needs to be verified by an on-site investigation pursuant to NRCS guidelines. The 2016 letter states that it supersedes the opinion contained in the 2014 letter. Copies of both letters prepared by Mr. Oster are provided in Attachment A.

Having reviewed Mr. Oster's 2014 letter, it is important to point out that it contains a statement regarding the longevity of the assumed increase in infiltration rate that was not acknowledged in the EIR. He states, "*Ripping may not permanently change the K_{sat}[1] of soils. Ripping may shatter, but may not mix them. The increase in K_{sat} would then be temporary, because soils may*

[1] K_{sat} of soil is defined as the saturated hydraulic conductivity or permeability of the soil. The higher the K_{sat} value, the higher the rate of water movement through the soil. Soils with relatively high K_{sat} values have higher infiltration rates than soils with low K_{sat} values.

reconsolidate after a few wetting and drying cycles." I had repeatedly made this same statement in my 2014 and 2016 EIR review comments.

I have obtained and reviewed a number of papers/reports on studies pertaining to how tilling[2] of soil alters infiltration/runoff rates and soil CN. A common conclusion from these studies is that tilling increases runoff and the long-term effect of not tilling leads to higher infiltration and lower runoff (Deck, 2010; Rust and Williams, 2010; Bonta and Shipitalo, 2013; Volkmer, 2014; Endale et al., 2011). Licht and Al-Kaisi (2012) present findings that deep ripping results in the lowest infiltration rate over several less intrusive tilling methods and non-tilled soil had the highest infiltration rate. Some studies also conclude that tilling increases both runoff rates and soil erosion (Jin et al., 2008; Battany and Grismer, 2000; Delaune and Sij, 2012). A few studies point out that tilling can increase poor infiltration by breaking up surface crusts or other compacted layers by deep tillage (USDA-NRCS, 2008; Allen and Musick, 1997; Volkmer, 2014). However, these same studies stress that this is only a short-term phenomenon and bare soil subjected to the direct impact and erosive forces of raindrops dislodge soil particles that fill in and block surface pores, contributing to the development of surface crusts that restrict water movement into soil. Allen and Musick (1997) found the increased infiltration rates ceased after a single irrigation cycle. Thus, the authors recommend that long-term solutions for maintaining or improving infiltration include practices that decrease disturbance to the macropore network (predominantly created by earthworms), increase surface and soil organic matter and aggregation, and reduce soil disturbance and compaction.

The findings from these studies and statements in Oster's 2014 letter are clear. The increase in infiltration associated with deep ripping is short-lived and infiltration rates will revert back towards original pre-tillage values. Thus, the estimated project runoff rates will occur only immediately after vineyard construction and the EIR fails to accurately assess/quantify the long-term changes in runoff rates and the associated erosion potential. Regardless, pursuant to NRCS guidance provided in Mr. Oster's 2016 letter, assumed changes in soil HSG due to ripping are only justified if they are verified by an on-site investigation. In his 2016 letter, Mr. Oster indicates that the actual HSG of the disturbed soil condition resulting from ripping should be verified by an on-site investigation as required by the National Engineering Handbook, Part 630.0702 (USDA-NRCS 2009), which pertains to "Disturbed Soil." Chapter 7, entitled Hydrologic Soil Group of Part 630 of the Handbook is provided in Attachment A. The entire text of Part 630.0702 of the Handbook includes the following.

> *"As a result of construction and other disturbances, the soil profile can be altered from its natural state and the listed group assignments generally no longer apply, nor can any supposition based on the natural soil be made that will accurately describe the hydrologic properties of the disturbed soil. In these circumstances, an onsite investigation should be made to determine the hydrologic soil group. A general set of guidelines for*

[2] For the purposes of this letter, tilling refers to the mechanical preparation of land for growing crops by plowing, discing, chiseling and/or ripping. My understanding of the deep ripping process is that bull dozer's equipped long steel shank(s) break up the surface soil and rock to a desired depth in order to prepare fields for vineyard planting. After ripping, soil amendments may be added and the soil is disced, breaking the large chunks of earth into smaller chunks. Finally, the vineyard is planed smooth to level the soil in preparation of planting vines and installing irrigation.

estimating saturated hydraulic conductivity from field observable characteristics is presented in the Soil Survey Manual (Soil Survey Staff 1993)."

Pages 36 to 41 of the Soil Survey Manual (USDA-NRCS 1993) cited in Part 630.0702 Handbook contains a description of the field method to estimate saturated hydraulic conductivity (K_{sat}) based on observation and measurement of various soil properties. This section of the Soil Survey Manual pertaining to the guidelines for field estimates of K_{sat} is also provided in Attachment A. Pursuant to these guidelines, the project would need to complete the field estimate procedure on each of the different HSG's after they have been deep ripped. The EIR does not present the results of any on-site soil field tests on ripped soil types that verify deep ripping will alter site soil HSG's. Therefore, their hydraulic analyses using non-verified HSG designations to estimate peak storm runoff rates should be considered invalid.

2.0 Effect of Vineyard Drainage Elements on Storm Runoff Rates

A critique I have presented to you in the past is the lack of integrating the project vineyard drainage elements into the post-project storm water runoff estimates. The DEIR does not present storm water runoff estimates from vineyard blocks. Their peak storm runoff estimates are calculated for and representative of much larger drainage areas. However, they do conclude that runoff from 41 vineyard blocks will be higher because the representative runoff curve numbers for those blocks will be higher than pre-project conditions[3]. They base their erosion control measures and designs on this qualitative assessment of changes in vineyard block runoff curve number – they do not attempt to model or quantify peak storm runoff rates form vineyard blocks. They state (Appendix F of DEIR [pdf p. 588]), "*Where the proposed blocks are small (less than 5 acres) and the change in curve number less than 4, any increase in runoff will also be very small. However, all blocks with any increase in the developed curve numbers will have some recommended runoff mitigation measure even though the actual impact would be extremely difficult to corroborate by a numeric hydraulic model because the change is so small*." Even more troubling is the fact that their qualitative conclusion for higher flows is based solely on a higher runoff curve number and they do not factor in the effect the drainage elements have on concentrating and increasing peak flow rates from individual vineyard blocks.

To better understand and quantify the different effect runoff curve number and drainage elements have on storm runoff, we completed a hydrologic modeling analysis on a proposed drainage outfall in Vineyard Block 21B. We chose this site because the EIR concludes that the drainage area to this outfall does not change between pre- and post-project conditions [cite to page number] and the vineyard block includes drainage elements including internal diversion ditches that feed into a surface drainage pipeline [cite to page number]. Figure 1 presents the 2.17-acre drainage area contributing to the outfall. Approximately two-thirds of the drainage area lies north of the proposed vineyard block while the lower third of the drainage area lies within the vineyard.

[3] Appendix F to the DEIR, presents a comparison of changes in curve numbers on a block by block basis and relates this to a relative change in runoff. RiverSmith states, "*In general, an increase in runoff curve number relates to less infiltration (more runoff) and a decrease in runoff curve number relates to an increase in infiltration (lower runoff)*."

Our hydrologic analysis follows the same modeling approach and methods, rainfall intensities, NRCS TR-55 travel time computation and other model assumptions as those used by RiverSmith in their hydrologic analysis. However, in lieu of using the same USACE HEC-HMS computer program, we used the StormCAD module integrated with our AutoCAD computer design program. The StormCAD program contains the same time of concentration and rainfall runoff equations/methods used in the RiverSmith hydraulic analysis. Using these tools, we developed three model scenarios as part of our analysis: 1) existing conditions (pre-project); 2) post-project without any drainage elements; and 3) post-project including the proposed drainage elements. Figure 2 depicts the model configuration of the third model scenario. Consistent with the curve numbers presented by RiverSmith in Appendix F of the DEIR, we assume a pre-project curve number of 78.2 for the entire water shed area, including vineyard. Under post-project conditions, we assume the curve number within the vineyard area is lowered to 75 while curve number for the rest of the watershed remains at 78.2. Thus, the composite curve number decreases under the post-project model scenarios. We simulated three of the RiverSmith 24-hour precipitation events for each model scenario including the 2-, 10- and 100-year storm events. The simulated peak storm runoff rates from this analysis are presented in Table 1.

TABLE 1: Simulated peak runoff rates (in cfs) for Vineyard Block 21B outfall.

	A	B	C
Storm Event	**Pre-Project Conditions**	**Post-Project Conditions (no drainage improvements)**	**Post-Project Conditions (with drainage improvements)**
2-year	6.94	6.71	7.80
10-year	10.73	10.47	12.18
100-year	21.02	20.79	24.32

As predicted by RiverSmith, simulated project runoff rates with no drainage improvements (column B, Table 1) are slightly lower than pre-project condition peak flow rates (column A, Table 1) due to a reduction in the composite runoff curve number. These changes equate to a 3%, 2.5% and 1% reduction in the 2-, 10- and 100-year peak storm flow rates, respectively. However, integrating the vineyard drainage elements into the runoff model results in peak flow rates that are notably higher (column C, Table 1) than those under pre-project conditions. Increases in post-project flow rates from the Block 21B outfall that also consider the internal drainage elements are 12.4%, 13.5% and 15.7% higher than pre-project 2-, 10- and 100-year peak storm flow rates, respectively This means that the flow reductions realized with a reduction in runoff curve number are negated and reversed by the effects of the internal drainage ditches and pipelines designed to collect, concentrate and accelerate flow off the vineyard block.

The results of our hydraulic analysis of Block 21B highlight the deficiencies of the EIR in accurately identifying areas of increased runoff and erosion potential. This example illustrates that a determination on the changes in runoff from vineyard blocks based solely on a qualitative

analysis of runoff curve number can lead to incorrect conclusions and unmitigated impacts. This also calls into question the suitability of the EIR in identifying and evaluating the potential adverse impacts associated with project erosion control measures/structures as discussed below.

3.0 Project Effects on Landslide Potential

You have asked that I review the FEIR for the Walt Ranch project and evaluate if the project increases the potential for landslide hazards. This review comes in light of the recent landslide damage to Highway 121 a short distance south of the project site located approximately 0.9 miles north of Wooden Valley Road (Figure 3). The site of the Hwy 121 slide is located in an area mapped as "Mostly Landslide" by Wentworth et al. (1997), indicated by the red shading on Figure 4. The Mostly Landslide designated area presented on Figure 4, defined by drawing envelopes around groups of mapped landslides, extends northward into the Walt Ranch Project site. Wentworth et al. state, "The best available predictor of where movement of slides and earth flows might occur is the distribution of past movements." The Site Geologic Map, prepared by Gilpin (2013) and presented in Appendix F of the DEIR, maps the location of active and dormant landslides at the project site. A number of proposed vineyard blocks overlap and/or drain runoff to the landslides mapped by Gilpin as well as the "Mostly Landslide" areas mapped by Wentworth et al. The following text describes how project activities may increase the potential to reactivate these slides.

Results of the hydrologic analysis completed by RiverSmith (2013; Appendix G of DEIR) indicate that peak storm runoff from 41 of the 69 project vineyard blocks will be greater than pre-project conditions based on an increase in runoff curve number associated with the change in vegetation type and land use. RiverSmith (2013) along with PPI Engineering (2013) propose a number of drainage and erosion control measures to mitigate for this increase. One objective of the drainage and erosion control measures in vineyard blocks is to mitigate for the increased channel erosion potential associated with the increased storm runoff rates. This is accomplished by installing rock energy dissipaters and/or berms and detention basins to store water to reduce predicted increases in runoff to pre-project levels. Both slow the rate of runoff, while the berms and detention basins actually pond and store water. With respect to reducing the landslide potential associated with vineyard development, mitigation measures also include installing drainage elements that help dewater the vineyards and reduce soil saturation and associated pore water pressure. These drainage elements act to accelerate the drainage of surface water from the vineyards to a downstream discharge point further adding to increases over pre-project runoff rates that are solely associated with the increased vineyard runoff curve numbers.

In their engineering geology report, Gilpin (2013) provide the following statements.

- (Pages 8-9) *We mapped approximately 278 active landslides on the site. This does not include active creek bank failures. Of these 278 landslides we mapped approximately 149 (54%) active debris flows or slides. The folded bedrock, steep hillslopes and deeply weathered bedrock are susceptible to the erosion caused by intense storm-related runoff that causes debris slide failures. Typically the landslides are elongate and narrow, and often confined to pre-existing swales or drainage courses. We believe the Erosion Control Plan (ECP) for the proposed*

vineyard development will significantly reduce the new occurrence, as well as the reactivation of existing debris slides on the property.

The ECP vineyard development process controls surface water flow, and addresses unwanted groundwater seepage and poor drainage with appropriate construction of subdrains. These two improvements reduce the debris slide hazard. In addition, vineyard block setbacks from large erosional gullies, combined with control of surface water runoff reduce the likelihood of future slope movement, and increased sediment yields from large storm events.

- (Page 16) *The ECP (PPI Engineering, Inc. 2013) adequately addresses erosion control issues on proposed Blocks 1-69. The ECP, in general, improves the existing runoff and erosion control of the site slopes on the proposed vineyard Blocks. However, because of the complex landslide deposits and history of slope instability additional precautions should be taken during vineyard construction on Blocks located on the east- and northeast –facing slopes of the two areas of the site: 1) the east edge of the volcanic upland; and, 2) the slopes rising from Monticello Road.*

- (Page 17) *We have reviewed the details shown for storm water drainage outlets and other water diversion facilities. These have appropriate armored, erosion-resistant surfaces that do not direct surface or subsurface runoff into slopes susceptible to landslide failure.*

Contrary to the statements by Gilpin, we have identified a number of vineyard blocks that discharge runoff from vineyard blocks directly onto mapped landslides. We identified these vineyards by georeferencing and overlaying project erosion control plans and the site geologic map. We evaluated a subset of the 69 vineyard blocks, focusing only on the 41 blocks where post-project storm runoff rates exceed pre-project rates as estimated by RiverSmith (2013). Of these blocks, we found that drainage from blocks 31A, 40B, 50, 52, 54, 57 and 61 will be directed directly onto mapped landslides. A comparison of erosion control plans[4] and landslide conditions at each of these vineyard blocks are presented in Figures 5 through 10. In order to mitigate for the increased flow rates from these blocks (i.e., reduce them to pre-project levels), the following mitigation measures are proposed: installation of small detention structure or gravel berm on downslope edge of the turnaround avenue at Blocks 31A and 40B; installation of localized detention structure of appropriate size at Blocks 50 and 52; and installation of a gravel berm on the downslope edge of the turnaround avenue at Blocks 54, 57, and 61. All of these proposed berm and detention structures will be located on mapped landslides (Figures 5-10). This will result in water being ponded and possible dispersed more widely on landslide deposits if a structure is overtopped. These mitigations will promote and concentrate infiltration into landslide deposits to a greater degree than would occur under pre-project conditions. Thus, proposed project mitigations are increasing the potential to reactive landslides in these seven specific areas. Although the remaining 34 berm and/or detention sites are not located on active or dormant landslides, they occur in geology and soils prone to sliding and also introduce an

[4] The quality of the Erosion Control plans provided in the EIR are poor and do not reproduce well. Thus, they are hard to read/interpret in Figures 5-10.

increased risk of landsliding. It is also important to point out that given the steep slopes and propensity for landslides to occur during large storm events, sediment mobilized by landslides at the project site would significantly increase sediment delivery to off-site creeks as well as the potential to adversely impact infrastructure downstream of the slides including, but not limited to: the Circle Oaks development; utilities; roadways including Highway 121; and by filling/plugging roadway drainage features such as ditches and culverts.

4.0 Stream Flow and Sediment Yield Monitoring

The Appendix to the Responses to Final EIR Comments report contains a memorandum from Whit Manley of Remy, Moose and Manley LLP (RMM) to Brian Bordona (dated December 18, 2015) which discusses the request from the City of Napa for post-project stream flow monitoring of Milliken Creek. On page 3 of this memorandum, he states, "*In order to obtain meaningful data, it would be necessary to install two in-stream check dams…*" The paragraph then continues to describe the adverse impacts, difficulties, delays, expense and permits associated with the installation of check dams to help rationalize eliminating the need for stream flow monitoring.

I have extensive experience in continuously measuring creek flows in California coastal mountain watersheds and disagree that check dams are required for stream flow gauging. It is my experience that, more times than not, check dams do not aid in stream flow monitoring. Monitoring of selected sections of undisturbed, stable channel is not only sufficient for monitoring but preferred, for many of the very reasons outlined in the RMM memorandum.

It is my opinion that the project Water Quality Monitoring Program should include the measurement of sediment yields entering and exiting the project site as a necessary approach at monitoring erosion from the site and potential impacts to aquatic and riparian resources in Milliken Creek downstream of the Project. The August 2016] version of the Water Quality Monitoring Program proposes to complete discrete measurements of turbidity as part of this Program to assist in evaluating potential impacts to the water quality entering Milliken Reservoir. Their proposed approach at monitoring turbidity (suspended solids) as discrete measurements only provides a snap-shot of concentrations at a single point in time. In order to quantify the changes in the volume of total sediment derived from the Project site, measurements of suspended (turbidity) <u>and</u> bedload sediment concentrations are required <u>in combination with</u> continuous stream flow monitoring. Continuous stream flow monitoring is required component in quantifying sediment yields. Similar to the groundwater monitoring component of the MMRP, pre-project stream flow and sediment monitoring would also provide a baseline for comparison to post-project conditions.

5.0 Recharge to the Sonoma Volcanics Groundwater Aquifer

The project wells will pump water solely from the Sonoma Volcanics groundwater aquifer to meet project demands across the site. This aquifer underlies less than half the project area. In their response to comments on the FEIR, Richard C. Slade & Associates (RCS) continue to defend using a recharge rate for the Sonoma Volcanics at the site based on a composite recharge rate derived from watershed areas that, in addition to Sonoma Volcanics, include large areas of alluvium and other rock types that have recharge rates far higher than that of the Sonoma Volcanics. As I've described in my previous 2014 and 2016 comment letters, this composite

recharge rate is higher than that for the Sonoma Volcanics alone. Given the lack of recharge rate estimates specific to individual rock/aquifer types in the area, a measured or focused study recharge rate to the Sonoma Volcanics remains elusive.

In an effort to identify a recharge rate representative of the Sonoma Volcanics, I obtained and reviewed a number of studies focused on estimating recharge rates exclusive to volcanics in other parts of the Western United States. There are numerous studies that have been completed, but they tend to be focus on areas underlain by volcanics (dominated by lave flows) with very different physical and hydrogeologic properties than the Sonoma Volcanics or occur in arid regions (e.g., Columbia River Plateau in Washington, Oregon and Idaho; Upper Deschutes River Basin, Oregon; Goose Lake Basin, Oregon and California; Yakama River Basin, Washington; and Hanford Waste Disposal Site, Washington).

A study by the USGS to estimate groundwater recharge to volcanic bedrock aquifers in the San Juan Islands area of Washington is better suited for comparison to the Sonoma Volcanics (Orr, Bauer and Wayenberg, 2002). This water-balance modeling study focused on estimating recharge from precipitation to groundwater aquifers. They developed models for four independent drainage basins underlain by volcanic bedrock similar to the Sonoma Volcanics. The bedrock consists of sedimentary and volcanic rocks that is metamorphosed in many areas. Well yields are generally small, usually sufficient only for single-family domestic use. Most of the bedrock is nonporous and water occurs primarily in joints and fractures. The mean annual rainfall (ranging from 26 to 35 inches per year) characteristics are similar to Napa County. Based on two years of available meteorological and hydrologic data, the authors estimated annual groundwater recharge rates as 1.4%, 1.5%, 1.0% and 4.8% of average annual precipitation. These rates are more in keeping with the recharge rates I've previously estimated for the Sonoma Volcanics as presented in my prior comment letters. Based on available data and varying techniques, I estimated annual groundwater recharge rates of 2% (2016 letter) and 4% (2014 letter) of mean annual total rainfall, whereas The EIR uses an annual recharge rate 7%.

6.0 Conclusions

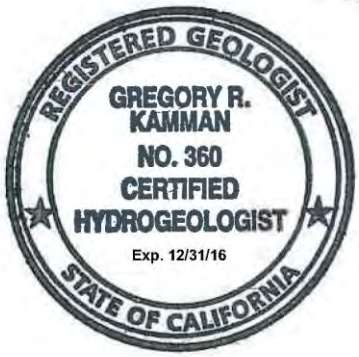
In closing, our continued review of EIR documents identifies deficiencies in a complete and accurate assessment of runoff rates and increased erosion potential from vineyard blocks. Therefore, the EIR should be considered inadequate at identifying potential adverse impacts from runoff and erosion. The Project has not implemented standard field analyses prescribed by the NRCS to justify the soil runoff coefficients applied to soil. Nor has it factored in the decrease in ripped soil infiltration rates (as informed by Mr. Oster, USDA-NRCS soil scientist) over the long-term. We have demonstrated that the incorporation of vineyard drainage elements into RiverSmith's hydrologic analyses reverse their results with respect to changes in runoff magnitude from vineyard blocks. Incorporating the proposed drainage elements of Vineyard Block 21B into the hydrologic model results in post-project storm runoff rates much higher than presented in the EIR. This calls into question the suitability of erosion control measures in mitigating (unquantified) impacts from increased runoff. The mitigation measures can't be designed to perform as desired without quantifying the flow magnitudes they are intended to treat. For example, proper sizing, design and function of a detention structure intended to reduce runoff to pre-project levels requires accurate quantification of the project flows it is intended to mitigate. We've also identified how some erosion control measures intended to mitigate the

adverse effects of increased runoff rates from vineyard blocks lead to unintended increases in potential landslide hazards. I have not found any reference in the EIR pertaining to an evaluation of potential landslide impacts associated with installation of the erosion control elements (detention structures and gravel berms) in Mitigation Measure 4.6-1. This is another omission of the EIR fully evaluating potential impacts associated with the Project.

Please feel free to contact me with any questions regarding the material and conclusions contained in this letter report.

Sincerely,

Greg Kamman, PG, CHG
Principal Hydrologist



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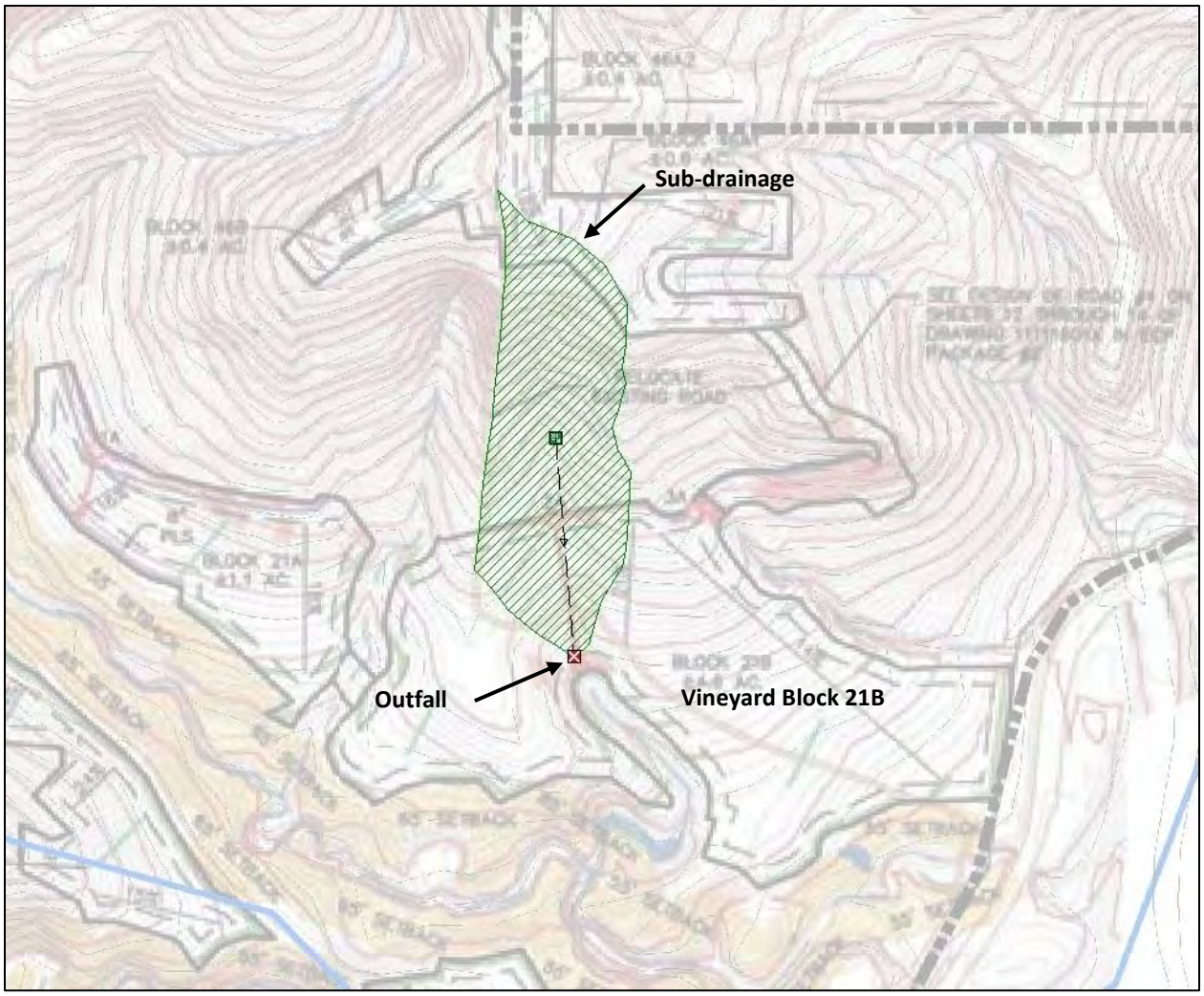

FIGURE 1: Hydrologic model configuration for existing conditions (no drainage improvements) drainage outfall from Vineyard Block 21B.

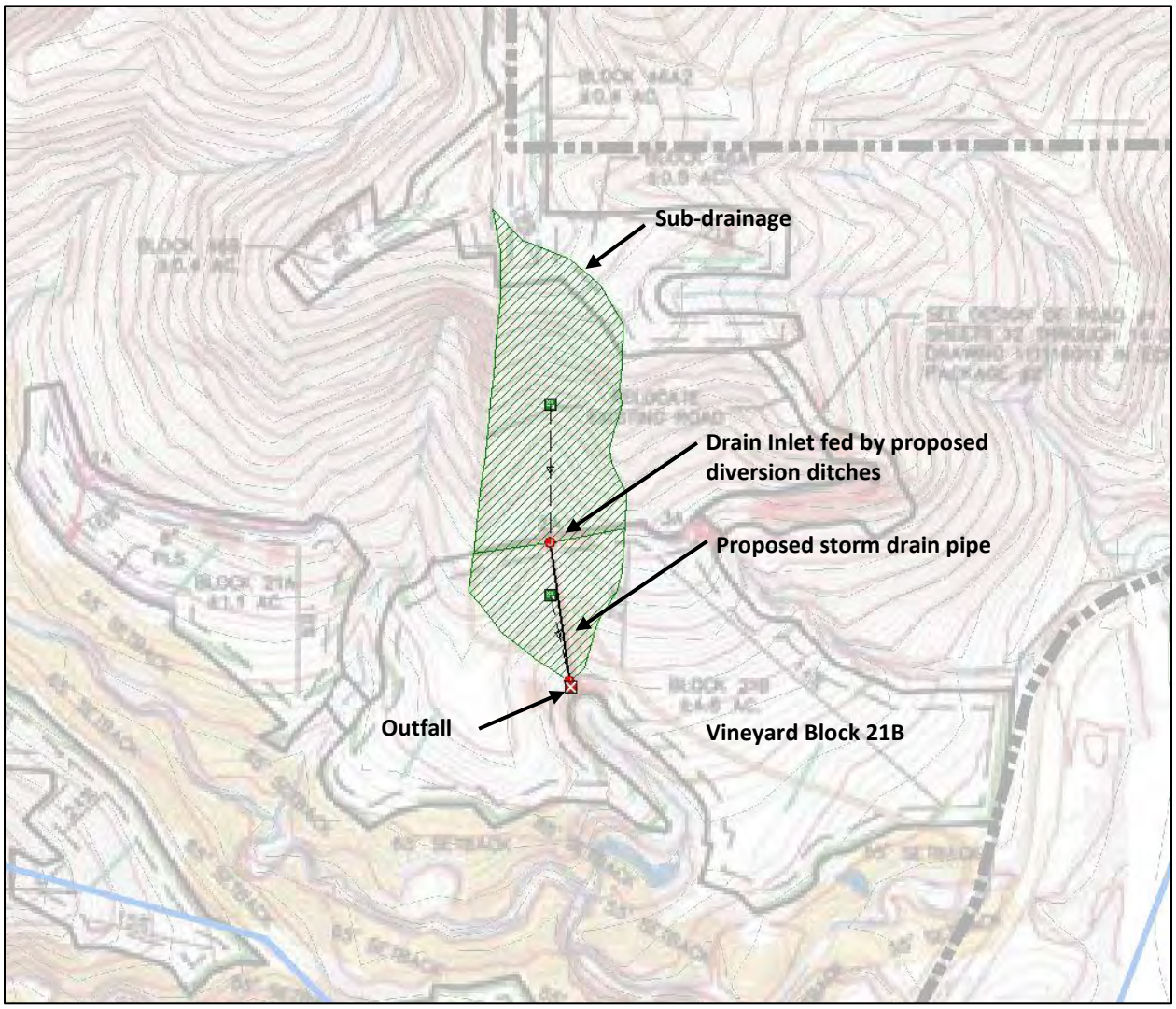

FIGURE 2: Hydrologic model configuration for proposed conditions (no drainage and with drainage improvements) drainage outfall from Vineyard Block 21B.

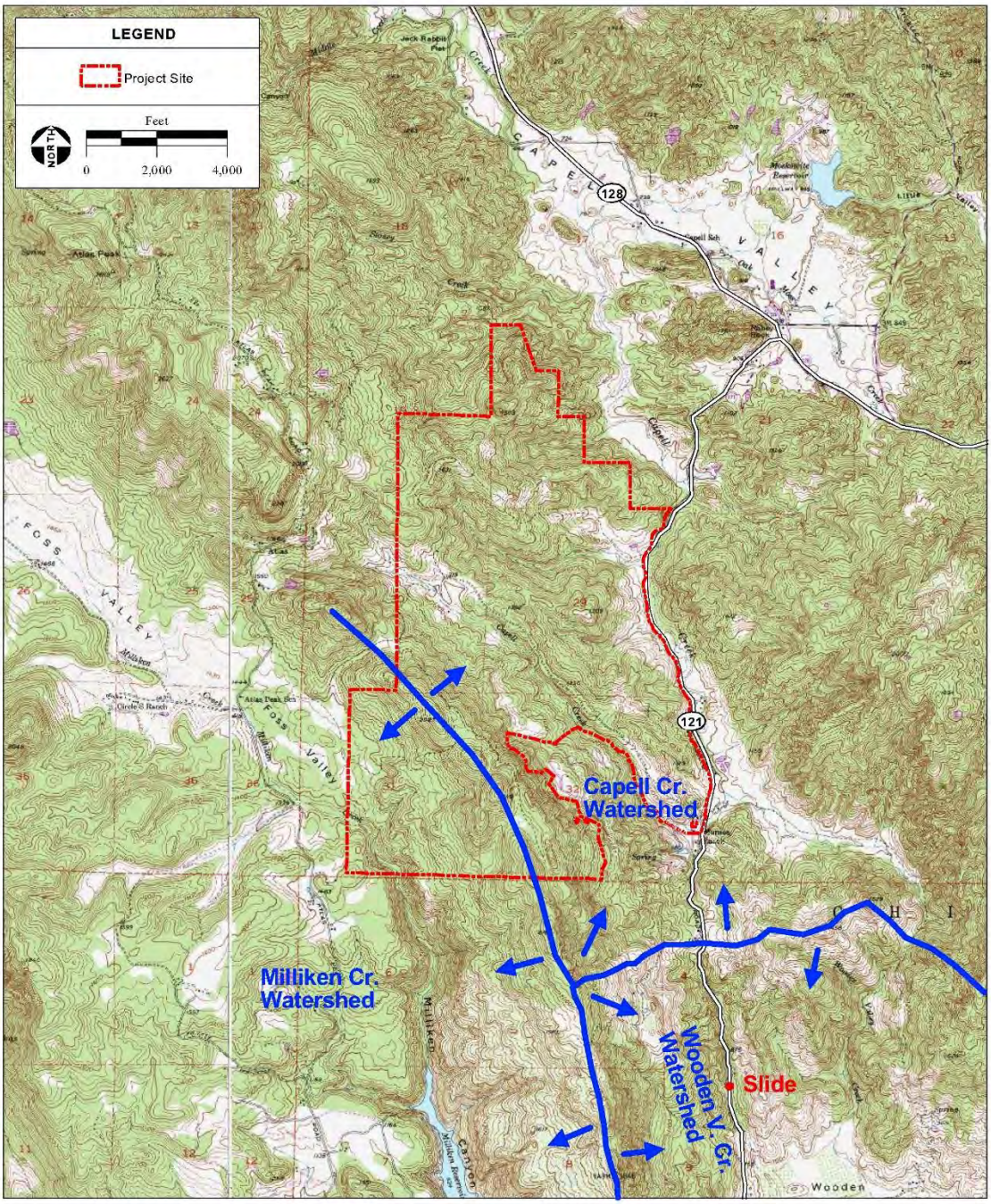

FIGURE 3: Location of recent landslide road failure on Highway 121.

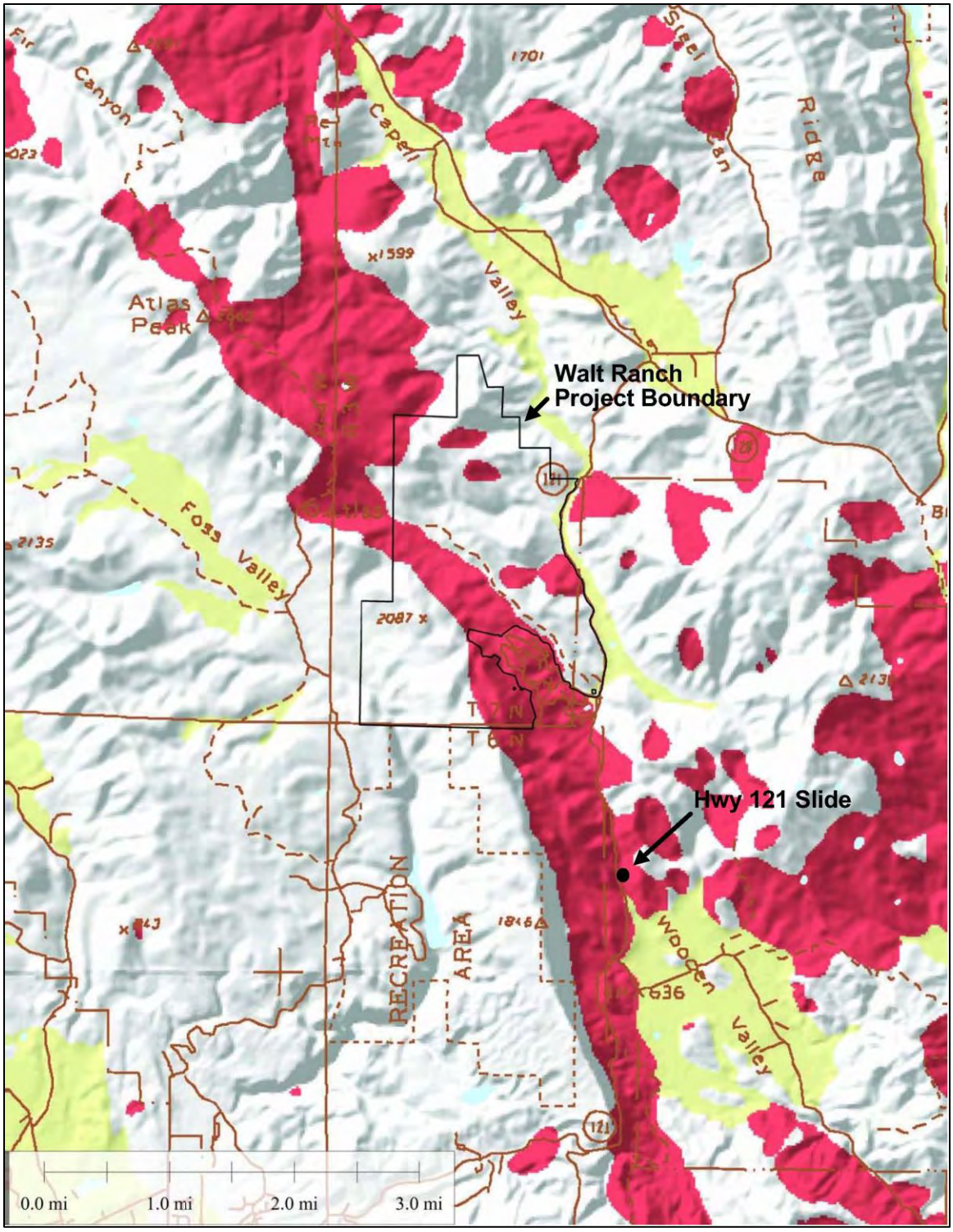

FIGURE 4: Distribution of slides and earth flows in Napa County, CA. Red shading indicates areas of mostly landslides. Source: Wentworth et al., 1997.

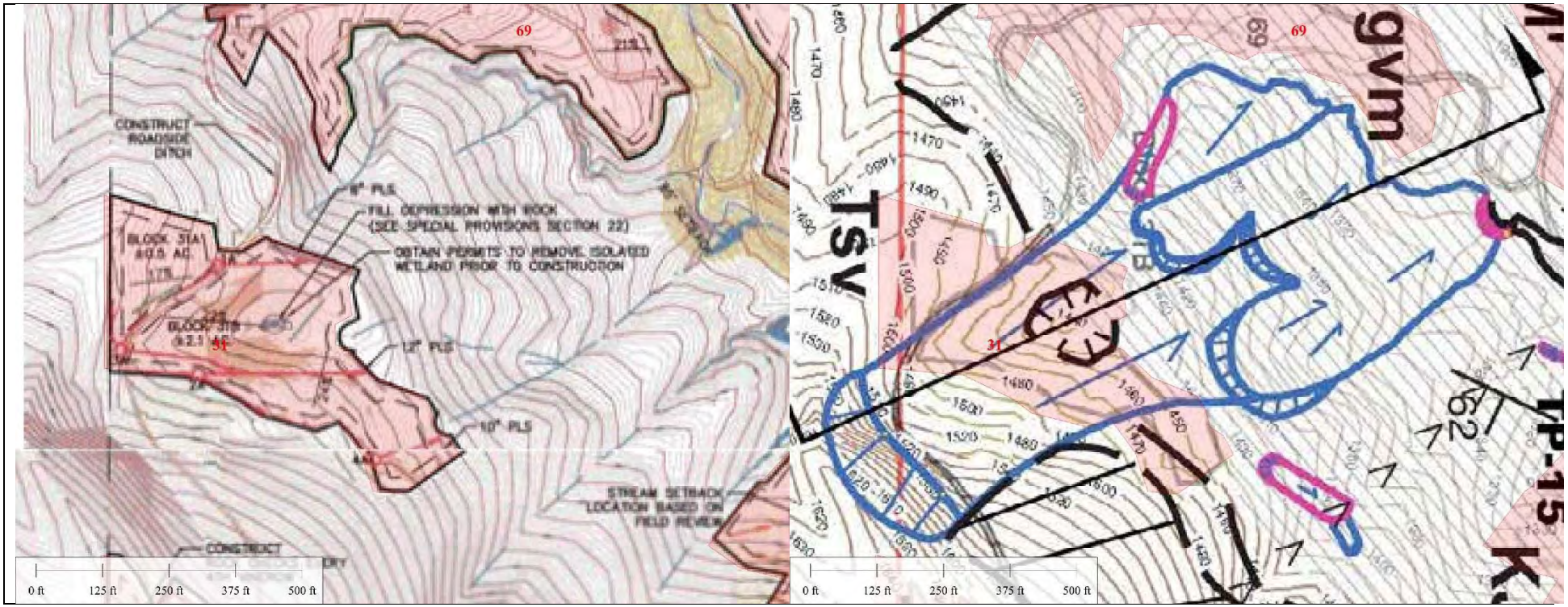

FIGURE 5: Vineyard Block 31A erosion control plan (left) and geologic map (right). Figures are aligned with north towards top of page. Vineyard blocks shaded red in both graphics. Dormant slides outlined in blue and active slides outlined in pink. Runoff flows from left to right (W-E) in vineyard block, discharging onto dormant landslide. Mitigation for increased runoff from Block 31A includes a small detention structure or gravel berm on downslope (right or East) edge of turnaround avenue. Sources: erosion control plans from PPI (2013) and geology map from Gilpin (2013).

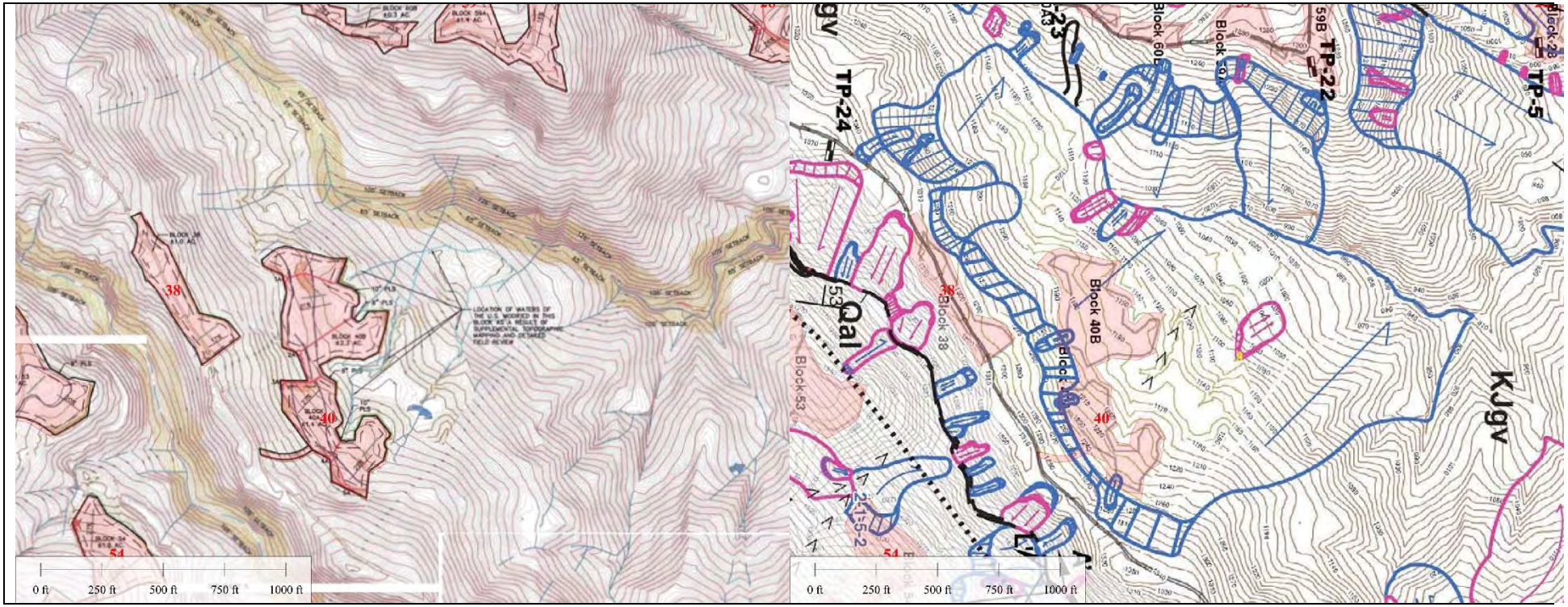

FIGURE 6: Vineyard Block 40B erosion control plan (left) and geologic map (right). Figures are aligned with north towards top of page. Vineyard blocks are shaded red in both graphics. Dormant slides outlined in blue and active slides outlined in pink. Runoff flows to the NE in vineyard block, discharging onto dormant landslide. Mitigation for increased runoff from Block 40B includes a small detention structure or gravel berm on downslope (right or East) edge of turnaround avenue. Sources: erosion control plans from PPI (2013) and geology map from Gilpin (2013).

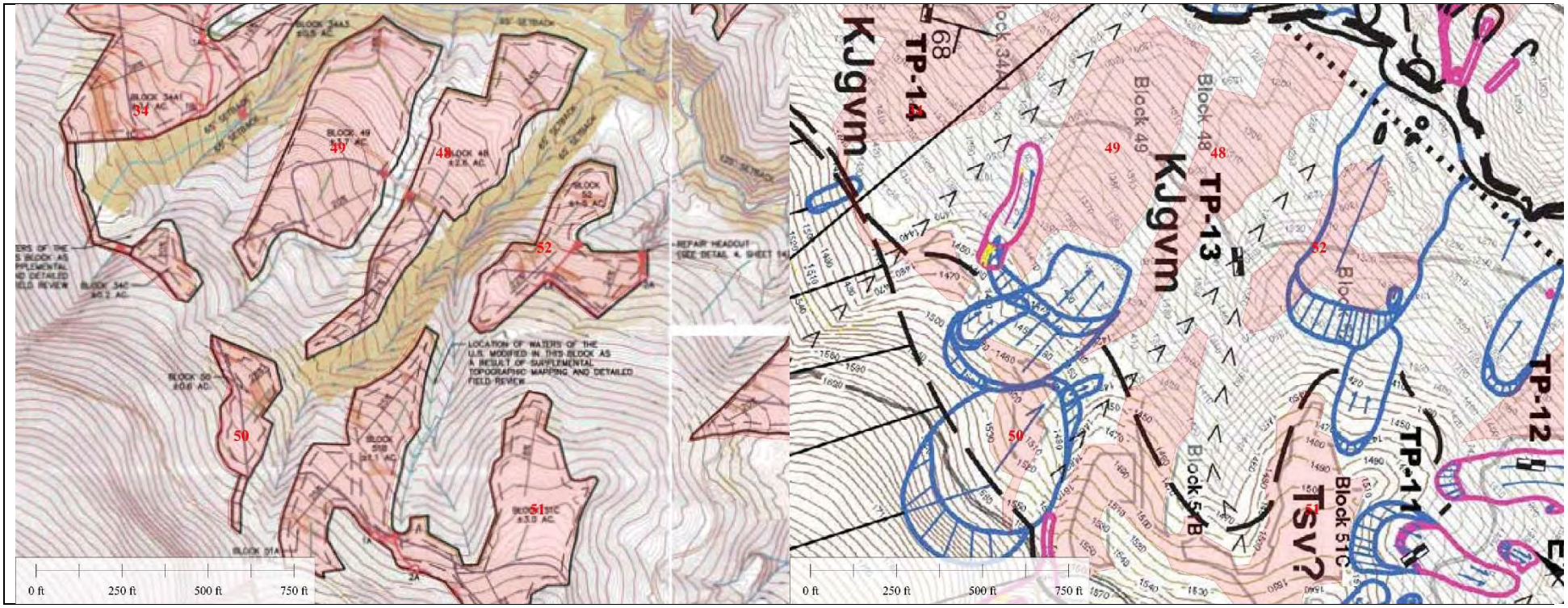

FIGURE 7: Vineyard Block 50 & 52 erosion control plans (left) and geologic map (right). Figures are aligned with north towards top of page. Vineyard blocks are shaded red in both graphics. Dormant slides outlined in blue and active slides outlined in pink. Runoff flows to the NE in both vineyard blocks, discharging onto dormant landslide. Mitigation measure at each block includes installation of localized detention structures of appropriate size to reduce predicted increases in runoff to pre-project levels. Sources: erosion control plans from PPI (2013) and geology map from Gilpin (2013).

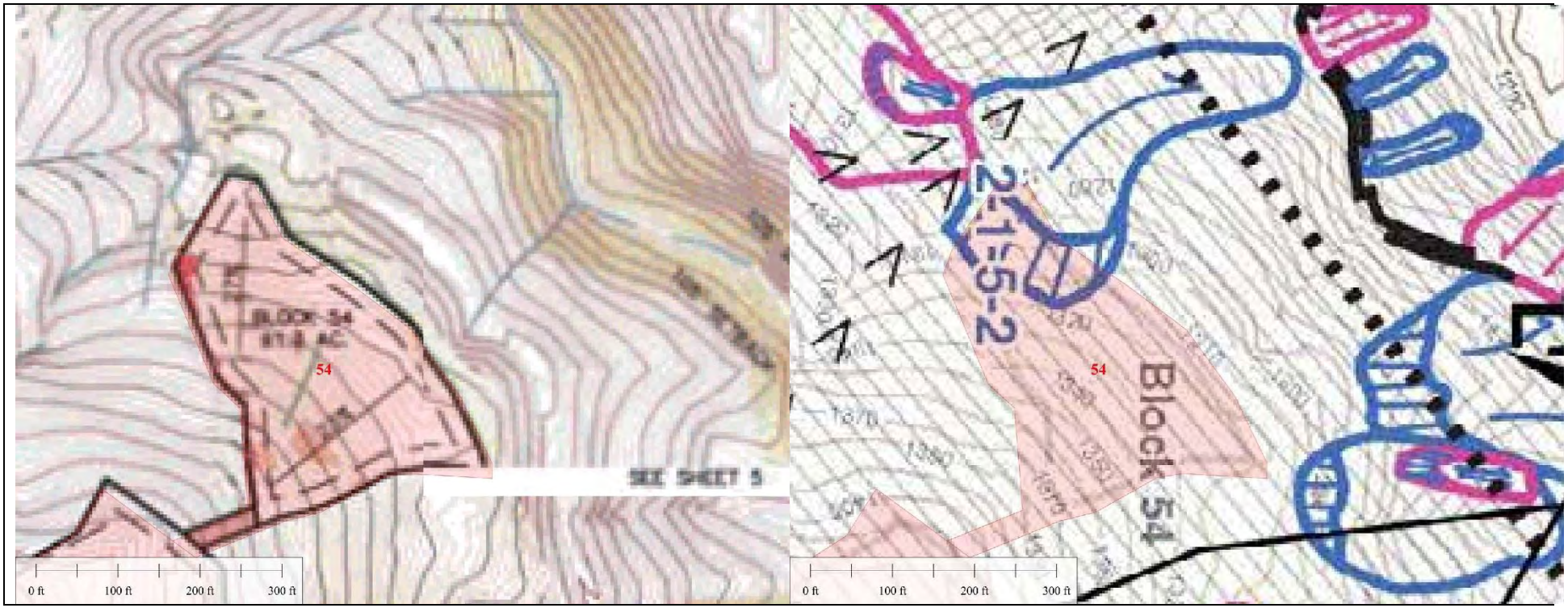

FIGURE 8: Vineyard Block 54 erosion control plan (left) and geologic map (right). Figures are aligned with north towards top of page. Vineyard blocks are shaded red in both graphics. Dormant slides outlined in blue and active slides outlined in pink. Runoff flows to the N-NE in vineyard block, discharging onto dormant landslide. Mitigation for increased runoff from Block 54 includes installing a small gravel berm on downslope (N-NE) edge of turnaround avenue. Sources: erosion control plans from PPI (2013) and geology map from Gilpin (2013).

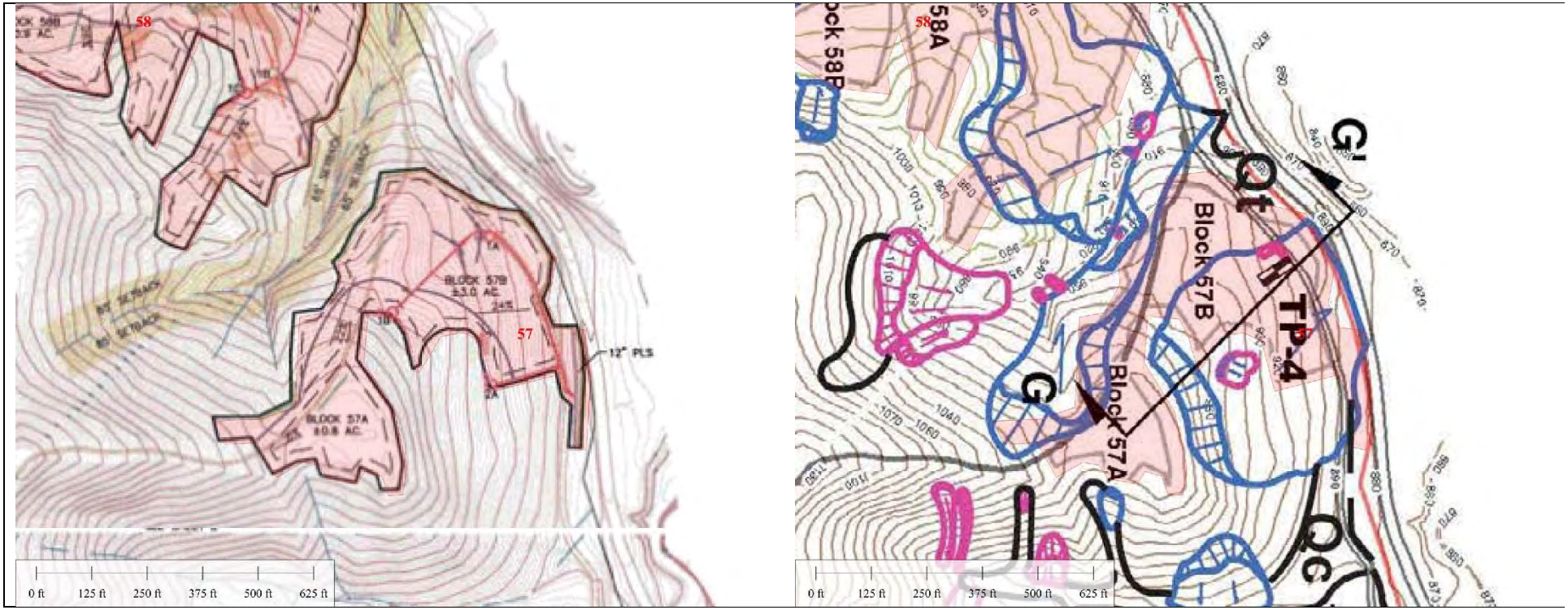

FIGURE 9: Vineyard Block 57 erosion control plan (left) and geologic map (right). Figures are aligned with north towards top of page. Vineyard blocks are shaded red in both graphics. Dormant slides outlined in blue and active slides outlined in pink. Runoff directed to the East in vineyard block, discharging at toe of dormant landslide. Mitigation for increased runoff from Block 57 includes installing a small gravel berm on downslope (East) edge of turnaround avenue. Sources: erosion control plans from PPI (2013) and geology map from Gilpin (2013).

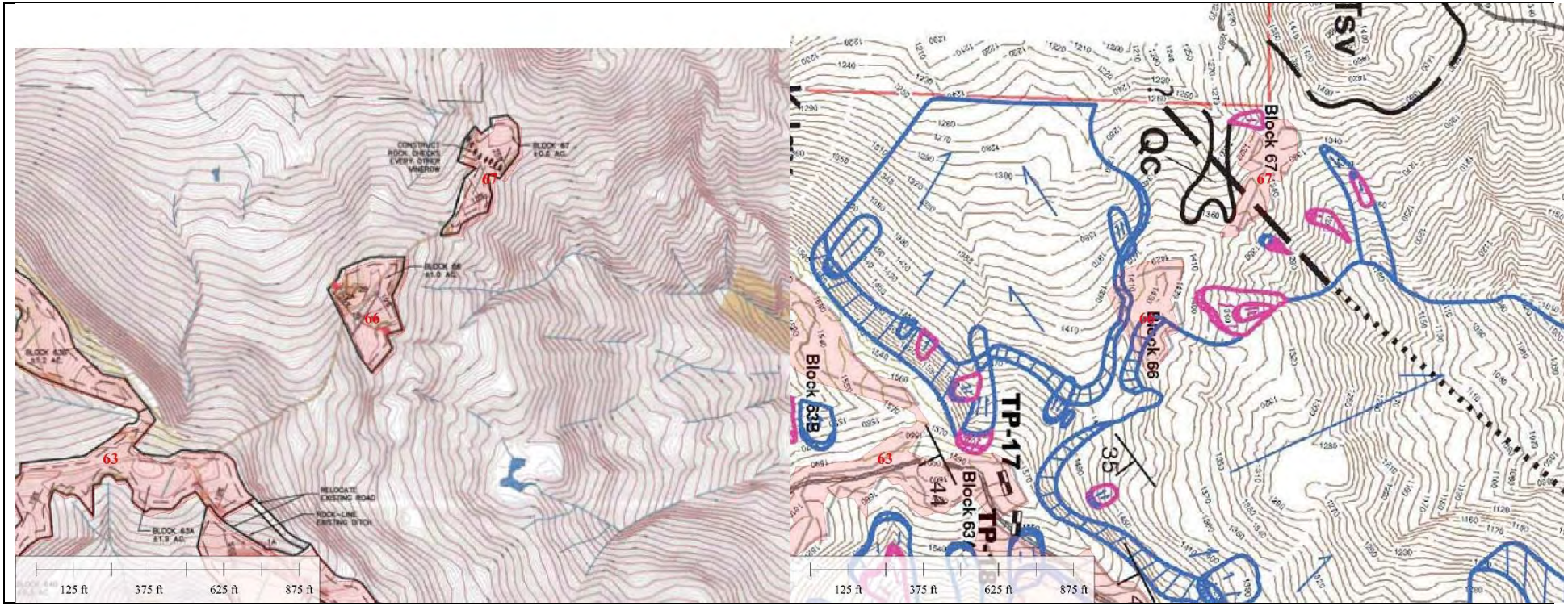

FIGURE 10: Vineyard Block 66 erosion control plan (left) and geologic map (right). Figures are aligned with north towards top of page. Vineyard blocks are shaded red in both graphics. Dormant slides outlined in blue and active slides outlined in pink. Block 66 centered on ridgeline and runoff is directed to the Northwest and Southeast sides of vineyard block, discharging onto bordering dormant landslides. Mitigation for increased runoff from Block 57 includes installing a small gravel berm on downslope edges of turnaround avenues on NW and SE sides of block. Sources: erosion control plans from PPI (2013) and geology map from Gilpin (2013).

ATTACHMENT A

- **USDA-NRCS Correspondence (2 letters)**
- **Part 630 Hydrology, Chapter 7 (Hydrologic Soil Groups) of National Engineering Handbook (USDA-NRCS, 2003)**
- **Excerpt from USDA-NRCS Soil Survey Manual (pg. 36-41, Chapter 3; 1993) Field Estimate Procedure for Estimating Saturated Hydraulic Conductivity.**

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June 2, 2016

Charles Schembre
Napa County Resource Conservation District
Napa, California

Subject: Effect of Ripping on Hydrologic Soil Groups, Updated

This letter gives policy and recommendations from NRCS on changing Hydrologic Soil Groups after the ripping of shallow soils.

On February 28, 2014 I wrote a letter to Dave Steiner describing how it was possible to change Hydrologic Soil Groups by ripping them. This letter supersedes that opinion.

1. The letter dated February 28, 2014 gives the theoretical effect of ripping based on the decision matrix in the NRCS National Engineering Handbook. Part 630, Chapter 7, page 7-4, Table 7-1 "Criteria for assignment of hydrologic soil groups (HSG)."

2. The actual HSG of the disturbed soil condition resulting from ripping should be verified by an on-site investigation as required by the National Engineering Handbook, Part 630.0702, which states: "Disturbed soils. As a result of construction and other disturbances, the soil profile can be altered from its natural state and the listed group assignments generally no longer apply, nor can any supposition based on the natural soil be made that will accurately describe the hydrologic properties of the disturbed soil. In these circumstances, an onsite investigation should be made to determine the hydrologic soil group."

3. When not using the hydrologic soil groups given in the current soil survey report for Napa County, the HSGs of the soils at the proposed vineyard sites should be determined on a case by case basis by the consultants.

I have attached the letter dated February 28, 2014.

Ken Oster
Area Resource Soil Scientist

cc: Rita Steiner, District Conservationist, NRCS, Napa, CA
Tony Rolfes, State Soil Scientist, NRCS, Davis, CA

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February 28, 2014

Dave Steiner
Napa County Resource Conservation District
Napa, California

Subject: Effect of Ripping on Hydrologic Soil Group, Updated

I have updated my analysis of data from the Soil Survey of Napa County to determine the effect of ripping soils to 36 inches depth on the Hydrologic Soils Group (HSG). This analysis replaces the letter written to Phill Blake on February 12, 2008.

Summary of Findings

I find that upon ripping to 36 inches deep the HSG of the following soils would change from D to C: Hambright, Lodo, Maymen and Millsholm. The HSG for the Kidd soil would change from D to B. Increases in soil depth from less than to more than 20 inches can change HSG even without changes in saturated hydrologic conductivity (Ksat).

Ripping through the lithic bedrock on the following soils may be difficult: Hambright, Kidd, Maymen and Millshlom. Ripping through paralithic bedrock on the following soils may be easier: Lodo.

Principles of Analysis

I determined HSG from the current criteria in the NRCS National Engineering Handbook dated January 2009. I have attached the criteria to this report. In some cases this does not agree with the data in the Soil Survey Reports.

Ripping may not permanently change the Ksat of soils. Ripping may shatter, but may not mix them. The increase in Ksat would then be temporary, because soils may reconsolidate after a few wetting and drying cycles. Nevertheless, the deepening of the soil alone would change the HSG.

I have no Ksat data for Rock Outcrop, and so cannot assess the effect of ripping on their HSG. Nevertheless I would expect water infiltration into bedrock to improve upon ripping.

I excluded the Henneke and Montara soils as candidates for vineyard development because of the infertility of soils developed from serpentinite.

Details of Findings

See the attached table "Effect of Ripping Soils on Hydrologic Soil Group."

Ken Oster
Area Resource Soil Scientist

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NRCS Natural Resources Conservation Service

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Effect of Ripping Soils on Hydrologic Soil Group

Map Unit Symbol	Soil Name	Natural or Ripped Soil?	Soil Texture least transmissive layer	% Clay in least transmissive layer	Depth to water impermeable layer (inches)	Depth to high water table (inches)	Saturated hydraulic conductivity (Ksat) of the least transmissive layer (micro m/sec)	Ksat Depth Range (inches)	HSG (1)
116, 117	Clear Lake	Natural	clay	40-60	>60	>36	.42-1.40	0	C
		Ripped to 36"	clay	40-60	>60	>36	.42-1.40	0	C
126, 127, 128, 129	Diablo	Natural	clay	35-60	40-80	None	.42-1.40	0	C
		Ripped to 36"	clay	35-60	40-80	None	.42-1.40	0	C
148, 149	Forward	Natural	loam	10-18	25-29	None	14-42	0	B
		Ripped to 36"	loam	10-18	36	None	14-42	0	B
143	Guenoc	Natural	clay loam	35-45	25-40	None	1.4-4	12	C
		Ripped to 36"	clay loam	35-45	36	None	1.4-4	12	C
151, 152, 176	Hambright	Natural	loam	20-27	10-20	None	4-14	0	D
		Ripped to 36"	loam	20-27	36	None	4-14	0	C
142, 153,	Henneke	Natural	clay loam - clay	35-55	10-20	None	1.4-4	7	D
		Ripped to 36"	clay loam - clay	35-55	36	None	1.4-4	7	C
134, 141, 148, 155, 156, 177	Kidd	Natural	sandy loam	10-20	13-20	None	14-42	0	D
		Ripped to 36"	sandy loam	10-20	36	None	14-42	0	B
157, 163	Lodo	Natural	loam	18-27	6-20	None	4-14	0	D
		Ripped to 36"	loam	18-27	36	None	4-14	0	C
161	Maxwell	Natural	clay	40-55	>60	None	.01-.42	0	D
		Ripped to 36"	clay	40-55	>60	None	.01-.42	0	D
157, 163	Maymen	Natural	loam	10-25	10-16	None	4-14	0	D
		Ripped to 36"	loam	10-25	36	None	4-14	0	C
163, 164, 165	Millsholm	Natural	loam	20-27	10-20	None	4-14	0	D
		Ripped to 36"	loam	20-27	36	None	4-14	0	C
166, 167	Montara	Natural	clay loam	27-35	10-15	None	1.4-4	0	D
		Ripped to 36"	clay loam	27-35	36	None	1.4-4	0	C
142	Rock Outcrop	Natural			0	None			No Data
		Ripped to 36"				None			No Data
151	Rock Outcrop	Natural			0	None			No Data
		Ripped to 36"				None			No Data
152	Rock Outcrop	Natural			0	None			No Data
		Ripped to 36"				None			No Data
175	Rock Outcrop	Natural			0	None			No Data
		Ripped to 36"				None			No Data
175	Rock Outcrop	Natural			0	None			No Data
		Ripped to 36"				None			No Data
175	Rock Outcrop	Natural			0	None			No Data
		Ripped to 36"				None			No Data
175	Rock Outcrop	Natural			0	None			No Data
		Ripped to 36"				None			No Data
176	Rock Outcrop	Natural			0	None			No Data
		Ripped to 36"				None			No Data

(1) January 2009 criteria in National Engineering Handbook, Chapter 7
http://www.nrcs.usda.gov/wps/portal/nrcs/detailfull/national/water/?cid=stelprdb1043063

by Ken Oster, Area Resource Soil Scientist, USDA-NRCS, 2/28/2014

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NRCS Natural Resources Conservation Service

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Table 7–1 Criteria for assignment of hydrologic soil group (HSG)

Depth to water impermeable layer 1/	Depth to high water table 2/	K_{sat} of least transmissive layer in depth range	K_{sat} depth range	HSG 3/
<50 cm [<20 in]	—	—	—	D
50 to 100 cm [20 to 40 in]	<60 cm [<24 in]	>40.0 µm/s (>5.67 in/h)	0 to 60 cm [0 to 24 in]	A/D
		>10.0 to ≤40.0 µm/s (>1.42 to ≤5.67 in/h)	0 to 60 cm [0 to 24 in]	B/D
		>1.0 to ≤10.0 µm/s (>0.14 to ≤1.42 in/h)	0 to 60 cm [0 to 24 in]	C/D
		≤1.0 µm/s (≤0.14 in/h)	0 to 60 cm [0 to 24 in]	D
	≥60 cm [>24 in]	>40.0 µm/s (>5.67 in/h)	0 to 50 cm [0 to 20 in]	A
		>10.0 to ≤40.0 µm/s (>1.42 to ≤5.67 in/h)	0 to 50 cm [0 to 20 in]	B
		>1.0 to ≤10.0 µm/s (>0.14 to ≤1.42 in/h)	0 to 50 cm [0 to 20 in]	C
		≤1.0 µm/s (≤0.14 in/h)	0 to 50 cm [0 to 20 in]	D
>100 cm [>40 in]	<60 cm [<24 in]	>10.0 µm/s (>1.42 in/h)	0 to 100 cm [0 to 40 in]	A/D
		>4.0 to ≤10.0 µm/s (>0.57 to ≤1.42 in/h)	0 to 100 cm [0 to 40 in]	B/D
		>0.40 to ≤4.0 µm/s (>0.06 to ≤0.57 in/h)	0 to 100 cm [0 to 40 in]	C/D
		≤0.40 µm/s (≤0.06 in/h)	0 to 100 cm [0 to 40 in]	D
	60 to 100 cm [24 to 40 in]	>40.0 µm/s (>5.67 in/h)	0 to 50 cm [0 to 20 in]	A
		>10.0 to ≤40.0 µm/s (>1.42 to ≤5.67 in/h)	0 to 50 cm [0 to 20 in]	B
		>1.0 to ≤10.0 µm/s (>0.14 to ≤1.42 in/h)	0 to 50 cm [0 to 20 in]	C
		≤1.0 µm/s (≤0.14 in/h)	0 to 50 cm [0 to 20 in]	D
	>100 cm [>40 in]	>10.0 µm/s (>1.42 in/h)	0 to 100 cm [0 to 40 in]	A
		>4.0 to ≤ 10.0 µm/s (>0.57 to ≤1.42 in/h)	0 to 100 cm [0 to 40 in]	B
		>0.40 to ≤4.0 µm/s (>0.06 to ≤0.57 in/h)	0 to 100 cm [0 to 40 in]	C
		≤0.40 µm/s (≤0.06 in/h)	0 to 100 cm [0 to 40 in]	D

1/ An impermeable layer has a K_{sat} less than 0.01 µm/s [0.0014 in/h] or a component restriction of fragipan; duripan; petrocalcic; orstein; petrogypsic; cemented horizon; densic material; placic; bedrock, paralithic; bedrock, lithic; bedrock, densic; or permafrost.

2/ High water table during any month during the year.

3/ Dual HSG classes are applied only for wet soils (water table less than 60 cm [24 in]). If these soils can be drained, a less restrictive HSG can be assigned, depending on the K_{sat}.

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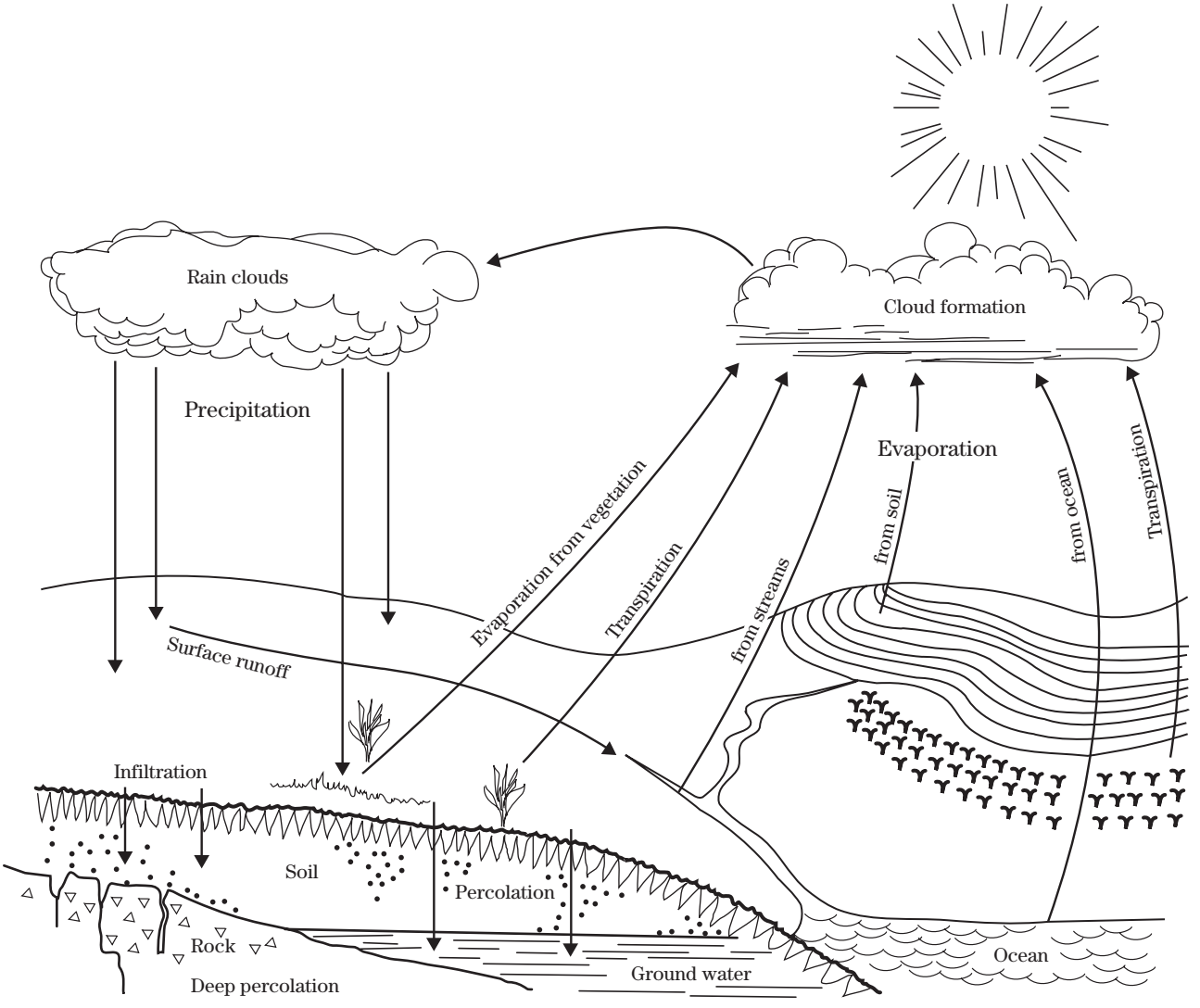
Part 630 Hydrology
National Engineering Handbook

Chapter 7 Hydrologic Soil Groups



Issued January 2009

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(210–VI–NEH, January 2009)

Acknowledgments

Chapter 7 was originally prepared by **Victor Mockus** (retired) and reprinted with minor revisions in 1972. This version was prepared by the U.S. Department of Agriculture, Natural Resources Conservation Service (NRCS) under guidance of **Jon Werner** (retired), NRCS; with assistance from **Donald E. Woodward** (retired), NRCS; **Robert Nielsen** (retired), NRCS; **Robert Dobos**, soil scientist, NRCS; and **Allen Hjelmfelt** (retired), Agricultural Research Service. It was finalized under the guidance of **Claudia C. Hoeft**, national hydraulic engineer.

Preface

This chapter of the National Engineering Handbook (NEH) Part 630, Hydrology, represents a multi-year collaboration between soil scientists at the National Soil Survey Center (NSSC) and engineers in the Conservation Engineering Division (CED) at National Headquarters to develop an agreed upon model for classifying hydrologic soil groups.

This chapter contains the official definitions of the various hydrologic soil groups. The National Soil Survey Handbook (NSSH) references and refers users to NEH630.07 as the official hydrologic soil group (HSG) reference. Updating the hydrologic soil groups was originally planned and developed based on this perspective.

Listing HSGs by soil map unit component and not by soil series is a new concept for the engineers. Past engineering references contained lists of HSGs by soil series. Soil series are continually being defined and re-defined, and the list of soil series names changes so frequently as to make the task of maintaining a single national list virtually impossible. Therefore, no such lists will be maintained. All such references are obsolete and their use should be discontinued.

Instructions for obtaining HSG information can be found in the introduction of this chapter.

Chapter 7 Hydrologic Soil Groups

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Chapter 7 Hydrologic Soil Groups

630.0700 Introduction

This chapter defines four hydrologic soil groups, or HSGs, that, along with land use, management practices, and hydrologic conditions, determine a soil's associated runoff curve number (NEH630.09). Runoff curve numbers are used to estimate direct runoff from rainfall (NEH630.10).

A map unit is a collection of areas defined and named the same in terms of their soil components or miscellaneous areas or both (NSSH 627.03). Soil scientists assign map unit components to hydrologic soil groups. Map unit components assigned to a specific hydrologic soil group have similar physical and runoff characteristics. Soils in the United States, its territories, and Puerto Rico have been assigned to hydrologic soil groups. The assigned groups can be found by consulting the Natural Resources Conservation Service's (NRCS) Field Office Technical Guide; published soil survey data bases; the NRCS Soil Data Mart Web site (*http://soildatamart.nrcs.usda.gov/*); and/or the Web Soil Survey Web site (*http://websoilsurvey.nrcs.usda.gov/*).

The NRCS State soil scientist should be contacted if a soil survey does not exist for a given area or where the soils within a watershed have not been assigned to hydrologic groups.

630.0701 Hydrologic soil groups

Soils were originally assigned to hydrologic soil groups based on measured rainfall, runoff, and infiltrometer data (Musgrave 1955). Since the initial work was done to establish these groupings, assignment of soils to hydrologic soil groups has been based on the judgment of soil scientists. Assignments are made based on comparison of the characteristics of unclassified soil profiles with profiles of soils already placed into hydrologic soil groups. Most of the groupings are based on the premise that soils found within a climatic region that are similar in depth to a restrictive layer or water table, transmission rate of water, texture, structure, and degree of swelling when saturated, will have similar runoff responses. The classes are based on the following factors:

- intake and transmission of water under the conditions of maximum yearly wetness (thoroughly wet)
- soil not frozen
- bare soil surface
- maximum swelling of expansive clays

The slope of the soil surface is not considered when assigning hydrologic soil groups.

In its simplest form, hydrologic soil group is determined by the water transmitting soil layer with the lowest saturated hydraulic conductivity and depth to any layer that is more or less water impermeable (such as a fragipan or duripan) or depth to a water table (if present). The least transmissive layer can be any soil horizon that transmits water at a slower rate relative to those horizons above or below it. For example, a layer having a saturated hydraulic conductivity of 9.0 micrometers per second (1.3 inches per hour) is the least transmissive layer in a soil if the layers above and below it have a saturated hydraulic conductivity of 23 micrometers per second (3.3 inches per hour).

Water impermeable soil layers are among those types of layers recorded in the component restriction table of the National Soil Information System (NASIS) database. The saturated hydraulic conductivity of an impermeable or nearly impermeable layer may range

from essentially 0 micrometers per second (0 inches per hour) to 0.9 micrometers per second (0.1 inches per hour). For simplicity, either case is considered impermeable for hydrologic soil group purposes. In some cases, saturated hydraulic conductivity (a quantitatively measured characteristic) data are not always readily available or obtainable. In these situations, other soil properties such as texture, compaction (bulk density), strength of soil structure, clay mineralogy, and organic matter are used to estimate water movement. Table 7–1 relates saturated hydraulic conductivity to hydrologic soil group.

The four hydrologic soil groups (HSGs) are described as:

Group A—Soils in this group have low runoff potential when thoroughly wet. Water is transmitted freely through the soil. Group A soils typically have less than 10 percent clay and more than 90 percent sand or gravel and have gravel or sand textures. Some soils having loamy sand, sandy loam, loam or silt loam textures may be placed in this group if they are well aggregated, of low bulk density, or contain greater than 35 percent rock fragments.

The limits on the diagnostic physical characteristics of group A are as follows. The saturated hydraulic conductivity of all soil layers exceeds 40.0 micrometers per second (5.67 inches per hour). The depth to any water impermeable layer is greater than 50 centimeters [20 inches]. The depth to the water table is greater than 60 centimeters [24 inches]. Soils that are deeper than 100 centimeters [40 inches] to a water impermeable layer and a water table are in group A if the saturated hydraulic conductivity of all soil layers within 100 centimeters [40 inches] of the surface exceeds 10 micrometers per second (1.42 inches per hour).

Group B—Soils in this group have moderately low runoff potential when thoroughly wet. Water transmission through the soil is unimpeded. Group B soils typically have between 10 percent and 20 percent clay and 50 percent to 90 percent sand and have loamy sand or sandy loam textures. Some soils having loam, silt loam, silt, or sandy clay loam textures may be placed in this group if they are well aggregated, of low bulk density, or contain greater than 35 percent rock fragments.

The limits on the diagnostic physical characteristics of group B are as follows. The saturated hydraulic conductivity in the least transmissive layer between the surface and 50 centimeters [20 inches] ranges from 10.0 micrometers per second (1.42 inches per hour) to 40.0 micrometers per second (5.67 inches per hour). The depth to any water impermeable layer is greater than 50 centimeters [20 inches]. The depth to the water table is greater than 60 centimeters [24 inches]. Soils that are deeper than 100 centimeters [40 inches] to a water impermeable layer and a water table are in group B if the saturated hydraulic conductivity of all soil layers within 100 centimeters [40 inches] of the surface exceeds 4.0 micrometers per second (0.57 inches per hour) but is less than 10.0 micrometers per second (1.42 inches per hour).

Group C—Soils in this group have moderately high runoff potential when thoroughly wet. Water transmission through the soil is somewhat restricted. Group C soils typically have between 20 percent and 40 percent clay and less than 50 percent sand and have loam, silt loam, sandy clay loam, clay loam, and silty clay loam textures. Some soils having clay, silty clay, or sandy clay textures may be placed in this group if they are well aggregated, of low bulk density, or contain greater than 35 percent rock fragments.

The limits on the diagnostic physical characteristics of group C are as follows. The saturated hydraulic conductivity in the least transmissive layer between the surface and 50 centimeters [20 inches] is between 1.0 micrometers per second (0.14 inches per hour) and 10.0 micrometers per second (1.42 inches per hour). The depth to any water impermeable layer is greater than 50 centimeters [20 inches]. The depth to the water table is greater than 60 centimeters [24 inches]. Soils that are deeper than 100 centimeters [40 inches] to a restriction and a water table are in group C if the saturated hydraulic conductivity of all soil layers within 100 centimeters [40 inches] of the surface exceeds 0.40 micrometers per second (0.06 inches per hour) but is less than 4.0 micrometers per second (0.57 inches per hour).

Group D—Soils in this group have high runoff potential when thoroughly wet. Water movement through the soil is restricted or very restricted. Group D soils typically have greater than 40 percent clay, less than 50 percent sand, and have clayey textures. In some areas, they also have high shrink-swell potential. All soils with a depth to a water impermeable layer less than 50 centimeters [20 inches] and all soils with a water table

within 60 centimeters [24 inches] of the surface are in this group, although some may have a dual classification, as described in the next section, if they can be adequately drained.

The limits on the physical diagnostic characteristics of group D are as follows. For soils with a water impermeable layer at a depth between 50 centimeters and 100 centimeters [20 and 40 inches], the saturated hydraulic conductivity in the least transmissive soil layer is less than or equal to 1.0 micrometers per second (0.14 inches per hour). For soils that are deeper than 100 centimeters [40 inches] to a restriction or water table, the saturated hydraulic conductivity of all soil layers within 100 centimeters [40 inches] of the surface is less than or equal to 0.40 micrometers per second (0.06 inches per hour).

Dual hydrologic soil groups—Certain wet soils are placed in group D based solely on the presence of a water table within 60 centimeters [24 inches] of the surface even though the saturated hydraulic conductivity may be favorable for water transmission. If these soils can be adequately drained, then they are assigned to dual hydrologic soil groups (A/D, B/D, and C/D) based on their saturated hydraulic conductivity and the water table depth when drained. The first letter applies to the drained condition and the second to the undrained condition. For the purpose of hydrologic soil group, adequately drained means that the seasonal high water table is kept at least 60 centimeters [24 inches] below the surface in a soil where it would be higher in a natural state.

Matrix of hydrologic soil group assignment criteria—The decision matrix in table 7–1 can be used to determine a soil's hydrologic soil group. If saturated hydraulic conductivity data are available and deemed to be reliable, then these data, along with water table depth information, should be used to place the soil into the appropriate hydrologic soil group. If these data are not available, the hydrologic soil group is determined by observing the properties of the soil in the field. Factors such as texture, compaction (bulk density), strength of soil structure, clay mineralogy, and organic matter are considered in estimating the hydraulic conductivity of each layer in the soil profile. The depth and hydraulic conductivity of any water impermeable layer and the depth to any high water table are used to determine correct hydrologic soil group for the soil. The property that is most limiting to water movement generally determines the soil's hydrologic group. In anomalous situations, when adjustments to hydrologic soil group become necessary, they shall be made by the NRCS State soil scientist in consultation with the State conservation engineer.

Table 7–1 Criteria for assignment of hydrologic soil group (HSG)

Depth to water impermeable layer 1/	Depth to high water table 2/	K_{sat} of least transmissive layer in depth range	K_{sat} depth range	HSG 3/
<50 cm [<20 in]	—	—	—	D
50 to 100 cm [20 to 40 in]	<60 cm [<24 in]	>40.0 µm/s (>5.67 in/h)	0 to 60 cm [0 to 24 in]	A/D
		>10.0 to ≤40.0 µm/s (>1.42 to ≤5.67 in/h)	0 to 60 cm [0 to 24 in]	B/D
		>1.0 to ≤10.0 µm/s (>0.14 to ≤1.42 in/h)	0 to 60 cm [0 to 24 in]	C/D
		≤1.0 µm/s (≤0.14 in/h)	0 to 60 cm [0 to 24 in]	D
	≥60 cm [≥24 in]	>40.0 µm/s (>5.67 in/h)	0 to 50 cm [0 to 20 in]	A
		>10.0 to ≤40.0 µm/s (>1.42 to ≤5.67 in/h)	0 to 50 cm [0 to 20 in]	B
		>1.0 to ≤10.0 µm/s (>0.14 to ≤1.42 in/h)	0 to 50 cm [0 to 20 in]	C
		≤1.0 µm/s (≤0.14 in/h)	0 to 50 cm [0 to 20 in]	D
>100 cm [>40 in]	<60 cm [<24 in]	>10.0 µm/s (>1.42 in/h)	0 to 100 cm [0 to 40 in]	A/D
		>4.0 to ≤10.0 µm/s (>0.57 to ≤1.42 in/h)	0 to 100 cm [0 to 40 in]	B/D
		>0.40 to ≤4.0 µm/s (>0.06 to ≤0.57 in/h)	0 to 100 cm [0 to 40 in]	C/D
		≤0.40 µm/s (≤0.06 in/h)	0 to 100 cm [0 to 40 in]	D
	60 to 100 cm [24 to 40 in]	>40.0 µm/s (>5.67 in/h)	0 to 50 cm [0 to 20 in]	A
		>10.0 to ≤40.0 µm/s (>1.42 to ≤5.67 in/h)	0 to 50 cm [0 to 20 in]	B
		>1.0 to ≤10.0 µm/s (>0.14 to ≤1.42 in/h)	0 to 50 cm [0 to 20 in]	C
		≤1.0 µm/s (≤0.14 in/h)	0 to 50 cm [0 to 20 in]	D
	>100 cm [>40 in]	>10.0 µm/s (>1.42 in/h)	0 to 100 cm [0 to 40 in]	A
		>4.0 to ≤ 10.0 µm/s (>0.57 to ≤1.42 in/h)	0 to 100 cm [0 to 40 in]	B
		>0.40 to ≤4.0 µm/s (>0.06 to ≤0.57 in/h)	0 to 100 cm [0 to 40 in]	C
		≤0.40 µm/s (≤0.06 in/h)	0 to 100 cm [0 to 40 in]	D

1/ An impermeable layer has a K_{sat} less than 0.01 µm/s [0.0014 in/h] or a component restriction of fragipan; duripan; petrocalcic; orstein; petrogypsic; cemented horizon; densic material; placic; bedrock, paralithic; bedrock, lithic; bedrock, densic; or permafrost.

2/ High water table during any month during the year.

3/ Dual HSG classes are applied only for wet soils (water table less than 60 cm [24 in]). If these soils can be drained, a less restrictive HSG can be assigned, depending on the K_{sat}.

630.0702 Disturbed soils

As a result of construction and other disturbances, the soil profile can be altered from its natural state and the listed group assignments generally no longer apply, nor can any supposition based on the natural soil be made that will accurately describe the hydrologic properties of the disturbed soil. In these circumstances, an onsite investigation should be made to determine the hydrologic soil group. A general set of guidelines for estimating saturated hydraulic conductivity from field observable characteristics is presented in the Soil Survey Manual (Soil Survey Staff 1993).

630.0703 References

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Water Movement

Water movement concerns rates of flow into and within the soil and the related amount of water that runs off and does not enter the soil. Saturated hydraulic conductivity, infiltration rate, and surface runoff are part of the evaluation.

Saturated Hydraulic Conductivity

Water movement in soil is controlled by two factors: 1) the resistance of the soil matrix to water flow and 2) the forces acting on each element or unit of soil water. Darcy's law, the fundamental equation describing water movement in soil, relates the flow rate to these two factors. Mathematically, the general statement of Darcy's law for vertical, saturated flow is:

$$Q/At = -K_{sat}\, dH/dz$$

where the flow rate Q/At is what soil physicists call the flux density, i.e., the quantity of water Q moving past an area A, perpendicular to the direction of flow, in a time t. The vertical saturated hydraulic conductivity K_{sat} is the reciprocal, or inverse, of the resistance of the soil matrix to water flow. The term dH/dz is the hydraulic gradient, the driving force causing water to move in soil, the net result of all forces acting on the soil water. Rate of water movement is the product of the hydraulic conductivity and the hydraulic gradient.

A distinction is made between saturated and unsaturated hydraulic conductivity. Saturated flow occurs when the soil water pressure is positive; that is, when the soil matric potential is zero (satiated wet condition). In most soils this situation takes place when about 95 percent of the total pore space is filled with water. The remaining 5 percent is filled with entrapped air. If the soil remains saturated for a long time (several months or longer) the percent of the total pore space filled with water may approach 100. Saturated hydraulic conductivity cannot be used to describe water movement under unsaturated conditions.

The vertical saturated hydraulic conductivity K_{sat} is of interest here; it is the factor relating soil water flow rate (flux density) to the hydraulic gradient and is a measure of the ease of water movement in soil. K_{sat} is the reciprocal of the resistance of soil to water movement. As the resistance increases, the hydraulic conductivity decreases. Resistance to water movement in saturated soil is primarily a function of the arrangement and size distribution of pores. Large, continuous pores have a lower resistance to flow (and thus a higher conductivity) than small or discontinuous pores. Soils with high clay content generally have lower hydraulic conductivities than sandy soils because the pore size distribution in sandy soil favors large pores even though sandy soils usually have higher bulk densities and lower total porosities (total pore space) than clayey soils. As illustrated by Poiseuille's law, the resistance to flow in a tube varies as the square of the radius. Thus, as a soil pore or channel doubles in size, its resistance to flow is reduced by a factor of 4; in other words its hydraulic conductivity increases 4-fold.

Hydraulic conductivity is a highly variable soil property. Measured values easily may vary by 10-fold or more for a particular soil series. Values measured on soil samples taken within centimeters of one another may vary by 10-fold or more. In addition, measured hydraulic conductivity values for a soil may vary dramatically with the method used for measurement. Laboratory determined values rarely agree with field measurements, the differences often being

on the order of 100-fold or more. Field methods generally are more reliable than laboratory methods.

Because of the highly variable nature of soil hydraulic conductivity, a single measured value is an unreliable indicator of the hydraulic conductivity of a soil. An average of several values will give a reliable estimate which can be used to place the soil in a particular hydraulic conductivity class. Log averages (geometric means) should be used rather than arithmetic averages because hydraulic conductivity is a log normally distributed property. The antilog of the average of the logarithms of individual conductivity values is the log average, or geometric mean, and should be used to place a soil into the appropriate hydraulic conductivity class. Log averages are lower than arithmetic averages.

Hydraulic conductivity classes in this manual are defined in terms of vertical, saturated hydraulic conductivity. Table 3-7 defines the vertical, saturated hydraulic conductivity classes. The saturated hydraulic conductivity classes in this manual have a wider range of values than the classes of either the 1951 *Soil Survey Manual* or the 1971 *Engineering Guide*. The dimensions of hydraulic conductivity vary depending on whether the hydraulic gradient and flux density have mass, weight, or volume bases. Values can be converted from one basis to another with the appropriate conversion factor. Usually, the hydraulic gradient is given on a weight basis and the flux density on a volume basis and the dimensions of K_{sat} are length per time. The correct SI units thus are meters per second.[6] Micrometers per second are also acceptable SI units and are more convenient (table 3-7). Table 3-8 gives the class limits in commonly used units.

Table 3-7. Saturated hydraulic conductivity classes

Class	Ksat (µm/s)
Very High	≥ 100
High	10 - 100
Moderately High	1 - 10
Moderately Low	0.1 - 1
Low	0.01 - 0.1
Very Low	< 0.01

Hydraulic conductivity does not describe the capacity of soils in their natural setting to dispose of water internally. A soil placed in a very high class may contain free water because there are restricting layers below the soil or because the soil is in a depression where water from

[6] The Soil Science Society of America prefers that all quantities be expressed on a mass basis. This results in Ksat units of kg s m-3. Other units acceptable to their society are m3 s kg-1, the result of expressing all quantities on a volume basis, and m s -1, the result of expressing the hydraulic gradient on a weight basis and flux density on a volume basis.

surrounding areas accumulates faster than it can pass through the soil. The water may actually move very slowly despite a high K_{sat}.

Table 3-8. Saturated hydraulic conductivity class limits in equivalent units

µm/s		m/s	cm/day	in/hr	cm/hr	kg s m^{-3}	m3 s kg^{-3}
100	=	10^{-4}	864.	14.17	36.0	$1.02X10^{-2}$	$1.02X10^{-8}$
10	=	10^{-5}	86.4	1.417	3.60	$1.02X10^{-3}$	$1.02X10^{-9}$
1	=	10^{-6}	8.64	0.1417	0.360	$1.02X10^{-4}$	$1.02X10^{-10}$
0.1	=	10^{-7}	0.864	0.01417	0.0360	$1.02X10^{-5}$	$1.02X10^{-11}$
0.01	=	10^{-8}	0.0864	0.001417	0.00360	$1.02X10^{-6}$	$1.02X10^{-12}$

Guidelines for K_{sat} Class Placement

Measured values of K_{sat} are available from the literature or from researchers working on the same or similar soils. If measured values are available, their geometric means should be used for class placement.

Saturated hydraulic conductivity is a fairly easy, inexpensive, and straightforward measurement. If measured values are unavailable, a project to make measurements should be considered. Field methods are the most reliable. Standard methods for measurement of K_{sat} are described in Agronomy Monograph No. 9 (Klute and Dirksen, 1986, and Amoozegar and Warrick, 1986) and in SSIR 38 (Bouma et al., 1982).

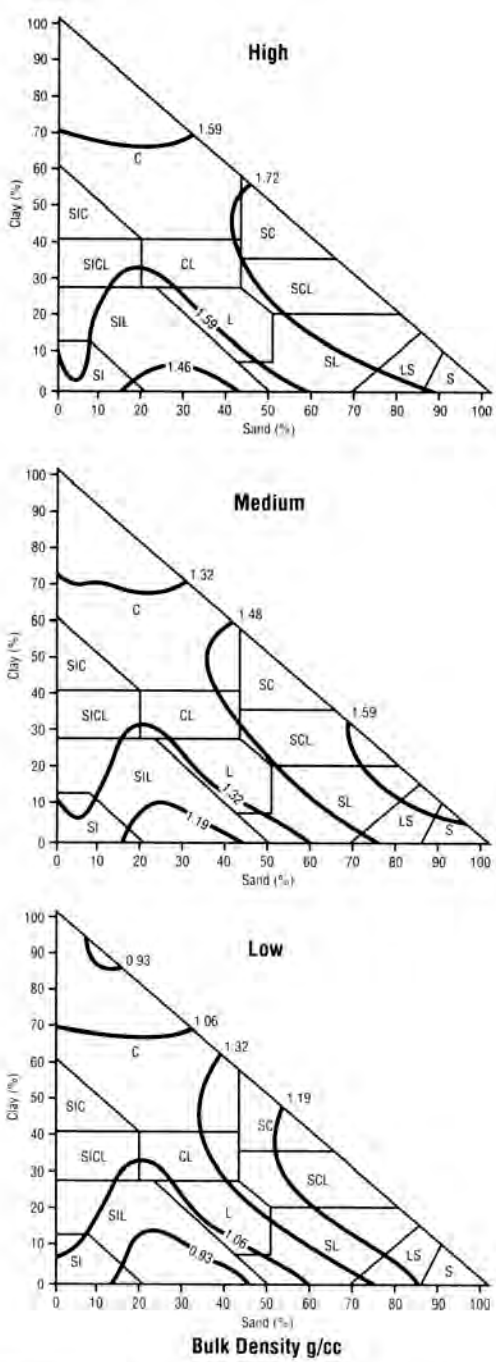
Various researchers have attempted to estimate K_{sat} based on various soil properties. These estimation methods usually use one or more of the following soil physical properties: surface area, texture, structure, bulk density, and micromorphology. The success of the individual methods varies. Often a method does fairly well in a localized area. No one method works really well for all soils. Sometimes, measurement of the predictor variables is more difficult than measurement of hydraulic conductivity. Generally, adjustments must be made for "unusual" circumstances such as high sodium concentrations, certain clay mineralogies, and the presence of coarse fragments, fragipans, and other miscellaneous features.

The method presented here is very general (Rawls and Brakensiek, 1983). It has been developed from a statistical analysis of several thousand measurements in a variety of soils. Because the method is intended for a wide application, it must be used locally with caution. The results, often, must be adjusted based on experience and local conditions.

Figure 3-11 consists of three textural triangles that can be used for K_{sat} class placement, based on soil bulk density and texture. The center triangle is for use with soils having medium or average bulk densities. The triangles above and below are for soils with high and low bulk densities, respectively.

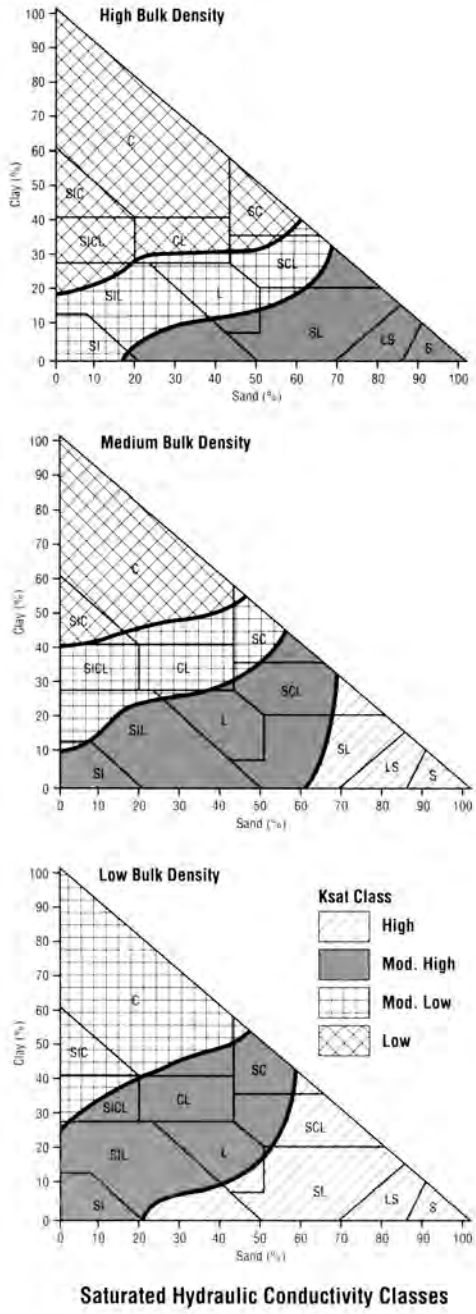
Figure 3-12 can be used to help determine which triangle in figure 3-11 to use. In each of the triangles, interpolation of the iso-bulk density lines yields a bulk density value for the particular soil texture. The triangle that provides the value closest to the measured or estimated bulk density determines the corresponding triangle in figure 3-11 that should be used.

FIGURE 3-11



Saturated hydraulic conductivity classes (Rawls and Brakensiek, 1983). A clay loam with a bulk density of 1.40 g/cc and 35 percent both sand and clay falls in the medium bulk density class.

FIGURE 3-12



Bulk density and texture relationships.

The hydraulic conductivity of a particular soil horizon is estimated by finding the triangle (fig. 3-11), based on texture and bulk density, to which the horizon belongs. The bulk density class to which the horizon belongs in Fig. 3-11 determines the triangle to be used in Fig. 3-12. The K_{sat} class can be determined immediately from the shading of the triangle. A numerical value of K_{sat} can be estimated by interpolating between the iso-K_{sat} lines; however, the values should be used with caution. The values should be used only to compare classes of soils and not as an indication of the K_{sat} of a particular site. If site values are needed, it is always best to make several measurements at the site.

The K_{sat} values given by the above procedure may need to be adjusted based on other known soil properties. Currently, there is little information available to provide adequate guidelines for adjusting the estimated K_{sat}. The soil scientist must use best judgement based on experience and the observed behavior of the particular soil.

Hydraulic conductivity can be given for the soil as a whole, for a particular horizon, or for a combination of horizons. The horizon with the lowest value determines the hydraulic conductivity classification for the whole soil. If an appreciable thickness of soil above or below the horizon with the lowest value has significantly higher conductivity, then estimates for both parts are usually given.

Infiltration

Infiltration is the process of downward water entry into the soil. The values are usually sensitive to near surface conditions as well as to the antecedent water state. Hence, they are subject to significant change with soil use and management and time.

Infiltration stages.—Three stages of infiltration may be recognized—preponded, transient ponded, and steady ponded. *Preponded infiltration* pertains to downward water entry into the soil under conditions that free water is absent on the land surface. The rate of water addition determines the rate of water entry. If rainfall intensity increases twofold, then the infiltration increases twofold. In this stage, surface-connected macropores are relatively ineffective in transporting water downward. No runoff occurs during this stage.

As water addition continues, the point may be reached where free water occurs on the ground surface. This condition is called ponding. The term in this context is less restrictive than its use in inundation. The free water may be restricted to depressions and be absent from the majority of the ground surface. Once ponding has taken place, the control over the infiltration shifts from the rate of water addition to characteristics of the soil. Surface-connected nonmatrix and subsurface-initiated cracks then become effective in transporting water downward.

Infiltration under conditions where free water is present on the ground surface is referred to as ponded infiltration. In the initial stages of *ponded infiltration*, the rate of water entry usually decreases appreciably with time because of the deeper wetting of the soil, which results in a reduced suction gradient, and the closing of cracks and other surface-connected macropores. *Transient ponded infiltration* is the stage at which the ponded infiltration decreases markedly with time. After long continued wetting under ponded conditions, the rate of infiltration becomes steady. This stage is referred to as *steady ponded infiltration*. Surface-connected cracks would be closed, if reversible. The suction gradient would be small and the driving force reduced to near that of the gravitational gradient. Assuming the absence of ice and of zones of free water within moderate depths and that surface or near surface features (crust, for example) do not control

ATTACHMENT B

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November 20, 2014

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Subject: Review of Draft EIR
Walt Ranch Project, Napa, CA

Dear Thomas:

I am a hydrologist with over twenty five years of technical and consulting experience in the fields of geology, hydrology, and hydrogeology. I have been providing professional hydrology services in California since 1991 and routinely manage projects in the areas of surface- and groundwater hydrology, water supply, water quality assessments, water resources management, and geomorphology. Most of my work is located in the Coast Range watersheds of California, including the Northern and Southern San Francisco Bay Counties. My areas of expertise include: characterizing and modeling watershed-scale hydrologic and geomorphic processes; evaluating surface- and ground-water resources/quality and their interaction; assessing hydrologic, geomorphic, and water quality responses to land-use changes in watersheds and causes of stream channel instability; and designing and implementing field investigations characterizing surface and subsurface hydrologic and water quality conditions. I co-own and operate the hydrology and engineering consulting firm Kamman Hydrology & Engineering, Inc. in San Rafael, California (established in 1997). I earned a Master of Science in Geology, specializing in Sedimentology and Hydrogeology as well as an A.B. in Geology from Miami University, Oxford, Ohio. I am a Certified Hydrogeologist (CHg) and a registered Professional Geologist (PG).

I have reviewed the Draft Environmental Impact Report, Walt Ranch Erosion Control Plan Application (No. P11-00205-ECA), prepared by Analytical Environmental Services (AES) County of Napa and dated July 2014. In addition to reviewing the DEIR, I have reviewed the following documents and rely on technical information contained in these documents to help formulate my opinions.

DEIR and Appendices

- Analytical Environmental Services (AES), 2014, Draft Environmental Impact Report, Walt Ranch Erosion Control Plan, Application No. P11-00205-ECA. Prepared for: Napa County Planning, Building and Environmental Services, July, 462p.
- Edwards Engineering, Walt Ranch Vineyard Development Project, preliminary water system master plan. Prepared for Hall Wines, LLC, November, 8p.
- Gilpin Geosciences, Inc., 2013, Engineering geologic investigation, Walt Ranch Vineyard Development, Hall Brambletree Associates LP, Monticello Road (Hwy 121) & Circle Oaks Drive, Napa, CA. Prepared for: Mr. Jim Bushey, PPI Engineering, Inc., March 6, 20p.
- Napa County RCD, 2013, Walt Ranch sedimentation and erosion potential evaluation. Prepared for PPI Engineering, February 11, 4p. with Appendix of USLE calculation results.

- PPI Engineering, 2013, Hall Brambletree Associates, LP, Walt Ranch Erosion Control Plan. Package 1 and 2, Revised February.
- Richard C. Slade & Associates (RCS), LLC, 2014, Second updated report on the results and analysis of 96-hour constant rate pumping test, Irrigation-supply well no. 3, Walt Ranch, Napa County, California. Prepared for: Hall Wines LLC, April, 56p.
- RiverSmith Engineering, 2013, Hydrologic analysis of proposed vineyard blocks within the Walt Ranch property, Napa County, California. Prepared for: PPI Engineering, March, 35p.
- WRA, 2007, Section 404 Jurisdicational wetland delineation, Walt Ranch, Napa County, CA. Prepared for: Hall Wines, LLC, December, 19p.

Professional Publications

- Clahan, K.B., Wagner, D.L., Saucedo, G.J., Randolph-Loar, C.E., and Sowers, J.M., 2004, Geologic map of the Napa 7.5' Quadrangle, Napa County, California: A digital database (v. 1). California Geological Survey, scale 1:24,000.
- Delattre, M.P. and Sowers, J.M., 2006, Geologic map of the Capell Valley 7.5' Quadrangle, Napa County, California: A digital database (v. 1). California Geological Survey, scale 1:24,000.
- Farrar, C.D. and Metzger, L.F., 2003, Ground-water resources in the Lower Milliken-Sarco-Tulucay Creeks area, Southeastern Napa County, California, 2000-2002. U.S. Geological Survey Water-Resources Investigations Report 03-4229, prepared in cooperation with the Napa County Department of Public Works, 106p.
- Faye, R.E., 1973, Ground-water hydrology of Northern Napa Valley. U.S. Geological Survey Water-Resources Investigations 13-73, prepared in cooperation with the Napa County Flood Control and Water Conservation District, November, 72p.
- Fox, K.F., Jr., Sims, J.D., Bartow, J.A., and Helley, E.J., 1973, Preliminary geologic map of Eastern Sonoma County and Western Napa County, California. U.S. Geological Survey Miscellaneous Field Studies Map MF-483, 1:62,500, 4 sheets.
- Fox, K.F., Jr., Fleck, R.J., Curtis, G.H., and Meyers, C.E., 1985, Potassium-argon and fission-track ages of the Sonoma Volcanics in an area North of San Pablo Bay, California. U.S. Geological Survey Miscellaneous Field Studies Map MF-1753, 1:125,000, 1 sheet with pamphlet (10p.).
- Fox, K.F., Jr., 1983, Tectonic setting of Late Miocene, Pliocene, and Pleistocene rocks in part of the Coast Ranges North of San Francisco, California. U.S. Geological Survey Professional Paper 1239, 38p.
- Johnson, M.J., 1977, Ground-water hydrology of the Lower Milliken-Sarco-Tulucay Creeks area, Napa County, California. U.S. Geological Survey Water Resource Investigations 77-82, Open file report, August, 40p.
- Kunkel, F. and Upson, J.E., 1960, Geology and ground water in Napa and Sonoma Valleys, Napa and Sonoma Counties, California. U.S. Geological Survey Water-Supply Paper 1495, prepared in cooperation with the California Department of Water Resources, 264p.
- Napa County, 2005, Napa County Baseline Data Report – Chapter 16 Groundwater Hydrology (Version 1). 13p.
- Napa County Department of Environmental Management, 2012, Milliken-Sarco-Tulocay (MST) groundwater deficient basin. Presentation to Napa County Groundwater Resources Advisory Committee (GRAC), April 26, 2012, 9 slides.
- Sarna-Wojcicki, A.M., 1976, Correlation of Late Cenozoic tuffs in the Central Coast Ranges of California by means of trace- and minor-element chemistry. U.S. Geological Survey Professional Paper 972, 38p.

- Sims, J.D., Fox, K.F., Jr., Bartow, J.A., and Helley, E.J., 1973, Preliminary geologic map of Solano County and parts of Napa, Contra Costa, Marin, and Yolo Counties, California. U.S. Geological Survey Miscellaneous Field Studies Map MF-484, 1:62,500, 5 sheets.
- Wagner, D.L. and Gutierrez, C.I., 2010, Geologic map of the Napa 30'x60' Quadrangle, Napa County, California. California Geological Survey, scale 1:24,000.

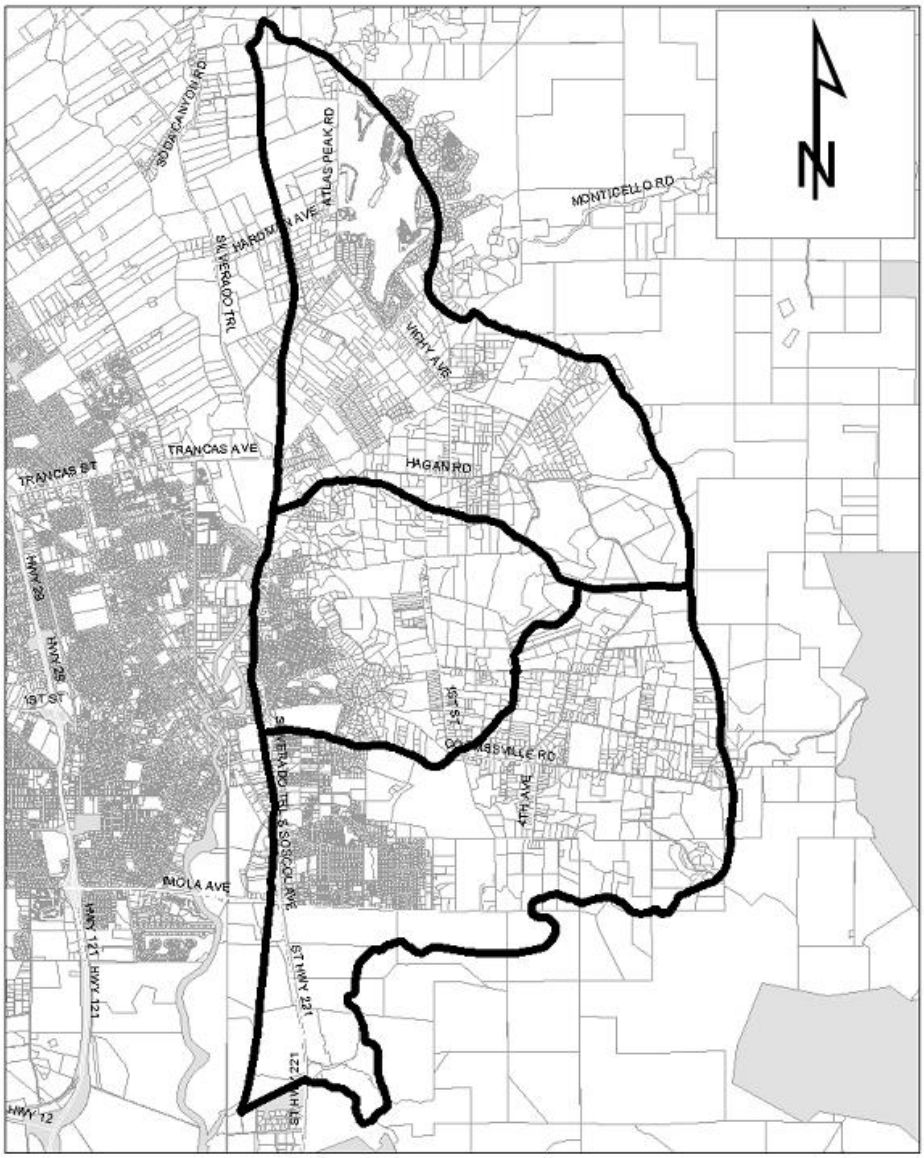
Based on my review of these materials and proposed mitigation measures, it is my professional opinion that the project has the potential to impart significant adverse impacts to vicinity groundwater supply, surface water flow and quality, and biological (vegetation and wildlife) in the Napa River and Capell Creek watersheds. The rationale for these opinions is provided below.

1. Walt Ranch Project is Located in the MST Groundwater Deficient Basin

The project does not acknowledge it lies in an important groundwater recharge area for the Milliken-Sarco-Tulucay groundwater basin (MST) and has not analyzed, let alone acknowledged, the project impact of groundwater withdrawals on the groundwater supply of the MST basin. The MST is the second largest groundwater basin in the County. It is located adjacent to the city of Napa along the eastern edge of the valley floor and covers an area of approximately 15 square miles. Because of acknowledged over-pumping from MST basin, the County has designated the MST as a "groundwater deficient area", as defined in the Groundwater Conservation Ordinance. As a result, the County has established MST groundwater use thresholds of 0.3 acre-feet per acre per year - groundwater use thresholds for the MST are defined in the County's Water Availability Analysis (WAA) Policy Report, dated August 2007. The WAA also states, "*The threshold for the Groundwater Deficient Areas was determined using data from the 1977 USGS report on the Hydrology of the Milliken Sarco Tulocay region. The value is calculated by dividing the "safe annual yield" (as determined by the USGS study of 1977) by the total acreage of the affected area (10,000 acres)*."

The County appears to delineate the MST basin as indicated in Figure 1 (Napa County Ordinance No. 1294, Chapter 13.15 Groundwater Conservation). The County's MST delineation likely comes from the "Study Area" designation presented in the 1977 USGS report (Johnson, 1977) cited in the WAA. The "Study Area" outlined in 1977 USGS report defines the downstream alluvial aquifer and underlying Sonoma Volcanic groundwater storage areas associated with known groundwater overdraft. This "Study Area" encompasses a 15-square mile area within the cumulative 42-squre mile drainage area for the Milliken, Sarco and Tulucay Creek watersheds (see Figure 2). However, here is where policy and science diverge with respect to defining a groundwater basin.

The 1977 USGS study, along with the more recent follow-up study completed by the USGS (Farrar and Metzger, 2003) clearly indicate that the 27-square mile higher elevation bedrock area lying to the east (and including a portion of the Walt Ranch Project area) are in direct hydraulic connection with and provide recharge to the 15-square mile MST groundwater storage "Study Area." The DEIR claims there is no hydraulic connection between the Walt Ranch project site and the MST "Study Area"/groundwater storage area. The USGS (2013) provides a graphical representation of the groundwater system underling the MST Creeks watershed, reproduced here in Figure 3. This conceptual groundwater flow model indicates that rainfall infiltrates and recharges the Sonoma Volcanic bedrock groundwater in the Howell Mountain uplands. The groundwater in the Sonoma Volcanic bedrock then migrates eastward over time towards the main alluvium and deeper Sonoma Volcanics storage area in the valley bottom, adjacent to the Napa River. The eastern boundary of the County's designated MST basin generally occurs where the foot of the Howell Mountains intersect the valley floor. The 2003 USGS report (Farrar and Metzger, 2003) provide the following statements regarding groundwater recharge to the MST.



Map 13-1: Milliken Sarco Tulocay Groundwater Deficient Basin

FIGURE 1: County designated MST groundwater basin (Source: Napa County Groundwater Ordinance).

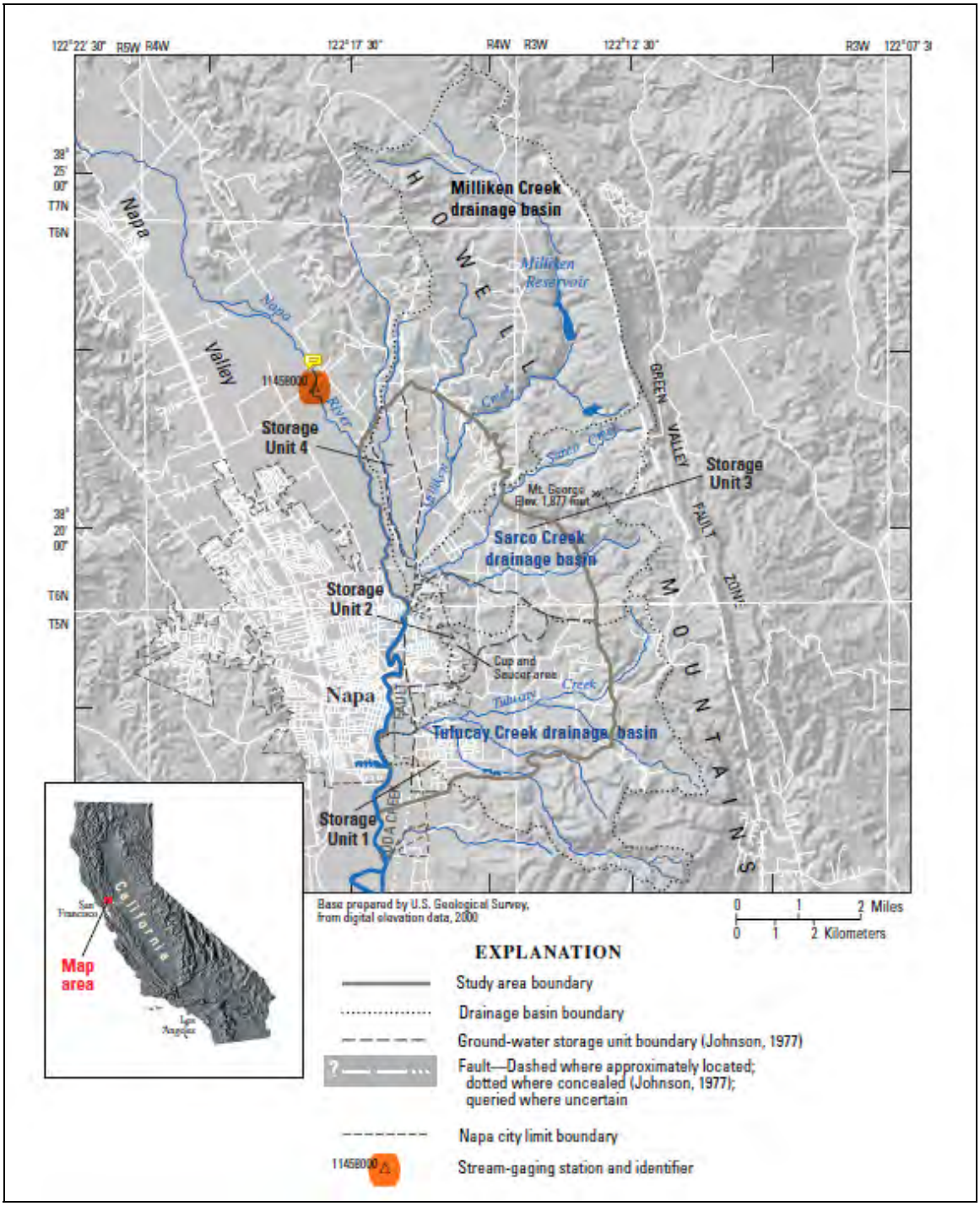


FIGURE 2: Location of 2003 USGS study area, differentiating between basin drainage area and "Study Area" boundaries (Source: Figure 1 in Farrar and Metzger, 2003).

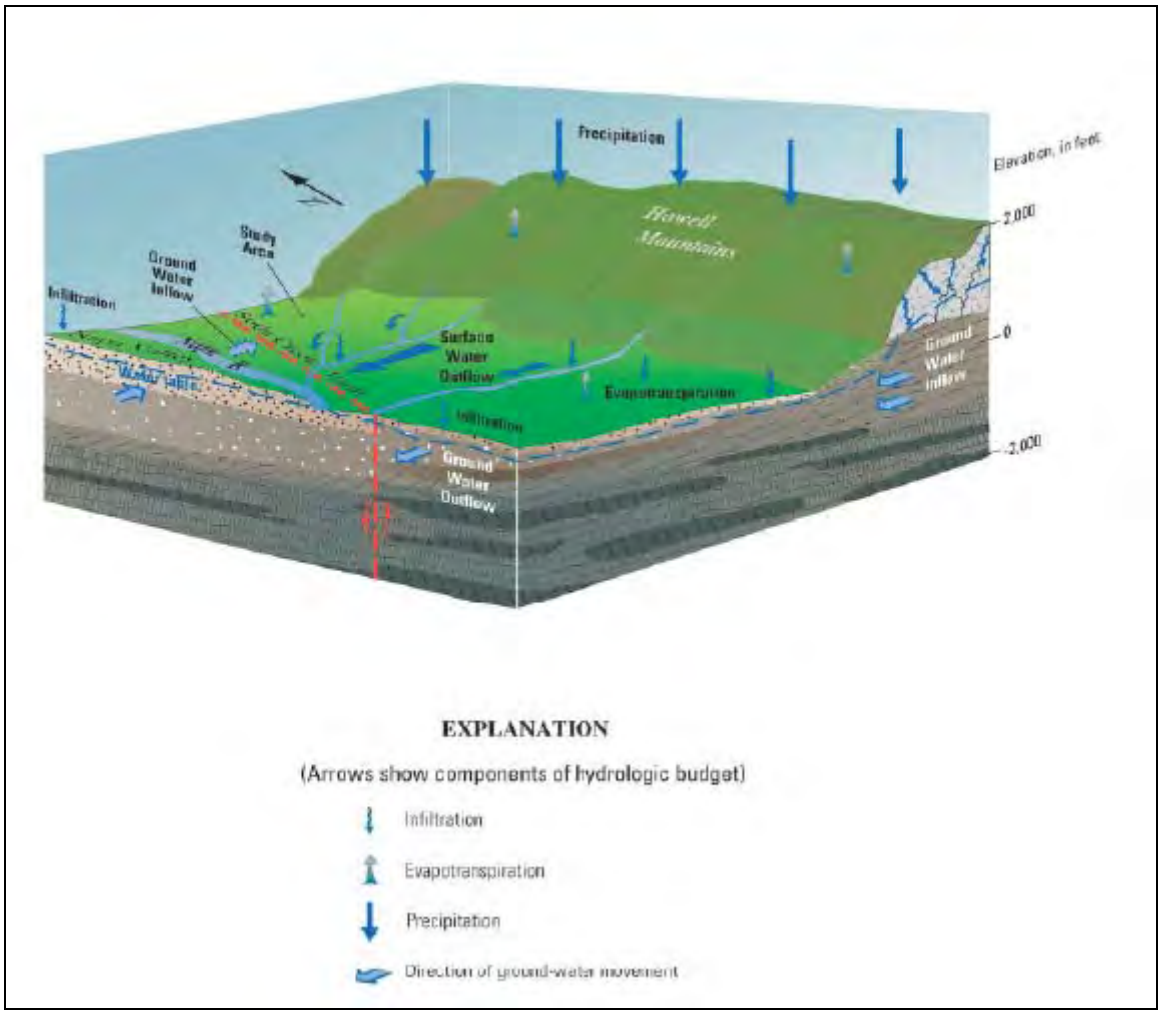


FIGURE 3: Conceptual model of groundwater flow system in the lower Milliken-Sarco-Tulucay Creeks area (Source: Figure 9 in Farrar and Metzger, 2003).

- On page 59 – "*The principal source of ground-water replenishment to the study area is lateral flow of ground water that is recharged in the Howell Mountains to the east of the study area.*"

- On Page 5 – "*The average total amount of precipitation received in the Milliken, Sarco, and Tulucay Creeks drainage basins is about 69,000 acre-ft/yr based on the isohyetal map (fig. 4). Of this amount, about 29,000 acre-ft/yr leaves the watershed as runoff in local streams to the Napa River. This estimate is based on streamflow records for stations on the Napa River and Tulucay Creek and is consistent with estimated unit runoff for this area given in Rantz (1968). Johnson (1977) estimated that evapotranspiration in the basins consumes about 30,500 acre-ft/yr. An estimate of about 34,000 acre-ft/yr is*

obtained when Johnson's estimate is adjusted for the slightly larger area mapped for this study. Using these estimates, it is clear that most of the water entering the basins leaves as runoff or evapotranspiration. Potential ground-water recharge can be calculated as the residual of total precipitation minus runoff and evapotranspiration, assuming no other inflows or outflows. Using this method, a residual of 6,000 acre-ft/yr is calculated based on the estimates made in this study. However, because of the uncertainty in the estimates of precipitation, runoff, and evapotranspiration, this value is not a precise estimate of potential ground-water recharge and should not be construed as the safe yield for the study area."

- On Page 21 – "*Johnson (1977) estimated that the average annual recharge in the area of this study in 1975 was 5,400 acre-ft/yr: 3,050 acre-ft/yr from streamflow infiltration; 2,100 acre-ft/yr from subsurface inflow from the Howell Mountain block; and about 250 acre-ft/yr from direct infiltration of precipitation.*

- On Page 19 – "*Although recharge from excess irrigation sometimes can be a significant part of total recharge within some basins, within this study area it is considered minor because the predominant crop is wine grapes and local growers use highly efficient drip systems.*"

I believe that the 1977 and 2003 USGS studies provide conclusive information that that the project area lies in an important recharge area to the MST groundwater basin and a part of the Walt Ranch project site is hydraulically connected to the lower MST groundwater storage area. Further, based on Johnson's work in 1977, groundwater inflow from the Howell Mountain uplands provides around 39% (2,100 AF/yr) of average annual recharge to the Lower "Study Area" aquifer storage unit regulated by County Codes. Thus, any withdrawals from the Sonoma Volcanics within the Walt Project site will directly reduce the groundwater inflow and supply to the MST basin.

Based on conclusions in the RCS hydrogeology report, the DEIR states that the Project lies outside of the Milliken-Sarco-Tulucay (MST) groundwater basin, however based on my review of available geology maps and USGS reports, the southwest 1/3rd of the project property clearly falls within the upper recharge area of the MST basin. Of the Walt Ranch project area, 512-acres fall within the Milliken Creek watershed and MST groundwater basin and the remaining 1791-acreas fall within the Capell Creek watershed, which drains to Lake Berryessa. The project proposes to install 299-acres of vineyard in the Milliken Creek watershed and 208-acres of vineyard in the Capell Creek watershed – total water demand for the project is 213.5-AF. All proposed project groundwater wells are located in the MST basin. The WAA indicates that MST groundwater withdrawals are limited to 0.3-acre-feet (AF) per year per acre of property in the MST. Based on this policy, the project is only entitled to 154-AF. By claiming to be outside of the MST, the project avoids complying with the County's MST groundwater use thresholds.

In my opinion, the County has incorrectly drawn the boundary for the MST basin. To fully satisfy the intent of the fair share policy in the MST, the County needs to consider and incorporate the entire hydrologic basin, not just a portion that happens to be where water is stored and over-pumped. Perhaps a surface water analogy would better articulate this point. For example, if a community is experiencing a drought and a governing entity is charged with protecting and fairly managing the resource, one management strategy would be to set minimum withdrawal volumes for property owners around the reservoir. The "safe yield" and "fair share" intent of this policy assumed only those lake-front residents would be removing water from the reservoir. However, the governing entity then allows properties on the streams tributary to the reservoir to draw water out of the river at a higher rate/volume than the residents on the reservoir. Such a management strategy defeats the purpose of protecting the limited water resources and

allocating those resources equally among all users. The main point here is that the County's resource management policy in the MST is tied to an arbitrary socioeconomic basin boundary, not a scientifically based, watershed scale boundary.

The project proposes to use MST basin water to irrigate out-of-basin vineyard in the Capell Creek watershed. Based on my review, it is unclear if out-of-basin transfers of MST water are acceptable/permissible per current County regulations and "fair use" policy. The bedrock and soil underlying the 2/3rds of the project area within the Capell Creek watershed does not yield significant quantities of water to wells.

2. Project Estimate of Available Groundwater Storage is Unsubstantiated

Project studies assume that all the Sonoma Volcanics (SVs) underlying the site can hold water. This is not the case as only specific units (most notably tuffaceous layers) within the SVs provide sufficient storage and permeability to provide water to wells. Review of published and project geologic maps, cross-sections and well completion information indicate that water-bearing units of the SV are limited under the project property. Johnson (1977) and Farrar and Metzger (2003) indicate that Sonoma Volcanics bedrock in the MST can be generally divided into five members: the lower andesitic member, the middle tuffaceous member, and the upper rhyolitic member, separated by two subaqueous deposits: diatomaceous deposits and sedimentary deposits, interbedded between the volcanic units. This five layer model is a useful simplification for some purposes, but it ignores the true complexity in the distribution of the various lithologies found in the Sonoma Volcanics. Many lithologic units in the Sonoma Volcanics lack wide areal extent and some units have a lenticular geometry or have interfingering contacts with adjacent lithologic units. The Gilpin Geosciences (2013) geologic map of the project site indicates rhyolite flows and andesite outcrop within the southwest portion of the site. Numerous studies (Kunkel and Upson, 1960; Johnson, 1977; and Farrar and Metzger, 2003) indicate that the principal water bearing unit of the SVs is the tuffaceous member. Farrar and Metzger (2003) report that the andesite member of the SVs has little primary permeability but, fracture zones associated with faulting and folding provides some secondary permeability, which yield small amounts of water to wells. They also report that the rhyolite member consists of low-permeability, banded rhyolitic lava interbedded with rhyolitic tuff, some densely welded, which reduces permeability. The RCS hydrogeology report (2014) also states that the SVs rock-types and their water bearing capacity is highly variable.

Information in the RCS hydrogeology report (2014) indicates that only selected horizons of the study wells[1] are screened. This suggests to me that the well driller identified and selected specific water-bearing horizons, which were preferentially screened in order to draw water. I assume the remaining lithologies encountered that were not screened are poor water-bearing materials within the Sonoma Volcanics. Therefore, understanding the thickness and extent of different rock types and their potential water bearing capacity under the site would help inform available groundwater supply.

The RCS hydrogeology report does not provide a detailed description or information regarding the specific rock types that make up the Sonoma Volcanics that lie beneath the Walt Ranch project site. The report's geologic map only illustrates the different Sonoma Volcanic units at the ground surface.

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[1] Much of the water yield information reported in the RCS hydrogeology report (2014) comes from the testing, monitoring and analysis of wells on and around the project site (see page 2, 22-29, Tables 1A through 3B, and Figure 1 of the RCS 2014 report, provided in Appendix D to the DEIR), including: a) Walt Ranch wells (WR-1 through WR-5); b) the adjacent parcel Circle S Ranch wells (CS-1 through CS-4); and; c) a private well located on a parcel immediately southwest of Walt Ranch known as the Gale well.

Typically, I rely on driller's boring logs and cross-sectional profiles of geologic conditions to better understand the subsurface hydrogeology of a site. This information is lacking in the RCS hydrogeology report and DEIR. Thus, in order to gain a more complete understanding of the underlying geology/hydrogeology conditions at the site and fully review/evaluate RCS's hydrogeology study, it's necessary for me to obtain and review the drillers boring logs for the wells reference above. Treating the entire saturated thickness of Sonoma Volcanics as a single homogeneous layer (as completed in the RCS study) does not recognize and suitably address the likely water-bearing variability of these rocks. This added level of detail and understanding would benefit from review of the rock types encountered during drilling and well installation and reported in the associated drillers boring logs.

RCS also uses different saturated thickness values in their hydrogeology study. A saturated thickness value of 275-feet is used in the groundwater storage analysis (page 41 of RCS report), which is significantly greater than the 230-feet saturated thickness value used in the pump-test analysis to determine aquifer parameters (top of page 30). Using the smaller value of 230-feet in the groundwater storage analysis would result in less local groundwater storage.

It's also important to point out that the Hydrogeology study contains considerable presentation and discussion of aquifer tests and data analysis methods (e.g., theoretical drawdown calculations/modeling, theoretical cumulative impacts of pumping, calculation of aquifer parameters) but results do not reflect reality. Calculated values of aquifer transmissivity and storage coefficients by various models are discarded (although similar in magnitude) and inexplicably replaced with empirically derived values. Tables (2A and 2B; cited in text on page 27) don't exist in the report and cited values for hydraulic parameters in text don't agree with values in existing tables. Simulated drawdown at adjacent wells do not reflect actual conditions. Underlying assumptions of software and analytical solutions do not apply to heterogeneous and anisotropic conditions such as volcanic bedrock aquifers. In short, a lot of time and effort was spent on analyses that provide results that aren't realistic. This indicates the inadequacy of the solutions in providing realistic insight into the potential impacts of groundwater pumping.

3. Misleading Conclusion Regarding Available Groundwater Storage

RCS provides what they refer to as a "conservative" estimate of total groundwater storage that is very large. The DEIR claims that this magnitude of storage will mitigate any potential impacts of overdraft associated with annual groundwater withdrawals that exceed average annual recharge. However the useable groundwater storage capacity is typically considerably less. Of all the water in the storage spaces which can be pumped, not all will be removed due to the dispersed aquifer area and limited pumping radius of influence. The current well spacing, presence of fault segregated aquifers, and non-uniform distribution of groundwater in the Sonoma Volcanics make is difficult, if not impossible, to dewater the saturated material. In Johnson's 1977 study of groundwater conditions in the MST, he estimated that only 10% of the Sonoma Volcanic groundwater storage capacity is useable (accessible) storage. Thus, assuming a 2% specific yield and 10% useable storage capacity of the estimated 4301 AF of total storage, yields only 430 AF of groundwater storage beneath the project site – a value much closer to the 213.5 AF/yr project groundwater demands.

4. Project Overestimates Groundwater Recharge – No Assessment of Cumulative Impacts

The RCS hydrogeology report (pages 48-49) presents estimates of deep groundwater recharge assuming 7- to 9-percent of annual rainfall goes to deep percolation. These estimates yield average annual recharge rates of 2.59- to 3.15-inches/yr and volumes of 161- to 207-AF/yr, assuming an average annual precipitation total of 35 inches. In either case, average annual recharge rates are less than the annual water project demands. The 7% of annual rainfall deep groundwater recharge value is based on RCS staff professional experience, while the 9% recharge estimate comes from the 1977 USGS report for the entire

MST Creeks drainage basin. The problem with applying the 9% recharge rate to the Walt Ranch project site is that it reflects a watershed-wide average, incorporating the high stream and volcanic tuff infiltration rates in the lower elevations of the eastern hills with much lower infiltration rates representative of the higher elevation volcanic terrain, including a portion of the Walt Ranch Project site. The 1977 and 2003 USGS studies indicate that of the total 5,400 AF of average annual recharge to the MST, 3,050 AF/yr is supplied by stream flow infiltration along the eastern margin of 15-square MST storage area, 2,100 AF/yr comes as subsurface inflow from the 27-square mile Howell Mountain block (higher elevation volcanic terrain), and 250 AF/yr is direct infiltration of precipitation to the 15 square mile lower MST storage area on the valley floor. Assuming the Howell Mountain block covers 27 square miles in area (Johnson, 1977, suggests this area may be up to 33 square miles) and the 2,100 AF/yr of groundwater inflow from the block reflects the annual deep groundwater recharge rate, the annual deep groundwater recharge rate for the higher elevation volcanic terrain, including the Walt Ranch project site is only 1.46 in/yr (4% of average annual precipitation). Applying this recharge rate to the project area covered with Sonoma Volcanics (790-acres) yields an average annual deep groundwater recharge volume of 96 AF/yr, a value less than half (45%) of the estimated maximum annual project groundwater demand. Clearly the project has the potential to lead to localized groundwater overdraft, especially if the groundwater storage volume discussed above is less than estimated.

5. Insufficient Site Specific and Cumulative Impact Assessments of Groundwater Withdrawals

Regardless of which deep groundwater recharge rate is applied, all rates presented in the DEIR and above indicate groundwater withdrawals will exceed groundwater recharge. Under Impact 4.6-4, the DEIR states that increased groundwater pumping would not impact groundwater supplies in the project region and pumping would be a less than significant impact, even knowing that pumping rates exceed deep groundwater recharge rates. The justification that this will not be a significant impact is that there is more than enough existing storage in the underlying aquifer to absorb the imbalance. However, as discussed above, there has not been adequate or accurate quantification of existing groundwater storage in the bedrock aquifer underlying the site. Therefore, no conclusions on potential impacts are substantiated.

The hydrologic analyses supporting the DEIR have only looked at interference of pumping on local wells. There is clear admission that the DEIR has not done a regional impact analysis on groundwater supply due to heterogeneous nature of geology (pg. 4.6-47). The DEIR also claims it is infeasible to predict long-term impacts associated with groundwater extractions (pg. 4.6-49). The lack of analysis or inability to complete an impact assessment does not constitute the conclusion of "no potential impact." The impact should be considered potentially significant until demonstrated otherwise.

As explained above, proposed project groundwater withdrawals will reduce deep groundwater recharge to the main valley-bottom MST aquifer storage area. The RCS hydrogeology study does not provide any assessment of project impacts of groundwater resources in the water deficient MST basin. Therefore, this impact is still potentially, if no likely, significant.

6. Invalid Mitigation Measure Associated with Potential Impacts from Groundwater Pumping

Groundwater monitoring is listed as Mitigation Measure 4.6-4 in the DEIR. From a scientific perspective, monitoring in itself is not a mitigation. Monitoring is used as a way to identify triggers that define an impact (e.g., lower groundwater levels). Specific triggers that identify an impact and the resulting management changes implemented to mitigate the impact are the "Mitigation Measure". These triggers and corresponding management/operational changes have not been developed/defined in the DEIR. Therefore, it is my opinion that a Mitigation Measure does not exist for the potential impact(s) associated with groundwater pumping.

7. Incomplete Hydrology Assessments of Potential Impacts to Ecosystem and Water Supply
The DEIR does not provide adequate assessment on the potential project-induced changes in the volume and timing of water supplies to wetlands, riparian corridors and the associated biological habitats. Nor does the DEIR provide an assessment on how changes in land-use, vegetative cover and installation of drainage systems affect groundwater recharge rates.

Hydrologic analyses supporting the DEIR are somewhat compartmentalized – there is no comprehensive monthly or seasonal water budget to fully quantify runoff or groundwater recharge through the year. The seasonal distribution and duration of surface water flow rates are an integral variable in the support of existing wetland and riparian vegetation and wildlife. There is no hydrologic evaluation on how the project elements will impact the volume and timing of water movement in and through the site and associated ecological habitats. Of particular emphasis at the Walt Ranch site are groundwater dependant wetlands mapped by WRA (2007), including: 0.42 acres of freshwater seeps; 1.49 acres of seasonal volcanic seeps; small portions of perennial flow in Milliken Creek; and a number of intermittent streams. Project elements that affect site hydrology include: changes in land use; changes in vegetation types; tree clearing; grading and filling that changes site topography; rock filling; facility construction; and installation of a variety of surface water and groundwater drainage systems. Any one of these project elements can have a profound effect on the timing and volume of surface water and shallow groundwater movement through the site. A standard analysis to evaluate project impacts on hydrology is the development of a comprehensive and integrated water budget. Important water budget variables for the Walt Ranch project include: rainfall, runoff, evapotranspiration, open water evaporation, soil moisture storage, infiltration, surface water storage, groundwater recharge, groundwater flow, and groundwater storage. A comparison of existing and project condition water budgets should be used to address project changes to site ecosystems such as: seasonal volumes, rates and duration of water supply to on- and off-site riparian and wetlands and associated wildlife; shallow groundwater supply to local wetlands that are documented (WRA, 2007) to rely on groundwater, including freshwater seeps, seasonal volcanic seeps and perennial/intermittent creek channels; and deeper groundwater recharge that supplies creek flow that supports aquatic habitats in the lower elevations of the MST basin, including known seeps and intermittent creeks at the adjacent Circle S property as well as flow in lower Milliken Creek, even potentially downstream of the reservoir. This project analysis is warranted given the presence of California red-legged frog, Foothill yellow-legged frog, and Western pond turtle at the site, which depend on the preservation of suitable water supply to creeks, wetlands and riparian corridors on site, as well as potential off-site impacts to salmonids in Milliken Creek.

8. Inaccurate Quantification of Project Storm Water Runoff Estimates
The project contends that development activities will reduce runoff rates from vineyard areas. One way the project contends to achieve this goal is by ripping soil in targeted areas to increase infiltration rates and reduce runoff rates. While this is likely a short-term result of soil-ripping, my professional experience is that the increased infiltration rate associated with ripping is short-lived, and soil will recompact over a relatively short period (single years), resulting in soil with infiltration rates similar (or lower) than pre-project conditions. Thus, the reduced runoff associated with the project will be temporary. RiverSmith Engineering's hydrology report (2013) has only analyzed storm runoff rates for this short-term condition, not the long-term return to pre-project soil properties. A return toward pre-project soil properties will increase the magnitude of estimated project peak flows.

The project proposes a number of surface drains, subdrains and utility corridors that will intentionally and unintentionally concentrate and accelerate runoff off through proposed vineyard blocks. A primary runoff treatment strategy recommended in the RiverSmith Engineering hydrology study is to "detain water" onsite as a means to reduce peak flows. However, this is contrary to intent of the project drainage plan,

which will effectively concentrate and accelerated storm water runoff. The hydrology storm runoff analysis does not incorporate these drainage elements into the storm water runoff calculations, where applicable. Both the likely reduction in infiltration capacity of ripped soil areas and project drainage elements will lead to significant increases in the estimated runoff rates, both on- and off-site. Thus, the peak flow rates for project conditions are underestimated, which means the potential impacts associated with high storm flows have not been accurately identified and evaluated.

9. Incomplete Erosion Potential Analysis: Potential Surface Erosion vs. Channel Erosion

For purposes of the following discussion, surface erosion is defined as that process by which rainfall and non-concentrated (sheet flow) rainfall-runoff erode and transport sediment off of relatively flat upland surfaces. In contrast, channel erosion refers to the erosion (down cutting and side cutting) in swales, ditches and channels by concentrated runoff and flow.

The project sedimentation and erosion potential evaluation for the site was completed by PPI and Napa RCD utilizing the empirically-based Universal Soil Loss Equation (USLE) to determine changes in annual erosion rates between existing and project conditions. The erosion potential assessment using the USLE only addresses surface erosion from individual vineyard blocks. The project erosion potential analysis does not consider or evaluate the potential for channel erosion within intervening or downstream receiving slopes, swales, and creeks outside of the vineyard blocks. This is a significant omission of potential erosion and sediment sources, especially in light of the fact that the project is underestimating the peak runoff from vineyard blocks. Thus, without considering the increase in channel runoff and associated channel erosion due to project development, the erosion potential analysis should be considered incomplete.

10. Presentation of Cumulative Erosion Potential Impacts Obscure Potential On-Site Impacts

The DEIR conclusions regarding project-induced changes in erosion potential are based on summing vineyard block soil loss subtotals within the Milliken and Capell Creek watersheds and presenting the total (net) change for each watershed (Milliken and Capell). The net results indicate that there are 44- and 13-percent reductions in potential soil loss from the Milliken and Capell Creek watersheds, respectively. However, this type of lumping of results masks localized impacts, which when considered alone, could be considered a significant impact. A more thorough review of changes in modeled soil loss results indicates localized increases in erosion potential from multiple vineyard blocks that contribute drainage and sediment to onsite Corps designated waters and wetlands located downstream of the proposed vineyards. These downstream creek, riparian and wetland areas host potentially sensitive biological resources, which would be potentially adversely impacted by increases in water and sediment runoff. Localized "hot spots" of anticipated increased sediment loading reported in the DEIR include: a) Corp wetlands receiving runoff from blocks 16B1, 16B2 and 16C1; b) Corp waters receiving drainage from blocks 17A-17C; c) Corp waters receiving runoff from blocks 34A3, 34C, and 49; d) Corp waters receiving drainage from blocks 36A and 36B; e) Corp wetlands receiving drainage from blocks 37D and 37E; f) Corp waters receiving drainage from blocks 38 and 53; g) Corp waters and wetlands receiving drainage from blocks 19A4, 19B, and 18A1-18A4; h) Corp waters receiving drainage from blocks 31A and 31B; and i) Corp waters receiving drainage from blocks 29, 29A1, 29A2, and 29B2. As indicated in the DEIR, increases in sediment delivery to any Corps designated water or wetland should be considered a significant potential impact.

11. Suitability of Project Erosion Control Measures

Review of project erosion control plans indicate that proposed vineyard block erosion control treatments include one or more of the following: straw wattle; rock check dams; overflow structures; and various types of energy dissipaters. No sediment basins are proposed at these locations. Although cover crops are listed as a project erosion control measure, they are incorporated into the USLE computations, including those vineyard blocks where erosion potential is anticipated to increase over existing conditions.

Straw wattle is a temporary surface erosion control measure and will degrade over time. This appear to be the only erosion control measures at many vineyard blocks and ability for straw wattle to provide long-term mitigation is highly limited.

Rock check dams are designed to dissipate concentrated flow energy and trap sediment. They reduce channel erosion potential and trap sediment from both surface and channel erosion. The potential for rock check dams to function properly over the long-term is mixed. They will require constant long-term maintenance to function as desired. If sediment built up behind rock check dams is not removed, they will lose their ability to dissipate energy and trap sediment allowing the unimpeded passage of high flows, leading to increased downstream channel erosion potential. Based on my experience, during very wet winters and/or extreme storms, rock vanes can be overwhelmed, buried and cease to function very quickly.

The runoff overflow and energy dissipation measures proposed in association with vineyard block drainage are designed to armor or dissipate flows at vineyard drainage outfalls in order to eliminate or reduce both surface and channel erosion potential - they are not designed to capture and retain sediment carried in runoff. These erosion control measures also require constant long-term maintenance to function and provide the necessary surface erosion protection at outfalls. However, many of these erosion control elements are located on steep slopes and water draining through them can become re-concentrated in swales and channels a short distance down-slope. It's important to restate that the RiverSmith Engineering storm runoff calculations did not take into account the drainage systems proposed in the vineyard blocks. Based on my review of vineyard drainage plans, these systems will collect and accelerate runoff through the vineyards, leading to higher project flow rates than those predicted in the RiverSmith Engineering hydrology study. These increased flows won't be detained by the proposed overflow energy dissipation structures, especially on steep slopes. This will lead to increased channel erosion potential in downslope receiving swales, channels and ditches and may adversely impact associated waters, wetlands and wildlife habitat.

The suitability of the pipe level spreader erosion control measure deserves further mention here. Based on review of standard pipe level spread design criteria, this erosion control measure seems poorly suited to the project site. In 2002, Caltrans completed an evaluation on the effectiveness of level spreaders[2]. Their report includes the following information:

- *Level spreaders are structures that are installed at points of concentrated storm water discharge. Level spreaders disperse the concentrated storm water over wide, relatively flat slopes so that erosion from concentrated runoff is minimized.*

- *Level spreaders are hydraulic conveyance systems that are constructed at a uniform elevation (zero grade) across a slope. The level spreader consists of a vegetated or mechanical lip or weir installed at surface grade that disperses (spreads) the water flow*

[2] Caltrans, 2002, Final Report – level spreader effectiveness evaluation. CTSW-RT-02-020, Caltrans Environmental Program, Office of Environmental Engineering, Sacramento, CA, 16p.

across a gentle slope. For construction applications, use of a mechanical lip constructed of timber, asphalt, or concrete would be preferred because those materials are likely to be durable. The structure must be installed in an undisturbed or finished area, should be level, and should disperse onto a vegetated slope that has a gradient of less than 1:10 (V:H). At a minimum, the final 6 meters (20 feet) of the conveyance structure entering the level spreader should have a finished gradient of less than 1:100. The lip can be constructed of either stabilized grass for low flows, or timber/concrete for higher flows. Typically, the minimum length for the level spreader lip is 2 meters (6 feet). The length of the level spreader lip is dependent on the volume of water that must be discharged. Typical rules-of-thumb are that storm water passing over the weir should be limited to a depth of approximately 0.15 meters (6 inches) and a velocity of approximately 0.3 meters per second (1 foot/sec).

- *For proper operation, runoff entering the level spreader must not contain significant amounts of sediment. Therefore, an upstream sediment removal BMP may be required in addition to the level spreader.*

- *The tributary area for the storm water should be less than two hectares.*

Based on the Caltrans design criteria, level spreaders are designed to be installed on very flat slopes and discharge onto similarly flat, vegetated slopes. Review of project erosion control plans indicate pipe level spreaders occupy relatively steep slopes, exceeding design criteria. Thus, these erosion control measures will not fully mitigate potential project impacts.

12. Project Potential to Active Dormant Landslides

The Gilpin Geosciences engineering geologic evaluation (2013) for the project states (page 17), "*We have reviewed the details shown for storm water drainage outlets and other water diversion facilities. These have appropriate armored, erosion-resistant surfaces that do not direct surface or subsurface runoff into slopes susceptible to landslide failure.*" They also state on page 13, "*Deep-seated landslides may be activated by undercutting of the toe, by adding significant weight to the top or body of the deposit, or by significantly altering the groundwater conditions which in turn increases the level of groundwater and pore water pressure. The rates of movement of deep-seated landslides are responsive to extended periods (multiple years of above average precipitation) of rainfall unlike shallow landslide that react to relatively short (single storm) bursts of intense storm activity (Iverson, 2000). Therefore any significant change in the regional groundwater regime could potentially affect the landslide stability*."

I've cross-referenced the proposed vineyard drainage outfall locations on the project Erosion Control Plans against Gilpin's landslide maps to determine if any vineyard runoff would be directed onto mapped landslides. Contrary to the statement contained in the Gilpin report, there are a number of vineyard block drainage outfalls directed above or onto mapped landslides, including vineyard blocks: 4E; 4H; 4I; 5A3; 19A; 31A; 31B; 36A; 36B; 62A; and 62B. Undoubtedly, the drainage discharge will increase the local infiltration and soil water content of the receiving landslide areas over existing levels. Based on the Gilpin text cited above, it is assumed that this may increase the potential to activate landslides – an increased potential adverse impact not acknowledged in the DEIR.

13. Invalid Analysis of On-Site and Cumulative Impacts

From my perspective, the DEIR failed at completing hydrologic and erosion assessments that evaluate potential impacts on surface water supply, groundwater supply, erosion and sediment transport to the on-site or surrounding environment. Runoff and erosion potential analyses were completed in a

compartmentalized fashion, without regard to findings and potential impacts from their mutual effect and recommendations. Specific deficiencies of these analyses included:

- Erosion control measures designed to reduce sedimentation lead to increased magnitude of stormwater runoff;
- Stormwater runoff estimates did not consider the vineyard drainage systems proposed as erosion control measures, which will lead to high magnitude flows and increased erosion potential to downstream drainages;
- No comprehensive water budget of the project site was developed to look at project-induced changes in the way surface and groundwater move through and interact with the site and each other;
- The erosion potential assessment only addressed vineyard blocks, not the intervening or downstream receiving slopes, swales, creeks and wetlands;
- Potential changes in surface and groundwater supply to wetlands, riparian corridors and associated habitats, both on-site and off-site were not evaluated; and
- Regardless of whether Walt Ranch lies within the formal MST designated area, the site provides groundwater recharge to the basin. The DEIR does not evaluate how long-term withdrawals from the project site, combined with all recent and planned vineyards and developments in the basin will affect the groundwater deficient MST basin.

Without having properly quantified the water flow and sediment volumes moving through and off-site, the project has not fully evaluated potential impacts to the associated environments. As such, no cumulative impact assessments are possible. Without completing these assessments, the DEIR has not demonstrated that the project will not impart impacts to flooding, erosion, wetland/riparian water supply and habitats, and other sensitive aquatic habitats.

Please feel free to contact me with any questions regarding the material and conclusions contained in this letter report.

Sincerely,

Greg Kamman, PG, CHG
Principal Hydrologist

ATTACHMENT C

Dennis Jackson - Hydrologist

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January 26, 2013

Thomas N. Lippe
329 Bryant Street, Suite 3D
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re: Napa River Sediment TMDL Vineyard Waiver and ISMND

Dear Mr. Lippe:

You have asked me to review and comment on the proposed *Conditional Waiver of Waste Discharge Requirements for Discharges from Vineyard Properties in the Napa River and Sonoma Creek Watersheds* (Draft Conditional Waiver) and its Initial Study and proposed Mitigated Negative Declaration (ISMND). The Draft Conditional Waiver for Vineyard Properties is a part of the Implementation Plans of the Sediment TMDLs for the Napa River and Sonoma Creek.

This letter addresses two issues that could result in either additional erosion as the result of implementing the Draft Conditional Waiver or additional erosion due to ongoing channel incision. I give a brief description of these issues and then a more in-depth discussion of them below.

The unjustified assumption that stormwater can be infiltrated, without careful planning, may result in increased erosion that would not occur if the Draft Conditional Waiver was not adopted. There is a lack of discussion of subsurface storm flow in the Draft Conditional Waiver and the ISMND. An assumption is made that it is always beneficial to infiltrate excess stormwater. No evidence is presented that demonstrates that such an assumption is justified. There are situations when infiltrating excess runoff is no better than keeping it on the surface or may actually be more harmful then keeping it on the surface. In instances where surface runoff is directed to an inappropriate place for infiltration there is the potential to either generate additional surface runoff, through a process called saturation-excess flow, or to increase the amount of subsurface flow which has the potential to cause erosion downslope. These mechanisms will be described in a subsequent section of this letter. The directing of storm water to an inappropriate location for infiltration would be done in order to comply with the Draft Conditional Waiver. Therefore, any adverse environmental impacts that arise from the inappropriate siting of locations for stormwater infiltration pursuant to the Draft Conditional Waiver would be the result of adopting the Draft Conditional Waiver. The mitigations proposed in the ISMND would be insufficient to prevent these impacts.

The approach of actively only reducing sediment discharge to the Napa River or Sonoma Creek has the potential to result in these two river systems having greater capacity to transport sediment than is actually available. This type of imbalance drives channel incision and produces sediment. The Draft Conditional Waiver does not directly require actions that would reduce stormwater discharge so the problem of incision may be reduced but not completely stopped which would continue adverse environmental impacts.

Storm Runoff

The goal of the Napa River Sediment TMDL is to reduce the sediment load of the Napa River to 125% of the natural load. It is my opinion that, in addition, to reducing the sediment load to 125% of the natural background sediment load the TMDL and Basin Plan Amendment (BPA) should require that the stormwater discharge regime of the Napa River be brought into alignment with the natural hydrograph that would transport no more than 125% of the background sediment load. In contrast, the TMDL, Draft Conditional Waiver and the ISMND for the Draft Conditional Waiver aim for no net increase in storm discharge volume, velocity or duration. Staff has stated that concentrating on reducing sediment discharge will simultaneously reduce storm water discharge. I agree that there will be a reduction in storm water volume, velocity and duration if the sediment discharge is reduced to the target levels. However, Staff has offered no factual evidence to demonstrate that the reduction in storm water discharge that will result from their approach will result in a balance between the discharge regime of the Napa River and Sonoma Creek and their respective target sediment loads. I contend that, without actually reducing the runoff from vineyard properties, the resulting discharge regime in the Napa River and Sonoma Creek, after the target sediment loads are obtained, will be capable of transporting more than 125% of the background sediment load.

If the approach of only reducing sediment discharge, as outlined in the TMDL and Draft Conditional Waiver, does not sufficiently reduce storm water discharge to bring the sediment transport capacity of the Napa River and Sonoma Creek into balance with the supplied sediment load then the process of streambed incision will continue. This adverse impact to the environment is not fully mitigated by the measures proposed in the ISMND for the Draft Conditional Waiver.

In my August 2010 comments on the Napa River Sediment TMDL, I demonstrated that the water discharge regime during the 1994-2003 period (the time period used to determine that the sediment load was 185% of background) would have to be reduced between 14% and 24% to be in balance with the target sediment load of 125% of background in the Napa River. Requiring existing vineyards to reduce their peak storm water discharge by 20%, as measured by TR-55 or other model, would shift the discharge regimes of the Napa River and Sonoma Creek towards being in balance with the target sediment load of 125% of background.

Inappropriate Infiltration

An assumption is made in the Draft Conditional Waiver and the ISMND that it is always beneficial to infiltrate excess stormwater. No evidence is presented that demonstrates that such an assumption is justified. There are situations when infiltrating excess runoff is no better than keeping it on the surface or may actually prove to be more harmful then keeping it on the surface.

This argument requires some background on the mechanisms of storm runoff. The following discussion of runoff mechanisms is based on Dunne and Leopold (1978) and on Selby (2000). See Figure 1, adapted from Selby's Figure 11.10 (2000) at the end of this letter for a conceptual drawing of the various runoff processes on a landscape.

Runoff Processes

The rainfall-runoff process is complex and occurs through several mechanisms. According to Dunne and Leopold (1978) the runoff processes are:

1. Hortonian overland flow,
2. Subsurface flow,
3. Saturated overland flow (saturation-excess flow)

4. Groundwater flow and,
5. Channel Precipitation

Hortonian overland flow (infiltration-excess overland flow) is caused when the rainfall intensity exceeds the infiltration capacity of the soil. Hortonian overland flow is what many people imagine when thinking about the runoff process. In forested environments or areas with undisturbed vegetation and deep permeable soils, infiltration rates tend to exceed all but the most intense rainfall intensities. In forested environments, Hortonian overland flow is usually limited to rock outcrops, or to small areas during extremely intense (rare) rainfall bursts, and disturbed areas such as roads.

The following quotes, describing the runoff process are from M.J. Selby (Hillslope Materials and Processes, second edition, 2000, page 213):

> Field observations indicate that Hortonian overland flow is a rare phenomenon, especially in areas with undisturbed vegetation cover and deep permeable soils. Overland flow is most readily generated in semiarid environments with thin, impermeable soils with low water-storage capacity, and in any environment where loss of soil structure (and therefore macropores) by compaction, removal of vegetation, freezing, and blocking of pores are associated with prolonged and/or high intensity rainfalls.
>
> In areas of permeable soils where hydraulic conductivity decreases with soil depth, subsurface flow moves laterally as throughflow within the soil profile. When and where the profile becomes completely saturated, saturation-excess overland flow will occur. Both processes may occur at rainfall intensities and durations which are well below those required to produce Hortonian overland flow. Furthermore, both throughflow and saturation-excess flow may be generated from source areas which are variable in extent and different in location from source areas of Hortonian overland flow.
>
> **Subsurface stormflow is now regarded as the major runoff-generating mechanism in most humid environments**, both because of its influence on the development of saturated zones and as an important contributor to stormflow in its own right (Anderson and Burt 1978). (Emphasis added)

Subsurface storm flow can occur through open rock joints, coarse talus, soil pipes and permeable soil (Selby, 2000). The following excerpts are from Selby's (2000, page 217) discussion of soil pipes.

> Pipe-Flow
>
> Flow in pipes has been greatly underestimated as a hydrological process, according to experimental work in a very small number of catchments (Jones 1987a, b; Bryan and Yair 1982: McCaig 1983). It is now recognized that subsurface natural pipes exist in many environments ranging from arid through semiarid to humid temperate and humid tropical. They occur in many soil types and at various depths. Natural pipes are known with diameters ranging from 0.02 m (0.8 inch) to > 1m (3.3 feet) and lengths of a few meters to >1 km; they may carry perennial or ephemeral flows. The major requirement for their existence appears to be a soil body which is strong enough to support the walls and roof of a pipe but not so strong that it inhibits pipe erosion by flows which, at least initially, are of low volume and velocity. The mechanics of pipe development are discussed in Chapter 12.
>
> Pipe-flow may be derived from areas of saturated soil, areas of cracked surface soils or with many large, open macropores, or zones of converging saturation flow in macropores. Some pipe-flow may come from concentrated overland flow and channel flow which is diverted into a pipe. The velocity of pipe-flow has been variously estimated as being in the range of that of overland flow (0.1 m/s or 0.33 ft/s) to being an order of magnitude more rapid. It can therefore be a major contributor to storm runoff and especially to peak flows, Furthermore networks of pipes extend the areas of a catchment which contribute to storm runoff and they may be major contributors of water to saturated zones from which saturation-excess overland flow occurs. In some catchments pipe-flow has been assessed as contributing up to 50 per cent of the total storm discharge.

> The total significance of pipe-flow in both catchment hydrology and in geomorphic development of hillslopes is, however, not well understood. The proportion of large regions in which pipes occur is usually regarded as being small; but as they are difficult to detect, unless their roofs collapse, they may be underestimated. Research into pipe-flows and the effects of pipes on delivering water to erodible sites, such as hollows and those with unstable soil masses, is rather neglected.

Saturated-excess flow occurs on saturated sites. A site is saturated when the water table rises to the surface. When subsurface flow encounters a saturated site some of the subsurface water flows over the ground surface and is called *return flow*. Since the water table is at the ground surface, the infiltration rate is zero and any rain falling on to the area will flow down-slope as surface runoff. Saturated-excess flow tends to occur in swale bottoms or the lower portion of hillslopes and near stream channels. The area subject to saturation-excess overland flow expands as the duration of a storm increases. Selby (2000) observes that;

> Storm-runoff contributing areas commonly develop first alongside stream channels and in concavities and then expand as surface runoff occurs from operation of several processes.

Selby's (2000) entire discussion of runoff processes is attached to this letter.
A section in Chapter 12 of Selby (2000, page 241) describes the formation of soil pipes as follows.

> Pipe Erosion
>
> Subsurface pipe erosion has been described by a number of terms including pothole erosion, suffusion, subcutaneous erosion, tunneling, and tunnel-gullying, but the most widely used term is *piping* (Parker and Jenne 1967; Crouch 1976; Jones 1987). Natural pipes and their role in slope hydrology were described in the previous chapter.
>
> Among the factors which dispose a soil to piping are: a seasonal or highly variable rainfall; a soil subject to cracking in dry periods; a reduction in vegetation cover; a relatively impermeable layer in the soil profile; the existence of a hydraulic gradient in the soil; and a dispersible soil layer.
>
> Examples of piping are particularly common in semiarid badlands formed on smectite clays which have strong swelling and shrinkage properties and may also have high exchangeable sodium percentages (Heede 1971; Guiterrez et al. 1988; Lopez-Bermudez and Romero-Diaz 1989; Swanson et al. 1989). Loess and loessic colluvium with high sodium content are also subject to piping (Laffan and Sutherland 1988).
>
> The most commonly reported situation in which pipes develop is one in which a surface soil cracks as a result of desiccation. In a rainstorm water then infiltrates rapidly down the cracks and supersaturates a relatively permeable horizon in the subsoil. Lateral seepage may be fast enough to move soil particles and develop a channel, or, if the soil has dispersible clays, these may lose aggregation. Movement of water through subsurface cracks and voids is slow until water breaks through the soil surface further down the slope, and rapid flow can then work headwards within the soil and form a gully or enlarge a pipe (Figs 12.13 and 12.14).

Ziemer and Albright (1987) studied storm flow in soil pipes in two swales in the Caspar Creek watershed located in Jackson State Forest in Mendocino County, California. The following excerpts are from their 1987 paper.

> ABSTRACT Pipeflow dynamics are being studied at Caspar Creek Experimental Watershed in north-coastal California near Ft. Bragg. Pipes have been observed at depths to 2 m within trenched swales and at the heads of gullied channels in small (0.8 to 2 ha) headwater drainages. Digital data loggers connected to pressure transducers monitor discharge using calibrated standpipes. During storms, pipeflow up to 8 1 s~ has been measured» while, within the same swales, no surface channel flow occurred. Pipeflow discharge has been correlated with antecedent precipitation.

INTRODUCTION

Most of the geomorphic literature attributes drainage network evolution, except in karst areas, to surface runoff processes. Recently, the influence of near-surface groundwater flow in promoting subsurface erosion in non-karst areas and the development of drainage networks has received increasing attention (Higgins, 1984). The geomorphic features resulting from erosion by the flow of subsurface water in non-calcareous rocks have been referred to as "pseudokarst" (Halladay, 1960; Parker et al., 1964). In arid regions, the role of piping in gully development has been recognized for some time. In humid regions, however, the geomorphic significance of piping was largely overlooked until Kirkby & Chorley (1967) presented a model of soil water throughflow and saturated overland flow as an alternative to Horton overland flow on vegetated slopes.

Under favorable conditions, subsurface drainage can promote accelerated erosion by chemical (solution), physiochemical (suffusion), and physical (piping and landsliding) processes. Biological processes generate organic acids that accelerate the dissolution of primary soil minerals and also disperse secondary minerals (Durgin, 1984). These minerals can be transported through the soil, and eventually to a stream channel, by subsurface drainage. As chemical erosion progresses and the soil becomes more porous, water flowing through the soil can detach and move colloids through soil pores—a process called suffusion. Suffusion can lead to soil piping as progressively larger material is eroded. In addition, stress fractures in the soil, as well as biotic activity by invertebrates and vertebrates and by root networks may contribute to the initiation and subsequent development of piping systems.

Water infiltrates the pipe as laminar flow, but within the pipe, flow becomes turbulent and erosion is primarily by corrasion and undermining of pipe walls (Dredge & Thorn, 1976). As subsurface erosion continues, pipe roofs may collapse, forming pseudokarst topography. Goldsmith & Smith (1985) summarized the conditions essential for piping: (a) a source of water, (b) a surface infiltration rate that exceeds the subsurface permeability at some depth, (c) a zone of potentially dispersive soil, (d) a hydraulic gradient to cause water to flow, and (e) an outlet for the lateral flow.

CONCLUSION

Nearly all of the discharge that we observed at our sites came from pipeflow. There was very little seepage from the excavation face, even during storm periods. This is similar to observations by Tsukamoto et al. (1982). They reported that pipeflow was responsible for 95% of the outflow from a small granitic headwater catchment in Japan. Seepage through the soil matrix at their location was negligible. In another setting, Jones & Crane (1984) found that pipeflow accounted for 46% of the streamflow generated from their study area. (Emphasis Added)

Climate and geology vary for the limited number of studies of pipeflow hydrology conducted to date. These studies firmly establish the concept that macropore and piping networks are locally significant mechanisms for routing water and sediment from steep upland watersheds.

The runoff mechanisms, described above, must be thoroughly understood to avoid creating unintended erosion when designing new drainage facilities or modifying existing drainage facilities. It is an assumption that diverting stormwater runoff into a detention basin is always less environmentally damaging than not doing so. For example, in an attempt to meet the requirements of the Draft Conditional Waiver, a property owner might convert an existing swale into a stormwater detention basin that infiltrates the water into the subsurface. Below, I discuss the potential problems of constructing a detention basin in a swale.

A swale is a concave depression on a hillslope without a surface channel. Swales are also called zero-order basins since they are upslope of Stahler first-order channels. A second-order channel is created when two first-order channels join. Class III channels, as defined in the Draft Conditional Waiver, are generally first-order or second-order streams under the Stahler system of stream order. In general, swales are located upslope of a stream channel. The point of channel initiation (channel head) is typically located at the downslope end of a swale. Subsurface flow from a swale can also enter a stream channel from the side.

Let's examine what is happening in a swale during a significant storm event. The colluvium that comprises a swale will be saturated during storm events that generate significant amounts of runoff. So, the water table in a swale will be at or close to the ground surface during storm events. The high groundwater table means that swales are sites where saturated overland flow (saturation-excess flow) occurs. Subsurface flow from the adjacent hillslopes may come to the surface along the margin of the swale and flow across the surface. Rain falling on a saturated area cannot infiltrate into the ground and so becomes surface runoff. A saturated area acts, in some respects, as an impervious surface.

Subsurface flow out of the swale may eventually come to the surface and initiate a channel head. The channel initiation process is more likely to occur when the soil is saturated. As discussed above, the soil of a swale will tend to be saturated during a significant storm event. So channel heads often form at the downslope end of a swale.

Subsurface flow out of the swale may also occur in soil pipes. In fact, Ziemer and Albright (1987) found that most of the flow from the two swales they studied was carried in soil pipes. Well-developed soil pipes are known to carry both water and sediment. Soil pipes will discharge the water and sediment they carry to the surface at some point downslope.

Now suppose that a property owner constructs a stormwater detention basin in a swale. The stormwater detention basin, formerly a swale, captures surface runoff and holds it until it seeps into the ground or evaporates. So, the stormwater runoff from the property has been decreased and it would appear that the project is meeting the goal of the Draft Conditional Waiver. However, we have to understand what happens to the stormwater that infiltrated into the swale.

The stormwater that enters the detention basin constructed in the swale would not have been delivered to the swale prior to the construction of the detention basin. Some of the stormwater will evaporate but much of this additional water infiltrates into the subsurface. The water that infiltrates will potentially increase the rate of subsurface storm flow and prolong the duration of subsurface storm flow. The increased rate and duration of subsurface storm flow may result in the point of channel initiation (channel head) moving upslope causing additional erosion that would not have occurred prior to the construction of the detention basin. This would be an unmitigated adverse impact directly attributable to adopting the Draft Conditional Waiver.

The increased volume of water infiltrating into the swale from the detention basin would increase the rate and duration of flow in any soil pipes draining the swale. An increase of the rate or duration of flow through a soil pipe would likely erode the walls of the soil pipe. The eroded material would be transported downslope and discharged to the surface, potentially into a stream channel. Or the water infiltrated from the detention basin could possibly initiate the formation of new soil pipes. This would be an unmitigated adverse impact directly attributable to adopting the Draft Conditional Waiver.

One of the processes that cause the formation of gullies is the collapse of the roof of soil pipes (Selby, 2000). The creation and/or expansion of soil pipes, from water infiltrating from an improperly sited detention basin, could result in the formation of a new gully. This would be an unmitigated adverse impact directly attributable to adopting the Draft Conditional Waiver.

In some situations, the erosion caused by the increased subsurface flow out of a swale that has been converted into a stormwater detention basin may exceed the erosion caused by not using such a detention basin. The increased subsurface stormflow from a swale containing a detention basin may result in the upslope migration of a channel head, or the erosion of soil pipes, and even the formation of a gully through the collapse of the roof of a soil pipe. These potential significant adverse impacts were not considered by the ISMND.

Vineyards are one example of a location where the permeability decreases with depth. When a new vineyard is installed, it has been common practice to rip the soil with heavy equipment. The zone of soil that was ripped will be more permeable than the undisturbed material below the ripped layer. When the ground surface has a slope, even of just a few percent, there will be subsurface storm flow at the interface of the ripped soil and the undisturbed material below it give sufficient rainfall.

Undisturbed hillslopes also tend to exhibit a decrease in permeability with depth. Therefore, subsurface storm flow can be expected to occur on most hillslopes, give sufficient rainfall. Subsurface storm flow is expected to be widespread in the Napa River and Sonoma Creek watersheds.

Soil pipes can form in soils with at least some shrink-swell potential. Such soils exist in Napa River and Sonoma Creek watersheds. Therefore, it is likely that soil pipes will be an important mechanism for transporting subsurface storm flow, after sufficient rainfall has occurred, in areas with soils that have at least some shrink-swell potential.

Subsurface Flow not Considered in the Draft Conditional Waiver

The Draft Conditional Waiver does not consider the importance of subsurface storm flow as a runoff process. The following passages from the Draft Conditional Waiver demonstrate a failure to consider the importance of subsurface storm flow.

On page 23 the Draft Conditional Waiver defines point(s) of discharge.

> **Point(s) of Discharge**. *Point(s) of Discharge* include all locations where storm runoff is discharged via concentrated surface flow into a defined channel that has a bed and banks. Also, at locations where engineered drainage has been installed and storm runoff is collected first (e.g., subsurface drainage pipes or tiles in a vineyard block, an inboard ditch along a Road, etc.), a Point of Discharge is located at the outlet of the engineered drainage feature, whether that location is on a hill slope or in a defined channel.

This definition does not consider the discharge of soil pipes since soil pipes are a subsurface flow process and not a surface flow process. Failing to specifically include the discharge from a soil pipe as a point of

discharge seriously undermines the effectiveness of the Draft Conditional Waiver. It is likely, that a significant amount of stormwater discharge is carried by soil pipes in the Napa River and Sonoma Creek watersheds.

Attachment D item 2(d) seeks to encourage on-site infiltration of stormwater to reduce erosion and flow peaks.

> 2. Vineyard Management Practices Element
> d. Management practices and infrastructure that promote and maximize infiltration on-site to reduce erosion and to prevent increase in stormwater peak flows.

However, the Draft Conditional Waiver should include statements that on-site infiltration should be designed in a manner that avoids increasing erosion from subsurface storm flow processes.

Attachment D item 5(a) also fails to mention the importance of designing on-site infiltration projects in a way that does not generate erosion from an increase in subsurface storm flow.

> 5. Stormwater Runoff Management Element
> a. Depict runoff flow patterns, including areas where runoff will be infiltrated, detained, and discharged via sheet flow and via a drainage system into the receiving waters.

Attachment D item 5(c) will not address erosion where soil pipes discharge since such locations are not included in the definition of point(s) of discharge.

> c. Describe erosion features, if any, at Points of Discharge and specify to address such erosion.

Attachment D item 6 does not explicitly recognize the role of subsurface storm flow in the formation of gullies (see Selby 2000).

> 6. Gullies and Shallow Landslides Element
> Unstable areas, such as gullies, rills, landslides, mudflows, rock falls, and channel erosion are significant sources of sediment. Where they exist, the Farm Water Quality Plan shall:
>
> > a. Describe the location of erosional features including gullies, rills, landslides, mudflows, and channel erosion that have the potential to deliver more than 10 cubic yards (as defined above) of sediment to the channel that are a result of past or current Road and vineyard operations on the Vineyard Property.
> >
> > b. Identify and implement management practices needed to promote natural recovery or to actively stabilize unstable areas and to minimize increases in sediment delivery to receiving waters, including actions to disburse runoff causing or contributing to gullies and other erosional features.
> >
> > c. Indicate areas where active restoration of gullies, shallow landslides, or other unstable areas has already occurred.

The above passages from the Draft Conditional Waiver are not meant to be an exhaustive list of all the places where the Draft Conditional Waiver disregards the importance of subsurface storm flow but serve to demonstrate its disregard for this important runoff mechanism.

Summary

In addition to reducing the sediment load to 125% of the natural background sediment load the TMDL, BPA, and the Draft Conditional Waiver should require that the stormwater discharge regime of the Napa River be brought into alignment with the natural hydrograph that transports no more than 125% of the

background sediment load. An enforceable storm water discharge performance standard should be applied to all four land use categories listed in BPA Tables 4.1 through 4.4. The storm water discharge performance standard should be applied to all lands in the Napa River watershed including upstream of the municipal water supply reservoirs.

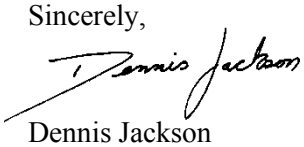
Reducing the sediment load from 185% down to 125% of the natural sediment load without actively reducing excess storm discharge from all land uses in the Napa watershed will create an imbalance between the target sediment load of 125% of the natural load and the sediment transport capacity of the Napa River and its tributaries. Such an imbalance has the potential to result in erosion of the banks and/or bed of the Napa River and its tributaries. Therefore, implementing the current version TMDL and BPA, through the Draft Conditional Waiver, has the potential of causing erosion of the banks and/or bed of the Napa River and its tributaries.

The Draft Conditional Waiver does not recognize the importance of subsurface storm flow in generating streamflow or erosion. Selby (2000) observes that subsurface stormflow is the major runoff mechanism in humid environments.

> Subsurface stormflow is now regarded as the major runoff-generating mechanism in most humid environments, both because of its influence on the development of saturated zones and as an important contributor to stormflow in its own right (Anderson and Burt 1978).

The failure to recognize the role of subsurface storm flow in the generation of streamflow and erosion is the reason that the Draft Conditional Waiver does not point out the need for on-site infiltration projects to be designed to minimize increased subsurface storm flow. On-site infiltration projects carried out to satisfy the requirements of the Draft Conditional Waiver may result in increased subsurface storm flow and result in erosion or gully formation that would not have occurred if the Draft Conditional Waiver was not adopted. These potential significant adverse impacts were not considered by the ISMND.

Sincerely,



Dennis Jackson
Hydrologist

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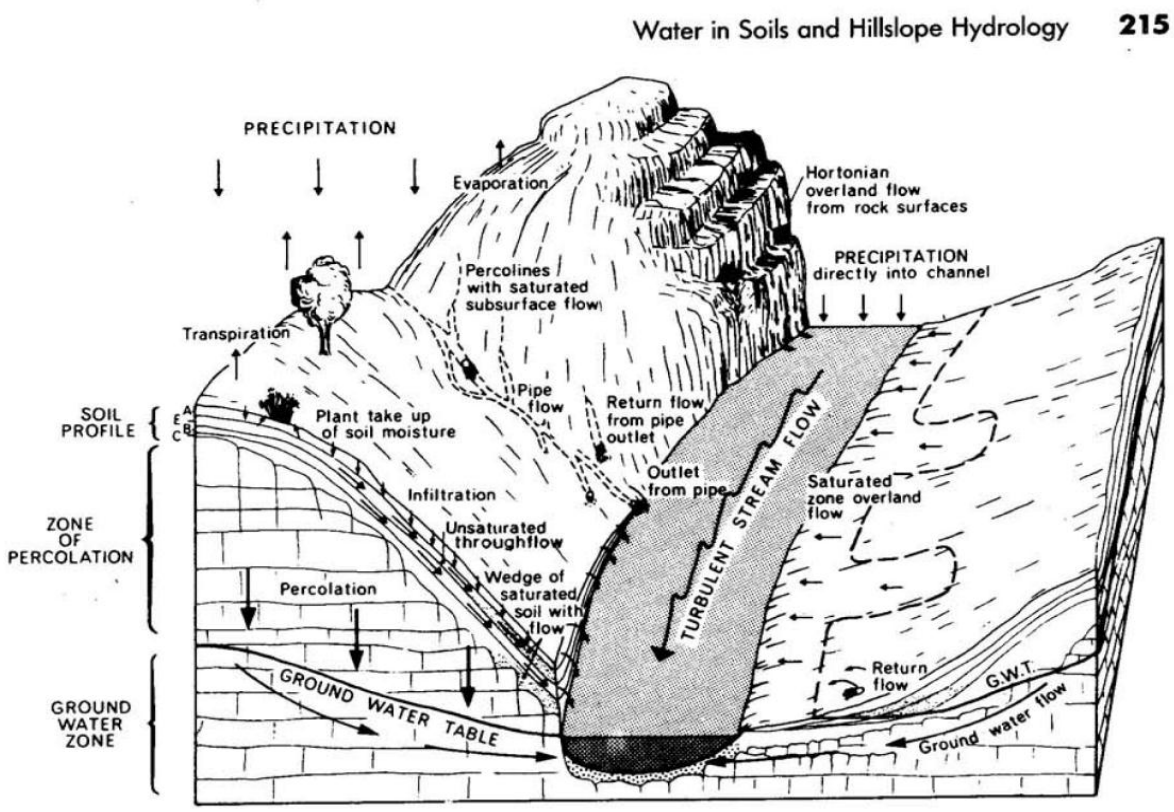

Figure 1. Adapted from Selby (2000) Figure 11.10(a). A schematic landscape with the various types of runoff from hillslopes and the sources and paths of runoff.

Table 4.1 Required and Trackable TMDL Implementation Measures for Sediment Discharges Associated with Vineyards[1]

Land Use Category	Performance Standards	Actions	Implementing Parties	Completion Dates
Vineyards	**Surface Erosion associated with vineyards**: Control excessive rates of sediment delivery to channels resulting from vineyard surface erosion[5]; **and** **Roads**: Road-related sediment delivery to channels ≤ 500 cubic yards per mile per 20-year period[a]; **and** **Gullies and/or shallow landslides:** Accelerate natural recovery and prevent human-caused increases in sediment delivery from unstable areas; **and** **Effectively attenuate significant increases in storm runoff**, so that the runoff from vineyards shall not cause or contribute to downstream increases in rates of bank or bed erosion.	Submit a Report of Waste Discharge[2] (RoWD) to the Water Board that provides, at a minimum, the following: a description of the vineyard; identification of site-specific erosion control measures needed to achieve performance standard(s) specified in this table; and a schedule for implementation of identified erosion control measures. Or Develop and begin implementing a farm plan certified under Fish Friendly Farming Environmental Certification Program or other farm plan certification program, approved as part of a waiver of WDRs. All dischargers applying for coverage under a waiver of WDRs also will be required to file a notice of intent (NOI) for coverage, and to comply with all conditions of the WDR waiver.[4]	Vineyard owner and/or operator	October 2014
		Comply with applicable waste discharge requirements (WDRs) or waiver of WDRs.	Vineyard owner and/or operator	As specified in applicable WDRs or waiver of WDRs
		Report progress on implementation of site specific erosion control measures.[3]	Vineyard owner and/or operator	As specified in applicable WDRs or waiver of WDRs

[1]To achieve TMDL allocations and consistent with the *Policy for Implementation and Enforcement of the Nonpoint Source Pollution Control Program* (State Board, 2004).
[2]Or compliance with applicable conditional waivers of WDRs that may be adopted by the Water Board.
[3]Reports may be submitted individually or jointly through a recognized third party.
[4]Additional conditions may be required under a General WDR and/or waiver program consistent with *the Policy for Implementation and Enforcement of the Non-Point Source Control Program* (State Board 2004), and/or as needed to avoid potentially significant environmental impacts.
[5]Napa County Conservation Regulations (County Code, Chapter 18.108) are effective in the control of excessive rates of sediment delivery resulting from vineyard surface erosion. Rates of sediment delivery are "excessive" when the predicted soil loss rate exceeds the tolerable soil loss rate (T), calculations as described in "The Universal Soil Loss Equation, Special Applications for Napa County, California" (USDA, 1994).
[a]Methods for estimating rates of sediment delivery to channels are described in general terms in "Upslope Erosion Inventory and Erosion Control Guidance" Weaver et al. (2006).

VOLUME II - REVISED EIR

FINAL ENVIRONMENTAL IMPACT REPORT

WALT RANCH EROSION CONTROL PLAN
APPLICATION NO. P11-00205-ECPA

MARCH 2016

LEAD AGENCY:

Napa County
Planning, Building and Environmental Services
1195 Third Street, Suite 210
Napa, CA 94559

within a FEMA designated flood zone, although a small portion of the eastern border of the property lies within Zone A along Capell Creek, which may be subject to flooding in a 100-year flood event (FEMA map 06055C0440E) (FEMA, 2008).

Surface Water Quality

Runoff from the project site is eventually transported to Napa River or Putah Creek, which are both currently listed as impaired water bodies under Section 303(d) of the Clean Water Act (CWA). The Napa River is listed for nutrients, pathogens, and sediment, while Putah Creek is listed for mercury and boron.

Sediment Loading

The construction of several large dams between 1924 and 1959 on major tributaries in the eastern Napa River watershed and northern headwater areas of Napa River has affected sediment transport processes into the mainstem Napa River by reducing the delivery of the coarse load sediments to the river. Thirty percent of the Napa River watershed drains into dams, such that ponds and reservoirs behind these dams capture a significant fraction of all coarse sediment input to channels (Napolitano et al., 2009).

Historically, the Napa River system has typically been described as a gravel-bed river; more recently, the Napa River has become increasingly dominated by finer sediments. The sources for these finer sediments include a variety of land uses, infrastructure construction, road runoff, and in-stream erosion sediment sources. Dams that trap coarse sediment in the area have not significantly reduced the degree to which finer sediments are being delivered to the mainstem Napa River and its tributaries. As a result of this fine sedimentation, habitats for steelhead, Chinook salmon, and California freshwater shrimp, which rely on more gravel substrate in the river, have been negatively affected from reduced gravel permeability (Stillwater Sciences and W. Dietrich, 2002). The San Francisco Bay Regional Water Quality Control Board (RWQCB) has released a technical report that proposes a total maximum daily load (TMDL) for the Napa River that calls for substantial reductions in the amount of fine sediment deposits into the watershed to improve water quality and maintain beneficial uses of the river, including spawning and rearing habitat for salmonid species.

Capell Creek, Lake Berryessa, and Putah Creek are not listed on the 303(d) list for sediment contamination.

Temperature

Parameters that influence stream temperature include ambient air temperature, humidity, riparian vegetation, topography, surrounding land uses, and flow conditions. Water temperature influences a number of chemical processes within water bodies. Streams in Mediterranean climates, such as Napa County, experience naturally low summer flows that translate to higher

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Thomas N. Lippe
Brian Gaffney
Keith G. Wagner
Kelly A. Franger
Henry S. Steinberg

February 1, 2013

Via Messenger to
Sandi Potter
San Francisco Bay Regional Water Quality Control Board
1515 Clay St # 1400
Oakland, CA 94612

Via Electronic Mail to
smpotter@waterboards.ca.gov

Re: Mitigated Negative Declaration for the proposed "Conditional Waiver of Waste Discharge Requirements For Discharges from Vineyard Properties in the Napa River and Sonoma Creek Watersheds"

Dear Ms. Potter:

This office represents Living Rivers Council ("Living Rivers"), a non-profit association, with respect to the Conditional Waiver of Waste Discharge Requirements for Vineyard Facilities in the Napa River and Sonoma Creek Watersheds (the "Project"). I am writing on Living Rivers' behalf to submit comments on the Mitigated Negative Declaration prepared for this Project and to object to approval of the Project on the grounds set forth in this letter.

1. **Previous comments on the Napa River Sediment TMDL**. As you know, Living Rivers has previously submitted voluminous comments on the Basin Plan Amendment for the Napa River Sediment Total Maximum Daily Load ("Napa River Sediment TMDL") including:

(1) May 17, 2010 comment letter from my office to the State Board, including:

a.. Comment letter dated August 5, 2010 from Dennis Jackson;

b.. Comment letter dated August 17, 2010 from Patrick Higgins;

(2) July 6, 2009 comment letter from my office to the Regional Board, including:

a.. Comment letter dated July 5, 2009 from Dennis Jackson;

b.. Comment letter dated July 2, 2009 from Dennis Jackson;

c.. Comment letter dated July 2, 2009 from Patrick Higgins;

(3) October 20, 2008 comment letter from my office to the Regional Board, including:

a.. Comment letter dated October 19, 2008 from Dr. Robert Curry;

b.. Comment letter dated October 17, 2008 from Dennis Jackson;

(4) May 7, 2008 comment letter from my office to the State Board, including:

a.. Comment letter dated April 24, 2008 from Dennis Jackson regarding the Napa River Sediment TMDL;

b.. Comment letter dated May 7, 2008 from Patrick Higgins regarding the Napa River Sediment TMDL;

c.. Comment letter dated May 7, 2008 from Dr. Robert Curry regarding the Napa River Sediment TMDL attached hereto as Exhibit 6.

(5) August 15, 2006 comment letter from my office to the Regional Board, including:

a.. Comment letter dated August 11, 2006 from Dr. Robert Curry;

b.. Comment letter dated August 11, 2006 from Dennis Jackson;

c.. Comment letter dated August 12, 2006 from Patrick Higgins.

All of these comments are included in the record of proceedings lodged with the Superior Court in the litigation entitled *Living Rivers Council vs. State Water Resources Control Board* (Alameda Superior Court Case No. RG11560171). The Superior Court's decision in this litigation is now on appeal in the case entitled *Living Rivers Council vs. State Water Resources Control Board* (Court of Appeal Case No. 137082. The cases are sometimes collectively referenced in this letter as the "litigation." A DVD containing this entire record of proceedings lodged with the Superior Court in the litigation is enclosed herewith as Exhibit 5. References to this record of proceedings in this letter are denoted by "AR" followed by the page number.

2. **CEQA: Piecemealing.** Living Rivers contends in the litigation and in this letter that the waiver policy and the Napa River Sediment TMDL are simply different aspects of the same CEQA "project" and therefore, must be assessed for environmental impacts in one CEQA document. (Exh 2, pp. 24- 28.) Therefore, Living Rivers' previous comments on the Substitute Environmental Document ("SED") prepared for the Napa River Sediment TMDL are also applicable to the waiver policy and Living Rivers requests that the Board consider them in determining whether preparation of an EIR or EIR-level Substitute Environmental Document is required before the Board adopts the waiver policy. Since Living Rivers "briefed" this claim in some detailed in the Superior Court, these

briefs are attached as Exhibits 2, 3 and 4 to this letter.

Indeed, the MND provides ample new evidence that the waiver policy is part of the same CEQA project as the Napa River Sediment TMDL. (See e.g., ISMND, p. 8 ["The Conditional Waiver implements the Napa River and Sonoma Creek sediment TMDLs that, in part, rely on individual landowners or operators of vineyard properties submitting a report of waste discharge (ROWD), or complying with WDRs, or waiver of WDRs, to meet water quality standards and protect beneficial uses].)

3. **CEQA: Fair Argument - the TMDL will cause significant impacts.** The Substitute Environmental Document prepared for the Napa River Sediment TMDL found that the adoption of the TMDL may have significant environmental impacts and it recommended and the Board adopted mitigation measures to reduce these impacts. Therefore, if Living Rivers is correct that the waiver policy and the Napa River Sediment TMDL are parts of the same CEQA "project," then the Board's integrated CEQA review of that single project must be conducted by preparation of an EIR or EIR level Substitute Environmental Document, and cannot be conducted by preparation of a mitigated negative declaration.

4. **CEQA: Fair Argument - Failure to Assess the Impacts of the Napa TMDL's Adoption of the Napa Conservation Regulations.** In the litigation, Living Rivers argues that the Napa River Sediment TMDL uses compliance with the Napa County Conservation Regulations as a "means of compliance" with the TMDL, that there is a fair argument that Napa County's implementation of its Conservation Regulations causes significant channel incision and sedimentation effects as a result of increasing precipitation runoff from hillside vineyards, and that the Napa River Sediment TMDL SED fails to lawfully assess this mechanism of impact. (See Exhibits 2, 3, 4, and 5.) As discussed in Living Rivers's previous comments on the Napa River Sediment TMDL, the TMDL adopts compliance with the Napa County Conservation regulations as part of the performance standard for surface erosion from vineyards set forth in Table 4.1 of the Napa River Sediment TMDL. Living Rivers previous comments demonstrate that Erosion Control Plans approved under the Napa County Conservation regulations often increase peak flows by authorizing the conversion of natural vegetation to vineyard cultivation and by efficiently channeling and directing surface and subsurface flows to downstream channels; and that this is a primary vector causing channel incision, channel instability, bank failures, and increases in sediment transport to low gradient reaches of Napa River tributary streams and to the Napa River. Living Rivers briefed this claim in the Superior Court (see Exhibits 2, 3, 4 and 5 attached hereto).

The environmental review for the waiver policy, which represents further implementation of this TMDL, must evaluate this mechanism of impact in an EIR because the evidence submitted by Living Rivers in the above comment letters is "substantial evidence" supporting a fair argument that the TMDL/waiver project will cause significant impacts in this way.

5. **CEQA: Fair Argument - Uncertain Runoff Standard.** In the litigation, Living Rivers argues that the Napa River Sediment TMDL SED admitted that the TMDLs performance standard for surface erosion could entail means of compliance that would cause significant increases in runoff, that the TMDl included and the Board adopted a mitigation measure to reduce this significant effect, and that the SED unlawfully deferred the development of the criteria and measures to achieve the mitigation contemplated by this performance standard for runoff. (Exh 2, pp. 24- 28; 3, 4, and 5.) The Board's response to this concern, made in connection with its adoption of the Napa TMDL, was that "The details of the SF Bay Water Board's analytical approach will be developed in consultation with a Technical Advisory Committee that has been formed to assist SF Bay Water Board with technical issues related to development of the WDR waiver." (AR 1760-61.)

In fact, however, the "WDR waiver" as proposed does not "develop the details of the SF Bay Water Board's analytical approach" to this issue and still does specify the criteria and measures to achieve the performance standard for runoff. This represents a violation of several CEQA requirements, including the rule against piecemealing, the rule against deferring the development of mitigation measures, and the rule requiring an EIR whenever a project may have significant adverse impacts that remain unmitigated to less-than-significant.

6. **CEQA: Fair Argument - Subsurface Flow.** The Board must prepare an EIR or EIR-level CEQA document for the waiver for an additional reason. As explained by Dennis Jackson in his comment letter (attached hereto as Exhibit 1), the waiver will cause vineyard owners to infiltrate precipitation runoff into the ground by using runoff detention basins, but the MND does not evaluate the extent to which this will lead to channel incision and downstream sedimentation as a result of concentrating and increasing subsurface flows. As explained by Mr. Jackson, this runoff mechanism is likely to cause environmental harm.

7. **CEQA: Incomplete Project Description - Covered Properties.** The MND does not present a complete description of the waiver policy because it appears that there are at least two categories of properties that are not either "covered", excluded from coverage and therefore requiring a ROWD, or excluded from coverage because the TMDL is not applicable:(1)Vineyard Properties containing a Vineyard Facility located on one or more parcels between 5 and 40 acres on slopes less than 5% where 5 or more acres are a planted vineyard; and (2) Vineyard Properties containing a Vineyard Facility located on one or more parcels between 5 and 20 acres on slopes more than 5% where 5 or more acres are a planted vineyard.

8. **CEQA: Inaccurate Project Description - Project Objectives.** The ISMND describes the "Project Objectives," in part, as follows: "Specifically, the Conditional Waiver will: • Improve and protect water quality through regulation of vineyard discharges that have previously been unregulated." In fact, however, the Conditional Waiver will do the exact opposite: it will allow vineyard discharges that have previously been unregulated, but that would now otherwise be regulated under the TMDL by Reports of Waster Discharge ("ROWD") and Waste Discharge Requirements ("WDR"), to remain unregulated by enrolling in the waiver. The claim to the contrary

in the MND is misleading and undermines public review and comment on the MND.

9. **CEQA: Unlawful Mitigation Measures.** The MND identifies several significant impacts and adopts mitigation measures to reduce them. These mitigation measures, however, consist solely of requiring compliance with other applicable regulations and permit requirements. This does not comply with CEQA because it is well-settled that compliance with another agency's regulatory standards cannot be used under CEQA as a basis for determining that a project's effects-either before or after mitigation-are insignificant. (*Kings County Farm Bureau v. City of Hanford* (1990) 221 Cal.App.3d 692. 712-718 [agency erred by "wrongly assum[ing] that, simply because the smokestack emissions would comply with applicable regulations from other agencies regulating air quality, the overall project would not cause significant effects to air quality"]; *Ebbetts Pass Forest Watch v. Cal. Dept. of Forestry & Fire Protection* (2008) 43 Cal.4th 936, 957 [agency erred "in concluding that any use of an herbicide in compliance with Department of Pesticide Regulation label restrictions necessarily 'would not have a significant effect on the environment.'"]; *Oro Fino Gold Mining Corporation v. County of El Dorado* (1990) 225 Cal.App.3d 872, 881-882 [rejecting agency's contention that project noise level would be insignificant simply by being consistent with general plan standards for the zone in question]; see also *City of Antioch v. City Council of the City of Pittsburg* (1986) 187 Cal.App.3d 1325, 1331-1332 [EIR required for construction of road and sewer lines even though these were shown on city general plan].) Instead, lead agencies must conduct their own fact-based analysis of project impacts, regardless of whether the project complies with other regulatory standards. (See, e.g., *Californians for Alternatives to Toxics v. Dept. of Food & Agriculture* (2005) 136 Cal.App.4th 1, 16 ("CATS")[lead agencies must review the site-specific impacts of pesticide applications under their jurisdiction, because "[Department of Pesticide Regulation's] registration does not and cannot account for specific uses of pesticides..., such as the specific chemicals used, their amounts and frequency of use, specific sensitive areas targeted for application, and the like"]; *Citizens for Non-Toxic Pest Control v. Dept. of Food & Agriculture* (1986) 187 Cal.App.3d 1575, 1587-1588 ("CNPC") [state agency applying pesticides cannot rely on pesticide registration status to avoid further environmental review under CEQA].)

Also, the MND does not disclose the extent to which vineyard properties that may contribute to these identified significant impacts will be subject to any other applicable regulations and permit requirements.

10. **Unlawful Delegation of Authority.** The Board apparently intends to base waivers on assurances provided by private sector consultants that are embodied in so-called "Farm Plans." This approach will out-source a large share of the burden of regulating vineyard compliance with the Basin Plan through the waiver policy to private non-governmental entities. This represents an unconstitutional delegation of governmental authority to the regulated community. *Bayside Timber Co. v. Board of Supervisors* (1971) 20 Cal. App. 3d 1. In addition, the extent to which the policy includes Board reliance on private sector assurances must be clearly described in the project description and the environmental impact of such reliance thoroughly evaluated. At present, the MND does not do so.

11. **CEQA: Limits on Public Participation.** Finally, the waiver policy will severely limit the public's ability to be informed of waiver decisions and projects that may harm the environment and to participate in the Board's decision whether to grant a waiver. Therefore, the opportunities for and constraints on public participation that will be part of the waiver policy must be clearly described in the project description and the environmental impact of limiting public participation thoroughly evaluated. At present, the MND does not do so.

Thank you for your attention to these comments.

Very truly yours,

Tom Lippe

Thomas N. Lippe

List of Exhibits

Exhibit 1: Letter from Dennis Jackson to Thomas Lippe dated January 26 February 1, 2013

Exhibit 2: Living Rivers Opening Trial Brief filed on November 23, 2011 in *Living Rivers Council v. State Water Control Board*, Alameda Superior Court Case No. RG11560171.

Exhibit 3: Living Rivers Reply Trial Brief filed on February 2, 2012 in *Living Rivers Council v. State Water Control Board*, Alameda Superior Court Case No. RG11560171.

Exhibit 4: Living Rivers Supplemental Trial Brief filed on April 25, 2012 in *Living Rivers Council v. State Water Control Board*, Alameda Superior Court Case No. RG11560171.

Exhibit 5: DVD containing the Administrative Record of Proceedings lodged in *Living Rivers Council v. State Water Control Board*, Alameda Superior Court Case No. RG11560171.

Dennis Jackson - Hydrologist

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January 26, 2013

Thomas N. Lippe
329 Bryant Street, Suite 3D
San Francisco, CA 94107

re: Napa River Sediment TMDL Vineyard Waiver and ISMND

Dear Mr. Lippe:

You have asked me to review and comment on the proposed *Conditional Waiver of Waste Discharge Requirements for Discharges from Vineyard Properties in the Napa River and Sonoma Creek Watersheds* (Draft Conditional Waiver) and its Initial Study and proposed Mitigated Negative Declaration (ISMND). The Draft Conditional Waiver for Vineyard Properties is a part of the Implementation Plans of the Sediment TMDLs for the Napa River and Sonoma Creek.

This letter addresses two issues that could result in either additional erosion as the result of implementing the Draft Conditional Waiver or additional erosion due to ongoing channel incision. I give a brief description of these issues and then a more in-depth discussion of them below.

The unjustified assumption that stormwater can be infiltrated, without careful planning, may result in increased erosion that would not occur if the Draft Conditional Waiver was not adopted. There is a lack of discussion of subsurface storm flow in the Draft Conditional Waiver and the ISMND. An assumption is made that it is always beneficial to infiltrate excess stormwater. No evidence is presented that demonstrates that such an assumption is justified. There are situations when infiltrating excess runoff is no better than keeping it on the surface or may actually be more harmful then keeping it on the surface. In instances where surface runoff is directed to an inappropriate place for infiltration there is the potential to either generate additional surface runoff, through a process called saturation-excess flow, or to increase the amount of subsurface flow which has the potential to cause erosion downslope. These mechanisms will be described in a subsequent section of this letter. The directing of storm water to an inappropriate location for infiltration would be done in order to comply with the Draft Conditional Waiver. Therefore, any adverse environmental impacts that arise from the inappropriate siting of locations for stormwater infiltration pursuant to the Draft Conditional Waiver would be the result of adopting the Draft Conditional Waiver. The mitigations proposed in the ISMND would be insufficient to prevent these impacts.

The approach of actively only reducing sediment discharge to the Napa River or Sonoma Creek has the potential to result in these two river systems having greater capacity to transport sediment than is actually available. This type of imbalance drives channel incision and produces sediment. The Draft Conditional Waiver does not directly require actions that would reduce stormwater discharge so the problem of incision may be reduced but not completely stopped which would continue adverse environmental impacts.

Storm Runoff

The goal of the Napa River Sediment TMDL is to reduce the sediment load of the Napa River to 125% of the natural load. It is my opinion that, in addition, to reducing the sediment load to 125% of the natural background sediment load the TMDL and Basin Plan Amendment (BPA) should require that the stormwater discharge regime of the Napa River be brought into alignment with the natural hydrograph that would transport no more than 125% of the background sediment load. In contrast, the TMDL, Draft Conditional Waiver and the ISMND for the Draft Conditional Waiver aim for no net increase in storm discharge volume, velocity or duration. Staff has stated that concentrating on reducing sediment discharge will simultaneously reduce storm water discharge. I agree that there will be a reduction in storm water volume, velocity and duration if the sediment discharge is reduced to the target levels. However, Staff has offered no factual evidence to demonstrate that the reduction in storm water discharge that will result from their approach will result in a balance between the discharge regime of the Napa River and Sonoma Creek and their respective target sediment loads. I contend that, without actually reducing the runoff from vineyard properties, the resulting discharge regime in the Napa River and Sonoma Creek, after the target sediment loads are obtained, will be capable of transporting more than 125% of the background sediment load.

If the approach of only reducing sediment discharge, as outlined in the TMDL and Draft Conditional Waiver, does not sufficiently reduce storm water discharge to bring the sediment transport capacity of the Napa River and Sonoma Creek into balance with the supplied sediment load then the process of streambed incision will continue. This adverse impact to the environment is not fully mitigated by the measures proposed in the ISMND for the Draft Conditional Waiver.

In my August 2010 comments on the Napa River Sediment TMDL, I demonstrated that the water discharge regime during the 1994-2003 period (the time period used to determine that the sediment load was 185% of background) would have to be reduced between 14% and 24% to be in balance with the target sediment load of 125% of background in the Napa River. Requiring existing vineyards to reduce their peak storm water discharge by 20%, as measured by TR-55 or other model, would shift the discharge regimes of the Napa River and Sonoma Creek towards being in balance with the target sediment load of 125% of background.

Inappropriate Infiltration

An assumption is made in the Draft Conditional Waiver and the ISMND that it is always beneficial to infiltrate excess stormwater. No evidence is presented that demonstrates that such an assumption is justified. There are situations when infiltrating excess runoff is no better than keeping it on the surface or may actually prove to be more harmful then keeping it on the surface.

This argument requires some background on the mechanisms of storm runoff. The following discussion of runoff mechanisms is based on Dunne and Leopold (1978) and on Selby (2000). See Figure 1, adapted from Selby's Figure 11.10 (2000) at the end of this letter for a conceptual drawing of the various runoff processes on a landscape.

Runoff Processes

The rainfall-runoff process is complex and occurs through several mechanisms. According to Dunne and Leopold (1978) the runoff processes are:

1. Hortonian overland flow,
2. Subsurface flow,
3. Saturated overland flow (saturation-excess flow)

4. Groundwater flow and,
5. Channel Precipitation

Hortonian overland flow (infiltration-excess overland flow) is caused when the rainfall intensity exceeds the infiltration capacity of the soil. Hortonian overland flow is what many people imagine when thinking about the runoff process. In forested environments or areas with undisturbed vegetation and deep permeable soils, infiltration rates tend to exceed all but the most intense rainfall intensities. In forested environments, Hortonian overland flow is usually limited to rock outcrops, or to small areas during extremely intense (rare) rainfall bursts, and disturbed areas such as roads.

The following quotes, describing the runoff process are from M.J. Selby (Hillslope Materials and Processes, second edition, 2000, page 213):

> Field observations indicate that Hortonian overland flow is a rare phenomenon, especially in areas with undisturbed vegetation cover and deep permeable soils. Overland flow is most readily generated in semiarid environments with thin, impermeable soils with low water-storage capacity, and in any environment where loss of soil structure (and therefore macropores) by compaction, removal of vegetation, freezing, and blocking of pores are associated with prolonged and/or high intensity rainfalls.
>
> In areas of permeable soils where hydraulic conductivity decreases with soil depth, subsurface flow moves laterally as throughflow within the soil profile. When and where the profile becomes completely saturated, saturation-excess overland flow will occur. Both processes may occur at rainfall intensities and durations which are well below those required to produce Hortonian overland flow. Furthermore, both throughflow and saturation-excess flow may be generated from source areas which are variable in extent and different in location from source areas of Hortonian overland flow.
>
> **Subsurface stormflow is now regarded as the major runoff-generating mechanism in most humid environments**, both because of its influence on the development of saturated zones and as an important contributor to stormflow in its own right (Anderson and Burt 1978). (Emphasis added)

Subsurface storm flow can occur through open rock joints, coarse talus, soil pipes and permeable soil (Selby, 2000). The following excerpts are from Selby's (2000, page 217) discussion of soil pipes.

> Pipe-Flow
>
> Flow in pipes has been greatly underestimated as a hydrological process, according to experimental work in a very small number of catchments (Jones 1987a, b; Bryan and Yair 1982: McCaig 1983). It is now recognized that subsurface natural pipes exist in many environments ranging from arid through semiarid to humid temperate and humid tropical. They occur in many soil types and at various depths. Natural pipes are known with diameters ranging from 0.02 m (0.8 inch) to > 1m (3.3 feet) and lengths of a few meters to >1 km; they may carry perennial or ephemeral flows. The major requirement for their existence appears to be a soil body which is strong enough to support the walls and roof of a pipe but not so strong that it inhibits pipe erosion by flows which, at least initially, are of low volume and velocity. The mechanics of pipe development are discussed in Chapter 12.
>
> Pipe-flow may be derived from areas of saturated soil, areas of cracked surface soils or with many large, open macropores, or zones of converging saturation flow in macropores. Some pipe-flow may come from concentrated overland flow and channel flow which is diverted into a pipe. The velocity of pipe-flow has been variously estimated as being in the range of that of overland flow (0.1 m/s or 0.33 ft/s) to being an order of magnitude more rapid. It can therefore be a major contributor to storm runoff and especially to peak flows, Furthermore networks of pipes extend the areas of a catchment which contribute to storm runoff and they may be major contributors of water to saturated zones from which saturation-excess overland flow occurs. In some catchments pipe-flow has been assessed as contributing up to 50 per cent of the total storm discharge.

> The total significance of pipe-flow in both catchment hydrology and in geomorphic development of hillslopes is, however, not well understood. The proportion of large regions in which pipes occur is usually regarded as being small; but as they are difficult to detect, unless their roofs collapse, they may be underestimated. Research into pipe-flows and the effects of pipes on delivering water to erodible sites, such as hollows and those with unstable soil masses, is rather neglected.

Saturated-excess flow occurs on saturated sites. A site is saturated when the water table rises to the surface. When subsurface flow encounters a saturated site some of the subsurface water flows over the ground surface and is called *return flow*. Since the water table is at the ground surface, the infiltration rate is zero and any rain falling on to the area will flow down-slope as surface runoff. Saturated-excess flow tends to occur in swale bottoms or the lower portion of hillslopes and near stream channels. The area subject to saturation-excess overland flow expands as the duration of a storm increases. Selby (2000) observes that;

> Storm-runoff contributing areas commonly develop first alongside stream channels and in concavities and then expand as surface runoff occurs from operation of several processes.

Selby's (2000) entire discussion of runoff processes is attached to this letter.
A section in Chapter 12 of Selby (2000, page 241) describes the formation of soil pipes as follows.

> Pipe Erosion
>
> Subsurface pipe erosion has been described by a number of terms including pothole erosion, suffusion, subcutaneous erosion, tunneling, and tunnel-gullying, but the most widely used term is *piping* (Parker and Jenne 1967; Crouch 1976; Jones 1987). Natural pipes and their role in slope hydrology were described in the previous chapter.
>
> Among the factors which dispose a soil to piping are: a seasonal or highly variable rainfall; a soil subject to cracking in dry periods; a reduction in vegetation cover; a relatively impermeable layer in the soil profile; the existence of a hydraulic gradient in the soil; and a dispersible soil layer.
>
> Examples of piping are particularly common in semiarid badlands formed on smectite clays which have strong swelling and shrinkage properties and may also have high exchangeable sodium percentages (Heede 1971; Guiterrez et al. 1988; Lopez-Bermudez and Romero-Diaz 1989; Swanson et al. 1989). Loess and loessic colluvium with high sodium content are also subject to piping (Laffan and Sutherland 1988).
>
> The most commonly reported situation in which pipes develop is one in which a surface soil cracks as a result of desiccation. In a rainstorm water then infiltrates rapidly down the cracks and supersaturates a relatively permeable horizon in the subsoil. Lateral seepage may be fast enough to move soil particles and develop a channel, or, if the soil has dispersible clays, these may lose aggregation. Movement of water through subsurface cracks and voids is slow until water breaks through the soil surface further down the slope, and rapid flow can then work headwards within the soil and form a gully or enlarge a pipe (Figs 12.13 and 12.14).

Ziemer and Albright (1987) studied storm flow in soil pipes in two swales in the Caspar Creek watershed located in Jackson State Forest in Mendocino County, California. The following excerpts are from their 1987 paper.

> ABSTRACT Pipeflow dynamics are being studied at Caspar Creek Experimental Watershed in north-coastal California near Ft. Bragg. Pipes have been observed at depths to 2 m within trenched swales and at the heads of gullied channels in small (0.8 to 2 ha) headwater drainages. Digital data loggers connected to pressure transducers monitor discharge using calibrated standpipes. During storms, pipeflow up to 8 1 s~ has been measured» while, within the same swales, no surface channel flow occurred. Pipeflow discharge has been correlated with antecedent precipitation.

INTRODUCTION

Most of the geomorphic literature attributes drainage network evolution, except in karst areas, to surface runoff processes. Recently, the influence of near-surface groundwater flow in promoting subsurface erosion in non-karst areas and the development of drainage networks has received increasing attention (Higgins, 1984). The geomorphic features resulting from erosion by the flow of subsurface water in non-calcareous rocks have been referred to as "pseudokarst" (Halladay, 1960; Parker et al., 1964). In arid regions, the role of piping in gully development has been recognized for some time. In humid regions, however, the geomorphic significance of piping was largely overlooked until Kirkby & Chorley (1967) presented a model of soil water throughflow and saturated overland flow as an alternative to Horton overland flow on vegetated slopes.

Under favorable conditions, subsurface drainage can promote accelerated erosion by chemical (solution), physiochemical (suffusion), and physical (piping and landsliding) processes. Biological processes generate organic acids that accelerate the dissolution of primary soil minerals and also disperse secondary minerals (Durgin, 1984). These minerals can be transported through the soil, and eventually to a stream channel, by subsurface drainage. As chemical erosion progresses and the soil becomes more porous, water flowing through the soil can detach and move colloids through soil pores—a process called suffusion. Suffusion can lead to soil piping as progressively larger material is eroded. In addition, stress fractures in the soil, as well as biotic activity by invertebrates and vertebrates and by root networks may contribute to the initiation and subsequent development of piping systems.

Water infiltrates the pipe as laminar flow, but within the pipe, flow becomes turbulent and erosion is primarily by corrasion and undermining of pipe walls (Dredge & Thorn, 1976). As subsurface erosion continues, pipe roofs may collapse, forming pseudokarst topography. Goldsmith & Smith (1985) summarized the conditions essential for piping: (a) a source of water, (b) a surface infiltration rate that exceeds the subsurface permeability at some depth, (c) a zone of potentially dispersive soil, (d) a hydraulic gradient to cause water to flow, and (e) an outlet for the lateral flow.

CONCLUSION

Nearly all of the discharge that we observed at our sites came from pipeflow. There was very little seepage from the excavation face, even during storm periods. This is similar to observations by Tsukamoto et al. (1982). They reported that pipeflow was responsible for 95% of the outflow from a small granitic headwater catchment in Japan. Seepage through the soil matrix at their location was negligible. In another setting, Jones & Crane (1984) found that pipeflow accounted for 46% of the streamflow generated from their study area. (Emphasis Added)

Climate and geology vary for the limited number of studies of pipeflow hydrology conducted to date. These studies firmly establish the concept that macropore and piping networks are locally significant mechanisms for routing water and sediment from steep upland watersheds.

The runoff mechanisms, described above, must be thoroughly understood to avoid creating unintended erosion when designing new drainage facilities or modifying existing drainage facilities. It is an assumption that diverting stormwater runoff into a detention basin is always less environmentally damaging than not doing so. For example, in an attempt to meet the requirements of the Draft Conditional Waiver, a property owner might convert an existing swale into a stormwater detention basin that infiltrates the water into the subsurface. Below, I discuss the potential problems of constructing a detention basin in a swale.

A swale is a concave depression on a hillslope without a surface channel. Swales are also called zero-order basins since they are upslope of Stahler first-order channels. A second-order channel is created when two first-order channels join. Class III channels, as defined in the Draft Conditional Waiver, are generally first-order or second-order streams under the Stahler system of stream order. In general, swales are located upslope of a stream channel. The point of channel initiation (channel head) is typically located at the downslope end of a swale. Subsurface flow from a swale can also enter a stream channel from the side.

Let's examine what is happening in a swale during a significant storm event. The colluvium that comprises a swale will be saturated during storm events that generate significant amounts of runoff. So, the water table in a swale will be at or close to the ground surface during storm events. The high groundwater table means that swales are sites where saturated overland flow (saturation-excess flow) occurs. Subsurface flow from the adjacent hillslopes may come to the surface along the margin of the swale and flow across the surface. Rain falling on a saturated area cannot infiltrate into the ground and so becomes surface runoff. A saturated area acts, in some respects, as an impervious surface.

Subsurface flow out of the swale may eventually come to the surface and initiate a channel head. The channel initiation process is more likely to occur when the soil is saturated. As discussed above, the soil of a swale will tend to be saturated during a significant storm event. So channel heads often form at the downslope end of a swale.

Subsurface flow out of the swale may also occur in soil pipes. In fact, Ziemer and Albright (1987) found that most of the flow from the two swales they studied was carried in soil pipes. Well-developed soil pipes are known to carry both water and sediment. Soil pipes will discharge the water and sediment they carry to the surface at some point downslope.

Now suppose that a property owner constructs a stormwater detention basin in a swale. The stormwater detention basin, formerly a swale, captures surface runoff and holds it until it seeps into the ground or evaporates. So, the stormwater runoff from the property has been decreased and it would appear that the project is meeting the goal of the Draft Conditional Waiver. However, we have to understand what happens to the stormwater that infiltrated into the swale.

The stormwater that enters the detention basin constructed in the swale would not have been delivered to the swale prior to the construction of the detention basin. Some of the stormwater will evaporate but much of this additional water infiltrates into the subsurface. The water that infiltrates will potentially increase the rate of subsurface storm flow and prolong the duration of subsurface storm flow. The increased rate and duration of subsurface storm flow may result in the point of channel initiation (channel head) moving upslope causing additional erosion that would not have occurred prior to the construction of the detention basin. This would be an unmitigated adverse impact directly attributable to adopting the Draft Conditional Waiver.

The increased volume of water infiltrating into the swale from the detention basin would increase the rate and duration of flow in any soil pipes draining the swale. An increase of the rate or duration of flow through a soil pipe would likely erode the walls of the soil pipe. The eroded material would be transported downslope and discharged to the surface, potentially into a stream channel. Or the water infiltrated from the detention basin could possibly initiate the formation of new soil pipes. This would be an unmitigated adverse impact directly attributable to adopting the Draft Conditional Waiver.

One of the processes that cause the formation of gullies is the collapse of the roof of soil pipes (Selby, 2000). The creation and/or expansion of soil pipes, from water infiltrating from an improperly sited detention basin, could result in the formation of a new gully. This would be an unmitigated adverse impact directly attributable to adopting the Draft Conditional Waiver.

In some situations, the erosion caused by the increased subsurface flow out of a swale that has been converted into a stormwater detention basin may exceed the erosion caused by not using such a detention basin. The increased subsurface stormflow from a swale containing a detention basin may result in the upslope migration of a channel head, or the erosion of soil pipes, and even the formation of a gully through the collapse of the roof of a soil pipe. These potential significant adverse impacts were not considered by the ISMND.

Vineyards are one example of a location where the permeability decreases with depth. When a new vineyard is installed, it has been common practice to rip the soil with heavy equipment. The zone of soil that was ripped will be more permeable than the undisturbed material below the ripped layer. When the ground surface has a slope, even of just a few percent, there will be subsurface storm flow at the interface of the ripped soil and the undisturbed material below it give sufficient rainfall.

Undisturbed hillslopes also tend to exhibit a decrease in permeability with depth. Therefore, subsurface storm flow can be expected to occur on most hillslopes, give sufficient rainfall. Subsurface storm flow is expected to be widespread in the Napa River and Sonoma Creek watersheds.

Soil pipes can form in soils with at least some shrink-swell potential. Such soils exist in Napa River and Sonoma Creek watersheds. Therefore, it is likely that soil pipes will be an important mechanism for transporting subsurface storm flow, after sufficient rainfall has occurred, in areas with soils that have at least some shrink-swell potential.

Subsurface Flow not Considered in the Draft Conditional Waiver

The Draft Conditional Waiver does not consider the importance of subsurface storm flow as a runoff process. The following passages from the Draft Conditional Waiver demonstrate a failure to consider the importance of subsurface storm flow.

On page 23 the Draft Conditional Waiver defines point(s) of discharge.

> **Point(s) of Discharge**. *Point(s) of Discharge* include all locations where storm runoff is discharged via concentrated surface flow into a defined channel that has a bed and banks. Also, at locations where engineered drainage has been installed and storm runoff is collected first (e.g., subsurface drainage pipes or tiles in a vineyard block, an inboard ditch along a Road, etc.), a Point of Discharge is located at the outlet of the engineered drainage feature, whether that location is on a hill slope or in a defined channel.

This definition does not consider the discharge of soil pipes since soil pipes are a subsurface flow process and not a surface flow process. Failing to specifically include the discharge from a soil pipe as a point of

discharge seriously undermines the effectiveness of the Draft Conditional Waiver. It is likely, that a significant amount of stormwater discharge is carried by soil pipes in the Napa River and Sonoma Creek watersheds.

Attachment D item 2(d) seeks to encourage on-site infiltration of stormwater to reduce erosion and flow peaks.

> 2. Vineyard Management Practices Element
> d. Management practices and infrastructure that promote and maximize infiltration on-site to reduce erosion and to prevent increase in stormwater peak flows.

However, the Draft Conditional Waiver should include statements that on-site infiltration should be designed in a manner that avoids increasing erosion from subsurface storm flow processes.

Attachment D item 5(a) also fails to mention the importance of designing on-site infiltration projects in a way that does not generate erosion from an increase in subsurface storm flow.

> 5. Stormwater Runoff Management Element
> a. Depict runoff flow patterns, including areas where runoff will be infiltrated, detained, and discharged via sheet flow and via a drainage system into the receiving waters.

Attachment D item 5(c) will not address erosion where soil pipes discharge since such locations are not included in the definition of point(s) of discharge.

> c. Describe erosion features, if any, at Points of Discharge and specify to address such erosion.

Attachment D item 6 does not explicitly recognize the role of subsurface storm flow in the formation of gullies (see Selby 2000).

> 6. Gullies and Shallow Landslides Element
> Unstable areas, such as gullies, rills, landslides, mudflows, rock falls, and channel erosion are significant sources of sediment. Where they exist, the Farm Water Quality Plan shall:
>
> > a. Describe the location of erosional features including gullies, rills, landslides, mudflows, and channel erosion that have the potential to deliver more than 10 cubic yards (as defined above) of sediment to the channel that are a result of past or current Road and vineyard operations on the Vineyard Property.
> >
> > b. Identify and implement management practices needed to promote natural recovery or to actively stabilize unstable areas and to minimize increases in sediment delivery to receiving waters, including actions to disburse runoff causing or contributing to gullies and other erosional features.
> >
> > c. Indicate areas where active restoration of gullies, shallow landslides, or other unstable areas has already occurred.

The above passages from the Draft Conditional Waiver are not meant to be an exhaustive list of all the places where the Draft Conditional Waiver disregards the importance of subsurface storm flow but serve to demonstrate its disregard for this important runoff mechanism.

Summary

In addition to reducing the sediment load to 125% of the natural background sediment load the TMDL, BPA, and the Draft Conditional Waiver should require that the stormwater discharge regime of the Napa River be brought into alignment with the natural hydrograph that transports no more than 125% of the

background sediment load. An enforceable storm water discharge performance standard should be applied to all four land use categories listed in BPA Tables 4.1 through 4.4. The storm water discharge performance standard should be applied to all lands in the Napa River watershed including upstream of the municipal water supply reservoirs.

Reducing the sediment load from 185% down to 125% of the natural sediment load without actively reducing excess storm discharge from all land uses in the Napa watershed will create an imbalance between the target sediment load of 125% of the natural load and the sediment transport capacity of the Napa River and its tributaries. Such an imbalance has the potential to result in erosion of the banks and/or bed of the Napa River and its tributaries. Therefore, implementing the current version TMDL and BPA, through the Draft Conditional Waiver, has the potential of causing erosion of the banks and/or bed of the Napa River and its tributaries.

The Draft Conditional Waiver does not recognize the importance of subsurface storm flow in generating streamflow or erosion. Selby (2000) observes that subsurface stormflow is the major runoff mechanism in humid environments.

> Subsurface stormflow is now regarded as the major runoff-generating mechanism in most humid environments, both because of its influence on the development of saturated zones and as an important contributor to stormflow in its own right (Anderson and Burt 1978).

The failure to recognize the role of subsurface storm flow in the generation of streamflow and erosion is the reason that the Draft Conditional Waiver does not point out the need for on-site infiltration projects to be designed to minimize increased subsurface storm flow. On-site infiltration projects carried out to satisfy the requirements of the Draft Conditional Waiver may result in increased subsurface storm flow and result in erosion or gully formation that would not have occurred if the Draft Conditional Waiver was not adopted. These potential significant adverse impacts were not considered by the ISMND.

Sincerely,

Dennis Jackson

Dennis Jackson
Hydrologist

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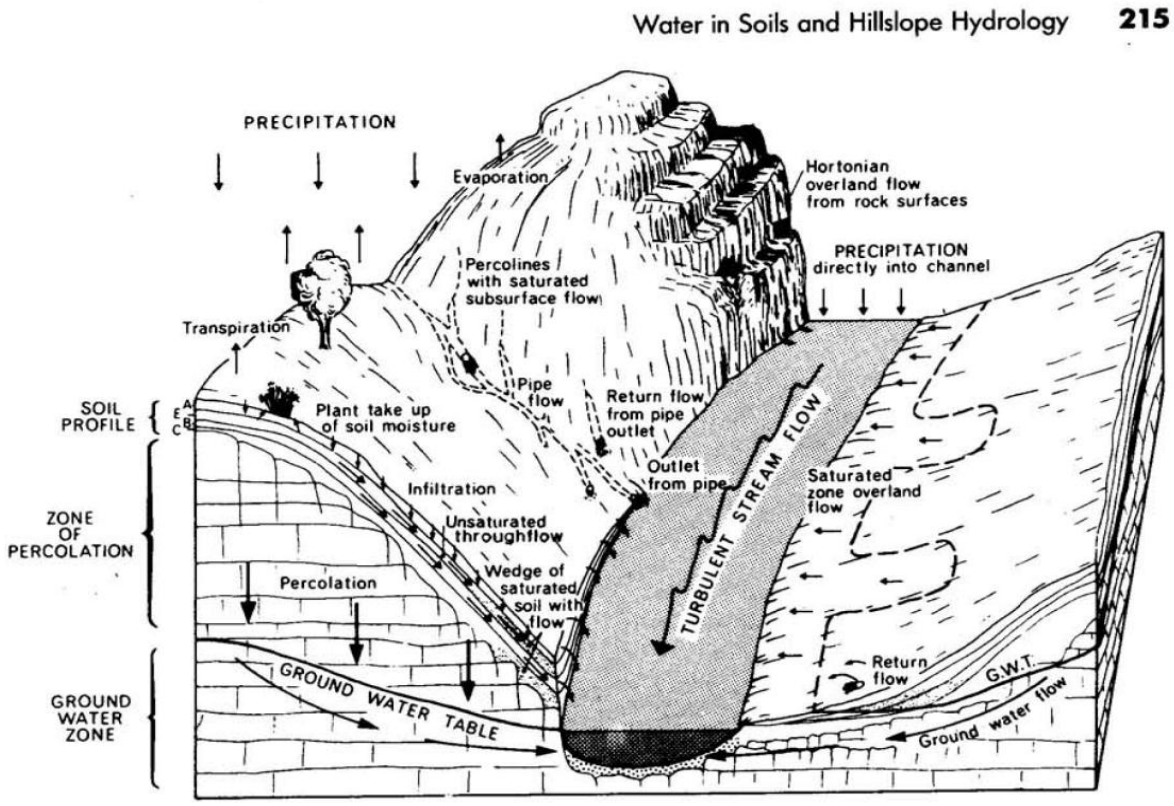

Figure 1. Adapted from Selby (2000) Figure 11.10(a). A schematic landscape with the various types of runoff from hillslopes and the sources and paths of runoff.

AB001

Permission to File KLINE, P.J.

Case No. A137082

IN THE COURT OF APPEAL OF THE STATE OF CALIFORNIA
FIRST APPELLATE DISTRICT
DIVISION 2

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LIVING RIVERS COUNCIL,

Appellants,

vs.

STATE WATER RESOURCES CONTROL BOARD,

Respondents.

On Appeal from the Superior Court
County of Alameda
The Honorable Evelio Grillo
Superior Court Case No. RG10543923

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CERTIFICATE OF INTERESTED ENTITIES OR PERSONS (CRC 8.208.)

I, Thomas N. Lippe, am appellate counsel for Plaintiff Living Rivers Council.

Pursuant to California Rules of Court, rule 8.208, I certify that Petitioner knows of no entity that has an ownership interest of 10 percent or more in Petitioner, and that Petitioner knows of no person or entity, other than the parties themselves, that has a financial or other interest in the outcome of the proceeding that Petitioner reasonably believes the justices should consider in determining whether to disqualify themselves under canon 3E of the Code of Judicial Ethics.

Executed under penalty of perjury under the laws of the State of California, this 27th day of June, 2013, in the City and County of San Francisco.

Thomas N. Lippe

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NOTE ON CITATIONS TO THE RECORD ON APPEAL

- Citation to the Certified Administrative Record of Proceedings (a complete electronic copy and index of which has been transmitted to the Court of Appeal from the trial court), are denoted by "AR" followed by page number.
- Citation to the Clerk's Transcript are denoted by "CT" followed by page number.
- Citation to the Reporter's Transcript are denoted by "RT" followed by page and line numbers.

NOTE ON CITATIONS TO CEQA AND THE CEQA GUIDELINES

- The California Environmental Quality Act ("CEQA") is codified at Public Resources Code section 21000, *et seq*. All statutory citations in this brief are to CEQA, unless stated otherwise, and shall consist of a section symbol and then the relevant section number and subdivision(s). For example, a citation to Public Resources Code section 21080, subdivision (e)(2), would appear as: § 21080(e)(2).
- The CEQA Guidelines[1] are codified at California Code of Regulations, title 14, chapter 3, section 15000, et seq. All citations to the CEQA Guidelines shall consist of the word "Guidelines" followed by the relevant section number and subdivision(s). For example, a citation to Cal. Code Regs., tit. 14, ch. 3, § 15088.5, subd. (a)(4) would appear as: Guidelines, § 15088.5(a)(4).

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[1] The Supreme Court has not decided whether the Guidelines constitute regulatory mandates. "At a minimum, however, courts should afford great weight to the CEQA Guidelines except when a provision is clearly unauthorized or erroneous under CEQA." (*Laurel Heights Improvement Assn. v. Regents of University of California* (1988) 47 Cal.3d 376, 391, fn. 2 (*Laurel Heights I*).)

I. INTRODUCTION

Nature of the Action. Plaintiff Living Rivers Council ("Living Rivers") challenges Respondent State Water Resources Control Board's ("Respondent" or "Board") decision to adopt an Amendment to the Water Quality Control Plan for the San Francisco Bay Basin ("Basin Plan") to Establish a Total Maximum Daily Load (TMDL) for Sediment in the Napa River, and an Implementation Plan to Achieve the TMDL and Related Habitat Enhancement Goals ("TMDL/BPA" or "Project"), and a Substitute Environmental Document ("Environmental Document") prepared pursuant to the California Environmental Quality Act ("CEQA") and the Board's CEQA regulations at 23 Cal. Code Regs., Article 6, section 3775, et seq. (CRC 8.204(a)(2)(A); CT:3.)

Relief Requested in the Trial Court. In the trial court and here, Living Rivers requests a peremptory writ of mandate ordering the Board to void its approval of the Project until the Environmental Document complies with CEQA and the Board's regulations. (CRC 8.204(a)(2)(A); CT:7-8.)

Appeal from Final Judgment. Living Rivers appeals from the final judgment on the merits issued on September 13, 2012, by Judge Evelio M. Grillo of the Alameda County Superior Court (CRC 8.204(a)(2)(A) & (B)). (CT:591.)

Legal Claims. When adopting a TMDL/BPA, the Board must evaluate the environmental effects of its "means of compliance," including "reasonably foreseeable means of compliance," which includes performance standards. (*City of Arcadia v. State Water Res. Control Bd.* (2006) 135 Cal.App.4th 1392, 1424-25 (*City of Arcadia*); 23 Cal. Code Regs. § 3777(b)(4)(A) & (B).) The TMDL/BPA establishes that compliance with Napa County's Conservation Regulations (i.e., its program of approving Erosion Control Plans for new

hillside vineyards) is an actual or foreseeable means of compliance with the TMDL/BPA's performance standard for controlling surface erosion.[2] Since 2000, environmental groups in Napa County have documented that this Napa County program causes significant sediment impacts on the Napa River. Despite Living Rivers' presentation of this history to the Board, the Environmental Document fails to assess the environmental impacts of this actual or foreseeable means of compliance with the TMDL/BPA.

Further, the Board conceded that landowner efforts to comply with its performance standard for controlling surface erosion may cause significant environmental impacts by increasing storm runoff and "channel incision," which leads to increased sediment discharge to the Napa River. Yet, instead of conducting an EIR-level assessment of the environmental impact of this "means of compliance, the Board adopted a new mitigation measure for increased runoff impacts. This measure is a purported "performance standard" for controlling storm runoff, which requires that vineyard landowners "Effectively attenuate significant increases in storm runoff. Runoff from vineyards shall not cause or contribute to downstream increases in rates of bank or bed erosion." Based on this measure, the Board found that increased runoff impacts would be mitigated to "less than significant."

Under CEQA, where a project will have significant environmental effects, the EIR may not defer the development of mitigation measures until after project approval except in limited circumstances where "'[F]or kinds of impacts for which mitigation is known to be feasible, but where practical considerations prohibit devising such measures early in the planning process

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[2]The Napa County Conservation Regulations are codified at Chapter 18.108 of the Napa County Municipal Code. (Appellant's Motion for Judicial Notice, Exhibit 5.)

. . . , the agency can commit itself to eventually devising measures that will satisfy specific performance criteria articulated at the time of project approval." (*Gentry v. City of Murrieta* (1995) 36 Cal.App.4th 1359; 1394 (*Gentry*). Here, the Environmental Document, however, fails to specify criteria for "effectively attenuating significant increases in storm runoff" that will achieve the standard of "not causing or contributing to downstream increases in rates of bank or bed erosion." No metrics are provided for what constitutes a "significant increase" in runoff that would be expected to cause or contribute to downstream increases in erosion, and that would, therefore, be disallowed by the TMDL/BPA and its Implementation Program. Also, the Environmental Document fails to present any information that it is possible to achieve this standard in the real world (i.e., that it is feasible to mitigate this significant impact), and no evidence that it is even feasible to measure whether the performance standard is achieved. Therefore, the Environmental Document fails to comply with CEQA's informational requirements. (*Communities for a Better Environment v. City of Richmond* (2010) 184 Cal.App.4th 70, 95 (*CBE*).)

Finally, the TMDL/BPA will be implemented by requiring that landowners submit a Report of Waste Discharge pursuant to Water Code § 13260 to obtain "Waste Discharge Requirements" issued by the San Francisco Bay Regional Water Quality Control Board ("Regional Board"). From the very beginning the TMDL/BPA included reference to a "WDR waiver policy" that would allow landowners to avoid this permitting requirement. Despite Living Rivers' repeated requests that the Environmental Document describe and evaluate the impacts of this anticipated policy, neither the TMDL/BPA or the Environmental Document do so. As a result, the Environmental Document unlawfully "piecemeals" its environmental review of the Project.

All of these claims arise from the Board's failure to include information required by CEQA and the Board's regulations in the Environmental Document. Therefore, they are claims that the Board prejudicially abused its discretion by failing to proceed in the manner required by law, which are reviewed by this court de novo.

II. ISSUES PRESENTED

1. Whether the Environmental Document unlawfully fails to assess the environmental impacts of establishing compliance with Napa County's Conservation Regulations for approving hillside vineyards as a means of compliance with the TMDLs performance standard for controlling surface erosion.

2. Whether the Environmental Document unlawfully defers the development of a mitigation measure to reduce storm runoff impacts caused by landowners' efforts to comply with the TMDLs standard for controlling surface erosion.

3. Whether the Environmental Document fails to describe or assess the environmental impacts of the "whole of the project," specifically, its anticipated "WDR waiver" policy.

III. STATEMENT OF FACTS

A. HISTORIC HARM TO THE NAPA RIVER ENVIRONMENT.

Since the late 1940s, populations of steelhead and salmon in the Napa River and its tributaries have declined substantially. (AR:1588.) While the Napa River watershed once supported runs of 6,000 to 8,000 steelhead, and 2,000 to 4,000 coho salmon, by the late 1960s coho salmon were extinct in the watershed, and the steelhead run was reduced by about 85 percent, to about 1,000 adults. (AR:1590.) The steelhead run is now estimated at less than a few hundred adults. (AR:1590.)

Three of the primary contributors to decreases in Napa River salmonid populations are related to sedimentation, including: 1) excess fine sediment in the stream bed, which decreases fish egg survival and juvenile rearing success; 2) erosion of the river's tributaries' bed and banks, which reduces spawning and rearing habitat; and 3) low flows and warm water temperatures in the dry season, which limit growth and survival of juvenile steelhead and salmon. (AR:8248.) The five major sources of sediment in the Napa River watershed are: 1) natural erosion, 2) road-related erosion, 3) surface erosion in vineyards, 4) gullies and shallow landslides caused by vineyards and grazing, and 5) human-caused bed and bank erosion along the River and its tributaries. (AR:8248.)

B. PREVIOUS REGULATORY ACTION.

In 1990, based on evidence of widespread excess erosion and sedimentation and concern regarding adverse impacts to fish habitat, the Regional Board listed the Napa River as an impaired water body due to fine sediment deposition, pursuant to federal Clean Water Act section 303(d). (AR:6, 1584.) While numerous beneficial uses of the Napa River are adversely affected by excess sediment, including recreation (i.e., fishing), cold freshwater habitat, fish spawning, and preservation of rare and endangered species (AR:1584), the primary reason for the listing was concern for the decline in salmonid populations (AR:1590).

In 1991, Napa County adopted its so-called Conservation Regulations, codified at Napa County Code Chapter 18.108. (AR:447, 3863.) These regulations require owners of land in Napa County, before conducting any earth-moving activities (including vegetation removal) on slopes over 5%, to submit and obtain the County's approval of an Erosion Control Plan ("ECP"). (Napa County Code §§ 18.108.070, subd. (B), 18.108.080 [See Motion for

Judicial Notice, Exh. 5]; AR:10289.)

Since 2000, environmental groups in Napa County have documented that this Napa County program causes significant sediment impacts on the Napa River. A more detailed explanation of the factual basis of these efforts is presented in Section VI.A.2 below. In short, vineyard conversions significantly contribute to ongoing significant sedimentation effects in the Napa River drainage. The primary mechanism of this impact is increases in storm water runoff caused by converting natural vegetation to vineyard, which causes channel incision leading to channel instability and bank failures. This process entrains sediments in stream flows, and these sediments are carried downstream. (AR:8848-49.) Also, ECPs approved by Napa County do not accurately evaluate or adequately mitigate impacts associated with these increases in runoff. (*Id.*)

C. PROCEDURAL HISTORY OF THE TMDL/BASIN PLAN AMENDMENT.

Because the Napa River is listed as impaired for sediment, the Regional Board must, under section 303(d) of the Clean Water Act, develop a Total Maximum Daily Load ("TMDL") for sediment pollution in the Napa River. (AR:1.) A TMDL/BPA includes the development of a pollutant budget and a control plan to restore the health of a polluted water body. (AR:1584.) The Regional Board developed the TMDL/BPA as an amendment to the Water Quality Control Plan for the San Francisco Bay Region ("Basin Plan"). The Regional Board's primary goal in adoption of the TMDL/BPA is conserving the salmon and steelhead fisheries in the Napa River drainage. (AR:2847-48.)

"Basin planning" by the Board is a certified regulatory program subject to a limited exemption from CEQA's requirement to prepare an Environmental Impact Report ("EIR") or Negative Declaration for the TMDL/BPA. (AR:7.)

Thus, instead of an EIR or Negative Declaration, the Regional Board prepared a Substitute Environmental Document for the Project, consisting of a Staff Report, a CEQA Checklist, the Basin Plan Amendment and the supporting documentation. (AR:7.)

Between 2006 and 2010, the TMDL/BPA was subject to six rounds of public comment; Living Rivers participated in all of them. (AR:8848, 9459, 9470, 9592, 9821, 10349.) As discussed in more detail in the Argument section of this brief, Living Rivers repeatedly presented all of the claims alleged in this case to the Regional and State Water Boards. (AR:8848-8850; AR:8854-8856; 8928-9043; 9427-9442.)

In June 2006, the Regional Board circulated the draft Environmental Document for public review, and on August 15, 2006, Living Rivers submitted comments and expert studies on those draft documents. (AR:8848-9442.). On January 23, 2007, the Regional Board adopted the TMDL/BPA and forwarded it to the State Board for approval. (AR:30-31.) On May 7, 2008, Living Rivers again submitted comments and expert studies to the State Board objecting to the proposed adoption of the TMDL/BPA. (AR:9470-9565.)

On June 6, 2008, the Regional Board withdrew the TMDL/BPA from State Board consideration (AR:7990) and in September 2008, circulated a revised version for comment (AR:7). On October 20, 2008, Living Rivers commented on the continued failure of the TMDL/BPA and Environmental Document to comply with CEQA. (AR:9592-9784.) On May 19, 2009, Regional Board Staff publicly circulated a second set of revisions. (AR:7.) On July 6, 2009, Living Rivers commented on the TMDL/BPA and Environmental Document. (AR:9821-10266.) On September 9, 2009, the Regional Board adopted the revised TMDL/BPA and found the Environmental Document in compliance with CEQA. (AR:4.)

The Board concedes the TMDL/BPA will have significant unavoidable impacts. (AR:7.) The Regional Board's agenda packet for its September 9, 2009 hearing on the TMDL/BPA included a Staff Summary Report, and attached as appendices: a Tentative Resolution with Proposed Basin Plan Amendment, Proposed Basin Plan Amendment showing changes since May 19, 2009, a Staff Report, and a Response to Comments (AR:650-1446) and the Environmental Checklist prepared pursuant to CEQA. (AR:794 to 817.) The Regional Board then transmitted the TMDL/BPA to the State Board for approval.

On August 18, 2010, Living Rivers submitted comments to the State Board, again detailing the failure of the Basin Plan Amendment and Environmental Document to comply with CEQA. (AR:10349-10388.) On October 5, 2010, the State Board approved the TMDL/BPA as adopted by the Regional Board. (AR:5.) The final TMDL/BPA establishes: 1) a sediment TMDL for the Napa River at 125% of background levels (185,000 metric tons per year); 2) numeric targets for spawning gravel permeability and the depth of streambed scout; 3) allocations for significant sediment sources; and 4) an implementation plan to achieve the TMDL and related habitat goals. (AR:4.) The Notice of Decision for the Project was posted on January 6, 2011.

D. PROCEDURAL HISTORY OF THE LITIGATION.

On February 7, 2011, Living Rivers filed its Petition for Writ of Mandate challenging the Board's CEQA compliance. (CT:1.) Living Rivers filed its Opening Trial Brief on November 23, 2011. (CT:120.) The Board filed its Opposition Brief on January 13, 2013. (CT:185.) Living Rivers filed its Reply Trial Brief on February 2, 2012 (CT:267), accompanied by a Request for Judicial Notice of the Board's website regarding then-ongoing development and CEQA review of the WDR waiver policy (CT:259).

On April 12, 2012, the trial court held a hearing on the merits. (RT 4/12/12.) Thereafter, the court continued the hearing and ordered the parties to submit supplemental briefs. The parties filed Supplemental Trial Briefs on April 25, 2012. (CT:415 [Living Rivers Supp. Br.]; 458 [Board Supp. Br.].) The continued hearing commenced and completed on April 27, 2012. (RT 4/27/12; CT:641.) The trial court issued a Final Statement of Decision on August 8, 2012 in which it ruled against Living Rivers' claims but granted all of Living Rivers' requests for judicial notice. (CT:535; 553.) Judgment denying the Petition for Writ of Mandate was entered on September 13, 2012. (CT:591.) Living Rivers timely filed its notice of appeal on November 13, 2012. (CT:627.)

IV. LEGAL FRAMEWORK

A. THE BOARD'S LEGAL OBLIGATIONS UNDER THE CLEAN WATER ACT AND PORTER COLOGNE WATER QUALITY ACT.

This action raises only CEQA claims, and does not raise any claims directly under the federal Clean Water Act ("CWA") and Porter Cologne Water Quality Act. The Court of Appeal decision in *City of Arcadia, supra,* summarizes the legal framework context for the Board's adoption of TMDLs. (135 Cal.App.4th at pp. 1403-05.) This legal context is also discussed in detail in section VI.C.2 below.

B. THE TMDL/BPA CARRIES THE FORCE OF LAW.

Under the Clean Water Act, states are responsible for developing water quality standards and regulating nonpoint[3] sources of water pollution. (*City*

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[3] "Nonpoint" sources are those which do not discharge from a "discernable, confined and discrete conveyance" or "point source." (*City of Arcadia, supra,* 135 Cal.App.4th at p. 1403, citing *Defenders of Wildlife v. EPA* (10th Cir.2005) 415 F.3d 1121, 1123-1124.) Nonpoint pollution sources recognized

of Arcadia, supra, 135 Cal.App.4th at pp. 1403-1404.) Additionally, states must implement a "water-quality based" program for cleaning up polluted rivers, streams or smaller water segments that regulation of point source pollution (the NPDES permit system) has not adequately addressed. (*Id.* at p. 1404; 33 U.S.C. § 1313(d)(1)(A); 40 C.F.R. § 130.7(b) (2003).) Specifically, states must (1) make a list of polluted water bodies (referred to as a "303(d) list"); (2) rank them in order of priority; and (3) determine the maximum amount of a pollutant, from all sources, that may be discharged or "loaded" into each impaired water body. *City of Arcadia,* 135 Cal.App.4th at pp. 1403.

The maximum amount of permissible pollution is called a "total maximum daily load" or "TMDL" and "must be 'established at a level necessary to implement the applicable water quality standards'." (*Ibid..*) A TMDL assigns a waste load allocation to each point source, and once developed, effluent limitations in NPDES permits must be consistent with the TMDL's waste load allocation. (*Ibid.*) The EPA has authorized California to adopt and administer the NPDES permit program for the state. (*Id.* at p. 1405, citing 54 Fed. Reg. 40664 (Oct. 3, 1989).)

"California implements the Clean Water Act through the Porter–Cologne Act (Wat. Code, § 13000 *et seq.*)." (*City of Arcadia, supra,* 135 Cal.App.4th at p. 1405.) Under the Porter–Cologne Act, regional water boards (operating under the purview of the State Water Board) must "formulate and adopt water quality control plans, commonly called basin

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by the Environmental Protection Agency include sediment from improperly managed construction sites, crop and forest land, and eroding stream banks. (*Id.* at fn 3.)

plans, which designate the beneficial uses to be protected, water quality objectives and a program to meet the objectives." (*Id.*, citing Wat. Code, §§ 13050, subd. (j), 13240.) "'Water quality objectives' means the limits or levels of water quality constituents or characteristics which are established for the reasonable protection of beneficial uses of water or the prevention of nuisance within a specific area." (*Id.*, quoting Wat. Code, §§ 13050, subd. (j), 13240; § 13050, subd. (h).)

C. THE BOARD'S LEGAL OBLIGATIONS UNDER CEQA.

1. The Board's Adoption of TMDLs Is a "Certified Regulatory Program"under CEQA.

The Board's program for adopting TMDLs is a "certified regulatory program" under section 21080.5 of CEQA. (*City of Arcadia, supra*, 135 Cal.App.4th at pp. 1421-22; CEQA, § 21080.5, Guidelines, § 15251(g).) Therefore, the Board must comply with CEQA's substantive requirements by preparing an Environmental Document that functions as the equivalent of an Environmental Impact Report ("EIR"), though the Board is exempt from the specific public and agency review and comment procedures applicable to EIRs set forth in Chapters 3 and 4 of CEQA. (CEQA, § 21080.5; *Sierra Club v. State Board of Forestry* (1994) 7 Cal.4th 1215, 1230; *Mountain Lion Foundation v. Fish & Game Commission* (1997) 16 Cal.4th 105, 113 (*Mountain Lion Foundation*); 23 Cal. Code Regs. § 3777 [Any water quality control plan must include or be accompanied by Environmental Document and be supported by substantial evidence in the administrative record.].)

Except for this limited exemption, CEQA's substantive provisions and policies apply to the Board and approval of TMDLs. These include fundamental CEQA requirements that the Environmental Document assess the project's environmental impacts, disclose feasible alternatives and mitigation

measures, and provide the public a meaningful opportunity to review and comment on the Environmental Document. (*Sierra Club, supra,* 7 Cal.4th at 1233; *City of Arcadia, supra,* 135 Cal.App.4th at pp. 1421-22.) CEQA and the statutes governing certified regulatory programs must be harmonized as much as possible. (*Mountain Lion Foundation, supra,* 16 Cal.4th at p. 122.)

2. CEQA has two purposes: informed self-government and protection of the environment.

CEQA has two purposes: informed self- government and protection of the environment. (*Woodward Park Homeowners Assn., Inc. v. City of Fresno* (2007) 150 Cal.App.4th 683, 690-691 (*Woodward Park*) [CEQA's purposes are "to inform the public and decision makers of the consequences of environmental decisions before those decisions are made" and "to require public agencies to adopt feasible mitigation measures to lessen the environmental impacts of the projects they approve."].) To achieve these purposes, CEQA establishes mandatory information disclosure and public participation requirements. (Guidelines, § 15002(a).) CEQA also requires that public agencies identify and adopt mitigation measures to reduce or avoid projects' significant impacts to the point where the remaining impacts will be less-than-significant or no further mitigation measures are feasible. (Guidelines, § 15021(a).)

a. CEQA's public participation requirements.

Public participation "is an essential part of the CEQA process." (Guidelines, §§ 15002(j), 15201.) The public holds a privileged position in the CEQA process. (*Concerned Citizens of Costa Mesa v. 32nd District Agricultural Assn.* (1986) 42 Cal.3d 929, 935-936.) "Public review provides the dual purpose of bolstering the public's confidence in the agency's decision and providing the agency with information from a variety of experts and

sources." (*Schoen v. Dept. of Forestry and Fire Protection* (1997) 58 Cal.App.4th 556, 573 (*Schoen v. CDF*).)

The EIR process is the primary means by which a lead agency fulfills CEQA's informed decisionmaking mandate. As explained by the Court of Appeal in *Protect the Historic Amador Waterways v. Amador Water Agency* (2004) 116 Cal.App.4th 1099, 1106 (*Amador Waterways*):

> An environmental impact report is an informational document, the purpose of which is to provide public agencies and the public in general with detailed information about the effect which a proposed project is likely to have on the environment; ... [Citation.] The purpose of an environmental impact report is to identify the significant effects on the environment of a project, to identify alternatives to the project, and to indicate the manner in which those significant effects can be mitigated or avoided.

(See also Guidelines, §§ 15126.2, 15126.6, 15130 [same].) The Supreme Court has stated that to meet CEQA's informational requirements, "[a]n EIR must include detail sufficient to enable those who did not participate in its preparation to understand and to consider meaningfully the issues raised by the proposed project." (*Laurel Heights Improvement Assn. v. Regents of the University of California* (1988) 47 Cal.3d 376, 405 (*Laurel Heights I*); see also *Kings County Farm Bureau v. City of Hanford* (1990) 221 Cal.App.3d 692, 712 (*Kings County*) ["An adequate EIR must be 'prepared with a sufficient degree of analysis to provide decisionmakers with information which enables them to make a decision which intelligently takes account of environmental consequences.'"]; Guidelines, § 15151.) Indeed, the Supreme Court has recognized the EIR as "the heart of CEQA," explaining that "An EIR is an 'environmental 'alarm bell' whose purpose it is to alert the public and its responsible officials to environmental changes before they have reached

ecological points of no return. . . . The EIR process protects not only the environment but also informed self-government." (*Laurel Heights I, supra,* 47 Cal.3d at p. 392.)

The lead agency has a duty to "use its best efforts to find out and disclose all it reasonably can." (Guidelines, § 15144; *Vineyard Area Citizens for Responsible Growth, Inc. v. City of Rancho Cordova* (2007) 40 Cal.4th 412, 428 (*Vineyard*). Where the lead agency omits relevant information from an EIR, precluding informed decision-making and/or informed public participation, the omission constitutes a prejudicial abuse of discretion. (*Kings County, supra,* 221 Cal.App.3d at 712.) "Certification of an EIR which is legally deficient because it fails to adequately address an issue constitutes a prejudicial abuse of discretion regardless of whether compliance [with CEQA] would have resulted in a different outcome." (*Citizens to Preserve the Ojai v. County of Ventura* (1985) 176 Cal.App.3d 421, 428; see also CEQA, § 21005(a).)

In addition, CEQA's procedural requirements place the burden on the lead agency – not the public – to independently ensure the objectivity and informational adequacy of the lead agency's environmental documents and analysis. (CEQA, § 21082.1(c)(1); Guidelines, § 15084(e).

b. CEQA's environmental protection mandate.

CEQA expresses the State's policy to require governmental agencies to "take all action necessary to protect, rehabilitate, and enhance the environmental quality of the state." (CEQA, § 21001(a).) CEQA substantively mandates that agencies should not approve projects "if there are feasible alternatives or ... mitigation measures available" which would substantially lessen the project's significant environmental effects. (CEQA, § 21002.) In enacting CEQA, the Legislature sought to establish "administrative procedures

drafted to '[e]nsure that the long-term protection of the environment shall be the guiding criterion in public decisions.'" (*No Oil, Inc. v. Los Angeles* (1974) 13 Cal.3d 68, 74 (*No Oil*), quoting CEQA, § 21001(d).) "[T]he public agency bears the burden of affirmatively demonstrating that, notwithstanding a project's impact on the environment, the agency's approval of the proposed project followed meaningful consideration of alternatives and mitigation measures." (*Mountain Lion Foundation, supra,* 16 Cal.4th at p. 134.)

Based on these principles, the California Supreme Court has held repeatedly that CEQA is "to be interpreted to afford the fullest possible protection to the environment within the reasonable scope of the statutory language." (*Mountain Lion Foundation, supra,* 16 Cal.4th at p. 112; *Laurel Heights I, supra,* 47 Cal.3d at p. 390; *Friends of Mammoth v. Board of Supervisors* (1972) 8 Cal.3d 247, 259 (*Friends of Mammoth*).) The high court has also acknowledged, "[i]t is ... too late to argue for a grudging, miserly reading of CEQA." (*Bozung v. Local Agency Formation Com.* (1975) 13 Cal.3d 263, 274 (*Bozung*).)

c. CEQA's findings requirements.

Where an EIR or Environmental Document identifies significant effects of the project, CEQA requires that the lead agency make one or more of the following findings before approving the project: (1) changes have been made to the project which mitigate or avoid the identified significant effects; (2) mitigation measures are required but are within the jurisdiction of another agency; or (3) that specific economic, legal, social, technological or other considerations make infeasible mitigation measures or project alternatives identified in the EIR. (CEQA, § 21081(a)(1)-(3); Guidelines, § 15091(a); see also *Protect Our Water v. County of Merced* (2003) 110 Cal.App.4th 362, 371.)

An agency's CEQA findings must be supported by "substantial evidence" and demonstrate that the agency actually considered the project's impacts and revealed to the public the means by which it has arrived at its decisions:

> The requirement ensures there is evidence of the public agency's actual consideration of alternatives and mitigation measures, and reveals to citizens the analytical process by which the public agency arrived at its decision. [citations.] Under CEQA, the public agency bears the burden of affirmatively demonstrating that, notwithstanding a project's impact on the environment, the agency's approval of the proposed project followed meaningful consideration of alternatives and mitigation measures.

(*Mountain Lion Foundation, supra,* 16 Cal.4th at p. 134; see also CEQA, § 21081.5.)

An agency's CEQA findings must specifically cite the "substantial evidence," or at least the documents containing such evidence, that the agency contends supports its findings. (*Environmental Protection & Information Center v. California Dept. of Forestry & Fire Protection* (2008) 44 Cal.4th 459, 516 (*EPIC*); *Topanga Association for a Scenic Community v. County of Los Angeles* (1974) 11 Cal.3d 506.) In *EPIC*, the Supreme Court stated that Code of Civil Procedure section 1094.5 "leaves no room for the conclusion that the Legislature would have been content to have a reviewing court speculate as to the administrative agency's basis for decision"; and "mere conclusory findings without reference to the record are inadequate." (*EPIC, supra,* 44 Cal.4th at pp. 515, 516.) In *Topanga*, the Supreme Court stated, "Absent such road signs, a reviewing court would be forced into unguided and resource-consuming explorations; it would have to grope through the record to determine whether some combination of credible evidentiary items which supported some line of factual and legal conclusions supported the ultimate

order or decision of the agency." (*Topanga, supra*, 11 Cal.3d at 516.) Lastly, the burden of identifying substantial evidence to support its decisions is on the lead agency. (*Gray v. County of Madera* (2008) 167 Cal.App.4th 1099, 1111.)

The Board's regulations mirror the above requirements. (23 Cal. Code Regs. § 3777(d).)

V. STANDARD OF REVIEW

A. STANDARD OF REVIEW ON APPEAL.

In CEQA actions, "[a]n appellate court's review of the administrative record for legal error and substantial evidence...is the same as the trial court's: the appellate court reviews the agency's action, not the trial court's decision; in that sense appellate judicial review under CEQA is de novo." (*Vineyard, supra,* 40 Cal.4th at p. 427.) The courts "therefore resolve the substantive CEQA issues" presented on appeal "by independently determining whether the administrative record demonstrates any legal error by the [lead agency] and whether it contains substantial evidence to support the [lead agency's] factual determinations." (*Ibid*; Public Resources Code §§ 21168.5, 21168; Code Civ. Proc., §§ 1085, 1094.5(b).)

B. STANDARD OF REVIEW UNDER CEQA.

This proceeding is for traditional mandamus under Code of Civil Procedure section 1085 because the State Board's approval of the TMDL/BPA is a quasi-legislative action. (*City of Arcadia, supra*, 135 Cal.App.4th at p. 1408.) In this case, like all CEQA cases, the court reviews the agency's actions for non-compliance with CEQA under the "prejudicial abuse of discretion" standard. (*Ibid.*) Abuse of discretion is established if the agency has not proceeded in a manner required by law or if the determination or decision is not supported by substantial evidence. (*Ibid.*; CEQA, § 21168.5.) "Judicial review of these two types of error differs significantly: While we

determine de novo whether the agency has employed the correct procedures, 'scrupulously enforc[ing] all legislatively mandated CEQA requirements' [citation], we accord greater deference to the agency's substantive factual conclusions. (*Vineyard, supra*, 40 Cal.4th at p. 435.)

The Court in *Vineyard* also held that the standard of review in CEQA cases is determined by the nature of the alleged violation, i.e., whether the violation is a procedural error or an unsupported factual determination:

> In evaluating an EIR for CEQA compliance, then, a reviewing court must adjust its scrutiny to the nature of the alleged defect, depending on whether the claim is predominantly one of improper procedure or a dispute over the facts. For example, where an agency failed to require an applicant to provide certain information mandated by CEQA and to include that information in its environmental analysis, we held the agency "failed to proceed in the manner prescribed by CEQA." [citations] In contrast, in a factual dispute over "whether adverse effects have been mitigated or could be better mitigated" [citation], the agency's conclusion would be reviewed only for substantial evidence.

(*Id.* at p. 435.)

Thus, an allegation that an EIR or EIR equivalent document such as an Environmental Document fails to contain required information is a procedural defect reviewed de novo. Examples include: failure to describe the entire project;[4] failure to describe the environmental setting;[5] failure to assess the

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[4]*Citizens Association for Sensible Development of Bishop Area v. County of Inyo* (1985) 172 Cal.App.3d 151, 165-166; *Bozung, supra*, 13 Cal.3d at 283-284.

[5] *San Joaquin Raptor/Wildlife Rescue Center v. County of Stanislaus* (1994) 27 Cal.App.4th 713, 722-723 (*San Joaquin Raptor I*); *Friends of the Eel River v. Sonoma County Water Agency* (2003) 108 Cal.App.4th 859, 881-882.)

effects of reasonably foreseeable future activities or expansion of the project;[6] failure to lawfully evaluate cumulative effects;[7] failure to circulate a cumulative effects evaluation for public review and comment;[8] failure to apply the correct definition of cumulative effects;[9] using an erroneous threshold of significance;[10] erroneous use of a threshold of significance;[11] deferral of the development of mitigation measures;[12] and error regarding the legal feasibility of mitigation measures.[13]

Living Rivers' claims in this case arise from the failure of the Environmental Document to contain information required by CEQA.

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[6]*See Laurel Heights I, supra*, 47 Cal.3d at 395-396.

[7]*Environmental Protection Information Center v. Johnson* (1985) 170 Cal.App.3d 604, 624-625 (*EPIC v. Johnson*).

[8]*Schoen v. CDF, supra,* 58 Cal.App.4th at p.565.

[9]*Bakersfield Citizens for Local Control v. City of Bakersfield* (2004) 124 Cal.App.4th 1184, 1216; *Communities For a Better Environment v. California Resources Agency* (2002) 103 Cal.App.4th 98, 114; *Kings County, supra*, 221 Cal.App.3d at 722; *EPIC v. Johnson, supra.*

[10]*Endangered Habitats League v. County of Orange* (2005) 131 Cal.App.4th 777, 793 ("the use of an erroneous legal standard is a failure to proceed in the manner required by law that requires reversal.")

[11] *Amador Waterways* (2004) 116 Cal.App.4th 1099, 1109; *Mejia v. City of Los Angeles* (2005) 130 Cal.App.4th 322, 342.

[12] *CBE, supra,* 184 Cal.App.4th at p. 90.

[13]*City of Marina v. Board of Trustees* (2006) 39 Cal.4th 341, 355 (where the Court held that the University of California's incorrect legal interpretation of article XIII, section 3, subdivision (a) of the California Constitution as preventing it from contributing public funds to mitigate significant environmental effects of project is subject to the *de novo* review.)

Therefore, the claims are primarily procedural, and subject to de novo review. Also, "the existence of substantial evidence supporting the agency's ultimate decision on a disputed issue is not relevant when one is assessing a violation of the information disclosure provisions of CEQA." (*CBE, supra,* 184 Cal.App.4th at p. 82.)

VI. ARGUMENT

A. THE ENVIRONMENTAL DOCUMENT FAILS TO ASSESS THE ENVIRONMENTAL IMPACTS OF THE MEANS OF COMPLIANCE WITH THE TMDL/BPA's PERFORMANCE STANDARD FOR SURFACE EROSION.

1. Summary of Argument on First Issue Presented.

The Board must evaluate the environmental effects of the "means of compliance," including "reasonably foreseeable means of compliance" specified in any TMDL/BPA, including performance standards. (*City of Arcadia, supra,* 135 Cal.App.4th at pp. 1424-25; 23 Cal. Code Regs. § 3777(b)(4)(A) & (B).) Where, as here, the impacts of the means of compliance may be significant, the environmental review must be "EIR level." (*City of Arcadia,, supra,* 135 Cal.App.4th at p. 1424 ["an EIR is required since the Trash TMDL itself presents substantial evidence of a fair argument that significant environmental impacts may occur. 'Because a negative declaration ends environmental review, the fair argument test provides a low threshold for requiring an EIR.' [citation]".)

This TMDL/BPA includes a performance standard for controlling surface erosion and establishes that compliance with the Napa County Conservation Regulations complies with this performance standard, stating: "Control excessive rates of sediment delivery to channels resulting from vineyards[,]" with a footnote stating: "Napa County Conservation Regulations (County Code, Chapter 18.108) are effective in the control of excessive rates

of sediment delivery resulting from vineyard surface erosion." (AR:19, Table 4.1, n. 5.) Thus, meeting the requirements of Napa County's program for approving hillside vineyards pursuant to Napa County's Conservation Regulations is a "means of compliance" with the TMDL/BPA's performance standard for controlling surface erosion.

Living Rivers submitted substantial evidence to the Board supporting a fair argument that this "means of compliance" may have significant environmental impacts by causing increased storm runoff, which leads to increased channel incision and increased sediment delivery to the Napa River. Therefore, the Board was required to conduct an EIR-level evaluation of this issue. (*City of Arcadia, supra,* 135 Cal.App.4th at pp. 1421-22.) The Board's Environmental Document fails to conduct any assessment of this issue, much less an EIR-level analysis.

2. Substantial Evidence Supports a Fair Argument That Napa County's Implementation of its Conservation Regulations May Cause Significant Environmental Harm.

The record contains substantial evidence supporting a fair argument that Napa County's program for approving vineyards under its Conservation Regulations may cause significant environmental harm. Over the last 10 years, environmental organizations[14] in Napa County have repeatedly demonstrated, both to Napa County and in comments to the Board on the proposed TMDL/BPA, that implementing projects in compliance with the Conservation Regulations may have significant, adverse impacts on the environment. The principal mechanism causing this harm is the installation of engineered drainage facilities to reduce surface erosion. These facilities have the unintended consequence of routing rainfall off the site more efficiently,

[14]The Sierra Club and Earth Defense for the Environment Now ("EDEN").

thereby increasing the amount of downstream runoff. The increased runoff, in turn, causes downcutting of the stream beds (also known as channel incision) which both directly moves more sediment downstream, and causes stream banks to collapse and add their sediments to the stream flow as well. (AR:8848-49.)

These organizations retained the services of experts in the field, Dr. Robert Curry, Dennis Jackson and Patrick Higgins, to comment on a number of vineyard conversion projects in the Napa River watershed and the Erosion Control Plans ("ECPs") prepared by vineyard owners pursuant to the Napa County Conservation Regulations.[15] (See, e.g., AR:8828-9051, 9426-9442.) Those experts consistently found that the ECPs do not accurately evaluate or adequately mitigate impacts associated with increases in runoff from the changes in land use attendant to vineyard conversions. (*Id.*) Again, the problem is that the focus of the ECPs used in the Napa County program is to reduce surface erosion, and the methods used to do so, including cross-slope ditches, drop inlets and underground pipes, concentrate and rout rainfall off of the property as quickly as possible before it can erode the surface. (See AR:10351-52.) The result is to *increase* the rate of runoff and peak discharge to tributary streams, causing channel incision, which causes destabilization of stream and river banks which then collapse and contribute additional sediment to the streams system. (*Id.*) This in turn lowers stream and river beds, separating the channels from their natural flood plain, which has many diverse and well-documented negative impacts on the riparian environment. (AR:710-711.)

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[15]The credentials of Dr. Robert Curry, Dennis Jackson and Patrick Higgins are at AR:8871-745 (Curry), 8897-8900 (Jackson), and 8924-27 (Higgins).

> As explained by Dr. Curry in his review of the Conservation Regulations in 2000: "The approach of the Napa County ordinances is fundamentally incorrect and cannot protect either public health and safety or long-term land productivity. The existing ordinances seem to assume that by attempting to capture sediments from upland vineyard conversion areas, downstream cumulative effects are reduced to insignificance. This is not correct. Increased upland sediment yields, while important, are less hazardous to Napa Valley than are the changes in runoff timing, volumes, and rates. Increased runoff does have cumulative downstream effects through changes in rates of runoff and frequency of runoff events of a given magnitude. These changes are likely to be a significant factor in changing sediment loads in the main Napa River through changes in stability of its side tributaries."

(AR:8930.) In response to this comment by Dr. Curry, the Regional Board expressed no disagreement, concurring that increased runoff from vineyard development is causing significant increases in sediment supply to the Napa River. (AR:516.) Indeed, the contribution to increased runoff from the installation of engineered drainage facilities designed to bring new vineyards into compliance with the Napa County Conservation Regulations is cumulatively significant. As explained by Dr. Curry:

> "The recommended structural drainage facilities such as culverts, lined ditches, and drainage facilities such as culverts, lined ditches, and drainage channels as applied over large areas of Napa Valley will reduce sediment input from uplands but will exacerbate off-site channel and stream-bed erosion through increased yield of runoff. The public and the fish in the Napa River are directly impacted by the cumulative downstream impacts of increased frequency and duration of flood flows in the main river and its primary tributaries."

(AR:9565.)

At the September 9, 2009 Regional Board hearing on this TMDL/BPA, Mike Napolitano, Environmental Scientist with the Regional Board, testified

to seeing projects approved under the Conservation Regulations that had caused environmental harm due to increased runoff, stating: "In some cases, the methods that have been used have definitely increased the flow of runoff off-site and have lead to local gull[y]ing at the site of discharge, and we have noted that as a significant source in our sediment budget analysis." (AR:8283) Similarly, at the October 5, 2010 hearing in which the State Board approved the TMDL/BPA, Joe Dillon of the National Marine Fisheries Service testified that he had seen vineyards that had negative runoff impacts despite having complied with the Conservation Regulations. (AR:8035.)

The above represents substantial evidence supporting a fair argument that Napa County's program for approving vineyards under its Conservation Regulations may cause significant environmental harm.

3. A Brief History of This Dispute in the Administrative Proceedings.

In its June 30, 2006, proposed TMDL/BPA, the Regional Board defined its performance standard for controlling surface erosion to be: "Comply with conservation regulations (County Code; Chapter 18.108)." (AR:8634.) In its August 15, 2006, comment letter, Living Rivers objected to this provision because Napa County's program for permitting new vineyards pursuant to its Conservation Regulations causes increases in runoff leading to channel incision, resulting in significant sediment impacts on the Napa River. (AR:8848-8849; Exhibits 7-17 at AR:8928-9051; Exhibits 30-32 at AR:9426-9442).

In its January 16, 2007, Response to Comments, the Board concurred that increased runoff from vineyard development is causing significant increases in sediment supply to the Napa River. (AR:516.) But in adopting its January 23, 2007, version of the TMDL/BPA, the Regional Board refused to

change its performance standard for controlling surface erosion in any way. (AR:41.) Therefore, in its May 7, 2008, letter to the State Board, Living Rivers reiterated its comment that: "The Staff Report entirely fails to assess the impact of increases in peak flow as a result of the installation of these engineered drainage facilities." (AR:9472.)

After obtaining the return of the TMDL/BPA from the State Board, in its September 5, 2008, proposed TMDL/BPA, the Regional Board again defined its performance standard for controlling surface erosion to be: "Comply with conservation regulations (County Code; Chapter 18.108)" (AR:9574.) In its October 20, 2008, letter to the Regional Board, Living Rivers stressed the Board's legal obligation to assess the impacts of this measure. (AR:9594 - 9594.) In its May 19, 2009, Response to Comments,[16] the Board responded that the TMDL/BPA does not "requir[e] the County Conservation Regulations, only acknowledging they are in effect." (AR:629.) Nevertheless, the May 19, 2009, proposed TMDL/BPA continued to define its performance standard for controlling surface erosion as: "*Comply* with conservation regulations (County Code; Chapter 18.108)." (AR:9794 (emphasis added).)

Living Rivers July 6, 2009, comment letter noted that:

> This response defies the language of the TMDL and the facts on the ground in Napa County....Also, the fact that the County Conservation Regulations "do not specify means of compliance" is immaterial. At this point, the 'means of compliance' are a matter of readily available historical record.

(AR:9824.)

After withdrawing the TMDL/BPA from State Board consideration, the

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[16]"Staff responses to written comments submitted in response to September 5, 2008, Staff Report and proposed Basin Plan amendment" starting at AR:604.

Regional Board's September 9, 2009, Response to Comments changed the language of the surface erosion performance standard, stating:

> In order to avoid further confusion with regard to the comment that we are requiring compliance with the County Conservation Regulations (Napa County Code, Chapter 18.108), we have edited Table 4.1 to clarify that we only are acknowledging the existence of this local regulatory program and its effectiveness with regard to control of sediment delivery to channels from vineyard surface erosion.

(AR:874.)

At its September 9, 2009, hearing, the Regional Board re-adopted the TMDL/BPA and sent it to the State Board for approval with amendments to Table 4.1 that replaced the text: "Comply with conservation regulations (County Code; Chapter 18.108)" and with new text stating: "Control excessive rates of sediment delivery to channels resulting from vineyards;" and added new footnote 5 stating: "Napa County Conservation Regulations (County Code, Chapter 18.108) are effective in the control of excessive rates of sediment delivery resulting from vineyard surface erosion." (AR:875; 31, 41, 8306.)

Living Rivers' August 18, 2010, letter to the State Board (which included expert studies (AR:10349-10388), again argued that the Environmental Document must evaluate the environmental effects of establishing that compliance with Napa County's program for new hillside vineyards pursuant to its Conservation Regulations complies with the TMDL/BPA's performance standard for controlling surface erosion (AR:10350).

The State Board's final version of the TMDL/BPA, as adopted in its October 5, 2010, Resolution, left this provision unchanged, stating "Control excessive rates of sediment delivery to channels resulting from vineyards[,]"

with a footnote stating: "Napa County Conservation Regulations (County Code, Chapter 18.108) are effective in the control of excessive rates of sediment delivery resulting from vineyard surface erosion." (AR:19.)

In its October 1, 2010, response to comments, the State Board stated that "[t]he TMDL does not adopt the [Napa County] program as a performance standard or as a mitigation measure for the TMDL; it simply acknowledges the existence of the program as one program that may be helpful for achieving the TMDL." (AR:1743-44.)

4. The TMDL/BPA Establishes Compliance With the Napa County Conservation Regulations as a "Means of Compliance" With the TMDL/BPA.

The Board's position that the TMDL/BPA does not require "compliance" with Napa's Conservation Regulations is wrong for several reasons. The Board's deletion of the word "compliance" is meaningless because footnote 5 of Table 4.1 establishes, as a matter of law, that "compliance" with Napa's Conservation Regulations constitutes compliance with the TMDL/BPA's surface erosion performance standard. Indeed, since the TMDL/BPA is a law, its unequivocal conclusion that the Napa Conservation Regulations "are effective" in doing exactly what the law requires means that complying with Napa's regulations complies with the TMDL/BPA's surface erosion standard. Thus, landowners subject to the TMDL/BPA can rely on this law to comply with the TMDL/BPA standard by obtaining an Erosion Control Plan permit from Napa County pursuant to its Conservation Regulations.

Also, the Board's position renders the text of footnote 5 meaningless, violating "the 'cardinal rule of statutory construction' to give effect to all words and provisions of a statute and leave no part superfluous or

inoperative." (*Leavitt v. County of Madera* (2004) 123 Cal.App.4th 1502, 1519.)

Finally, the Staff Report prepared for the Board's final hearing on October 5, 2010, confirmed Living Rivers' understanding of footnote 5 of TMDL/BPA Table 4.1, stating: "The Basin Plan amendment relies on landowner compliance with Napa County's Conservation Regulations to achieve sediment allocations for vineyard surface erosion." (AR:1780.)

5. The Board's Argument Below That the Environmental Document Supplies the Missing Assessment by Discussing Increases in Runoff and Channel Incision Lacks Merit.

The Board argued below that the Environmental Document assesses the impacts of the effects of "what the Napa Regulations entail," stating: "Second, and more importantly to LRC's contention that the Water Board failed to perform an 'EIR level analysis' of the effects of complying with the Napa Regulations, once one recognizes what the Napa Regulations entail, it becomes obvious that the [Environmental Document] contains an extensive discussion of their effects." (CT:201.) This argument lacks merit for many reasons.

a. The Environmental Document does not discuss Napa County's administration of its regulatory program.

The Board cited numerous pages of the record to support its argument. (See CT:201-206, citing AR:18; 19; 55; 1595-1640 [esp. 1599-1600, 1602, 1624, 1630-1633]; 1652-1674; 1691-1694, 1696-1702, 1705-1706, 1709-1711, 1714; 1715-1719; 1721-1730; 2188; 3862-3875; 8283-8284; 8022-8023.) These cites are irrelevant to Living Rivers' claim, however, because they do not reflect any assessment of whether and to what extent Napa County's administration of its Erosion Control Plan permit program is causing adverse environmental impacts. Nowhere does, or can, the Board demonstrate that the Environmental Document discloses the Regulations' content or any details of

the County's approval or administration of projects (i.e., erosion control plans) that would support meaningful analysis of their impacts.

The Board is not excused from disclosing that one of a TMDL/BPA's means of compliance may cause significant environmental impacts simply by discussing such impacts in general, causally unconnected to the Project. The purpose of an EIR or TMDL/BPA Environmental Document is to inform the public of impacts *caused by the Project.* (Pub. Res. Code § 21002.1 ["The purpose of an environmental impact report is to identify the significant effects on the environment of a project"].)

b. The Environmental Document does not discuss the "channel incision" impacts of the Project.

Even if a generic discussion of "channel incision" could substitute for a fact-specific discussion of Napa County's program of approving erosion control plans for new vineyards, these record cites do not even do that. For example, the Board cites the "sediment source analysis" at AR:1595-1640, which states that subsurface drainage pipes may discharge runoff at a faster rate than under natural conditions and that discharging from several pipes at a single location could further concentrate runoff volume. (AR:1600.) The source analysis states that such actions lead to "off-site gully erosion and/or shallow landslide failures, most often at or near the points of discharge from the site and in locations where hillslope soils and bedrock are soft (easily eroded)." (AR:1600 (emphasis added). See also AR:1602 ["The goal for management of existing vineyards should be to reduce peak storm runoff rates into actively eroding gullies or landslides or other potentially unstable areas, as needed to avoid and control human-caused increase in sediment delivery from unstable areas."].)

This cite does not support the Board's argument because gully erosion

and landslide failures are types of surface erosion that occur when runoff is discharged on land and erodes soils as it flows to a stream channel. This is different than channel incision impacts, which occur when increased runoff reaches a stream and downcuts the stream bed, which causes stream channel erosion. (See AR:1624, 1630. See also AR:1602 [establishing separate sediment source categories for, *inter alia,* (1) colluvial bank (hillslope soil) erosion, gullies, and shallow landslides and (2) channel incision].) Again, Living Rivers' claim is that the Environmental Document fails to assess the TMDL/BPA's effects of the increasing runoff into stream channels, thereby causing channel incision and stream channel erosion. The distinction between stream channel erosion and surface erosion (and their respective causes and processes), is important because, although both upland surface erosion and stream channel erosion degrade water quality through sediment deposition, channel incision "has the highest priority for treatment because sediment from channel incision is produced locally therefore, it likely has a greater effect on fine sediment deposition at spawning sites in the Napa River, than distal sources." (AR:1634.)

Further, whereas the impacts of upland surface erosion flow solely from the delivery of sediment to a stream, the impacts of stream channel erosion extend far beyond its significant sediment contributions. As the stream channel erodes, the basic physical habitat structure of the river is obliterated. (AR:1634.) Essential salmonid habitat (*e.g.,* gravel bar, riffle margins, side channels, and sloughs) is "simplified," or replaced with homogeneous long, deep pool-run habitats, which favor fishes that prey upon juvenile salmonids. (AR:83, 1634.) Pervasive channel incision (and resultant habitat simplification) appears to be the primary factor limiting salmon populations. (AR:83.) "Complex habitat structure must first be restored on a large scale

before habitat quality as affected by sediment ... would begin to influence Chinook salmon population size." (*Ibid.*)

Although the Environmental Document calculates the "Sediment Supply from Channel Incision" (AR:1631-1632), and discusses the problem of channel incision in general terms,[17] it attributes channel incision primarily to past land use disturbances. The Final Staff Report states that "[a] suite of management actions have likely caused or contributed to channel incision, including (but not necessarily limited to): levee building, large tributary dams, straightening of some mainstem channel reaches, filling of side channels, historical gravel mining, dredging to reduce flood risk, and intensive removal of large woody debris."[18] (AR:1637.) Nowhere does the Environmental Document discuss how erosion control measures permitted by the County pursuant to its administration of its Conservation Regulations cause channel incision by concentrating increased runoff in stream channels. (See AR:1662-1730.)

Thus, Living Rivers' claim that the Environmental Document fails to

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[17] The Source Analysis explained that large segments of Napa River terrain are composed of highly erodible deposits of coarse-grained sediments (valley fills and alluvial fans). (AR:1630.) "Channel incision [occurs] where human actions have destabilized streams underlain by deep alluvial deposits." (AR:1602.) Erosion of stream channel sediments contributed an average of about 45,000 tonnes of sediment per year to the Napa River and the rate of channel incision over the past four decades was greater than 50 times the natural background rate. (AR:1630.)

[18] See also AR:1633: "Almost all incision is found to be anthropogenic based on the very high estimated rate [of incision], and initiation during historical period, which is coincident with a period of intensive levee building and dam construction, filling of flood basins adjacent to channels, navigational dredging, intensive removal of debris jams, and historical gravel mining and channel straightening.".

assess the Napa program's effects on channel incision and stream channel erosion, as compared to surface erosion, remains unrefuted.

c. Adoption Of A Mitigation Measure Does Not Cure the Board's Failure To Analyze The Impact.

The Board asserted below that EIR-level analysis was conducted, in part, because the Board adopted "a separate performance standard for controlling excessive storm runoff and to mitigate the effects of sub-optimally implemented erosion control structures such as those studied by [Living Rivers'] experts." (CT:203-204,[19] citing AR:55 [Finding 16].[20] Nothing in CEQA, however, permits an agency to simply adopt mitigation measures in lieu of fully assessing a project's potentially significant environmental impacts. To the contrary, mere acknowledgment that an impact would be significant is inadequate; the EIR must include a detailed analysis of "how adverse" the impact would be. (*Galante Vineyards v. Monterey Peninsula Water Management Dist.* (1997) 60 Cal.App.4th 1109, 1123, citing *Santiago County Water Dist. v. County of Orange* (1981) 118 Cal.App.3d 818, 831.)

d. The Trial Court's ruling on these issues is erroneous.

The trial court ruled that the Board did not adopt the Conservation Regulations as a performance standard because the Board said it did not. (CT:544-545.) It was improper for the trial court to rely on the Board's contentions in the record on this point because "The question of which acts

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[19]The performance standard for controlling storm runoff is: "Effectively attenuate significant increases in storm runoff, so that the runoff from vineyards shall not cause or contribute to downstream increases in rates of bank or bed erosion." (AR:19.)

[20]See also, CT:204-205, citing AR:1715-1719, 18, 1698, 1702, 19, 1710-1711, 1662-1663, 1691-1694, 1696-1701, 1705-1706, 1709-1711, 1714, and 1721-1730.

constitute the 'whole of an action' for purposes of CEQA is one of law, which [courts] review de novo based on the undisputed facts in the record." (*CBE, supra,* 184 Cal.App.4th at p. 98.)

The trial court agreed with Living Rivers that the Environmental Document does not disclose that Erosion Control Plans implemented in compliance with the County's Conservation Regulations may cause channel incision, stating: "the Staff Report does not specifically disclose that erosion control measures in vineyards might through a series of causal connections increase channel incision in the river...." (CT:546, emphasis added.) Nevertheless, the trial court found this omission was not "material" in light of separate discussions of other impacts caused by erosion control measures (i.e., increased peak storm runoff, incision in upland gullies) and a general discussion of incision in the Napa River. (CT:545-546.) This ruling is erroneous for the reasons stated in section VI.5.a above.

The trial court ruled there is substantial evidence that the TMDL/BPA. includes a measure (i.e., the "runoff performance standard" discussed in section VI.B below) to mitigate channel incision caused by landowners efforts to meet the TMDL/BPA's surface erosion standard. (CT:546.) As discussed section VI.B below, Living Rivers agrees that the Board adopted the runoff performance standard for the purpose of reducing the channel incision impacts of measures intend to meet the TMDL/BPA's surface erosion control standard. As discussed in section VI.A.5.c above, however, adopting a mitigation measure does not excuse the Board from disclosing the nature and severity of the impact and its causal relationship to the TMDL/BPA's means of compliance in the first instance.

B. THE ENVIRONMENTAL DOCUMENT VIOLATES CEQA BY FAILING TO DESCRIBE THE PROJECT'S PERFORMANCE STANDARD FOR CONTROLLING INCREASES IN RUNOFF.

1. Summary of Argument on Second Issue Presented.

The Environmental Document must describe and evaluate the impacts of the "whole" of the project. (*County of Inyo v. City of L.A.* (1981) 124 Cal.App.3d 1, 9 (*County of Inyo II*) ["'[A]n accurate, stable and finite project description is the *sine qua non* of an informative and legally sufficient EIR;'" *Kings County, supra,* 221 Cal.App.3d at 738.) "A curtailed or distorted project description may stultify the objectives of the reporting process." (*County of Inyo v. City of Los Angeles* (1977) 71 Cal.App.3d 185, 192-193 (*County of Inyo I*).) Where an environmental document does not accurately describe the entire project, the "truncated project concept" results in a "fallacy of division," which causes the environmental review to overlook the project's "cumulative impact by separately focusing on isolated parts of the whole." (*San Joaquin Raptor I, supra,* 27 Cal.App.4th at pp. 729-730.)

As noted above, the TMDL/BPA includes a mitigation measure in the form of a performance standard for controlling runoff (i.e.,"[e]ffectively attenuate significant increases in storm runoff, so that the runoff from vineyards shall not cause or contribute to downstream increases in rates of bank or bed erosion" (AR:19)). The Environmental Document fails to fully describe this mitigation measure and illegally defers, until after project approval, identification of whether and how mitigation will be achieved.

The general rule is that, where a project will have significant environmental effects, the EIR may not rely on mitigation measures to be developed after project approval except in the limited circumstances where (1) the mitigation measures require compliance with other existing regulatory

requirements; or (2) "'[F]or kinds of impacts for which mitigation is known to be feasible, but where practical considerations prohibit devising such measures early in the planning process . . . , the agency can commit itself to eventually devising measures that will satisfy specific performance criteria articulated at the time of project approval." (*Gentry, supra,* 36 Cal.App.4th at pp. 1393-96.) There must also be evidence that meeting the performance standard is feasible and effective in reducing significant impacts. (*CBE, supra,* 184 Cal.App.4th 70, 95; *Sacramento Old City Ass'n v. City Council of Sacramento* (1991) 229 Cal.App.3d 1011; *Sundstrom v. County of Mendocino* (1988) 202 Cal.App.3d 296, 308-309 (*Sundstrom*).) No such showings has been made here.

Reliance on tentative plans for future mitigation after completion of the CEQA process significantly undermines CEQA's goals of full disclosure and informed decisionmaking...." (*CBE, supra,* 184 Cal.App.4th at p. 92.) For this reason, courts routinely overturn EIRs that place the onus of mitigation on a future plan, leaving the public "in the dark about what [] steps will be taken, or what specific criteria or performance standard will be met...." (*Id.* at p. 93.) For instance, in *CBE,* the court overturned an EIR that merely proposed a generalized goal of mitigation and then set out a handful of "cursorily described mitigation measures for future consideration that might serve to mitigate" the project's impacts. (*Id.* at p. 92.) This Environmental Document suffers from the same deficiency with respect to the performance standard adopted to mitigate the runoff increase impacts of the performance standard for surface erosion.

The Board concedes the performance standard set forth in Table 4.1 of the TMDL/BPA. to "[e]ffectively attenuate significant increases in storm runoff" is a mitigation measure to reduce the project's potentially significant effect of altering drainage patterns and hydrology (i.e., increases in runoff)

caused by its surface erosion performance standard, stating in the first paragraph of Board Resolution 2010-0047:

> Although the proposed project has the potential to alter drainage patterns and otherwise affect hydrology, changes have been incorporated into the project in the form of a performance standard to effectively attenuate significant increases in storm runoff to lessen any environmental effects to less than significant levels.

(AR:2.) See also AR:1519 ["August 2, 2009 Response to Comments: "To avoid and minimize potential adverse impacts of compliance actions, we have added mitigation measures including performance standards for vineyard stormwater runoff quantity...."].) The Board's Environmental Checklist makes this point expressly, stating: "Therefore, the Basin Plan amendment would not increase the rate or amount of runoff, exceed the capacity of storm water drainage systems, or degrade water quality, and <u>the impact is less than significant with mitigation incorporation</u>." (AR:833-834 (emphasis added).)

However, the Environmental Document fails to present any information that it is possible to achieve this standard in the real world (i.e., that it is feasible to mitigate this significant impact), and no evidence that it is even feasible to measure whether the performance standard is achieved. Also, the TMDL/BPA is fatally vague with respect to the measures that will be used to attenuate increases in surface runoff to less than significant levels.

2. A Brief History of This Dispute in the Administrative Proceedings.

In its January 2007 Response to Comments, the Regional Board expressed its intention to adopt a limitation on peak runoff from vineyard conversions at approximately 10-15% above pre-vineyard conditions. (AR:516.) The Regional Board also responded that it revised the project description, but the revision does nothing to cure Living rivers' objections.

(AR:577-578.)

Then, on September 5, 2008, the Regional Board circulated a revised TMDL/BPA (AR:9566-9584), which added the performance standard for runoff from vineyards, which states: "Effectively attenuate significant increases in storm runoff. Runoff from vineyards shall not cause or contribute to downstream increases in rates of bank or bed erosion." (AR:9574.) The September 5, 2008, Staff Report indicated that the Board might adopt a criterion for whether peak flow increases are deemed "significant," of 10-15% above pre-project rate, a number derived from the Fish Friendly Farming Program. (AR:6770.) In its October 20, 2008 letter, Living Rivers objected to this criterion because it does not account for: (1) changes in the watershed's peak flow response to storm events that result from the cumulative effects of past, closely related projects; (2) past peak flow impacts having made many of the stream beds and banks in the Napa River drainage more sensitive to further damage; and (3) the fact that other important variables, such as riparian vegetation, depth of channel incision, and duration of storm flows would have to remain at pre-project levels to allow tolerance for a 15% increase in storm flood runoff without further damage, yet for all of those conditions, the baseline is changing and the effects are additive to other causes of increased peak flows such as groundwater withdrawal, paving and urbanization, etc. (AR:9592-9593.)

On May 19, 2009, the Regional Board circulated a revised TMDL/BPA. (AR:9785-9804.) With respect to the measures to "effectively attenuate significant increases in runoff," the TMDL/BPA remained unchanged and still fatally vague. (AR:9794.) The May 2009 revision of the TMDL/BPA deleted reference to the Fish Friendly Farming Program as being "effective with regard to control of pollutant discharges associated with vineyards," but maintained

reference to implementation of a "farm plan certified under Fish Friendly Farming Environmental Certification Program or other farm plan certification program" as an "Action" option. (AR:9794.) Moreover, the May 2009 Staff Report maintained the same indication that the Regional Board might be prepared to accept a 10-15% above pre-project rate for peak storm runoff as criterion for whether peak flow increases are deemed significant. (AR:6923.) Living Rivers continued to object to the vague performance standard and to the 10-15% above pre-project rate criterion in its July 6, 2009, comment letter. (AR:9823.) In addition, during the September 2009 Regional Board hearing on the Project, counsel for Living Rivers objected to the lack of any description of criteria or process to achieve the performance standard for attenuating significant increases in runoff, noting that this work has been deferred to a later time when the Waste Discharge Requirement waiver policy, discussed in section IV.C below, is developed. (AR:8271:9-11; 8274:16-8275:3.)

In its September 9, 2009, Response to Comments, the Regional Board admits that the TMDL/BPA does not include any definition of or threshold of significance for the terms contained in this performance standard, stating: "we have not reached a decision yet on numeric expression of the vineyard storm runoff performance standard (e.g., effectively attenuate significant increases in storm runoff) listed in Table 4.1 of the Basin Plan amendment." (AR:1463.)

In its August 18, 2010, comment letter to the State Board, Living Rivers continued to object, stating:

> critical information is not provided. No detail is provided as to what criteria or thresholds will be used to identify significant vs less-than significant increases. No information is provided regarding how baseline runoff will be determined. How the TMDL will control increases in runoff is a black box that is

entirely dependent on the WDR waiver policy....

(AR:10351, 10355-56.)

The Board's response to Living Rivers' concern was dismissive, inconsistent and untrue, stating: "The County's program is not a mitigation measure for the TMDL; as such, requiring the attenuation of significant increases in storm runoff describes one objective of the TMDL; not a way to mitigate the impacts of the TMDL." (AR:1745.) As shown above, this is untrue because the runoff performance standard is a measure to mitigate the impacts of the TMDL/BPA's surface erosion standard.

The Board also argued that an adequate project description is not necessary in the TMDL/BPA because it did not receive project-level review: "A deferred analysis is not comparable with the SF Bay Water Board's tiered approach to environmental review – from plan level, to general permit or waiver of WDRs, to project specific environmental review." (AR:1752.) But, as discussed in section VI.B.3 below, the Board cannot just decide to violate CEQA's requirements.

Finally, the Board argued that the performance standard is specific and enforceable, and proceeded to describe a process for determining the significance of runoff increases in the field, stating:

> Compliance shall be evaluated through: a) field inventories of vineyard sites; b) review of available information ...; and c) field observations of channel condition in channel reaches draining onto the property, at the point(s) of discharge immediately from the vineyard, and in the first downstream response reach (e.g., gravel-bedded channel reach with a streambed slope ≤ 0.02). Evidence of active down-cutting or head-cutting, and/or anomalous patterns or intensity of bank erosion (e.g., extensive bank erosion along one or both banks), at/near the point of discharge or in the first downstream response reach will be interpreted to indicate that the upstream vineyard may be

> contributing to damaging increases in bed and/or bank erosion. In such cases, the landowner and/or manager will be required to implement actions to facilitate recovery of channel habitat structure and balanced fine and coarse sediment budgets in the unstable channel reach. The details of the SF Bay Water Board analytical approach will be developed in consultation with a Technical Advisory Committee that has been formed to assist SF Bay Water Board with technical issues related to development of the WDR waiver.

(AR:1760-61, emphasis added.)

This is too little too late. Too late because the public had no opportunity to comment on this measure. Too little because this measure describes a review process; it doe s not supply the missing information regarding the feasibility of achieving mitigation, the criteria for determining the significance of runoff increases, or the measures to avoid significant increases. Plainly then, even if an enforceable standard is *to be* developed, it is *not yet* developed or described in the Environmental Document, in violation of CEQA.

3. The Board Improperly Deferred the Development of this Mitigation Measure.

The Board cannot invoke the exception noted in *Gentry*, *supra*, for mitigation measures "for kinds of impacts for which mitigation is known to be feasible, but where practical considerations prohibit devising such measures early in the planning process" because there is no evidence that achieving this performance standard is feasible. Indeed, this mitigation plan is similar to the mitigation plan the Court found defective in *CBE*, where the lead agency "divulged little or no information about how it quantified the Project's greenhouse gas emissions, offered no assurance that the plan for how the Project's greenhouse gas emissions would be mitigated to a net-zero standard was both feasible and efficacious, and created no objective criteria for

measuring success." (*CBE, supra,* 184 Cal.App.4th at pp. 93, 95.) Similarly here, the Board has not quantified the potential increases in runoff that must be mitigated and has no basis for assuming it will be effective and no criteria to judge its efficacy.

The trial court misapplied the case law on this point. It held that, under *California Native Plant Society v. City of Rancho Cordova* (2009) 172 Cal.App.4th 603, 621, the Board may develop "attenuation standards with a greater level of detail" after approval of the TMDL/BPA. (CT:550.) *California Native Plant Society* does not stand for the proposition that an agency may put off developing specific performance criteria that must be met to achieve mitigation. Instead, it states that "when a public agency has evaluated the potentially significant impacts of a project and has identified measures that will mitigate those impacts, the agency does not have to commit to any particular mitigation measure in the EIR, as long as it commits to mitigating the significant impacts of the project." (*California Native Plant Society, supra,* 172 Cal.App.4th at p. 621.) Nothing in that opinion excuses the agency from the requirements stated in *Gentry* that "mitigation is known to be feasible" and in *CBE* that there must be evidence that achieving the performance standard is feasible.

C. THE ENVIRONMENTAL DOCUMENT PIECEMEALS ENVIRONMENTAL REVIEW OF THE PROJECT'S WDR WAIVER POLICY.

1. Summary of Argument on Third Issue Presented.

In determining whether a project may have a significant effect on the environment requiring preparation of an EIR, the Board must consider "[a]ll phases of project planning, implementation, and operation." (Guidelines, § 15063(a)(1).) Whether the Environmental Document is a "checklist"

resembling a Negative Declaration or a more in depth "EIR-level" study, the agency may not treat one project as a succession of smaller projects which, by themselves, do not cause significant impacts, but rather must consider the entire project, and disclose and mitigate the impacts of the whole of the project. (*Citizens Association for Sensible Development of Bishop Area, supra,* 172 Cal.App.3d at pp. 156-166.)

Under CEQA, the term "project" is broadly defined and construed in order to maximize protection of the environment. (*Nelson v. County of Kern* (2010) 190 Cal.App.4th 252, 271, citing *San Joaquin Raptor I, supra,* 27 Cal.App.4th at p. 730.) A "project" includes "the whole of an action" or the entire activity which has a potential to directly or indirectly result in a physical change in the environment, and which is undertaken, supported or approved by a public agency. (Guidelines, § 15378(a) & (c).) "This big picture approach to the definition of a project (i.e., including "'the whole of an action'") prevents a proponent or a public agency from avoiding CEQA requirements by dividing a project into smaller components which, when cons idered separately, may not have a significant environmental effect." (*Nelson, supra,* 190 Cal.App.4th 252, 271, citing *Tuolumne County Citizens for Responsible Growth, Inc. v. City of Sonora* (2007) 155 Cal.App.4th 1214, 1222 (*Tuolumne County Citizens*); *San Joaquin Raptor I, supra,* 27 Cal.App.4th at p. 730.)

Accordingly, the Board has an obligation to evaluate the environmental impacts of reasonably foreseeable future activities associated with the TMDL/BPA where these activities may contribute to significant environmental effects. (*Laurel Heights I, supra,* 47 Cal.3d at 395-396.) This obligation attaches whether the future activities are considered a foreseeable future activity as described in *Laurel Heights I* or a separate project subject to cumulative effects analysis: one way or the other the EIR or EIR-level

document must conduct this assessment. (See *San Joaquin Raptor I, supra,* 27 Cal.App.4th at p. 733.)

Here, the Project includes an implementation plan for the TMDL/BPA. "As suggested by definitions of implement and plan, a TMDL implementation plan is 'a detailed description of a program of actions' (plan) to 'ensure actual fulfillment by the performance of specific measures' (implement) that are needed to restore clean water." (AR:1657.) The "specific measures" set forth in the implementation plan for vineyards includes a requirement that vineyard operators either (1) submit a Report of Waste Discharge pursuant to Water Code, section 13260 to obtain "Waste Discharge Requirements" issued by the Regional Board (AR:19) or (2) comply with the conditions of a Waiver Policy, which would exempt a defined group of polluters from the obligation to submit reports of waste discharge under certain circumstances (AR:8634). The Board openly admitted that "the primary vehicle for achieving the Napa River sediment TMDL are the actions called for under the WDR waiver programs specified in Tables 4.1 to 4.4 of the [BPA]." (AR:1758.)

Because the Waiver Policy is "a contemplated future part of" the TMDL/BPA's implementation plan, it is an integral part of the "project" under review. (*Tuolumne County Citizens, supra,* 155 Cal.App.4th at p. 1231, quoting *Sierra Club v. West Side Irrigation Dist.* (2005) 128 Cal.App.4th 690, 699 *(West Side Irrigation)*.) Yet, despite Living Rivers' repeated requests that the Environmental Document describe and evaluate the impacts of the WDR waiver policy for vineyards (AR:9593, 9593, 9822-23, 10351), the Environmental Document does not do so.

"The question of which acts constitute the 'whole of an action' for purposes of CEQA is one of law, which [courts] review de novo based on the undisputed facts in the record." (*CBE, supra,* 184 Cal.App.4th at p. 98, citing

Tuolumne County Citizens, supra, 155 Cal.App.4th at p. 1224.) The trial court improperly applied the more deferential "substantial evidence" standard of review to this claim. (CT:542.) Accordingly, the trial court's ruling "that there is substantial evidence that the Environmental Document disclosed the amount and type of information regarding WDR policies and permits that was necessary for an informed discussion" (CT:543) is both legally erroneous and off-point. The Board admittedly deferred CEQA review of the Waiver Policy. (CT:263.) The question is whether, as a matter of law, the Waiver Policy is an integral part of the TMDL/BPA such that its impacts should have been reviewed in the TMDL/BPA Environmental Document. As explained below, it is.

2. WDR Waiver Policies Are an Integral Part of the Regulatory System Governing TMDLs.

When the Clean Water Act's regulation of point-source pollutants (the "NPDES system") "fails to adequately clean up certain rivers, streams or smaller water segments, the [Clean Water] Act requires use of a water-quality based approach. States are required to identify such waters ... [and] rank [them] in order of priority, and based on that ranking, calculate levels of permissible pollution called 'total maximum daily loads' or 'TMDLs.'" (*City of Arcadia, supra,* 135 Cal.App.4th at p. 1404; 33 U.S.C. § 1313(d)(1)(A); 40 C.F.R. § 130.7(b) (2003).) "A TMDL defines the specified maximum amount of a pollutant which can be discharged or 'loaded' into the waters at issue from all combined sources." (*City of Arcadia, supra,* 135 Cal.App.4th at p. 1404.) "TMDLs are primarily informational tools that allow the states to proceed from the identification of waters requiring additional planning to the required plans." (*Id.* at p. 1414.) A "TMDL forms the basis for further administrative actions that may require or prohibit conduct with respect to particularized

pollutant discharges and water[ ]bodies." (*Id.* at p. 1415.) Approved TMDLs must be incorporated into the states' current water quality control plans. (40 CFR 130.7(d)(2).)

In California, the Porter–Cologne Water Quality Control Act (Water Quality Act) requires each regional water board to adopt water quality control plans (referred to as basin plans). (*Asociacion de Gente Unida por el Agua v. Central Valley Regional Water Quality Control Bd.* (2012) 210 Cal.App.4th 1255, 1261, citing Water Code, § 13240.) Basin plans are defined as "a designation or establishment for the waters within a specified area of all of the following: [¶] (1) Beneficial uses to be protected. [¶] (2) Water quality objectives. [¶] (3) A program of implementation needed for achieving water quality objectives." (*City of Arcadia v. State Water Resources Control Bd.* (2010) 191 Cal.App.4th 156, 177, quoting Water Code § 13050, subd. (j) (emphasis added).)

Water quality objectives are the limits or levels of constituents allowed in the water to protect the quality of the water. (*Asociacion de Gente Unida, supra,* 210 Cal.App.4th at p. 1261, citing Water Code § 13050, subd. (h).) "The program of implementation for achieving water quality objectives shall include, but not be limited to:"

> (a) A description of the nature of actions which are necessary to achieve the objectives, including recommendations for appropriate action by any entity, public or private.
> (b) A time schedule for the actions to be taken.
> (c) A description of surveillance to be undertaken to determine compliance with objectives.

(Water Code § 13242.) The description of actions expected to be implemented (also referred to as "Management Practices" or "MPs") and the process to be used to select or develop MPs are "key elements" of a non-point source

pollution ("NPS") control program. (Policy for Implementation and Enforcement of the Non-Point Source Control Program (State Board, (2004)) ("NPS Implementation Policy") at p. 12.) A regional board "must be able to determine that there is a high likelihood that the program will attain water quality requirements. This will include consideration of the MPs to be used and the process for ensuring their proper implementation." (*Id.*) Additionally, "justification for the use of a particular category or type of MP must show that the MP has been successfully used in comparable circumstances." (*Id.*)

The regional boards implement basin plans through waste discharge requirements ("WDRs"). (*Asociacion de Gente Unida, supra,* 210 Cal.App.4th at p. 1261, citing Water Code, § 13263, subd. (a).) In prescribing WDRs, a regional board must consider the beneficial uses to be protected, the water quality objectives reasonably required for that purpose, other waste discharges, the need to prevent nuisance, past present, and probable future beneficial uses, environmental characteristics, water quality conditions that could reasonably be achieved through the coordinated control of all factors which affect water quality in the area, economic considerations, the need for developing housing, and the need to develop and use recycled water. (*Asociacion de Gente Unida, supra,* 210 Cal.App.4th at p. 1261, citing §§ 13263, subd. (a), 13241.) Since a WDR implements a basin plan, it must conform to the state policy for water quality control. (*Id.*, citing Water Code §§ 13140, 13240.)

Any person discharging or proposing to discharge waste that could affect water quality is required to file a report (RoWD) with the appropriate regional board. (*Id.*, citing Water Code § 13260, subd. (a)(1).) Upon receipt of an RoWD, the regional board makes an evaluation and decides how to respond. The regional boards' tools for regulating non-point source pollution include the issuance of waste discharge requirements (Water Code § 13263,

subd. (a)), enrollment under a general permit (Water Code § 13263, subd. (I)), the issuance of a site-specific waiver (or authorization to discharge) (Water Code § 13269, subd. (a)), enrollment under a general waiver (Water Code § 13269, subd. (f)), and/or the issuance of a cleanup and abatement order. (Water Code § 13304.) As explained in the NPS Implementation Policy:

> In obligating the SWRCB and RWQCBs to address all discharges of waste that can affect water quality, including nonpoint sources, the legislature provided the SWRCB and RWQCBs with administrative permitting authority in the form of administrative tools (waste discharge requirements [WDRs], waivers of WDRs, and basin plan prohibitions) to address ongoing and proposed waste discharges. Hence, all current and proposed NPS discharges must be regulated under WDRs, waivers of WDRs, or a basin plan prohibition, or some combination of these administrative tools.

(NPS Implementation Policy at p. 3.) A regional board "may choose to use the basin planning process to adopt some of these administrative approaches." (*Id.* at p. 4.) "A categorical waiver of waste discharge requirements, for instance, could be adopted as a [] basin plan amendment."[21] (*Id.* (emphasis added).)

A general or categorical waiver of WDRs a pplies to a "type of discharge" and may be adopted if the waiver is consistent with any applicable state or regional water quality control plan and is in the public interest. (Water Code§ 13269(a)(1).) The waiver must be conditional and may be terminated at any time. (Water Code § 13269(a)(2).) The conditions must include, but

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[21] The trial court incorrectly held that as "a matter of regulatory chronology the Board must first adopt the Amendment and then at a later date develop the specifics of the Board's policies regarding permits and waivers." (Decision at p. 18.) The Board's NPS Implementation Policy explicitly recognizes that WDR waiver rules or policies may be adopted as part of a Basin Plan Amendment.

need not be limited to, the performance of individual, group, or watershed-based monitoring, except as provided in paragraph (a)(3). (*Id.*)

A regional board may also prescribe general waste discharge requirements for a category of discharges. (*Id.*, citing § 13263, subd. (I).) To do so, the board must find or determine that all of the following criteria apply to the discharges in that category:

> (1) The discharges are produced by the same or similar operations.
> (2) The discharges involve the same or similar types of waste.
> (3) The discharges require the same or similar treatment standards.
> (4) The discharges are more appropriately regulated under general discharge requirements than individual discharge requirements.

(Water Code, § 13263 (I).)

3. The WDR Waiver Policy Is An Integral Part of the TMDL Basin Plan Amendment.

The TMDL/BPA adopted by the Regional Board includes "Required and Trackable TMDL Implementation Measures for Sediment Discharges Associated with Vineyards." (AR:19 [Table 4.1].) These implementation measures specify "Actions" that a vineyard discharger may take to comply with the Basin Plan. (*Ibid.*) A vineyard discharger may submit RoWDs <u>or</u> develop and implement a farm plan pursuant to a categorical Waiver Policy:

> Submit a Report of Waste Discharge[fn2] (RoWD) to the Water Board that provides, at a minimum, the following: a description of the vineyard; identification of site-specific erosion control measures needed to achieve performance standard(s) specified in this table; and a schedule for implementation of identified erosion control measures.
> Or
> Develop and begin implementing a farm plan certified under Fish Friendly Farming Environmental Certification Program or

> other farm plan certification program, approved as part of a waiver of WDRs. All dischargers applying for coverage under a waiver of WDRs also will be required to file a notice of intent (NOI) for coverage, and to comply with all conditions of the WDR waiver.[fn4]

(*Id.*) Footnote 2 provides that the discharger may comply with "applicable conditional waivers of WDRs that may be adopted by the Water Board" in lieu of submitting RoWDs. (*Id.*) Footnote 4 provides that the discharger seeking enrollment under a "waiver of WDRs" may be required to comply with additional conditions that "may be required under a General WDR and/or waiver program." (*Id.*)

The Board contemplated development and adoption of a WDR waiver policy as part of the TMDL/BPA from the beginning. On June 30, 2006, the Regional Board released a proposed TMDL/BPA that specified the performance standards governing new vineyards on rural lands and the "Actions" that must be taken to comply with the TMDL/BPA. The "Actions" included submitting a "Report of Waste Discharge [] to the Water Board," but further provided that "[w]aiver conditions may allow for other submittals in lieu of a Report of Waste Discharge." (AR:8638.)

In its September 5, 2008, revised TMDL/BPA, the Regional Board elaborated on the WDR waiver policy, stating:

> Submit a Report of Waste Discharge [n]2 (RoWD) to the Water Board that provides, at a minimum, the following: a description of the vineyard; identification of site-specific erosion control measures needed to achieve performance standard(s) specified in this table; and a schedule for implementation of identified erosion control measures.
> <u>Or</u>
> <u>Implement farm plan certified under Fish Friendly Farming Environmental Certification Program or other farm plan certification program, *as approved as part of a WDR waiver*</u>

> *policy*. All dischargers applying for coverage under a WDRs waiver policy also will be required to file a notice of intent (NOI) for coverage, and to comply with all conditions of the WDR waiver policy [n]4. ¶ Comply with applicable waste discharge requirements (WDRs) or *waiver of WDRs*.
> [Footnotes]
> 2. *Or compliance with applicable conditional waivers of WDRs that may be adopted by the Water Board.*
> 4. This Basin Plan amendment recognizes farm plans certified under the Fish Friendly Farming Environmental Certification Program as effective with regard to control of pollutant discharges associated with vineyards. Additional conditions will be required under a General WDR and/or waiver program consistent with State Board (2004), and/or as needed to avoid potentially significant environmental impacts.

(AR:9574 (underscore in original, italics added).)

On May 19, 2009, the Regional Board issued another revised proposed TMDL/BPA, amending footnote 4 of the "Actions" as follows:

> 4. *Additional conditions ~~will~~ may be required under a General WDR and/or waiver program* consistent with the Policy for Implementation and Enforcement of the Non-Point Source Control Program (State Board, (2004), and/or as needed to avoid potentially significant environmental impacts.

(AR:9794 (underscore in original, italics added).)

Because the Board explicitly included compliance with a WDR waiver policy among the implementation measures (i.e., "management practices" or "MPs") applicable to vineyards, the Waiver Policy is "a contemplated future part of" the TMDL/BPA and thus an "integral" part of the "project" for purposes of CEQA. (*Tuolumne County Citizens, supra,* 155 Cal.App.4th at p. 1231, quoting *West Side Irrigation Dist., supra,* 128 Cal.App.4th at p. 699.)

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4. The Regional Board Improperly "Piecemealed" Analysis, Disclosure, and Mitigation of the WDR Waiver Policy's Impacts.

Throughout the administrative process, Living Rivers urged the Board to disclose and analyze the impacts of the WDR waiver policy (see Living Rivers letters at AR:9593, 9822-23, and 10351 and Board responses at AR:1462, 1746-48.) In its October 1, 2010, response, the State Board asserted that "The environmental documentation that accompanies a TMDL cannot be project specific, because no projects have yet been proposed to meet the specific requirements of the TMDL." (AR:1746-48.) The State Board's response is incorrect insofar as it portrays WDR waiver policy as "project-specific" action.[22]

The "categorical" or "general" waiver policy contemplated by the TMDL/BPA is not specific to any particular project or discharge. Indeed, the State's NPS Implementation Policy provides a regional board may use the basin planning process to adopt some administrative approaches to implementing WDRs, specifically explaining that a "categorical waiver of waste discharge requirements, for instance, could be adopted as a [] basin plan amendment." (NPS Implementation Policy at p. 4.)

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[22] The trial court erroneously relied on the Board's misrepresentation of the Waiver Policy as location- or "project-specific" action in ruling against Living Rivers' piecemealing claim. In particular, it found deferred review of the Waiver Policy appropriate "because the Basin Plan Amendment is equivalent to a Program level document, so the Amendment is not required to define and evaluate the impact of the anticipated Waste Discharge waiver policy or permits or waivers regarding <u>any individual landowner</u>." (CT:552.) The trial court further found that "[t]he Basin Plan Amendment sets a performance standard and in the adoption of the waiver policy the Board can more closely examine how it will meet that standard both in policies and <u>as applied to individual locations</u>." (*Ibid.*)

The trial court took judicial notice of the Regional Board's website for the Waiver Policy which, at the time, stated:

> **Overview of the Vineyard Waiver Program**
>
> Water Board staff is developing a Conditional Waiver of Waste Discharge Requirements for Vineyard Facilities in the Napa River and Sonoma Creek Watersheds (Vineyard Waiver). The implementation plans for the Napa River and Sonoma Creek Sediment Total Maximum Daily Loads (TMDLs) identified waste discharge requirements or waivers thereof as a regulatory tool to achieve sediment load allocations specified in the TMDLs.
>
> [...] The essential component of the Vineyard Waiver will be the vineyard owner/operator's completion of a farm water quality plan (farm plan).

(CT:263.)

The Board's failure to disclose, analyze, and mitigate impacts of the WDR waiver policy in the Environmental Document for the TMDL/BPA is unlawful. The WDR waiver policy, including the "farm plan" provisions, is specified as an implementation measure for the TMDL/BPA and is thus "integral" thereto. And contrary to the Board's assertion below, the contemplated WDR waiver policy does not involve site- or project-specific analysis that would be inappropriate at the basin planning stage.

The Environmental Document reflects the same error found by the Court of Appeal in *San Joaquin Raptor I*. In that case, the EIR for a development project did not include an assessment of the environmental effects of the likely future expansion of the Project's sewer line. (*San Joaquin Raptor I*, *supra*, 27 Cal.App.4th at p. 733.) The Court recognized that, whether considered a foreseeable future activity under *Laurel Heights I* or a separate project subject to cumulative effects analysis, one way or the other the

EIR was required to conduct this assessment. (*Ibid.*) Here, similarly, deferring development of the WDR waiver policy violates CEQA because it piecemeals environmental review of the TMDL/BPA and its implementation plan.

> While proper tiering of environmental review allows an agency to defer analysis of certain details of later phases of long-term linked or complex projects until those phases are up for approval, CEQA's demand for meaningful information "is not satisfied by simply stating information will be provided in the future." [citation] As the CEQA Guidelines explain: "Tiering does not excuse the lead agency from adequately analyzing reasonably foreseeable significant environmental impacts of the project and does not justify deferring such analysis to a later tier EIR or negative declaration." (Cal.Code Regs., tit. 14, § 15152, subd. (b).) Tiering is properly used to defer analysis of environmental impacts and mitigation measures to later phases when the impacts or mitigation measures are not determined by the first-tier approval decision but are specific to the later phases.

(*Vineyard*, supra, 40 Cal.4th at p. 431.) Here, the impacts of the WDR waiver policy are determined by the first tier approval, not by site- or project- specific second tier approvals farther down the line.

These CEQA requirements apply to program level EIRs or equivalent environmental documents. For example, in *Vineyard*, the Supreme Court held that a Program-level EIR that "leaves consideration of long-term impacts until after project approval does not serve the purpose of sounding an 'environmental alarm bell' before the project has taken on overwhelming bureaucratic and financial momentum." (40 Cal.4th at p. 441.)

Similarly, in *Stanislaus Natural Heritage Project v. County of Stanislaus* (1996) 48 Cal.App.4th 182, 195, the court held that a Program EIR violated CEQA's requirement to conduct a "programmatic" evaluation of the impacts of later phases that constitute the "whole" of the project, stating:

> The County in essence approved an EIR for a 25-year project when water for the project had not been assured beyond the first five years of the fifteen-year first phase of the project. The County knew neither the source of the water the project would use beyond the first five years, nor what significant environmental effects might be expected when the as yet unknown water source (or sources) is ultimately used. In our view, the County's approval of the project under these circumstances defeated a fundamental purpose of CEQA: to "inform the public and responsible officials of the environmental consequences of their decisions before they are made." [citations.] The CEQA EIR process "protects not only the environment but also informed self- government. See also Guidelines, . . . section 15002, subdivision (a)(1), which points out that one of the "basic purposes" of CEQA is to "[i]nform governmental decision-makers and the public about the potential, significant environmental effects of proposed activities."

(*Id.* at pp. 195-196.)

In sum, the Board failed to meet its obligation to describe the WDR waiver policy and subject it to CEQA review.

D. RESPONDENT'S ABUSE OF DISCRETION IS PREJUDICIAL.

As described above, the Environmental Document violates CEQA's public participation requirements, therefore, approval of the underlying project must reversed:

> "When the informational requirements of CEQA are not complied with, an agency has failed to proceed 'in a manner required by law' and has therefore abused its discretion." Furthermore, "when an agency fails to proceed as required by CEQA, harmless error analysis is inapplicable. The failure to comply with the law subverts the purposes of CEQA if it omits material necessary to informed decisionmaking and informed public participation. Case law is clear that, in such cases, the error is prejudicial."

(*Amador Waterways, supra,* 116 Cal.App.4th at pp. 1105-1106 [citations

omitted].)

VII. CONCLUSION

For the reasons set forth above, Living Rivers seeks a writ of mandate pursuant to 21168.9(a)(1), compelling Respondent to set aside its adoption of the Amendment to the Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan) to Establish a Total Maximum Daily Load (TMDL) for Sediment in the Napa River, and an Implementation Plan to Achieve the TMDL and Related Habitat Enhancement Goals (also known as the "Napa River Sediment TMDL"); and pursuant to 21168.9(a)(3), compelling Respondent to recirculate and adopt an Environmental Document that complies with CEQA.

DATED: June 27, 2013 LIPPE GAFFNEY WAGNER, LLP

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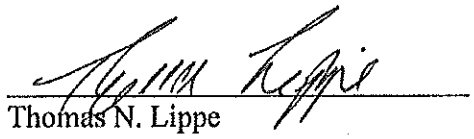
WORD COUNT CERTIFICATION

I, Thomas N. Lippe, appellate counsel for Petitioner and Appellant Living Rivers Council, hereby certify that the word count of this brief is 15,170 words according to the word processing program (i.e., Corel Wordperfect) used to prepare the brief.

DATED: June 27, 2013 LIPPE GAFFNEY WAGNER, LLP



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PROOF OF SERVICE
Living Rivers Council v. State Water Resources Control Board
(Court of Appeal Civil Case No. A137082)

I am a citizen of the United States of America; I am over the age of 18 years and not a party to the above-titled action; my business address is 329 Bryant Street, San Francisco, California 94107.

On June 27, 2013, I served a true copy of the foregoing documents entitled

APPELLANTS' OPENING BRIEF

MOTION FOR JUDICIAL NOTICE UNDER EVIDENCE CODE SECTIONS 451(b) AND 452; MEMORANDUM OF POINTS AND AUTHORITIES AND DECLARATION IN SUPPORT;[PROPOSED] ORDER

[PROPOSED] ORDER GRANTING APPELLANT'S MOTION FOR JUDICIAL NOTICE UNDER EVIDENCE CODE SECTIONS

APPLICATION TO FILE AN APPELLANT'S OPENING BRIEF IN EXCESS OF LENGTH LIMIT; DECLARATION OF THOMAS N. LIPPE IN SUPPORT THEREOF; ORDER

in the above-captioned matters on the persons and entities identified in the attached service list by overnight Federal Express, at San Francisco, California, by placing the copy of the foregoing document in sealed envelopes in an envelope or package designated by the express service carrier or other facility regularly maintained by the express service carrier or delivered to an authorized courier or driver authorized by the express service carrier to receive documents, with delivery fees paid or provided for, addressed to each of the persons at the addresses listed below, and then, in the ordinary course of business, placing the sealed envelopes in

the custody of Federal Express.

I certify under penalty of perjury of the laws of the State of California that the foregoing is true and correct. Executed on June 27, 2013, at San Francisco, California.

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IN THE COURT OF APPEAL OF THE STATE OF CALIFORNIA

FIRST APPELLATE DISTRICT, DIVISION TWO

LIVING RIVERS COUNCIL,

Plaintiff and Appellant,

v.

STATE WATER RESOURCES CONTROL BOARD,

Defendant and Respondent.

Case No. A137082

Court of Appeal First Appellate District
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Honorable Evelio Grillo, Judge

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CERTIFICATE OF INTERESTED ENTITIES OR PERSONS

Pursuant to California Rules of Court, rule 8.208, there are no interested parties or entities to list in the certificate. (Cal. Rules of Court, rule 8.208(d)(3).

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INTRODUCTION AND SUMMARY OF CASE

The California Regional Water Quality Control Board, San Francisco Bay Region (Regional Water Board) conducted a scientifically rigorous process to amend the Water Quality Control Plan for the San Francisco Bay Region (Basin Plan). The amended Basin Plan identified and listed the Napa River as "impaired" by sediment pursuant to the Clean Water Act. This listing required the Regional Water Board to establish a total maximum daily load (TMDL) for sediment in the Napa River to attain water quality standards. Living Rivers Council (LRC) now challenges the environmental review for the amended Basin Plan.

The Regional Water Board collaborated with the University of California and other scientists to study how sediment and other stressors limit populations of three at-risk aquatic species, and conducted extensive field surveys throughout the watershed to identify and quantify all significant sediment sources, including surveys of more than 10,000 acres of vineyards and more than 10 miles of the Napa River. In January 2007, the Regional Water Board adopted a basin plan amendment including a sediment TMDL for Napa River. In May 2008, when the State Water Resources Control Board (State Water Board)[1] was considering approval of the amendment, it received written comments that challenged the adequacy of the CEQA environmental analysis underlying the amendment. To further evaluate and address these concerns, in June 2008, the Regional Water Board withdrew the January 2007 basin plan amendment from further State Water Board consideration. On September 9, 2009, the Regional Water Board then adopted the basin plan amendment at issue here (hereafter, the Basin Plan Amendment), and considered revised supporting

[1] The State Water Board and Regional Water Board are hereinafter collectively referred to as the "Board."

documentation to address the CEQA concerns. On October 5, 2010, the State Water Board approved the Basin Plan Amendment after another round of hearing and comments. The Basin Plan Amendment subsequently was approved by the Office of Administrative Law and the U.S. EPA.

In order to protect and restore the habitat of the Napa River's native fish community and enhance recreational values of the river, the Basin Plan Amendment establishes numeric targets for sediment that protect water quality; a TMDL for the Napa River equal to 125% of natural background; TMDL allocations among various sediment sources, like vineyards, that require 51% reduction in sediment; an implementation plan to achieve the TMDL and related habitat enhancement goals; and a plan and schedule for evaluating and monitoring progress.

The environmental document for the Basin Plan Amendment, in this case a substitute environmental document (SED), contained a comprehensive sediment source analysis and evaluated on a programmatic level the reasonably foreseeable environmental impacts of the methods of compliance with the Basin Plan Amendment, including the use of engineered drainage facilities to reduce surface erosion. The SED found that such facilities are not widely used at vineyards, but if they are used, in some circumstances, they could potentially be problematic in terms of concentrated stormwater runoff resulting in bed and bank erosion in headwater channels and further downstream incision of the Napa River.

To avoid this problem altogether, and to address wider runoff problems associated with vineyard conversions, the Regional Water Board revised the Basin Plan Amendment prior to approval to include, as part of the project, a vineyard runoff performance standard. This runoff standard, in effect, precludes the use of engineered drainages where they cause runoff increases leading to increased downstream bed and bank erosion. The runoff standard prevents downstream sedimentation by limiting upstream

runoff to a level that will not cause downstream bed and bank erosion that could add sediment to downstream reaches of the waterbody. Controlling vineyard runoff is important because runoff is a significant source of sediment delivery to the Napa River. The SED found that activities under the Basin Plan Amendment are by design intended to decrease peak runoff. The SED further found that because the new runoff performance standard would apply to existing, replanted, and new vineyards, the net effect would be less peak runoff and is therefore hydrologically and environmentally beneficial.

The Basin Plan Amendment was praised by experts, including a National Academy of Sciences fellow and U.S. EPA, which described the science as exemplary and some of the best it has seen. It also received strong support from the National Marine Fisheries Service (NMFS) and the Napa Chapter of the Sierra Club.

Despite the above, LRC claims that the SED fails to address the environmental impacts of engineered drainage facilities, that the SED fails to adequately describe the project's performance standard for controlling increases in runoff, and that the SED piecemeals environmental review of the Basin Plan Amendment's alleged "waiver policy." A review of the record will establish that the SED fully evaluated all potentially significant environmental effects from the project. LRC insists that this technically robust project to reduce sediment in the Napa River is an agent of its degradation. As will be shown below, this view is contrary to the evidence in the record.

STATUTORY FRAMEWORK AND PROCEDURAL HISTORY

I. THE STATUTORY FRAMEWORK

A. TMDLs, Basin Plans, and Regulation of Discharges of Waste

Water quality in California is governed by an interrelated set of state and federal laws and regulations that involve control of both point and non-point sources of pollution.

1. Federal law

In *San Joaquin River Exchange Contractors Water Authority v. State Water Resources Control Bd.* (2010) 183 Cal.App.4th 1110, 1115, the Court of Appeal laid out the federal law regarding TMDLs: "The federal Clean Water Act (the Clean Water Act) (33 U.S.C. § 1251 et seq.) places primary reliance for developing water quality standards on the states (termed 'water quality objectives' in California). The Clean Water Act focuses on two possible sources of pollution: point and nonpoint. 'Point' sources refer to discrete discharges, such as from a pipe. 'Nonpoint' refers to everything else, including agricultural runoff. When the Clean Water Act's permit program, applicable to point sources, fails to clean up a river or river segment, states are required to identify such waters and list them in order of priority. Based on that listing, . . . states are to calculate levels of permissible pollution in TMDLs (i.e., total maximum daily loads). A TMDL defines the maximum amount of a pollutant that can be discharged or 'loaded' into the relevant water segment from all sources. A TMDL must be established at a level that will implement the applicable water quality objective. A TMDL is comprised of a 'wasteload allocation' that applies to point sources, a 'load allocation' that applies to nonpoint sources, and a 'margin of safety' to account for any lack of knowledge concerning

the relationship between the pollutant and water quality." (*Id.* at p. 1115, citations omitted.)

Basin plan amendments incorporating TMDLs and their load allocations are not self-enforcing. "TMDLs are primarily informational tools that allow the states to proceed from the identification of waters requiring additional planning to the required plans. [Citation.] As such, TMDLs serve as a link in an implementation chain that includes federally-regulated point source controls, state or local plans for point and nonpoint source pollution reduction, and assessment of the impact of such measures on water quality, all to the end of attaining water quality goals for the nation's waters." (*Prosolino v. Nastri* (9th Cir. 2002) 291 F.3d 1123, 1129); see also *City of Arcadia v. U.S. Environmental Protection Agency* (N.D. Cal. 2003) 265 F.Supp.2d 1142, 1144-1146 (stating that a TMDL does not by itself prohibit any conduct or require any actions; it forms the basis for further administrative action that may require or prohibit conduct regarding particularized pollutant discharges and waterbodies).)

2. State Law

"California implements the Clean Water Act through the Porter–Cologne Water Quality Control Act (Wat. Code, § 13000 et seq.). . . . Under the Porter-Cologne Act, nine regional water boards regulate the quality of waters within their regions under the purview of the State [Water] Board. (Wat. Code, §§ 13000, 13100, 13200, 13241, 13242.) The regional water boards must formulate and adopt water quality control plans, commonly called basin plans, which designate the beneficial uses to be protected, water quality objectives, and a program to meet the objectives. (Wat. Code, §§ 13050, subd. (j), 13240.) 'Water quality objectives' means the limits or levels of water quality constituents or characteristics which are established for the reasonable protection of beneficial uses of water or the prevention of nuisance within a specific area. (Wat. Code., § 13050, subd.

(h).)" (*City of Arcadia v. State Water Resources Control Board* (2006) 135 Cal.App.4th 1392, 1405.)

Because TMDLs are an expression of existing water quality objectives, basin plan amendments incorporating TMDLs include a program of implementation (commonly referred to as implementation plans) that includes a description of the nature of actions necessary to achieve water quality objectives, a time schedule for these actions, and a description of surveillance to determine compliance with the objectives. (Wat. Code, § 13242.)

Basin plans are subject to special rulemaking provisions of the Administrative Procedure Act. (Gov. Code, § 11353, subd. (b).) After adoption by a regional water board, a basin plan must be approved by the State Water Board and the Office of Administrative Law. (Wat. Code, §§ 13245, 13246; Gov. Code, § 11353, subd. (b).) In addition, the U.S. EPA must approve any new or amended water quality standards (those portions of a basin plan that are water quality standards under the Clean Water Act) and TMDLs to achieve water quality standards. (33 U.S.C. § 1313(c)(3) [approval of standards] and (d)(2) [approval of TMDLs]; 40 C.F.R. §§ 130.7 [TMDLs], 131.20 [standards].)

The Porter-Cologne Act gives the regional water boards authority to issue waste discharge prohibitions, waste discharge requirements, and/or waivers thereof, to control actual or potential discharges of waste into the waters of the state. (Wat. Code, §§ 13260-13275, 13370-13389; see also AR 4181-4200 [State Bd., Policy for Implementation and Enforcement of the Nonpoint Source Pollution Control Program (May 20, 2004) [Nonpoint Source Policy].):

- A **waste discharge prohibition** is exactly what it sounds like: specification of "certain conditions or areas where the discharge

of waste, or certain types of waste, will not be permitted." (Wat. Code, § 13243; AR 4187-4188.)

- A **waste discharge requirement** is a permit allowing a proposed discharge to occur subject to requirements necessary to implement relevant water quality control plans and to protect the beneficial uses of water. (Wat. Code, § 13263; AR 4186.)
- A **waiver of waste discharge** requirements is *not* what it sounds like. The State Water Board or the regional water boards may waive waste discharge requirements, which allows individual discharges or types of discharges to proceed without a waste discharge requirement, subject to conditions to ensure consistency with applicable state or regional water quality control plans. The regional water boards may approve a waiver only after any necessary meeting, and only after determining that the waiver (including its conditions) is consistent with any applicable state or regional water quality control plan and is in the public interest. A waiver thus allows a discharger who qualifies, and abides by the conditions, to discharge waste without obtaining a waste discharge requirement, and yet, through its conditions, ensures that water quality control plans are satisfied. (See Wat. Code, § 13269; see also AR 4187.) Waivers are conditional and, at a minimum, must include monitoring requirements, except where it is determined the discharge does not pose a significant threat to water quality. (Wat. Code, § 13269, subds. (e) & (a)(2).) The State and regional water boards can take enforcement against dischargers that violate waiver conditions. (Wat. Code, § 13350.) In essence, a waiver functions as a type of discharge permit. For ease of

reference, we use the term "permit" to refer collectively to waste discharge requirements and waivers.[2]

B. CEQA Compliance

The California Environmental Quality Act (CEQA) (Pub. Resources Code, § 21000 et seq.) generally requires public agencies to prepare an environmental impact report (EIR) when it considers approval of a project that "may have a significant effect on the environment." (Pub. Resources Code, § 21100.) Under defined circumstances, and to avoid redundancy, CEQA authorizes the Secretary of the Natural Resources Agency to certify that an agency's regulatory program under separate legislation is the functional equivalent of CEQA review where the program meets certain criteria, such as where the enabling legislation of the regulatory program includes protection of the environment among its principal purposes and contains authority for the agency to adopt rules for the protection of the environment. (Pub. Resources Code, § 21080.5.) As one court explained, if the analysis prepared under an agency's own statutory authority essentially encompasses the information that would appear in an EIR, the "preparation of a separate EIR would be redundant, and a plan or other written document can be used in lieu of an EIR." (*San Mateo County Coastal Landowners' Assn. v. County of San Mateo* (1995) 38 Cal.App.4th 523, 551-553.)

The Secretary of the Natural Resources Agency has certified the State and regional water boards' basin planning process as a "certified regulatory program" under CEQA. (Cal. Code Regs., tit. 14, § 15251, subd. (g); *San*

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[2] As discussed in footnote 18, *infra*, the Regional Water Board intends to regulate vineyard these discharges at issue here through waste discharge requirements rather than a waiver. The CEQA analysis is the same regardless of the type of permit the Regional Water Board ultimately issues.

Joaquin River Exch., supra, 183 Cal.App.4th at p. 1125.) As such, the State and regional water boards are allowed to use a written report in lieu of an EIR or a negative declaration, and are exempt from CEQA's requirements in Public Resources Code sections 21100 to 21108. (*Id.* at pp. 1125-1126; Pub. Resources Code, § 21080.5, subds. (a), (b), (d)(3).) A substitute environmental document under this program must include an environmental checklist and a written report that includes:

> (1) A description of the proposed activity;
>
> (2) Reasonable alternatives to the proposed activity; and
>
> (3) Mitigation measures to minimize any significant adverse environmental impacts of the proposed activity.

(Cal. Code Regs., tit. 23, § 3777, subd. (a) (2009)[3].) The board must also include a written response to comments. (Pub. Resources Code, § 21080.5 subd. (d)(2)(D); Cal. Code Regs., tit. 23, § 3779 (2009).) The board must comply with the public participation requirements of the certified regulatory program, rather than CEQA's general requirements for environmental documents. (See Pub. Resources Code, § 21080.5, subd. (d)(2)(C)-(F).) Additionally, when adopting a rule or regulation, such as the Basin Plan Amendment here, CEQA requires the boards to conduct an environmental analysis of the reasonably foreseeable means of compliance. (Pub. Resources Code, §21159.) Public Resources Code section 21159 does not require the agency to conduct a project-level analysis, and "is not intended, and may not be used, to delay the adoption of any rule or regulation for which an analysis is required [under section 21159]." (*Id.,* subds. (d) & (f).)

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[3] The Board's regulations implementing CEQA for exempt regulatory programs were amended effective as of February 18, 2011. The regulations as they existed when the Board acted here are found in the Clerk's Transcript at 224.

Here, the Basin Plan Amendment (AR 10-29), Environmental Checklist (AR 1676-1689), Final Staff Report (AR 1577-1737), and supporting documentation (e.g., responses to comments) together constitute the SED under the Board's certified regulatory program. (See AR 4, no.3; AR 53, no. 14).

II. PROCEDURAL HISTORY

A. The Napa TMDL and Basin Plan Amendment

In 1990, on the basis of evidence of widespread erosion and concern regarding adverse impacts to fish habitat, the Regional Water Board listed the Napa River as impaired by sedimentation under the federal Clean Water Act. (AR 1584.) Accordingly, the Regional Water Board was required to establish a (TMDL) for sediment for the river. (See *San Joaquin River Exch.*, *supra,* 183 Cal.App.4th at p. 1115.) TMDLs must be established "at levels necessary to attain and maintain the applicable narrative and numerical [water quality standards]." (40 C.F.R. § 130.7(c)(1).)

Following five years of intensive field studies in the watershed (see, e.g., AR 76-367, AR 2187-2188, AR 1595-1640) and several draft reports, hearings, and public comments, on September 9, 2009, the Regional Water Board adopted the Basin Plan Amendment[4] which, among other things, established a TMDL for sediment in the Napa River at 125% of the natural background (AR 1651-1653); set wasteload and load allocations for various point and non-point sources of sediment needed to achieve the TMDL (AR 1653-1655); and a plan (Implementation Plan) to implement the TMDL

[4] The Regional Water Board adopted a previous version in 2007, but withdrew it from the State Water Board's consideration due to CEQA comments. (AR 7990, 1536.) The Regional Water Board thereafter revised it to include the performance standard for runoff at issue here, a mitigation measure for sensitive natural communities, and extend compliance dates; it also revised the SED to address the CEQA concerns. (AR 1546.)

(AR 1657-1674). (See generally AR 4-29 [Adopted Resolution and Basin Plan Amendment].) In setting load allocations, the TMDL calls for a 51% reduction in human-caused sediment sources, like vineyards. (AR 15.)

On October 5, 2010, following additional rounds of public comments, response to comments, and a hearing, the State Water Board approved the Basin Plan Amendment establishing the TMDL and Implementation Plan. (AR 1-29 [Board Notice of Decision and Resolution]; 8008-8042 [hearing transcript]; 1738-1776 [responses to comments].) The Office of Administrative Law and the U.S. EPA subsequently approved the amendment.[5] (AR 10393, 10397.) Notably, U.S. EPA commended the TMDL and Final Staff Report as containing a technically solid, "very thorough analyses" that is based on exemplary science.[6] (AR 8024, 8160, 8265-8266) U.S. EPA determined that the TMDL will "upon implementation, result in the attainment of the applicable water quality standards [i.e., sediment and settleable solids] for the Napa River." (AR 8160-8161, 10397.) Thus, despite LRC's claim of increased stormwater runoff and associated erosion and sedimentation, the project will result in *reduced* sediment loadings such that water quality standards will be met.

B. This Action

On February 11, 2011, LRC filed this action, seeking (1) a writ of mandate ordering the State Water Board to set aside the Basin Plan Amendment establishing the TMDL for sediment in the Napa River, and

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[5] A summary of the Basin Plan Amendment is codified at Cal. Code Regs., tit. 23, § 3919.9.

[6] The NMFS (AR 9811-9812, 8275-8276, 8035-8036), Professor William Dietrich (AR 8790), and the Napa Chapter of the Sierra Club (AR 8277-8278) also strongly supported the TMDL. Independent peer reviewers confirmed the TMDL was based on sound scientific knowledge, methods, and practices. (AR 4, 5984-6024.)

related actions, and (2) a declaratory judgment that the State Water Board failed to comply with CEQA, and therefore, the adoption of the Basin Plan Amendment is null and void. (CT 6 [First Amended Petition for Writ of Mandate and Complaint for Declaratory Relief (dated Nov. 18, 2011)].)

LRC raised five broad issues at the trial court. (See CT 113-119 [Statement of Issues].) The first issue was that the SED for the Basin Plan Amendment violates CEQA by failing to perform an "EIR level analysis" of certain environmental impacts of the Basin Plan Amendment's performance standard for controlling surface erosion. LRC claimed that the Basin Plan Amendment incorporated the Napa County Conservation Regulations (Napa Regulations) as a means of compliance and thus requires the State Water Board to conduct an EIR level review of the County's program because a fair argument can be made that increased runoff will result. Second, LRC claimed that the SED violates CEQA because it fails to evaluate the cumulative effects of the TMDL's use of the Napa Regulations as a means of compliance. The third issue raised was that the Board allegedly deferred development of the runoff performance standard in violation of CEQA. Fourth, LRC claimed that the SED piecemeals the environmental review because it fails to identify the potential adverse effects of the "waiver policy." Finally, LRC claimed that the SED fails to adequately analyze a range of alternatives to the project.

The trial court rejected these challenges and denied the writ. LRC now appeals, raising only the first, third, and fourth issues it pressed in the trial court.

STANDARD OF REVIEW

The standard of review in CEQA cases is well-established: "In reviewing an agency's compliance with CEQA in the course of its legislative or quasi-legislative actions, the courts' inquiry shall extend only to whether there was a prejudicial abuse of discretion. Such an abuse is

established if the agency has not proceeded in a manner required by law or if the determination or decision is not supported by substantial evidence. [¶] An appellate court's review of the administrative record for legal error and substantial evidence in a CEQA case, as in other mandamus cases, is the same as the trial court's: the appellate court reviews the agency's action, not the trial court's decision; in that sense appellate judicial review under CEQA is de novo. [Courts] therefore resolve . . . CEQA issues . . . by independently determining whether the administrative record demonstrates any legal error . . . and whether it contains substantial evidence to support the [agency's] factual determinations." (*Vineyard Area Citizens for Responsible Growth, Inc. v. City of Rancho Cordova* (2007) 40 Cal.4th 412, 426, citations, quotations, and footnotes omitted.)

"Courts presume that the agency's decisions are correct, and the challenger bears the burden of proving the contrary." (*San Diego Citizenry Group v. County of San Diego* (2013) 219 Cal.App.4th 1, 13.) Moreover, in determining whether the EIR is adequate, "[a] reviewing court looks not for perfection, but for good faith and substantial compliance. An error in procedure by itself is not the basis for an adverse judicial determination. There must be a prejudicial abuse of discretion. There is no presumption that error is prejudicial." (*Ibid.,* citations and quotations omitted.)

Of particular importance in this appeal is the distinction between the two types of error noted above, and further emphasized by the Supreme Court in *Vineyard*: "An agency may abuse its discretion under CEQA either by failing to proceed in the manner CEQA provides or by reaching factual conclusions unsupported by substantial evidence. Judicial review of these two types of error differs significantly: while we determine de novo whether the agency has employed the correct procedures, scrupulously enforcing all legislatively mandated CEQA requirements, we accord greater deference to the agency's substantive factual conclusions. In reviewing for

substantial evidence, the reviewing court may not set aside an agency's approval of an EIR on the ground that an opposite conclusion would have been equally or more reasonable, for, on factual questions, our task is not to weigh conflicting evidence and determine who has the better argument." (*Vineyard, supra,* 40 Cal.4th. at p. 435, citations and quotations omitted.)

Here, LRC claims that it is only challenging a procedural defect – lack of certain allegedly required analyses in the SED – and so contends that this case presents only purely legal issues to be reviewed de novo, and no issue concerning substantial evidence that requires greater deference. (LRC brief at pp. 19-20.) Even a cursory review of LRC's actual arguments, however, belies this contention. Many of LRC's arguments focus not on any legal error, but on an alleged lack of evidence to support the Board's factual determinations. By way of example only, one of the supposedly purely legal defects that LRC's alleges is that the Board improperly deferred development of a performance standard that LRC deems to be a mitigation measure. (LRC Brf., p. 40 ["The Board Improperly Deferred the Development of this Mitigation Measure"].) Yet, the argument that follows in LRC's brief is anything but a purely legal argument. It is, instead, expressly an attack on the Board's factual conclusions, arguing that "there is no evidence that achieving this performance standard is feasible." (LRC Brf., p. 40.) An agency's feasibility determinations, of course, are factual conclusions that are evaluated under the deferential substantial evidence standard. (See, e.g., *Masonite Corporation v. County of Mendocino* (2013) 218 Cal.App.4th 230, 237.)

It is important to recognize these and other places where LRC inappropriately casts factual disputes as purely legal issues. As the Supreme Court has stated: "In evaluating an EIR for CEQA compliance . . . a reviewing court must adjust its scrutiny to the nature of the alleged

defect, depending on whether the claim is predominantly one of improper procedure or a dispute over the facts." (*Vineyard, supra,* 40 Cal.4th. at p. 435, citations and quotations omitted.)

ARGUMENT

I. THE SED PROPERLY ASSESSES THE EFFECTS OF THE PROJECT

The SED is a program-level, not project-level, evaluation. In approving the Basin Plan Amendment, the Board set broad policy, and adopted regulatory standards that will apply to various vineyards and other types of land use activities. The Basin Plan Amendment does not in itself approve any particular vineyard, land alteration, or waste discharge. It provides a framework for the next steps in the regulatory process. Like a program EIR, a court evaluates the SED on a programmatic level, determining whether the SED adequately identifies the "significant effects of the planning approval at hand," while deferring the less feasible development of detailed implementation requirements, and any additional environmental review that is required to support the Boards' adoption of those requirements, to future actions of the Board. (*In re Bay-Delta Programmatic EIR Coordinated Proceedings* (2008) 43 Cal.4th 1143, 1172-1175.)

The Basin Plan Amendment adopted a "rule or regulation" and is subject to CEQA's requirement to identify and mitigate the adverse environmental impacts of the project over and above the existing physical conditions (i.e., baseline), and to analyze the impacts of the reasonably foreseeable methods of compliance with the rule. (Pub. Resources Code, §§ 21000, 21002, 21159; Cal. Code Regs., tit. 14, § 15126.2 subd. (a)) No "project-level analysis" of the methods of compliance is required. (Pub. Resources Code, § 21159 subd. (d).) With that background, we now turn to LRC's argument.

LRC contends that, "The Board must evaluate the environmental effects of the . . . 'reasonably foreseeable means of compliance' specified in any TMDL/BPA, including performance standards." (LRC Brf., p. 20.) Then, citing one sentence in footnote to an item in a table, which notes that the Napa Regulations are "effective in the control of excessive rates of sediment delivery resulting from vineyard surface erosion" (AR 19, fn. 5), LRC concludes that complying with the Napa Regulations is one way to satisfy the TMDL's performance standard for controlling surface erosion. Contrary to LRC's argument at page 27 of its brief, this sentence, which merely states that the Napa Regulations[7] can be effective at controlling erosion, does not mean that the Board approved engineered drainage facilities as a means of complying with the TMDL even where the facilities fail to meet the runoff performance standard. The text of the Basin Plan Amendment does not support LRC's reading.

LRC also argues that a cardinal rule of statutory construction compels the footnote be given regulatory effect (LRC Brf., pp. 27-28). The Basin Plan, however, is not statute, but a planning and informational document that serves as the "master policy document that contains descriptions of the legal, technical, and programmatic bases of water quality regulation."[8] While the Basin Plan does include regulatory requirements, other provisions are merely policy statements or background information. The Administrative Procedure Act recognizes the non-regulatory nature of some basin plan provisions in stating that the Office of Administrative Law only

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[7] The Napa Regulations require the owners/operators of vineyards that have been planted or replanted since 1991 to submit for approval erosion control plans to control surface erosion.

[8] Basin Plan, p. 1-3, available at http://www.waterboards.ca.gov/sanfranciscobay/water_issues/programs/planningtmdls/basinplan/web/docs/BP_all_chapters.pdf

reviews the regulatory provisions of the Basin Plan. (See, e.g., Gov. Code, § 11353(b)(2)(A) [OAL shall restrict its review to regulatory provisions].) A sentence in a footnote stating that the Napa Regulations are effective at controlling surface erosion is simply an example of non-regulatory informational language of the kind found throughout the Basin Plan.

LRC then contends that the Board was required to analyze the effects of this "reasonably foreseeable means of compliance," and that the Board failed to do so. (LRC Brf., pp. 20-33.) Specifically, LRC argues that erosion control projects implemented to comply with the Napa Regulations may include the use of so-called "engineered drainage" facilities – basically ditches constructed on the ground surface (e.g., cross-slope ditches) and/or sub-surface drainage systems (e.g., inlets connected into underground pipes) that are designed to route the runoff offsite, before it accumulates on the ground surface in the vineyard. (See AR 10351-10352.) It argues that such facilities, by concentrating and increasing runoff, can cause channel incision and subsequent downstream sedimentation, and therefore the Board was required to perform an "EIR level" analysis of the effects of compliance with the Napa Regulations.

There are two interrelated flaws in LRC's argument.

A. CEQA Only Requires Analysis of the Reasonably Foreseeable Impacts of the Project and the Reasonably Foreseeable Means of Compliance with the Project

Under the regulation on which LRC relies, the Board's SED must identify and analyze the "reasonably foreseeable methods of compliance with the project." (Cal. Code Regs., tit. 23, § 3777, subd. (b)(4)(A).) As in effect at the time the Board approved the Basin Plan Amendment, section 3777 required a SED to include, "(1) A brief description of the proposed activity; (2) Reasonable alternatives to the proposed activity; and (3) Mitigation measures to minimize any significant adverse environmental

impacts of the proposed activity.) (Cal. Code Regs., tit. 23, §3777, subd. (a)(2009).) Public Resources Code section 21159 also requires an analysis of the reasonable foreseeable methods of compliance with a pollution control rule or regulation.

The SED's description of the project (the regulatory provisions of the Basin Plan Amendment) includes at least two performance standards, both of which must be satisfied:

> **Project Description**
>
> The proposed project is a Basin Plan amendment that would establish a Total Maximum Daily Load (TMDL) for sediment in the Napa River and an implementation plan to achieve the TMDL and related habitat enhancement goals (see Appendix A). The project includes:
>
> - Performance standards for runoff *and* sediment control . . .

(AR 1690, bold in original, italics added.) The Implementation Plan for the project, with respect to controlling sediment discharges from vineyards, reflects the same combination of performance standards, both of which must be satisfied:

> Surface Erosion associated with vineyards: Control excessive rates of sediment delivery to channels resulting from vineyard surface erosion [*fn.5*]; ***and***
>
> . . .
>
> Effectively attenuate significant increases in storm runoff, so that the runoff from vineyards shall not cause or contribute to downstream increases in rates of bank or bed erosion.

(AR 19, emphasis added.)

Engineered drainage facilities that do not meet the runoff performance standard are not a reasonably foreseeable means of compliance with the Basin Plan Amendment, because they do not comply with the Amendment's requirements. If a discharger seeks to construct a new

engineered drainage facility, that facility must be constructed in a manner so as not to result in increased runoff leading to downstream increases in rates of bed or bank erosion. Otherwise, the Board may not permit the discharge because *both* performance standards have to be met. (See, e.g., AR 8284 [if a project permitted under the Napa Regulations does not achieve the runoff performance standard, it would have to be changed to meet it, in order to be permitted by the Board]; Wat. Code, §§ 13263 [waste discharge requirements shall implement basin plans], 13269 [waiver of waste discharge requirements must be consistent with basin plan].) Unchecked runoff from pre-existing engineered drainage facilities is the baseline condition that the Basin Plan Amendment is seeking to correct with the runoff performance standard. The effect of the Basin Plan Amendment on these existing facilities is that they would have to be corrected and/or retrofitted. (AR 8284, 1515, 1714.) The net effect of the Basin Plan Amendment would be a reduction in concentrated runoff. (AR 1714-1715.)

Accordingly, there was no need for the Board to undertake the analysis that LRC insists it should have. This conclusion is fully consistent with CEQA, the purpose of which is to disclose and analyze the effects of a project (defined as the "*whole* of an action" under Cal. Code Regs., tit. 14, § 15378 [emphasis added])—not project compliance scenarios that are not reasonably foreseeable.

B. Even if CEQA Required An "EIR Level" Analysis of the Effects of Compliance with the Napa Regulations, the SED Satisfies that Requirement

1. The SED Contains an "EIR Level" Analysis of the Effects of Excessive Runoff from All Sources, Including Installation of Engineered Drainage Facilities

LRC argues that the SED fails to include an "EIR level" analysis of the effects of the Napa Regulations as a means of compliance with the project. This characterization of a single aspect of the SED is somewhat misleading. As discussed below, the SED includes a level of analysis equivalent to an EIR and does not purport to be a "substitute" negative declaration or mitigated negative declaration. The SED evaluates excessive runoff from all sources, including engineered drainage facilities that LRC claims are the result of complying with the Napa Regulations, and thus does include the type of review that LRC refers to as an "EIR level" analysis.

The Napa Regulations require the owners/operators of vineyards that have been planted or replanted since 1991 on slopes greater than 5% to submit for approval erosion control plans to control surface erosion (and its consequent sedimentation).[9] (See Napa County Code, tit. 18, ch. 18.108.[10])

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[9] In the Napa River watershed, about 25% of vineyard acreage is developed on hillslopes greater than 5%, with the remaining majority of vineyards developed on the valley floor on slopes less than 5% such that they are not subject to the Napa Regulations. (AR 101, and compare AR 356 and AR 362.) This context is important to give perspective to LRC's claim of rampant storm runoff from vineyards leading to sedimentation in streams (i.e., it does not serve the Board's objective to address sediment watershed-wide to adopt a county regulation that only applies to a minority of total vineyards within the watershed).

[10] A copy of these regulations can be found beginning at CT 230, and also is available at

(continued...)

There are many ways to control surface erosion, including, for example, planting cover crops which slow the flow of water and whose root systems stabilize soil; mulching; conservation tillage; terracing hillsides to reduce flow rates and consequent erosion; and also the engineered drainage facilities on which LRC focuses. (See AR 1701.) Nothing in the Napa Regulations requires or even encourages the use of engineered drainage facilities, or any other specific means of compliance. (See Napa County Code, tit. 18, ch. 18.108.)

Some vineyard operators nevertheless install engineered drainage facilities to control surface erosion in ways or places that cause increases in runoff that can lead to channel incision and other downstream erosional effects. The SED fully addresses and avoids this impact. During development of the Basin Plan Amendment, Regional Water Board staff visited about 100 vineyards, comprising more than 10,000 acres in the Napa River watershed. Staff concluded that, "methods and means that are used to control surface erosion are not monolithic. [But in] some cases, the methods that have been used [to control erosion] have definitely increased the flow of runoff . . . ." (AR 8283; see also AR 8022-8023, 3875.) Staff also concluded that approaches taken to control surface erosion in vineyards are not dominated by intensive engineering approaches. (AR 8022-8023 [tab 131, mtg. transcript], 8283-8284 [tab 149, mtg. transcript], 3875 [tab 75, Napolitano memo to file].) These problems occur only when (a) a vineyard was developed in a natural setting that is particularly sensitive to a runoff increase and/or (b) intensive engineering of drainage (e.g., lots of subsurface drainage pipes and/or concentrating naturally more

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(...continued)
http://library.municode.com/HTML/16513/level2/TIT18ZO_CH18.108CORE.html .

dispersed drainage at fewer points of discharge) is utilized. (See AR 3875, 1600, 8022-8023.)

The SED specifically addresses increased runoff caused by engineered drainage facilities:

- That such engineered drainage facilities cause increased runoff: "[I]f vineyard development involves installation of subsurface drainage pipes, more storm runoff, at a faster rate, may be discharged off-site than under natural conditions. Finally, if discharges from drainage pipes are collected at a single point of discharge, there is the potential to further concentrate runoff volume . . . ." (AR 1600 [Final Staff Report]; see also, e.g., AR 638-639 [responding to LRC comments and acknowledging that "excessive reliance on engineered drainage to control surface erosion" can cause "significant increases in storm runoff"]; AR 1515);
- That such increases in runoff can cause channel incision: "[H]uman caused increases in peak flow are a contributing factor to the current episode of channel incision along the mainstem of the Napa River." (AR 515 [agreeing with LRC comments making the same point]; AR 11 [final Basin Plan Amendment, noting that "[h]uman activities that have contributed to channel incision . . . includ[e] . . . development projects that have increased peak runoff during storms"]; AR 1621 [Final Staff Report: "We hypothesize that the current episode of channel down-cutting (channel incision) is in response to the following disturbances including: . . . increased peak flows in the river (e.g., vineyards, rural residences, commercial buildings, and roads)"]; AR 1599); and

- That such increases can cause stream banks to collapse and increased sedimentation: "The goal for management of existing vineyards should be to reduce peak storm runoff rates into actively eroding gullies[11] or landslides or other potentially unstable areas, as needed to avoid and control human-caused increase in sediment delivery from unstable areas." (AR 1662.)

In addition to the passages from the SED quoted above that discuss the issue LRC identifies – that use of engineered drainage facilities can increase runoff and therefore channel incision, bank erosion, and so forth – LRC itself cites to hundreds of pages in its own comments that it contends analyze the issue with express relation to the Napa Regulations. (See LRC Brf., p. 22, citing AR 8848-9051, 9426-9442; 10351-10352.) This is exactly what LRC contends the SED fails to do, yet these comments themselves are also part of the SED, and must be considered in evaluating the adequacy of the SED's analysis. (*Residents Ad Hoc Stadium Com. v. Board of Trustees* (1979) 89 Cal.App.3d 274, 285-86 [characterizing as "sophistical" argument that comments should not be considered part of

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[11] A gully is a type of channel (not a type of surface erosion as LRC claims without any support [LRC Brf., pp. 29-30]), (AR 4880). and the SED uses the terms "headwater channels (AR 3875)," and "off-site channel enlargement (gully development)" (AR 1662), enlargement of upland channels (e.g., gully formation) (AR 515), and gully erosion (AR 1600) interchangeably. The only place in the record where the term "channel" is not included in the discussion of vineyard runoff erosion impacts is at AR 1600, which LRC relies on in making its argument that the SED did not discuss channel incision, but rather only considered upstream discharges to land (LRC Brf., pp. 29-30); however, the photo at AR 1600 clearly demonstrates that a gully is a type of channel and not a surface erosion feature. *Gully-causing runoff that is reduced upstream is runoff reduced downstream.* Also, throughout the record the Board clearly connected increased runoff from vineyards as a cause or contributing factor to channel incision in the Napa River and its tributaries. (AR 1621, AR 515, AR 1599, and AR 1719.)

EIR]; see also, Pub. Resources Code, §21080.5, subd. (d); Cal. Code Regs., tit. 23, § 3779.5, subd. (b) (effective 2/18/2011).)

Precisely because the Board evaluated engineered drainage facilities (and because it was concerned with runoff impacts from vineyard conversions), it adopted a project change in the form of a vineyard runoff performance standard to avoid impacts from engineered drainage facilities that could cause significant increases in storm runoff offsite. (AR 1548 ["[b]y adding this performance standard, we fully avoid this potential impact"], 8253.)

Besides all of the specific discussions and avoidance of the potential environmental effects of engineered drainage facilities, the Final Staff Report contains every other item that CEQA and the Board's regulations require in a substitute environmental document, including, among other things, an analysis of alternatives (AR 1715-1719); mitigation measures (AR 18, 1698, 1702 [avoiding Basin Plan compliance projects in certain areas to reduce potential impacts to sensitive natural communities], 19, 1710-1711 [avoidance mitigation in the form of a project change to include a performance standard for runoff], 1662-1663 [mitigation measures to employ at the project specific level to reduce runoff]); impacts of reasonably foreseeable methods of compliance (AR 1691-1694, 1696-1701, 1705-1706, 1709-1711, 1714-1715); and costs associated with controlling excessive runoff from all sources (AR 1721-1730). (Cal. Code Regs., tit. 23 § 3777, subd. (a) (2009); Pub. Resources Code, § 21159.)

This case is not like *City of Arcadia v. State Water Resources Control Bd.* (2006) 135 Cal.App.4th 1392, on which LRC so heavily relies. (See LRC Brf., pp. 5, 9, 11, 12, 15, 17.) The fair argument standard has no

application to this case.[12] The sole application of that standard is to determine whether the lead agency must prepare an EIR rather than a negative declaration. In *City of Arcadia*, a regional water board concluded that the project at issue would have no significant effect on the environment, and so produced as its SED the functional equivalent of a negative declaration. (See *San Joaquin River Exchange Contractors Water Authority v. State Water Resources Control Bd.* (2010) 183 Cal.App.4th 1110, 1127-1128.) The Court of Appeal found this inadequate, holding that "an EIR is required since the [project at issue] presents substantial evidence of a fair argument that significant environmental impacts may occur." (*City of Arcadia, supra,* 135 Cal.App.4th at p. 1424.) LRC argues at length that the fair argument standard applies here with respect to the potential harm from excessive runoff from certain erosion control projects implemented pursuant to the Napa Regulations, and that is why, according to LRC, the Board is required here to do an "EIR level" analysis of those effects.[13]

The defect in LRC's argument is that here, unlike *City of Arcadia*, the Board did not purport to produce the equivalent of a negative declaration.[14]

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[12] The fair argument test is "a low threshold requirement for the initial preparation of an EIR that reflects a preference for resolving doubts in favor of environmental review." (*Nelson v. County of Kern* (2010) 190 Cal.App.4th 252, 282 citing *County Sanitation Dist. No. 2 v. County of Kern* (2005) 127 Cal.App.4th 1544, 1579-1580.) "Once an EIR or negative declaration has been prepared, the fair argument test does not apply...." (1 Kostka & Zischke, supra, § 6.37 p. 342 (rev. 3/12))

[13] As discussed earlier, the SED need not be identical to an EIR.

[14] For example, the Board conservatively found that the project may result in a significant and unavoidable impact to biological resources and adopted a statement of overriding considerations. (AR 54.) By definition, a negative declaration may not be prepared when there are significant impacts. (Pub. Resources Code, § 21064.)

It concluded that there was exactly the fair argument that LRC claims exists. The SED does include an EIR level analysis: the Board performed an extensive analysis of all sources of sediment, including excessive runoff (AR 1595-1640), did a linkage analysis evaluating the linkages between those sources and fish habitat conditions (AR 1652-1656), developed an implementation plan to achieve the project goals (AR 1657-1674), and included a performance standard for excessive runoff (AR 19). This is exactly what constitutes an "EIR level" analysis. (See, e.g., *San Joaquin River Exchange, supra,* 183 Cal.App.4th at p. 1126 [finding substitute environmental document was EIR-equivalent]; *California Sportfishing Protection Alliance v. State Water Resources Control Board* (2008) 160 Cal.App.4th 1625, 1642-1645 [same].)

2. The Administration of the Napa Regulations by the County is Irrelevant to the SED Analyses

The other basis for LRC's contention that the SED is inadequate is that discussions of the effects of engineered drainages described above do not analyze in detail "Napa County's administration of its regulatory program." (LRC Brf., p. 28.) LRC, however, does not explain why or how any such discussion is necessary or would add anything to the SED's environmental analysis. As explained above, regardless of how Napa County administers its surface erosion control regulations, and regardless of whether any specific vineyard is subject to the Napa Regulations in the first place, the Basin Plan Amendment requires that landowners effectively attenuate any increases in runoff that may cause increases in downstream erosion, including increases that might be caused by implementation of erosion control plans submitted to the County for approval under the Napa Regulations. (AR 8284.)

This Basin Plan Amendment establishes programmatic regulatory requirements. The SED's purpose was to evaluate the reasonably

foreseeable impacts from adoption of the TMDL – not a separate entity's regulations. It is axiomatic that an agency has discretion to define the limits of its own project. An agency need not prepare an EIR to consider a project other than as planned and approved. (*Running Fence Corp. v. Superior Court* (1975) 51 Cal.App.3d 400, 430-431.))

C. Summary

In summary, LRC's insistence that the Board was required to do an EIR level analysis of the Napa Regulations is misplaced. Engineered drainage facilities that cause runoff problems, which LRC alleges result from complying with the Napa Regulations, are not a reasonably foreseeable means of compliance because they would not meet the Basin Plan Amendment's performance standards. Even if the Board was required to do the analysis LRC insists on, the Board did so because the Final Staff Report, Basin Plan Amendment, responses to comments and supporting documentation all disclose, as CEQA requires, the potentially significant effects from the use of engineered drainages. The Amendment avoids the effect with the runoff performance standard. In addition, the SED fully evaluates the problem of channel incision.

II. THE SED PROPERLY DEFINES AND EXPLAINS THE PERFORMANCE STANDARD FOR ATTENUATING STORM RUNOFF

LRC next alleges that "the TMDL/BPA includes a mitigation measure in the form of a performance standard for controlling runoff (i.e., '[e]ffectively attenuate significant increases in storm runoff, so that the runoff from vineyards shall not cause or contribute to downstream increases in rates of bank or bed erosion . . . ')." (LRC Brf., p. 34.) On this basis, LRC argues that the SED (a) "fails to fully describe" and (b) "illegally defers" this alleged mitigation measure. (*Id.*) More specifically, LRC contends that the SED lacks "information regarding the feasibility of

achieving mitigation, the criteria for determining the significance of runoff increases, or the measures to avoid significant increases." (LRC Brf., p. 40.) None of those allegations are true.

A. The Runoff Performance Standard is Both a Project Component and a Mitigation Measure in a Limited Sense

Mitigation measures are measures undertaken to mitigate the effects "of the project." (See Pub. Resources Code, § 21002 [EIR must discuss mitigation of significant effects "of the project"].) In view of this definition, it is important, as an initial matter, to recognize that the runoff performance standard serves as a mitigation measure in only one limited respect: to avoid the potential effects of excessive runoff stemming from the use of engineered drainage systems that might be employed as a means of compliance with the project's goal of reducing surface erosion. (AR 1548, 8353.) The runoff performance standard, however, also addresses runoff from sources/activities that are not caused by the project. (AR 9564, 8848-8849, 1714.) In this respect, it is a project component, not a mitigation measure.

The Board added the runoff standard as a project component because excessive runoff leads to downstream erosion, including channel incision, and contributes to downstream sedimentation and habitat degradation. (AR 515, 1599, 1621, 1622, 1719.) Such excessive runoff has multiple causes and sources. Among the most significant is increased runoff stemming from land use changes, such as conversion of land to vineyards. (See, e.g., AR 1621 ["We hypothesize that the current episode of channel down-cutting (channel incision) is in response to the following disturbances including: . . .land-cover changes that have increased peak flows in the river (e.g., vineyards, rural residences, commercial buildings, and roads)"]; AR 1662 ["problem when new and/or replanted hillside vineyards are proposed

and permitted, the design review process needs to incorporate rigorous hydrological analysis to predict potential change in peak runoff rates"]; AR 1714 ["existing and projected future vineyard development has the potential to cause significant long-term impacts to water quality as a result of increases in storm runoff quantity"].)

Even LRC's own expert agrees, averring: "As I have repeatedly pointed out to Napa County in my reviews of Erosion Control Plans, most vineyard conversions significantly change the hydrologic characteristics of the soil substrate in the new vineyard areas. ***The single most important factor in this change*** is the removal of surface stones and/or deep-ripping of soils on hillsides." (AR 9564, emphasis added.) LRC's trial briefs make the same point: "These experts found that the vineyard conversions significantly contribute to ongoing significant sedimentation effects in the Napa River drainage. ***The primary mechanism of this impact is increases in runoff (peak flows) caused by the conversion of natural vegetation to vineyard***, which causes channel incision leading to channel instability and bank failures, which add sediment carried by stream flows to low gradient reaches of the tributaries and main stem of the Napa River. (AR 8848-49.)" (CT 129, emphasis added.)

These land use changes are part of the problem that the project is designed to address. (AR 1714 ["Basin Plan amendment related activities are, by design, intended to decrease peak runoff rates from upland land uses"].) These changes are not effects of the project that must be mitigated, but consequences of past and future land use changes over which, by themselves, the Board has no direct control or even jurisdiction. (AR 1753.)

The only effect of the project itself that LRC identifies as requiring mitigation is the limited potential for some persons to construct engineered drainage facilities as a way to comply with the performance standard requiring control of surface erosion, as discussed above. To the extent that

the project might promote these engineered drainage solutions to its surface erosion standard, and only to that extent, is the runoff performance standard a mitigation measure within the meaning of CEQA. (See Pub. Resources Code, § 21002 [EIR must discuss mitigation of significant effects of the project].)

With this distinction in mind, we turn to LRC's specific complaints.

B. The SED Specifies Measures to Meet the Runoff Performance Standard

LRC contends that the SED "is fatally vague with respect to the measures that will be used to attenuate increases in surface runoff to less than significant levels." (LRC Brf., p. 36.) The text of the SED belies this allegation. Table 11(a) of the Final Staff Report, titled "Summary of Compliance Actions and Permitting Requirements," identifies several methods that will be used for runoff attenuation, including detention basins (to capture runoff), dispersal of runoff (reducing its erosive potential and/or facilitating greater infiltration), use of cover crops or composted mulch (decreasing runoff by increasing the amount of water that is absorbed into the ground), and terracing (slowing runoff and increasing ground absorption), and re-establishing forest cover. (AR 1700.) With respect to erosion that may be caused by increased runoff from engineered drainage facilities, that same table also specifies "reduce/disconnect engineered drainage systems" as a method. LRC does not, and cannot explain, how this "measure . . . to attenuate increases in surface runoff to less than significant levels" is vague in any way, much less "fatally vague." (LRC Brf., p. 36.)

C. To the Extent the Runoff Performance Standard is a Mitigation Measure, It Is Feasible

LRC also contends that the runoff performance standard, as mitigation, is infeasible. (LRC Brf., p. 40.) "A mitigation measure is

feasible if it is capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, social, and technological factors." (*California Native Plant Society v. City of Rancho Cordova* (2009) 172 Cal.App.4th 603, 622, internal quotations omitted.)

The runoff performance standard applies to all existing, replanted and new vineyards. (AR 1714.) Pre-existing vineyards with runoff-causing intensive engineered drainage facilities are part of the environmental baseline which the Basin Plan Amendment is trying to improve. Because the runoff problems in these areas are pre-existing and do not flow from the Basin Plan Amendment, they require no mitigation since they are not a project impact. They are nevertheless addressed by the Basin Plan Amendment because its objective is to improve the existing condition. For replanted and new vineyards, landowners must also implement measures to comply with runoff performance standard to avoid runoff impacts. To the extent these measures are viewed as mitigation, the record includes substantial evidence they are feasible, considering economic, environmental, social, and/or technical factors.

Cover crops, dispersal of surface runoff, detention basins, terracing, and re-establishing forest cover practices to meet the runoff standard can be accomplished in a successful manner. For example, the Napa River Watershed Task Force, a group of technical experts convened to examine the strengths and weaknesses of the Napa Regulations, found that these measures are all feasible approaches for achieving a no-net increase in runoff from a proposed/new vineyard. (AR 3772-3780.) The record contains expert opinions that these methods also effectively attenuate runoff. (See AR 2040-2042 [excerpt from the California Land Stewardship Institute's Fish Friendly Farming Workbook].)

LRC does not specify the way in which the runoff performance standards and the measures under these standards are infeasible, or point to any evidence to suggest that they are infeasible. Thus, LRC has failed to carry its initial burden under CEQA, and its argument must be rejected. (*California Native Plant Society v. City of Rancho Cordova, supra,* 172 Cal.App.4th at p. 626 ["the burden is on the party challenging the EIR to show it is inadequate"].)

D. The SED Specifies Adequate Criteria for Determining the Significance of Runoff Increases

Regarding the "criteria for determining the significance of runoff increases" (LRC Brf., p. 40), the Basin Plan Amendment's performance standard clearly states: "Effectively attenuate significant increases in storm runoff, ***so that the runoff from vineyards shall not cause or contribute to downstream increases in rates of bank or bed erosion***." (AR 19, (emphasis added), 1526 .) The SED also explains that:

> Compliance shall be evaluated through: a) field inventories of vineyard sites; b) review of available information (e.g., property history, vineyard design and management practices, mapping of natural and engineered drainage features, soil and geologic mapping, and topographic mapping); and c) field observations of channel condition in channel reaches draining onto the property, at the point(s) of discharge immediately from the vineyard, and in the first downstream response reach (e.g., gravel-bedded channel reach with a streambed slope ≤ 0.02).
>
> Evidence of active down-cutting or head-cutting, and/or anomalous patterns or intensity of bank erosion (e.g., extensive bank erosion along one or both banks), at/near the point of discharge or in the first downstream response reach will be interpreted to indicate that the upstream vineyard may be contributing to damaging increases in bed and/or bank erosion. In such cases, the landowner and/or manager will be required to implement actions to facilitate recovery of channel habitat structure and balanced fine and coarse sediment budgets in the unstable channel reach.

(AR 1760.)

LRC argues there are several problems with this standard.

First, LRC contends that the standard is qualitative, not quantitative. (See LRC Brf., p. 41 ["the Board has not quantified the potential increases in runoff that must be mitigated"].) However, the Clean Water Act, the Porter-Cologne Act, and CEQA do not require that performance standards (or mitigation measures) be defined numerically or quantitatively. LRC's only authority, a quotation from *Communities for a Better Environment v. City of Richmond* (2010) 184 Cal.App.4th 70 (*CBE*), provides no support for its position. (See LRC Brf., pp. 40-41.) No issue was presented in *CBE* regarding whether the Clean Water Act, Porter-Cologne, or CEQA require quantitative, rather than qualitative, measures of mitigation, and the *CBE* court expressed no view, even in dictum, on that issue.

Instead, in *CBE*, the court rejected a greenhouse gas mitigation plan to be developed and approved by the City of Richmond after project approval where the plan was to consider a menu of implementation measures that were "non-exclusive, undefined, untested and of unknown efficacy" in achieving a "generalized goal" of no net increases in greenhouse gases. (*CBE, supra,* 184 Cal.App.4th at p. 93.) The court held that the only criteria for success of the plan were the "subjective judgment" of the city's council after project approval.

That is not the case here. The runoff performance standard has a clear objective criterion for judging success: increases in rates of downstream bed and bank erosion. In fact, this performance standard was part of the approach used in the field to identify runoff-associated erosion and establish the TMDL's sediment budget. (See, e.g., AR 3875, 3863.) Thus, it has been implemented in the field with success.

Second, LRC contends that the SED fails to identify "criteria to judge its [the runoff performance standard's] efficacy." (LRC Brf., p. 41.) This

allegation has no merit. As quoted above, at AR 1760 the Board expressly explained how compliance with the standard will be evaluated, and its efficacy has been established when used in the field.

Third, with respect to LRC's claim that this was "too late" because the public did not have the opportunity to comment on it (LRC Brf., p. 40), once again LRC is incorrect. The explanation was contained in the response to comments, which is part of the SED under CEQA (Pub. Res. Code § 21080.5, subd. (d)(2)(D); Cal. Code Regs., tit. 23, § 3779 (effective 2/18/2011)), and was made available for public review and comment prior to the Board hearing approving the project (see, e.g., AR 8019).

As a practical matter, the performance standard finally adopted by the Board is eminently sensible. The whole point of the vineyard performance standard for storm runoff is to avoid increases in rates of downstream bed or bank erosion. (See, e.g., AR 8283-8284.) Accordingly, as the SED explains, the best, most direct and practical measure of unacceptable runoff is to look at where the impacts will occur: at the stream beds and banks, rather than some numeric proxy for excessive runoff that is susceptible to scientific error and requires vintners to act as scientists and measure peak river flows during storms. (AR 1760-1762.) Indeed, the record shows that a numeric criterion that relies on the proxy of measuring the amount of runoff, rather than directly observing its effect, is inherently inaccurate. (AR1761; see also AR 1516.) Any such measurement will have error of 10-15% (i.e., the "actual" amount of runoff can be 10-15% more or less than the most accurate possible measurement). (AR 1761.) This is another reason the performance standard the Board ultimately adopted calls for direct monitoring of runoff effects as a measure of whether increases are "significant." (See AR 1761-1762.) Also, looking directly at the bed and banks to ensure runoff impacts are not occurring affords vintners a chance

to evaluate whether their management practices are working to meet the runoff standard. (AR 1762.)

E. The Board Did Not Improperly Defer Mitigation

LRC's arguments about deferred mitigation ignore the difference between a project-level CEQA analysis and a programmatic CEQA document.

LRC argues that the process for determining the significance of runoff increases is impermissibly vague, emphasizing language stating that the *details* of the analytical approach will be developed later. (LRC Brf., p. 40.) This simply means the Board, in future permitting actions, will develop methodologies and protocols for future permittees to perform field surveys to recognize problematic runoff leading to bed and bank erosion. This field survey method already exists and was in fact used by the Board to construct the sediment budget for the TMDL (AR 3863); it just needs to be translated for use by future permittees. This is consistent with the programmatic nature of a TMDL and implementation plan and thus the SED. (See, e.g., *Prosolino, supra*, 291 F.3d 1123, 1129, *City of Arcadia, supra*, 265 F.Supp.2d 1142, 1144-1146; see also, Pub. Res. Code, § 21159, subd. (d) [project-level analysis not required].)

LRC's main concern with the runoff standard appears to be potentially significant increases in runoff that can result from engineered drainage structures that it believes will be used to meet the sedimentation standard.[15] To the extent LRC is concerned about engineered drainages that vineyards have already installed, these are part of the CEQA baseline

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[15] LRC does not identify any other potentially significant impacts of either standard. Speculation that additional, unspecified impacts might occur is not enough to invalidate an EIR. (Pub. Resources Code, § 21082.2, subd. (c) [substantial evidence].)

and the Board need not analyze their impacts except to the extent the Basin Plan Amendment will make them more significant. To the extent LRC is concerned with the impacts of new engineered drainage structures or other impacts,[16] the Board's analysis was adequate.

LRC overstates the specificity that is necessary in a performance standard. The First District Court of Appeal recently upheld a requirement to develop and implement landscaping plan as sufficient to mitigate visual impacts, "since it commits the [lead agency] to mitigation and sets out a standard for the landscaping plan to follow, to wit: to reduce and soften the visual intrusion of the tanks." (*North Coast Rivers Alliance v. Marin Municipal Water District Board of Directors* (2013) 216 Cal.App.4th 614, 629-631.)

In general, reliance on a performance standard to mitigate potential impacts does not improperly defer mitigation if the standard meets certain requirements:

> [T]he exception allowing the deferral of the formulation of mitigation measures has been expressed in a variety of ways. From these cases, we glean two principles that are important to this case. First, the deferral of the formulation of mitigation measures requires the agency to commit itself to *specific performance criteria* for evaluating the efficacy of the measures implemented. Second, the "activity" constituting the CEQA project may not be undertaken without mitigation measures being in place "to minimize any significant adverse effect on the environment of the activity." (§ 21080.5, subd. (d)(3)(A).) In other words, the deferral relates only to the *formulation* of mitigation measures, not the mitigation itself. Once the project reaches the point where activity will have a significant adverse effect on the environment, the mitigation measures must be in place.

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[16] Again, engineered drainage structures need only be analyzed to the extent they are reasonably foreseeable means of compliance with the TMDL; the structures themselves are not the "project."

(*POET LLC v. State Air Resources Board* (2013) 218 Cal.App.4th 681, 737-738 (emphasis in original) (petition for review and request for depublication pending).)

The court in *POET* found the Air Resources Board failed to meet this standard. However, *POET* is distinguishable from the facts at hand. The issue in *POET* was mitigation of the effects of potential increases in nitrogen oxide (NOx) emissions resulting from the Air Resources Board's Low Carbon Fuel Standards (LCFS), which encourage use of biodiesel fuel. (*Id.*, at p. 732.) Unlike the TMDL, the Air Resources Board did not adopt a regulatory standard for NOx emission increases that would result from the LCFS, which it did adopt. The Air Resources Board deferred both the specification of mitigation measures and the adoption of a performance standard until after it approved the LCFS, stating that it was "currently conducting an extensive test program for biodiesel and renewable diesel and will follow that effort with a rulemaking to establish specifications to ensure there is no increase in NOx." (*Ibid.*) Moreover, the court in *POET* found the Air Resources Board's performance standard inadequate because it simply stated a general goal of zero NOx emissions, but "established no objective performance criteria for measuring whether the stated goal (zero NOx emissions) will be achieved (*id.*, at p. 740).

Here, the Board did more than express an intention to promulgate a standard in the future or require a permittee to prepare a plan and follow it. The Board adopted the performance standard, and the SED identifies measures and objective criteria for measuring whether the standard is achieved: "Evidence of active down-cutting or head-cutting, and/or anomalous patterns or intensity of bank erosion (e.g., extensive bank erosion along one or both banks), at/near the point of discharge or in the

first downstream response reach." (AR 1760.) The Board did not improperly defer anything.[17] Finally, unlike the LCFS, the TMDL and Implementation Plan are not self-enforcing; the Board must issue a subsequent permit that must comply with both the performance standard and CEQA. Thus, mitigation is not improperly delayed. (*See, POET, supra,* 218 Cal.App.4th at p. 740.)

CBE, supra, is also distinguishable on its facts. *CBE* involved replacement and upgrade of an oil refinery. In that case, the lead agency delayed identification and analysis of a possible impact until late in the CEQA process, and improperly deferred any consideration of mitigation until after approval of the project. (*CBE, supra,* 184 Cal.App.4th at p. 95.) Although the lead agency committed to review and approve the mitigation plan, the project itself involved no further approvals that would take into account the mitigation plan or the environmental impacts it addressed.

Sacramento Old City Assoc. v. City Council (1991) 229 Cal.App.3d 1011, 1029 (*SOCA*) is more factually similar to this case. *SOCA* allows deferral of mitigation measures if three criteria are satisfied: (1) practical considerations prevented the formulation of mitigations measures at the usual time in the planning process, (2) the agency committed itself to formulating the mitigation measures in the future, and (3) the agency adopted specific performance criteria that the mitigation measures were required to satisfy. (*SOCA, supra*, at pp. 1028-1029.) With regard to the

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[17] The Board cannot dictate the manner of compliance with their regulations. (Wat. Code, § 13360.) However, the Board can establish performance criteria. (See *Tahoe-Sierra Preservation Council v. State Water Resources Control Bd.* (1989) 210 Cal.App.3d 1421, 1438; *Pacific Water Conditioning Assn., Inc. v. City Council* (1977) 73 Cal.App.3d 546, 554.) The Board still can, and must, analyze the reasonably foreseeable means of compliance with regulatory performance criteria. The Board did so here.

first criterion, each permit will also be subject to CEQA's mitigation requirements. The practical considerations that led the Board not to issue a permit when it adopted the Basin Plan Amendment are the same as those that led to the creation of CEQA's tiering process. Second, each permit is a discretionary decision of the Board and is subject to CEQA and the required analyses of impacts and imposition of mitigation measures. (See *Committee for a Progressive Gilroy v. State Water Resources Control Board* (1987) 192 Cal.App.3d 847 [waste discharge requirements exclusively under Porter-Cologne Act are subject to CEQA].) Third, the Board adopted specific performance criteria as explained in Section II above, that must be met through future permits. Requiring compliance with environmental permitting requirements alone can be a proper mitigation measure. (*North Coast Rivers Alliance, supra*, 216 Cal.App.4th at 647-648.)

III. THE SED DID NOT UNLAWFULLY PIECEMEAL ENVIRONMENTAL REVIEW

Finally, LRC contends that the Board has engaged in unlawful "piecemealing," by failing to evaluate the environmental effects of what LRC terms the "WDR waiver policy." (LRC Brf., p. 41.) This contention is based on a misconception of CEQA's limitations on piecemealing, the role of waivers or permits in implementing the TMDL, and the Water Code's provisions regarding the regulation of waste discharges.

CEQA specifically contemplates that programmatic planning decisions, like Basin Plans, may be evaluated by "master," or "program," or "tiered" EIRs, deferring review of more specific, related projects. (See, e.g., *Rio Vista Farm Bureau Center v. County of Solano* (1988) 5 Cal.App.4th 351, 371-372.) The purpose of such programmatic EIRs is to "allow a lead agency to focus on decisions ripe for review." (Pub. Resources Code, § 21093, subd. (a); Cal. Code Regs., tit. 14, § 15385, subd. (b).) An agency that chooses to tier may provide analysis of general matters in a broader

EIR, then focus on narrower project-specific issues in later EIRs. (Cal. Code Regs., tit. 14, § 15152, subd. (a); *In re Bay-Delta Programmatic Environmental Impact Report Coordinated Proceeding, supra,* 43 Cal.4th at p. 1173.) Put differently, "an agency can use a 'program EIR,' for 'a series of actions that can be characterized as one large project and are related either: (1) Geographically, [or] (2) As logical parts in the chain of contemplated actions, . . . Section 15385 of the Guidelines provides for 'tiering' of EIRs, which is 'the coverage of general matters in broader EIRs (such as on general plans or policy statements) with subsequent narrower EIRs . . . .' " (*Laurel Heights Improvement Assn. v. Regents of University of California* (1988) 47 Cal.3d 376, 399, fn. 8, citations and quotation omitted.)

CEQA's prohibition against "piecemealing," in contrast, is designed to prevent project proponents from evading environmental review or underestimating environmental impacts by chopping up larger projects into many little ones, "each with minimal potential impact on the environment" but "cumulatively may have disastrous consequences." (*Bozung v. LAFCO* (1975) 13 Cal.3d 263, 283-284.)

Here, LRC alleges that the Board is not permitted to evaluate the Basin Plan Amendment alone in one environmental document (the SED), and to defer development and consideration of the issuance a waiver of waste discharge requirements (to regulate discharges), for later CEQA review. LRC offers two bases for its contention. It argues that the Board cannot defer review of waivers of waste discharge requirements until they are issued because what it calls "the waiver policy" is an "integral part" of the TMDL's implementation program. (LRC Brf., pp. 44-50.) It also argues that "the waiver policy" is an integral part of the Basin Plan Amendment itself. These arguments are two sides to the same coin and each lacks merit.

As a threshold matter, nothing in the Basin Plan Amendment contains or requires a waste discharge waiver "policy." (AR 10-29.) Rather, the Basin Plan Amendment states:

> The state's Policy for Implementation and Enforcement of the Nonpoint Source Pollution Control Program requires regulation of nonpoint source discharges using the Water Board's administrative permitting authorities, including waste discharge requirements (WDRs), waiver of WDRs, Basin Plan Discharge Prohibitions, or some combination of these. Consistent with this policy, Tables 4.1-4.4 specify actions and performance standards by nonpoint source category, as needed to achieve TMDL sediment targets and allocations in Napa River watershed. The Water Board will consider adopting conditions for waiving WDRs that apply to the nonpoint sources (vineyards, grazing, roads, etc.) listed in Tables 4.1-4.4, address all pollutants of concern, protect all beneficial uses, and balance the agricultural, environmental, recreational, and residential needs of the watershed.

(AR 17.) The Basin Plan Amendment merely recognizes that dischargers will have to meet its performance standards, and that the Water Code requires them to have authorization for discharges through either waste discharge requirements or a waiver of waste discharge requirements. (See AR 19.) It states that a waiver of waste discharge requirements "may" be adopted by the Board, but neither establishes all of the necessary conditions for such a waiver nor approves one. (AR 19, footnote 2; see also *id.* at 1691, 7810.) The Basin Plan Amendment simply provides the framework for the next steps in the regulatory process.

Including the waiver in the Basin Plan Amendment would have made little sense in light of the much broader scope of the permitting action as compared to the Basin Plan Amendment. For example, the TMDL in the Basin Plan Amendment only deals with sediment. But a waiver or waste discharge requirements must include conditions or requirements to regulate all water quality impacts of the subject discharges. (Wat. Code, §§ 13263,

13269.) In addition to sediment, discharges from vineyards, grazing, and other activities subject to the TMDL include waste that the Regional Water Board must regulate, such as pesticides or excess nutrients. Similarly, the Regional Water Board intends to issue a permit to cover watersheds in both Napa and Sonoma, which covers a larger geographical area than the Napa River Sediment TMDL does. The permit will address erosion and sedimentation issues in all areas the permit covers, and will also implement any other applicable TMDLs. (*Ibid.*)

In *Stanislaus Natural Heritage Project v. County of Stanislaus* (1996) 48 Cal.App.4th 182, the EIR improperly deferred for a future EIR any analysis of the impacts of providing water for a planned 5,000 unit residential development project which could not proceed without the water, and where there was no on-site water source. (*Id.* at p. 199.) Here, the Basin Plan Amendment can be implemented without any "waiver policy." The *Stanislaus Heritage* court found that tiering was improper in that case because: "The project here is not merely a general policy document, but an actual specific plan." (*Id.,* at p. 204.) Here, in contrast, the TMDL/Basin Plan Amendment is quintessentially a policy/planning document. (See *City of Arcadia, supra,* 265 F.Supp.2d at p. 1144, 1145 ["a TMDL forms the basis for further administrative actions that may require or prohibit conduct with respect to particularized pollutant discharges and waterbodies."].)

In light of the relationship between the Basin Plan Amendment and permits just described, tiering environmental review – addressing the Basin Plan issues that were ripe for review first, and deferring consideration of project-specific permits until they are developed – was the proper course, and is consistent with CEQA. (See, e.g., Pub. Resources Code, § 21159, subd. (d) [agency need not do project level analysis when adopting rule or regulation].)

This approach, moreover, is consistent with the Water Code's requirement that in issuing any permit, the Board affirmatively determine that "the waiver is consistent with any applicable state or regional water quality control plan [basin plan]." (Wat. Code, § 13269, subd. (a)(1).) Logically, it made sense for the Board to amend the Basin Plan first, so that when it considered issuing permits for sediment discharges it could make the required consistency determination.[18] This is exactly the sort of situation that program-level CEQA documents and tiering are intended to address.

This is not what courts consider improper piecemealing. Courts will sometimes find improper piecemealing where an agency omitted analysis of a "crucial element" of the project. For example, in *San Joaquin Raptor/Wildlife Rescue Center v. County of Stanislaus* (1994) 27

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[18] LRC states the Board's Nonpoint Source Policy allows a categorical waiver of waste discharge requirements in a basin plan. (LRC Brf., p. 47.) This does not mean the Board was required to do so here. As the Nonpoint Policy states, the boards have broad discretion in how they use the administrative tools provided by the Water Code. (AR 4181-4200, Nonpoint Source Policy, p. 4.) Reasons for adopting waivers of waste discharge requirements through separate permitting actions as opposed to a basin plan amendment rulemaking are numerous.

Adopting a waiver as a basin plan amendment is far more cumbersome and time consuming than issuing a stand-alone waiver or other type of permit, due to the lengthy approval process for basin plan amendments. For example, waivers only last five years (Wat. Code, § 13269(a)(2)). It is far less efficient to do a rulemaking, which requires State Water Board review (Wat. Code, § 13245) and is subject to the Administrative Procedures Act ("APA" at Gov. Code, § 11353(b)) even once, let alone every five years. Any necessary modifications of the waiver must go through the same process. Waivers are not subject to the APA unless they are part of a basin plan amendment; see Gov. Code, § 11352), and are subject to permissive rather than mandatory State Water Board review (see Wat. Code, § 13320).

Cal.App.4th 713, the Court of Appeal determined that the agency had improperly piecemealed by omitting any analysis of a contemplated sewer expansion related to a residential development project, because the sewer expansion was a "crucial element[] without which the project[] cannot go forward." (*Id.*, at p. 732.) Such is not the case here. Because the Basin Plan Amendment does not require any waiver of waste discharges, much less any "waiver policy," the project – the Basin Plan Amendment – obviously can go forward without one. In fact, as set forth in Respondent's Request for Judicial Notice (dated October 15, 2013), the Board is not going to proceed with a waiver, but general waste discharge requirements, to implement the TMDL.[19]

Similarly, this is not a case where the agency possessed detailed information about the project that it excluded from consideration in the EIR. (See, e.g., *Citizens Assn. for Sensible Development of Bishop Area v. County of Inyo* (1985) 172 Cal.App.3d 151, 169 [project EIR improperly excluded consideration of " 'the development of three of the five lots which will not initially be developed with the proposed shopping center, but 'will eventually be developed with satellite buildings (i.e., bank, offices, service station, restaurant),' and the approximately 265 single-family dwelling units 'planned for' north of the shopping center"]; *Laurel Heights Improvement Assn. v. Regents of University of California* (1988) 47 Cal.3d 376, 396 [project EIR improperly excluded consideration of future

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[19] LRC sought, and this Court has since granted, judicial notice of the Board's February 2, 2012, web pages showing that the Board was in fact developing a conditional waiver of waste discharge requirements for vineyards. Earlier on March 8, 2013, however, the Board published on its website that it is <u>not</u> proceeding with a waiver of waste discharge requirements for vineyards and is instead going to proceed with general waste discharge requirements and notified interested persons, including LRC. (See Respondent's Request for Judicial Notice filed herewith.)

activities that included and expansion of the facility on the property, including almost a doubling of personnel expected on the campus. "Under the standard we have announced, it is therefore indisputable that the future expansion and general type of future use is reasonably foreseeable [and should have been considered in the initial EIR]."].)

Here, in contrast, the specific requirements of any waiver or other type of permit (beyond a requirement to comply with the Basin Plan's performance standard, whose reasonably foreseeable methods of compliance were evaluated in the Final Staff Report [see, e.g., AR 1691-1694]) were not yet developed at the time the SED was prepared. Absent that information, there was nothing else for the SED at issue here to review.[20] "Where future development is unspecified and uncertain, no purpose can be served by requiring an EIR to engage in sheer speculation as to future environmental consequences." (*Rio Vista, supra,* 5 Cal.App.4th at p. 372, citation and quotation omitted; see also *Sierra Club v. City of Orange* (2008) 163 Cal.App.4th 523, 533 [where a project will be implemented in phases, the EIR is not deficient simply because the description of the future approvals is not fully defined].) The Board was correct in responding to LRC's piecemealing allegations as follows:

> CEQA does not compel public agencies to conceive and develop projects before they are ready to do so. Rather, it requires public agencies to consider the whole of an action when evaluating environmental impacts and not to defer environmental analysis—not project development. The Water Board is within

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[20] LRC claims that the trial court mistakenly applied the substantial evidence test to this issue. The trial court framed the question as to how much material was required at this time and cited *Madeira Oversight Coalition, Inc. v. County of Madera* (2011) 199 Cal.App.4th 48, 101-102. As the trial court correctly determined, information is available in the SED regarding the amount and type of information regarding permits that was necessary for informed decision at this point. (CT 542-543.)

> its regulatory prerogative to first do a rulemaking in the form of a Basin Plan amendment to set forth the rules . . . and then later use all of its regulatory tools, such as permits, waivers of permits, and enforcement orders, to achieve those rules. Nothing in CEQA compels that the Water Board do all of the preceding at once. For example, when the Water board adopts a water quality objective through a Basin Plan amendment, it does not and need not simultaneously adopt permits to achieve the new standard.

(AR1462.)

In short, this case is "not a project development proposal which contemplates additional development or even the acquisition of property for future facilities without further consideration of environmental consequences or upon issuance of a negative declaration." (*Rio Vista, supra,* 5 Cal.App.4th at p. 372.) Here, the permitting actions that the Basin Plan amendment foresees are also subject to CEQA. (See *Committee for a Progressive Gilroy, supra,* 192 Cal.App.3d at p. 862) Therefore, the determination of whether the Board conducted an appropriate CEQA analysis for a specific, future permit is not ripe until the Board issues the permit.

CONCLUSION

For the forgoing reasons, the decision of the trial court should be affirmed.

Dated: October 15, 2013

Respectfully submitted,

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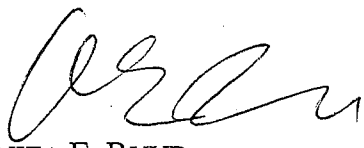

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SF2012205248

CERTIFICATE OF COMPLIANCE

I certify that the attached STATE WATER RESOURCES CONTROL BOARD'S ANSWERING BRIEF uses a 13 point Times New Roman font and contains 13,450 words.

Dated: October 15, 2013

KAMALA D. HARRIS
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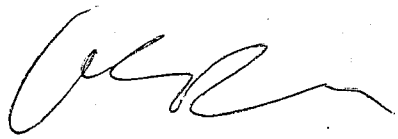

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DECLARATION OF SERVICE BY U.S. MAIL

Case Name: **Living Rivers Council v. State Water Board**
Court of Appeal Case No.: **A137082**

I declare:

I am employed in the Office of the Attorney General, which is the office of a member of the California State Bar, at which member's direction this service is made. I am 18 years of age or older and not a party to this matter. I am familiar with the business practice at the Office of the Attorney General for collection and processing of correspondence for mailing with the United States Postal Service. In accordance with that practice, correspondence placed in the internal mail collection system at the Office of the Attorney General is deposited with the United States Postal Service with postage thereon fully prepaid that same day in the ordinary course of business.

On October 15, 2013, I served the attached

STATE WATER RESOURCES CONTROL BOARD'S ANSWERING BRIEF

by placing a true copy thereof enclosed in a sealed envelope in the internal mail collection system at the Office of the Attorney General at 455 Golden Gate Avenue, Suite 11000, San Francisco, CA 94102-7004, addressed as follows:

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I declare under penalty of perjury under the laws of the State of California the foregoing is true and correct and that this declaration was executed on October 15, 2013, at San Francisco, California.

Joan Randolph
Declarant

Joan Randolph
Signature

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Filed per AB 6.2 (2012)

Case No. A137082

IN THE COURT OF APPEAL OF THE STATE OF CALIFORNIA
FIRST APPELLATE DISTRICT
DIVISION 2

LIVING RIVERS COUNCIL,

Appellants,

vs.

STATE WATER RESOURCES CONTROL BOARD,

Respondents.

Court of Appeal First Appellate District
FILED
NOV - 5 2013
Diane Herbert, Clerk
by _____ Deputy Clerk

On Appeal from the Superior Court
County of Alameda
The Honorable Evelio Grillo
Superior Court Case No. RG10543923

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- Citation to the Certified Administrative Record of Proceedings (a complete electronic copy and index of which has been transmitted to the Court of Appeal from the trial court), are denoted by "AR" followed by page number.
- Citation to the Clerk's Transcript are denoted by "CT" followed by page number.
- Citation to the Reporter's Transcript are denoted by "RT" followed by page and line numbers.

NOTE ON CITATIONS TO CEQA AND THE CEQA GUIDELINES

- The California Environmental Quality Act ("CEQA") is codified at Public Resources Code section 21000, *et seq*. All statutory citations in this brief are to CEQA, unless stated otherwise, and shall consist of a section symbol and then the relevant section number and subdivision(s). For example, a citation to Public Resources Code section 21080, subdivision (e)(2), would appear as: § 21080(e)(2).
- The CEQA Guidelines[1] are codified at California Code of Regulations, title 14, chapter 3, section 15000, et seq. All citations to the CEQA Guidelines shall consist of the word "Guidelines" followed by the relevant section number and subdivision(s). For example, a citation to Cal. Code Regs., tit. 14, ch. 3, § 15088.5, subd. (a)(4) would appear as: Guidelines, § 15088.5(a)(4).

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[1] The Supreme Court has not decided whether the Guidelines constitute regulatory mandates. "At a minimum, however, courts should afford great weight to the CEQA Guidelines except when a provision is clearly unauthorized or erroneous under CEQA." (*Laurel Heights Improvement Assn. v. Regents of University of California* (1988) 47 Cal.3d 376, 391, fn. 2 (*Laurel Heights I*).)

I. INTRODUCTION

Plaintiff/Appellant Living Rivers Council ("Living Rivers") and other environmental groups have spent the last 13 years critiquing Napa County's program for enforcing its Conservation Regulations because that program causes significant sediment impacts on the Napa River. Despite Living Rivers' presentation of this history to Respondent State Water Resources Control Board ("Board"), the Board placed its stamp of approval on this program by establishing compliance with the Conservation Regulations as a means of compliance with the Napa Sediment TMDL's performance standard for surface erosion. The Board did so by adopting a performance standard for surface erosion that provides: "Control excessive rates of sediment delivery to channels resulting from vineyards" and then legislating that "Napa County Conservation Regulations (County Code, Chapter 18.108) are effective in the control of excessive rates of sediment delivery resulting from vineyard surface erosion." (AR:19, Table 4.1, n. 5.)

The Board violated the California Environmental Quality Act ("CEQA") because its Environmental Document fails to assess the environmental impacts of this "means of compliance" with the TMDL. In its Respondent's Answering Brief ("RB"), the Board argues that it was not required to do so because it adopted a mitigation measure to reduce the impacts of this "means of compliance." This is incorrect as a matter of law, because under CEQA, an Environmental Impact Report ("EIR"), or EIR-equivalent document, cannot meet the lead agency's obligation to assess and disclose the significant impacts of a project simply by adopting a mitigation measure. (See Section II.A, infra.)

The Board also violated CEQA because, after conceding that the runoff increasing effects of engineered drainage facilities installed to comply with the

TMDL's surface erosion standard are "significant," rather than adopting specific mitigation measures to substantially reduce this impact, the Board adopted a performance standard intended to reduce increases in runoff. But the Board did not comply with CEQA's requirements for using a performance standard rather than specific mitigation measures, including its requirements that achieving the performance standard is feasible, that there are objective measures to judge success in achieving the performance standard, and that it be enforceable. (See Section II.B, infra.)

The Board also violated CEQA because it "piecemealed" its environmental review of the TMDL/BPA. (See Section II.B, infra.)

The Board's opposition arguments are rebutted in detail below.

II. ARGUMENT

A. THE ENVIRONMENTAL DOCUMENT FAILS TO ASSESS THE ENVIRONMENTAL IMPACTS OF NAPA COUNTY'S PERMIT PROGRAM PURSUANT TO ITS CONSERVATION REGULATIONS AS A MEANS OF COMPLIANCE WITH THE TMDL/BPA's PERFORMANCE STANDARD FOR SURFACE EROSION.

1. The Board's Argument That it Was Not Required to Assess the Environmental Impacts of Napa County's Permit Program Is Without Merit.

a. The Board's argument that footnote 5 of Table 4.1 has no regulatory effect is waived and incorrect.

The TMDL/BPA includes a performance standard for controlling surface erosion and establishes that compliance with the Napa County Conservation Regulations complies with this performance standard, stating: "Control excessive rates of sediment delivery to channels resulting from vineyards[,]" with a footnote stating: "Napa County Conservation Regulations (County Code, Chapter 18.108) are effective in the control of excessive rates of sediment delivery resulting from vineyard surface erosion." (AR:19, Table

4.1, n. 5.) This is a legislative declaration of a means of compliance.

The Board implies that footnote 5 in Table 4.1 (at AR:19) is not a "regulatory provision" of the BPA TMDL, citing Government Code section 11353(b)(2)(A). (RB 17.) The Board readily admits, "This Basin Plan Amendment establishes programmatic regulatory requirements." (RB 26.) Presumably the Board would concede that the surface erosion performance standard contained in Table 4.1 is one of these a "regulatory provisions."[2] But the Board does not explain why footnote 5 is not a regulatory provision. Nor does the Board cite to any evidence in the record or elsewhere that supports this assertion. Therefore, the argument is waived. (*Marriage of Falcone & Fyke* (2012) 203 Cal.App.4th 964, 1004; *Cahill v. San Diego Gas & Elec. Co.* (2011) 194 Cal.App.4th 939, 956, ["We are not bound to develop appellants' arguments for them ... The absence of cogent legal argument or citation to authority allows this court to treat the contentions as waived" (internal quotes and citation omitted)].)

b. The Board's argument that "engineered drainage facilities that do not meet the runoff performance standard are not a reasonably foreseeable means of compliance" is without merit.

The Board argues it was not required to assess the impacts of Napa County's permit program because:

> Engineered drainage facilities that do not meet the runoff performance standard are not a reasonably foreseeable means of compliance with the Basin Plan Amendment, because they do not comply with the Amendment's requirements.

(RB 18.) This argument cleverly elides the issue and commits clear errors of

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[2] Similarly, the Board argues that the runoff performance standard contained in Table 4.1 of the TMDL/BPA is a regulatory provision. (RB 18.)

law.

(1) The Board mischaracterizes Living Rivers' claim.

Footnote 5 of Table 4.1 does not refer to "engineered drainage facilities" as "effective in the control of excessive rates of sediment delivery resulting from vineyard surface erosion." It refers to the "Napa County Conservation Regulations" as so effective. Therefore, Living Rivers submitted evidence to the Board that compliance with Napa County's Regulations occurs when a landowner obtains approval of an Erosion Control Plan from the County; and that these plans often cause significant sediment impacts on the Napa River by causing increased storm runoff, which leads to increased channel incision and increased sediment delivery to the Napa River. (Living Rivers Opening Brief, pp. 21-24.)

Living Rivers' evidence includes evidence that Napa County's enforcement of these regulations often involves both the approval of engineered drainage facilities and the failure to assess how the construction of such facilities will increase storm runoff. Examples include the following comments:

> "The approach of the Napa County ordinances is fundamentally incorrect and cannot protect either public health and safety or long-term land productivity. The existing ordinances seem to assume that by attempting to capture sediments from upland vineyard conversion areas, downstream cumulative effects are reduced to insignificance. This is not correct. Increased upland sediment yields, while important, are less hazardous to Napa Valley than are the changes in runoff timing, volumes, and rates. Increased runoff does have cumulative downstream effects through changes in rates of runoff and frequency of runoff events of a given magnitude. These changes are likely to be a significant factor in changing sediment loads in the main Napa River through changes in stability of its side tributaries." Exhibit

7, p. 1.

(AR:8849; 8930.)

> Routine application of the MUSLE [Universal Soil Loss Equation] without accommodation of the unique Napa Valley soil characteristics that give rise to the inherently extremely valuable substrate for wine grape production leads to errors that are now being multiplied throughout the Napa appellations. For example, the simple error that assumes, based on agricultural soil loss principles, that the steeper the slope, the greater the risk of soil losses and increased runoff, is fundamentally false for the eastern side of the Napa Valley uplands and for parts of the western side. In fact, slopes less than 30 percent have higher sediment and water yields than do those of greater than 30 percent, simply because the less steep slopes retain the clay·rich volcanic soils that are simultaneously more valuable for premium grape production and are more susceptible to decreased infiltration capacity when disturbed and are therefore more hazardous for conversion.

(AR:8931.)

The Regulations assume that upland sediment trapping features (such as swales and basins, also referred to as "CAVs"), once constructed, will continue indefinitely to capture sediment. (AR:8964-65.) However, as sediment is "trapped" it builds up in the feature and, over time, accumulated soil not only decreases the feature's capacity to capture sediment, but also completely fills up the swale or basin so that it no longer captures any sediment at all. (See *id.*) As Dr. Curry explained,

> It is simply not sound science to contend that sites of past accumulation will always remain sites of future accumulation. The accumulation of sediment raises the ground level and thus steepens the gradient on water flowing over the surface. This is a progressive process that leads to exponentially decreased trap efficiency on a linear time scale. The "basins" are now at the geomorphic concept of "grade;" that is, they are an equilibrium surface and slope for transport of water and sediment.

(AR:8965.) The Regulations do not provide any method for estimating how long a particular feature will remain effective:

> If sediment can be trapped in the CAVs as is purported, then it must be able to be transported to and across the CAVs. If we are to believe that it is only to be transported part way through the CAV, what is the process by which it is stopped? If it is gradient, what is that critical threshold gradient, and why don't we see an accumulation of sediment at that point in the CAV? If it is vegetative cover, what is that critical cover roughness? It is all downhill and water flows downhill and water carries sediment. There must be some means to estimate the future trapping efficiency of these CAVs and their future lifetimes. If we can believe that the CAVs will store 28.3 tons per year more sediment annually, how long will that go on before the storage capacity reaches it limit? Why is this not an exponential function?

(AR:8965.)

The Regulations do not include any methods for maintaining the effectiveness of Erosion Control Measures. Dr. Curry asked:

> [H]ow will the proposed Erosion Control features be maintained? If 81 tons per annum will be trapped on the vineyard slopes and 160 tons will be trapped in the ECP features, how will that annual accumulation be moved back to the hillslopes or to landfill sites or to the stream courses? <u>Silt fences and hay bale check dams fill up, and become progressively less efficient each season and each storm as gradients are steepened over</u>, around and through these constructed features by accumulating sediment. <u>The ECPs</u> acknowledge need for maintenance but <u>do not discuss or evaluate the procedures for such maintenance in perpetuity</u>. Various techniques are possible using terraces, cover cropping, grassed berms between vine rows, capture and carry-back to the upper vineyard surfaces, offsite disposal, etc. One effective technique is to use a cover of stones as a "stone mulch" that is allowed to erode in place to form an interlocking porous pavement around the vines, ultimately reducing net erosion to very low levels.

(AR:8966-67 [emphasis added].)

> The ECPs need to provide analyses through time, not just at a single point at the initiation of the vineyard. The engineering calculations that lead to the estimates of soil erosion and transport and changes that may occur with the hanged land uses need to be projected into the future in a dynamic and defensible fashion. Through analysis of sediment accumulations below hillside vineyards that have been managed for almost 1000 years in southern France (cf, Chateau-Neuf-du-Pape Rhone terraces) we learn that erosion volumes and rates do not have to be constant, and that where initial disturbance conditions that may be very great (as for example new vineyards in the Cahors region with deep mechanized ripping) such sites can be managed to reduce erosion rates to less than those before conversion in as little as 10 years. We need to know how this is going to be done in Napa County if the ECP program is to be effective.

(AR:8967.)

Erosion control measures approved by the County and implemented in compliance with its Conservation Regulations have not been able to reduce surface erosion without simultaneously causing peak flow increases that lead to sedimentation caused by channel incision. As Dr. Curry explained:

> [M]y prior extensive reports and analyses of specific conversion projects in Napa County have all demonstrated that <u>you cannot simultaneously reduce sediment yield with engineering structures and flow routing while maintaining or reducing peak flow runoff</u>. [...] In my opinion, it may be possible to implement the TMDL and meet its goals with local control, but that has not been demonstrated to date and the bulk of the evidence suggests that in the specific case of Napa County, there is an entire land-use engineering industry that has not been able to deal with impacts of peak flow increases associated with land conversions.
>
> The source-area erosion control technology promoted by the consultant community in Napa County is good and seems to be improving through time. But <u>the engineering solutions for</u>

> headwater source-area sediment yield reduction and/or local capture of sediments almost invariably result in greater off-site, downstream, concentration of runoff that then leads to bank and streambed erosion to balance sediment load with the increased stream power. It seems that recommendations for more and larger-capacity on-site runoff detention are largely ignored in favor of reduced sediment concentration in that runoff.

(AR:9563 [emphasis added].)

In another example relating to a 2003 vineyard conversion project, County staff relied on unsupported assumptions, rather than readily available data, and failed to employ proper methods for measuring cumulative watershed effects in preparing an ECP. (AR:8948-50.) Moreover, the erosion control measures employed would only function for a short time and the ECP did not include any effective monitoring or maintenance measures:

> There are no proposed sediment traps for the Atwater conversion site. Only rock-lined channels are proposed in the ECP although grass-lined channels are mentioned. Those will be of value only for a limited number of years until they sediment-in and become smooth transport channels. All of the proposed vineyard erosion control measures have only limited lifetimes. Only the 70% ground cover between vines may be considered permanent and that achievement is very improbable. []The primary mitigations that are called for comprise landowner monitoring with occasional county oversight and the ability to change land use practices should cover or erosion control not be effective. This is clearly an attempt to close the hen house after the fox got in. It is unrealistic to assume that the vineyards would be pulled up and replanted to native cover if the 70% cover could not be maintained annually. It is also unrealistic to have the County or RCD inspect after each major storm, and there are no "performance standards" implied by the cover value. With no sediment traps in the ECP, there is no way to readily assess how well the site is performing.

(AR:8950-51 [emphasis added].)

The erosion control measures and cumulative impacts analysis in an

ECP approved by Napa County for a 2002 vineyard conversion were inadequate:

> The Erosion Control Plan (ECP) uses grass-lined ditches on site with a site-boundary rock check dam. [. . .]
> The ECP Plan itself is not adequate to permit evaluation of its efficacy and the applicants' responses to the Napa County Planning Department checklist (Request for Additional Information) are inadequate and do not support the Approval that was provided by the County. Neither the ECP nor any of the documents that I have seen provide any information on how the increased runoff will be captured or moderated to avoid cumulative offsite impacts. The proposed grassy drainageway is shown simply ending at a fence line that may or may not be a parcel boundary. No map depicting the context of this enhanced drainage facility is provided and no discussion exists to place this conversion in the context of other local developments that may affect runoff of water and/or sediment. There are no facilities other than the grass-lined ditch proposed for capture of increased sediment yield and no retention basin proposed for the increased runoff.
>
> [The soil loss calculation assumed short slopes and the existence of diversion ditches every 75 feet along the ditch]. However, it is apparent that no "Diversion Ditches" exist or are proposed to break up the long slope lengths and no structures exist to capture sediment or runoff from any such diversion ditches. Thus, the USLE calculations for short slope lengths are meaningless and have little or no relevance to the proposed conversion. There is no text that calls out the maintenance requirements for the rock check dam or the grass-lined ditch or the trapped sediment, and no figure or calculation of the volumes of water or sediment that it may be designed to trap.

(AR:8953-54 [emphasis added].)

Another Napa County-approved ECP in 2002 failed to assess cumulative watershed impacts and did not include any monitoring or maintenance measures:

> [T]he ECP does not develop any information on expected changes in runoff or sediment yield in any fashion that informs decision makers, that permits assessment of potential cumulative offsite effects, or that protects Napa County public resources offsite. Structures and straw-bale sediment traps are carefully specified for initial installation but are nowhere called out in annual maintenance or storm-time maintenance specifications. These structures cannot, by their very nature and design, serve as permanent erosion control features. They do not appear to be designed in any way to handle stormwater flow increases. Cover crops are to be maintained and are factored into the analyses through the USLE wherein they are assumed to exist in perpetuity in good condition but are not assumed to control all erosion.

(AR:9442 [emphasis added],) (See generally, AR:8848-8849; Exhibits 7-17 at AR:8928-9051; Exhibits 30-32 at AR:9426-9442).

By focusing only on "engineered drainage facilities" and ignoring Napa County's practice of approving ECPs without adequately assessing how construction of such facilities will increase storm runoff, the Board mischaracterizes the issue presented and fails to brief it.

(2) The Board's argument is inconsistent with CEQA.

The Board's argument is inconsistent with CEQA because it implies that the impact analysis that the Environmental Document failed to conduct (i.e., assessing the impact of enshrining compliance with the Napa regulations as a means of compliance with the TMDL) is unnecessary because adoption of the runoff performance standard will avoid the impact.[3] This is incorrect as

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[3] See also RB 24 ["Precisely because the Board evaluated engineered drainage facilities (and because it was concerned with runoff impacts from vineyard conversions), it adopted a project change in the form of a vineyard runoff performance standard to avoid impacts from engineered drainage facilities that could cause significant increases in storm runoff offsite. (AR:1548 ['[b]y

a matter of law. The Board cannot discharge or obviate its legal obligation to assess the impact of the project by adopting a mitigation measure. This approach may work for CEQA review at the level of a Negative Declaration (see e.g., CEQA Guidelines, section 15070, et seq), but not for CEQA review at the level of an EIR. (*Galante Vineyards v. Monterey Peninsula Water Management Dist.* (1997) 60 Cal.App.4th 1109, 1123, citing *Santiago County Water Dist. v. County of Orange* (1981) 118 Cal.App.3d 818, 831.) For EIR-level review, the impact analysis is required to *inform* the identification and development of mitigation measures. (See e.g., CEQA Guidelines, section 15126.2, 15126.4.) Here, the Board concedes that the Environmental Document is intended to be "EIR-level" rather than "Negative Declaration-level." (RB 25-26)

In Argument section I.B.2 of its brief, the Board argues that including Napa County's administration of its Conservation Regulation program in the Environmental Document's impact analysis would add nothing to the Environmental Document's discussion of the impacts of engineered drainage facilities. (RB 26.) This is pure speculation and it is inconsistent with subdivision (a) of Public Resources Code § 21005, which provides:

> Legislature finds and declares that it is the policy of the state that noncompliance with the information disclosure provisions of this division which precludes relevant information from being presented to the public agency, or noncompliance with substantive requirements of this division, may constitute a prejudicial abuse of discretion within the meaning of Sections 21168 and 21168.5, regardless of whether a different outcome would have resulted if the public agency had complied with those provisions.

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adding this performance standard, we fully avoid this potential impact'], 8253.)"].)

Further, analysis of the Napa County's efforts to simultaneously control both surface erosion and runoff increases would shed light on the difficulties and unintended consequences involved. Indeed, the Conservation Regulations do not mandate the use of "engineered drainage facilities" to control surface erosion. Thus, their use is a result of discretionary decisions made by Napa County planners in the administration of their permit program. (See Appellant's Motion for Judicial Notice, Exhibit 5, p. 14, Section 18.108.080.C ["To the extent relevant to the activity proposed, the erosion control plan shall substantially conform to the guidelines contained in the excerpts from the Hillside Vineyard Unit Redwood Empire Target Area Manual (Soil Conservation Service/Napa County Resource Conservation District, 1985) and the most current Manual of Standards for Erosion and Sediment Control Measures . . ."].)

Moreover, even if adopting a mitigation measure could obviate the Board's legal obligation to assess the impact of the TMDL's surface erosion standard, the Board's adoption of the runoff standard does not serve that purpose here. This is because the runoff standard is not intended to reduce the impact of establishing compliance with Napa County's Conservation Regulations as a means of compliance with the surface erosion standard. According to the Board, it is only intended to reduce the impact of using "engineered drainage facilities" to control surface erosion. (RB 28 ["[i]t is important, as an initial matter, to recognize that the runoff performance standard serves as a mitigation measure in only one limited respect: to avoid the potential effects of excessive runoff stemming from the use of *engineered drainage systems* that might be employed as a means of compliance with the project's goal of reducing surface erosion"] (emphasis added).)

(3) The Board's argument is circular.

The Board's argument is also circular. The assertion that "engineered drainage facilities that do not meet the runoff performance standard are not a reasonably foreseeable means of compliance with the Basin Plan Amendment because they do not comply with the Amendment's requirements" (RB 18) includes unstated and false assumptions. It assumes that Napa County will assure that engineered drainage facilities meet the runoff performance standard. But Living Rivers comments demonstrate that Napa County does not do so. In short, the Board simply assumes away all of the evidence on which Living Rivers has based its comments to the Board, its claims in this lawsuit, and the issues presented in this appeal.

As a result, the Environmental Document omits necessary information due to the Board's failure to follow CEQA's requirement that it assess the environmental impact of the TMDL's means of compliance. This represents a failure to proceed in the manner required by law, which is reviewed de novo. (*Vineyard Area Citizens for Responsible Growth, Inc. v. City of Rancho Cordova* (2007) 40 Cal.4th 412, 428 (*Vineyard*) ["For example, where an agency failed to require an applicant to provide certain information mandated by CEQA and to include that information in its environmental analysis, we held the agency 'failed to proceed in the manner prescribed by CEQA'"].)

2. The Board's Argument That the Environmental Document Does Assess the Environmental Impacts of Napa County's Permit Program Is Without Merit.

The Board argues that if it was required to assess the impacts of the means of compliance with the TMDL's surface erosion standard, the Environmental Document did so. The Board bases this assertion on two propositions: (1) Living Rivers' comment letters supply the missing analysis

and disclosure; and (2) there is discussion in the record of proceedings relating to engineered drainage facilities, increased runoff and channel incision. Both contentions lack merit.

a. Living Rivers' comments cannot cure the defective Environmental Document.

As discussed in Living Rivers' Opening Brief (at pages 21-27), Living Rivers submitted extensive comments to both Napa County and to the Board showing that Napa County' approval of Erosion Control Plans for new vineyard pursuant to its Conservation Regulations leads to increased sedimentation of the Napa River. The Board argues that these comments supply the analysis and disclosure that is otherwise lacking in the Environmental Document, citing *Residents Ad Hoc Stadium Com. v. Board a/Trustees* (1979) 89 Cal.App.3d 274, 285-86 (*Residents Ad Hoc Stadium*). (RB 23.) However, neither *Residents Ad Hoc Stadium* nor the cases it cites support this proposition.

The opinion in *Residents Ad Hoc Stadium* stands for the unremarkable proposition that comments on an EIR and the agency's responses thereto are considered part of the Final EIR. In *Residents Ad Hoc Stadium* and the CEQA and NEPA cases its cites, however, this fact is only relevant to whether the agency adequately responded to public comments. For example, in *Society for California Archaeology v. County of Butte* (1977) 65 Cal.App.3d 832, the court held:

> the board did not respond adequately to the adverse environmental indications presented to it. In fact, it did not really respond to them at all. The proceedings following the draft EIR, including the minutes of the three board meetings of March 1974, show only the receipt of further adverse archaeological information, followed by approval of the EIR and of the subdivision without any meaningful comment thereon.

(Id. at p. 840.) Similarly, in the instant case, the Board never responded to Living Rivers comments that it needed to assess *how* Napa County approves vineyard Erosion Control Plans. (See also, *City of Des Plaines v. Metropolitan Sanitary Dist.* (7th Cir. 1977) 552 F.2d 736, 739-740 ["The substantial input of the City and others opposing the site selection ultimately made were set out in full and analyzed intelligently"]; *Conservation Council of North Carolina v. Froehlke* (M.D.N.C. 1972) 340 F.Supp. 222, 226 ["When, as here, the issue of procedure relates to the sufficiency of the presentation in the statement, the court is not to rule on the relative merits of competing scientific opinion. Its function is only to assure that the statement sets forth the opposing scientific views, and does not take the arbitrary and impermissible approach of completely omitting from the statement, and hence from the focus that the statement was intended to provide for the deciding officials, any reference whatever to the existence of responsible scientific opinions concerning possible adverse environmental effects"].)

Further, the Board's notion that Living Rivers' comments could or did cure a defective Environmental Document EIR ignores the fundamental purpose of EIRs and EIR-equivalent documents.

> The EIR is also intended "to demonstrate to an apprehensive citizenry that the agency has, in fact, analyzed and considered the ecological implications of its action." [citations] Because the EIR must be certified or rejected by public officials, it is a document of accountability. If CEQA is scrupulously followed, the public will know the basis on which its responsible officials either approve or reject environmentally significant action, and the public, being duly informed, can respond accordingly to action with which it disagrees. [citations] The EIR process protects not only the environment but also informed self-government.

(*Laurel Heights Improvement Assn. v. Regents of University of California*

(1988) 47 Cal.3d 376, 392.) Living Rivers extensive comments regarding the flaws in Napa County's program simply cannot "demonstrate to an apprehensive citizenry that the agency has, in fact, analyzed and considered the ecological implications of its action." Only the Board can do that - by adopting a revised Environmental Document.

b. The discussion in the record of proceedings of engineered drainage facilities, increased runoff and channel incision does not legally assess the environmental impacts of Napa County's Permit Program.

The Board cites to information scattered across the record of proceedings in an effort to show that the Environmental Document analyzed and disclosed the environmental impacts of Napa County's permit program. (RB 21-26.) This effort fails, for three reasons: (1) the cited information relates to generic erosion process, not to Napa County's administration of its Conservation Regulations; (2) under CEQA, information not contained in the Environmental Document cannot remedy informational defects in that document; and (3) much of the information the Board cites relates to surface erosion processes, not sedimentation caused by increases in runoff to stream channels.

(1) The information the cited by the Board relates to generic erosion processes, not to Napa County's administration of its Conservation Regulations.

The portions of the record on which the Board relies do not reflect any assessment or disclosure in the Environmental Document of the sedimentation impacts of Napa County's administration of its Erosion Control Plan permit program. The general acknowledgment that increases in peak flows can and do cause channel incision and bank erosion is not the same as evaluating

whether and to what extent Napa County's administration of its permit program is contributing to this mechanism of harm.

(2) Under CEQA, information not contained in the Environmental Document cannot remedy informational defects in that document.

The Board points to numerous statements made by staff during hearings and in internal memoranda to show that the Environmental Document analyzed and disclosed the impacts of erosion control measures on stream channel erosion (RB 21, quoting AR:8283 [meeting transcript] and citing 8022-8023 [meeting transcript], AR:8283-8284 [meeting transcript], AR:3875 [staff (Napolitano) memo to file].)

These cites, no matter what they say, cannot remedy a defective EIR-level Environmental Document because it is settled that significant impacts must be disclosed and analyzed in the EIR itself. "The data in an EIR must not only be sufficient in quantity, it must be presented in a manner calculated to adequately inform the public and decision makers, who may not be previously familiar with the details of the project. "[I]nformation 'scattered here and there in EIR appendices' or a report 'buried in an appendix,' is not a substitute for 'a good faith reasoned analysis'" (*Vineyard, supra,* 40 Cal.4th at p. 442.) As the Supreme Court observed:

> The audience to whom an EIR must communicate is not the reviewing court but the public and the government officials deciding on the project. That a party's briefs to the court may explain or supplement matters that are obscure or incomplete in the EIR, for example, is irrelevant, because the public and decision makers did not have the briefs available at the time the project was reviewed and approved. The question is therefore not whether the project's significant environmental effects *can* be clearly explained, but whether they *were.*

(*Id.* at p. 443 (emphasis in original.)

For instance, the staff memorandum cited by the Board acknowledges that erosion control measures on hillslope vineyards cause stream channel erosion:

> Where engineered drainage systems are used on hillslope sites to capture sheetflow and discharge it through subsurface drainage pipes, and where these same vineyards are developed on soft sedimentary bedrock and/or were forested prior to development, we often found that storm runoff from vineyards was concentrated in time and/or space, appearing to contribute to active bed and bank erosion in headwaters channels at or near the point(s) of discharge from the vineyard.

(AR:3875 [emphasis added].) In addition to its failure to address Napa County's role in the process, the Board's reliance on this internal memorandum is misplaced because disclosure and analysis of potentially significant impacts must occur in the Environmental Document. (*Vineyard, supra,* 40 Cal.4th at pp. 442-43.) Casual acknowledgment of a significant impact at a hearing, or in an internal agency memorandum, is not "information in an [SED]" and, without question, does not "inform" the reader of the project's potentially significant impacts. (*Id.* at p. 442.)

The remainder of the Board's citation to material outside of the Environmental Document is either irrelevant or mis-cited. For instance, the Board points to its internal investigation and analysis of sediment sources. (See RB pp.21-22.) Yet, the fact that the Board thoroughly studied the issue does not support a conclusion that it adequately communicated its findings to the public and the decision makers in the Environmental Document. Similarly, the fact that *some* erosion control measures do not cause significant impacts does not obviate the admitted fact that others do. (See RB 21-22; AR:8022-8023 [Staff concluded that approaches taken to control surface erosion in vineyards are not *dominated* by intensive engineering approaches],

3875.)

(3) Much of the information the Board cites relates to surface erosion processes, not sedimentation caused by increases in runoff.

The Board asserts that the Environmental Document's acknowledgment that some erosion control measures increase and/or concentrate storm runoff constitutes analysis and disclosure of their impacts on channel incision. (RB 22.) The cited portions of the Environmental Document, however, discuss *upland surface erosion*, not stream channel erosion. For instance, the Board points to statements in the Environmental Document's Source Analysis that "if vineyard development involves installation of subsurface drainage pipes, more storm runoff, at a faster rate, may be discharged off-site than under natural conditions" and "if discharges from drainage pipes are collected at a single point of discharge, there is the potential to further concentrate runoff volume." (RB 22, quoting AR:1600, Figure 3.)

However, the Source Analysis explains that "these effects have the potential to cause <u>off-site gully erosion and/or shallow landslide failures</u>, most often at or near the points of discharge from the site and in locations where <u>hillslope soils</u> are deep and bedrock is soft (easily eroded)." (*Id.*, quoting AR:1600, emphasis added.) "Hillslope soil" erosion, "off-site gully erosion and/or shallow landslide failures" refer to the erosion and deposition of upland surface sediments caused by diverting concentrated stream runoff over erodible land features, which is separate and distinct from erosion of the stream channel itself. (See AR:1624, 1630.)

Similarly, the response to comments at AR:638-639 do not disclose that vineyard erosion control measures cause channel incision. That discussion also addresses upland surface erosion. (See RB 22, citing AR:638-639 ["at some

hillside vineyards, excessive reliance on engineered drainage to control surface erosion on-site has inadvertently caused or contributed to off-site gully erosion at or near the points of discharge from the vineyards" [emphasis added].) Further, rather than studying and disclosing the extent to which vineyard development increases storm runoff and peak flow in the Napa River and its tributaries, the response merely states that:

> To address these questions, more field data collection and analysis is needed to determine how much runoff may be increasing and under what circumstances, and to evaluate potential consequences with regard to location(s) and effects on channel physical habitat structure. [Certain] models are commonly used in Napa County to evaluate effects of vineyard development on storm runoff. Changes predicted by these models are strongly influenced by professional judgment regarding the selection of key parameter values, and therefore it is not surprising that conclusions derived from these models are sometimes controversial.

(AR:369.)

The discussion of increased runoff at AR:1662 is likewise entirely focused on sedimentation caused by upland surface erosion, stating that "Hillside vineyard development at some sites, especially at those underlain by soft bedrock and/or where vineyards replace forest cover has also caused off-site channel enlargement (gully development) and associated shallow landslide failures." (AR:1662 [emphasis added].) That discussion concludes without any mention of in-channel erosion, asserting that, "the goal for management of existing vineyards should be to reduce peak storm runoff rates into actively eroding gullies or landslides or other potentially unstable areas, as needed to avoid and control human-caused increase in sediment delivery from unstable areas." (AR:1662 [emphasis added].)

The underscored language indicates that the Environmental Document's

analysis is directed at upland surface, rather than stream channel, erosion because it does not address the delivery of runoff into stream channels. Nothing therein acknowledges that erosion control measures that increase or concentrate the amount of *water* in the channel (by, for instance, directly diverting runoff into the river) will increase sedimentation by causing channel incision. (See also AR:1602 [establishing separate sediment source categories for, *inter alia,* (1) colluvial bank (hillslope soil) erosion, gullies, and shallow landslides and (2) channel incision].) Accordingly, the Board is incorrect that the Environmental Document discloses that erosion control measures "cause stream banks to collapse." (See RB 23, citing AR:1662.)

The Board misleadingly suggests that the discussion of "gully" erosion constitutes a discussion of channel incision, asserting that "a gully is a type of channel." (RB 23, n11.) However, as demonstrated by the discussion above, "channel incision" refers to bed and bank erosion within a stream channel – not "upland channels" such as gullies. (See also AR:515 [discussing runoff impacts on the "enlargement of <u>upland channels (e.g., gully formation) and associated shallow landslides</u>" and separately the impacts of peak flow increases on "channel incision."].) This discussion misleadingly conflates upland sediment sources such as eroding gullies with stream channel sediment sources related to channel incision.

The Board asserts that it disclosed the impacts of vineyards on channel incision in a response to a comment on channel incision at AR:515. (RB 22). However, far from "agreeing" with comments that "increases in peak flows caused by conversions of natural vegetation to vineyard cultivation a[re] a primary vector causing channel instability, including bank failures, [and] channel incision," the Board artfully dodged the issue by (1) agreeing that "human caused increases in peak flow as a result of land use changes have

caused significant enlargement of upland channels (e.g., gully formation) and associated shallow landslides and (2) "also agree[ing]" that is reasonable to hypothesize that human-caused peak flow increases contributes to channel incision and that the hypothesis could be confirmed or rejected by field measurement and modeling." (See AR:515 [emphasis added].) The Board did not conduct or cite any field investigations addressing this issue and did not address the primary issue raised in the comment: that vineyards and their erosion control measures contribute to channel incision.

The Board's reference to general discussions of channel incision at AR:1621 and AR:1599 are also unavailing. (RB 22.) In these cites the Board attributed channel incision impacts primarily to historical activities, makes only a passing reference to vineyards, and does not explain how vineyard erosion control measures approved by Napa County contribute to channel incision (or how to avoid it). The passage states:

> We hypothesize that the current episode of channel down-cutting (channel incision) is in response to the following disturbances including: a) a suite of direct alterations to the river channel and/or its floodplain (e.g., levee building, channel straightening, filling of side channels, removal of debris jams, historical gravel mining, and dredging); b) construction of four large tributary dams between 1939 and 1959 that capture runoff and coarse sediment delivered from approximately 20 percent of the land area in the watershed; and c) land-cover changes that have increased peak flows in the river (e.g., vineyards, rural residences, commercial buildings, and roads). Each of the above actions may contribute to down-cutting either through increasing the capacity of the river to transport sediment or by decreasing its supply of coarse sediment (e.g., tributary dam construction).

(AR:1621.) Similarly, at AR:1599 the Board identifies historical factors; "watershed development" in general, and direct channel alterations as the causes of channel incision. (AR:1599 ["As the watershed was developed,

upslope disturbances of vegetation and soil likely increased runoff rates and sediment input to channels. These historical and recent impacts, in combination with direct alterations of channels and adjacent flood basins, have destabilized channels where they traverse alluvial fan and valley deposits. This has led to active and rapid channel down-cutting and accompanying bank erosion that is widespread along Napa River and lower reaches of many of its tributaries today."].)

The Environmental Document further states that "[a] suite of management actions have likely caused or contributed to channel incision, including (but not necessarily limited to): levee building, large tributary dams, straightening of some mainstem channel reaches, filling of side channels, historical gravel mining, dredging to reduce flood risk, and intensive removal of large woody debris."[4] (AR:1637.) Nowhere does the Environmental Document either (1) identify erosion control measures permitted by the County pursuant to its Conservation Regulations as cause of stream channel erosion or (2) analyze and disclose the extent of their influence. (See *id*.)

3. Napa County's Conservation Regulations Program Is Not Part of The Environmental Baseline, It Is Part of The TMDL/BPA "Project."

The trial court characterized the Napa County Conservation Regulations as part of the "regulatory baseline." (CT 545.) The Board does not argue this point in its Answering Brief, therefore, it is waived. (*Kelly v. CB & I*

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[4] See also AR:1633 ("Almost all incision is found to be anthropogenic based on the very high estimated rate [of incision], and initiation during historical period, which is coincident with a period of intensive levee building and dam construction, filling of flood basins adjacent to channels, navigational dredging, intensive removal of debris jams, and historical gravel mining and channel straightening.").

Constructors, Inc. (2009) 179 Cal.App.4th 442, 451.) Nevertheless, to the extent this Court may consider the issue, Living Rivers briefs it here.

The TMDL/BPA's adoption of Napa County's program of issuing Erosion Control Plan permits alters the regulations that apply to vineyard landowners in ways that the Environmental Document does not explain or assess. The TMDL/BPA's performance standard for surface erosion from vineyards is:

> "Control excessive rates of sediment delivery to channels resulting from vineyards"[n.5]
> [5]Napa County Conservation Regulations (County Code, Chapter 18.108) are effective in the control of excessive rates of sediment delivery resulting from vineyard surface erosion. Rates of sediment delivery are "excessive" when the predicted soil loss rate exceeds the tolerable soil loss rate (T), calculations as described in "The Universal Soil Loss Equation, Special Applications for Napa County, California" (USDA, 1994)

(AR:19, Table 4.1.)

In contrast, the operative provisions of Napa County's Conservation regulations provide, with respect to surface erosion:

> It is furthermore intended that these regulations accomplish the following: . . . (2) Minimize soil erosion caused by human modifications to the natural terrain.

(Appellant's Motion for Judicial Notice, Exhibit 5, p. 1, Section 18.108.010.)

> Minimization of Erosion Potential. Site development shall be conducted in a manner, based upon the topography and soil type, which creates the least potential for erosion.

(*Id.*, p. 13, Section 18.108.070.D.)

> Conformance With Guidelines. To the extent relevant to the activity proposed, the erosion control plan shall substantially conform to the guidelines contained in the excerpts from the Hillside Vineyard Unit Redwood Empire Target Area Manual (Soil Conservation Service/Napa County Resource Conservation

> District, 1985) and the most current Manual of Standards for Erosion and Sediment Control Measures (published by the Association of Bay Area Governments), which are incorporated herein by reference.

(*Id.*, p. 14, Section 18.108.080.C.)

Thus, the TMDL/BPA combines Napa County's discretion under the above ordinance to "minimize erosion" by requiring that projects "substantially conform" to standards set forth in the named manuals with a new criterion of "excessive" rates of sediment delivery to channels defined by reference to the Universal Soil Loss Equation. How this regulatory scheme affects the environment is a topic that the Environmental Document should, but did not, investigate.

B. THE ENVIRONMENTAL DOCUMENT VIOLATES CEQA BY FAILING TO DESCRIBE THE PROJECT'S PERFORMANCE STANDARD FOR CONTROLLING INCREASES IN RUNOFF.

The Board agrees with the factual underpinnings of Living Rivers case, i.e., that efforts to control surface erosion to comply with the TMDL can increase runoff, which can lead to increased sedimentation of the Napa River. (RB 29-30.) The Board also concedes that the TMDL's runoff standard is a mitigation measure that it adopted to reduce the TMDL's significant sedimentation impact caused by efforts to comply with the TMDL's surface erosion standard. (RB 28-30.) Therefore, the only dispute is whether the mitigation measure meets CEQA's requirements that it be effective, feasible, and enforceable.[5]

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[5]In this context as well, the Board incorrectly focuses solely on "engineered drainage facilities" rather than compliance with Napa County's Conservation Regulations as the cause of increases in runoff that this mitigation measure is designed to reduce. (See e.g., RB 29-30 ["The only effect of the project itself that LRC identifies as requiring mitigation is the limited potential for some

The TMDL/BPA includes a mitigation measure in the form of a performance standard for controlling runoff (i.e.,"[e]ffectively attenuate significant increases in storm runoff, so that the runoff from vineyards shall not cause or contribute to downstream increases in rates of bank or bed erosion." (AR:19.) But the Board erred under CEQA because rather than adopting specific mitigation measures to substantially reduce this impact, the Board adopted a performance standard, but without complying with CEQA's requirements for using a performance standard rather than specific mitigation measures, including its requirements that achieving the performance standard is feasible, that there are objective measures to judge success in achieving the performance standard, and that it be enforceable. (See Opening Brief, pp. 4-40.)

These requirements are triggered by the Board's concession that the impact that the mitigation measure is designed to reduce is "significant." (RB 26 ["there was exactly the fair argument that LRC claims exists"]; RB 24, quoting AR:1548 ["[b]y adding this performance standard, we fully avoid this potential impact"], AR:8253; Pub Res. Code 21081(a)(1).) Therefore, the Board's self-serving description of the circumstances requiring adoption of this measure as "limited" (e.g., RB 29-30) does not vitiate or "relax" these requirements.

The Board concedes, as it must, that the runoff performance standard is not a specific mitigation measure or even a group of mitigation measures.

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persons to construct engineered drainage facilities as a way to comply with the performance standard requiring control of surface erosion, as discussed above. To the extent that the project might promote these engineered drainage solutions to its surface erosion standard, and only to that extent, is the runoff performance standard a mitigation measure within the meaning of CEQA."].)

Instead, it is a performance standard that landowners are free to meet any way they choose. As discussed in Living Rivers Opening Brief, in order to use a performance standard rather than specifically described and adopted mitigation measures, CEQA requires that (1) practical considerations prohibit devising such measures early in the planning process; (2) there be evidence that achieving the performance standard is feasible; (3) the agency commits itself to devising measures that will satisfy the performance criteria (*Gentry v. City of Murrieta* (*Gentry*) (1995) 36 Cal.App.4th 1359, 1393-1396); (4) there be evidence that meeting the performance standard is effective in reducing significant impacts; and (5) there be objective criteria for measuring success." (*Communities for a Better Environment v. City of Richmond* (2010) 184 Cal.App.4th 70, 93, 95 (*CBE*).)

Here, the runoff performance standard is "Runoff from vineyards shall not cause or contribute to downstream increases in rates of bank or bed erosion." (AR:19, Table 4.1.)

1. There Is No Evidence That it Is Feasible to Achieve the Runoff Performance Standard.

The Board argues that there are specific methods that are proven to be feasible in achieving this standard. (See RB 30, citing to AR:1700 ["detention basins (to capture runoff), dispersal of runoff (reducing its erosive potential and/or facilitating greater infiltration), use of cover crops or composted mulch (decreasing runoff by increasing the amount of water that is absorbed into the ground), and terracing (slowing runoff and increasing ground absorption), and re-establishing forest cover."].) However, Table 11(a) of the Final Staff Report, upon which the Board relies, merely identifies "reasonably foreseeable compliance actions" that regulated parties *may* take in effort to comply with the runoff performance standard. (AR:1700.) Nothing in the BPA/TMDL or

Environmental Document analyzes how effectively these actions attenuate runoff or whether implementing these actions would prevent vineyard runoff from contributing to channel incision. Indeed, the BPA/TMDL doesn't even state the degree to which runoff must be attenuated in order to prevent increased rates of bank or bed erosion.

The Board cites Napa River Watershed Task Force Report (analyzing the weaknesses of the Napa Regulations) for the proposition that these measures are "all feasible approaches for achieving a no-net increase in runoff from a proposed/new vineyard." (RB 31, citing AR:3772-3780.) The Board is incorrect. The Task Force concluded that the current management practices under the Regulations do not fully address downstream hydrologic impacts and streams, and land downstream from the project site "may be affected by fluctuations in peak flow and associated impacts such as bank erosion, channel degradation, and flooding." (AR:3773.) The report recommended that runoff/erosion control measures should be selected based on the hydrologic sensitivity of the site and may include preparing a standard erosion control plan; applying no-till ground cover on a maximum percentage of ground; installing energy dissipaters, water spreaders, sheet flow spreaders; constructing discharge detention basins; and/or vegetation retention or replanting. (AR:3774.) However, the report recognizes that these measures may not be feasible in all sites and, in such cases, proposals for new vineyard development should be "reevaluated." (AR:3778-3780.) Further, there is no indication that the County adopted these recommendations or that the measures listed can be feasibly implemented on existing vineyards to ensure that the site does not contribute to increased channel incision.

The Board also refers to the Fish Friendly Farming Workbook, which provides that drainage systems should be designed "to result in only very small

increases in peak stormwater volumes . . . [and] should not increase peak stormwater discharge over pre-project conditions by more than 10-15% for tile 2-, 5-, and 10-year events." (AR:2042.) However, there is no indication that a drainage system that increases peak runoff by 10-15% would prevent vineyards from causing or contributing to increased rates of bank or bed erosion, as required by the runoff standard. (See AR:2040-2042; AR:1700; AR:9592-9593.)

2. The Runoff Performance Standard Does Not Provide Objective Criteria for Measuring Success.

The Board argues that the objective criterion for judging success of the runoff performance standard to "effectively attenuate runoff" is "increases in rates of downstream bed and bank erosion." (RB 33.) The Board asserts that "this performance standard was part of the approach used in the field to identify runoff-associated erosion and establish the TMDL's sediment budget," but its citations to the record do not support this conclusion. (RB 33, citing AR:3875; 3863.) The memo at AR:3875 merely discusses staff's observations of drainage systems where "storm runoff from vineyards was concentrated in time and/or space, appearing to contribute to active bed and bank erosion in headwaters channels at or near the point(s) of discharge from the vineyard." (*Id.* at 3875.) The memo does not explain how staff determined that the runoff source "'appeared' to contribute to channel incision" and provides no information about how the Board will determine whether a runoff sources is doing so in the future. (*Ibid.*) Additionally, the report at AR:3863 describes the field surveys and methods of estimating rates of sediment delivery from landslides and eroding gullies. (*Ibid.*) The Board does not explain how these field surveys or methods for measuring upland sediment sources could be used to determine whether a particular vineyard is (or may) causing or contributing

to increased rates of channel incision. (*Ibid.*)

However, none of these measures are specified in the BPA/TMDL. More important, the Board argues that a process of "field inventories," "review of available information," and "field observations" described at RB 32 and AR:1760 will ensure that these measures are used and that they achieve the performance standard. However, this process is only included in the Responses to Comments and is not included in the BPA/TMDL. Therefore, it is not enforceable as required by CEQA (*Lincoln Place Tenants Ass'n v. City of Los Angeles* (2005) 130 Cal.App.4th 1491, 1508; CEQA Guidelines, section 15126.4(a)(2) ["Mitigation measures must be fully enforceable through permit conditions, agreements, or other legally-binding instruments. In the case of the adoption of a plan, policy, regulation, or other public project, mitigation measures can be incorporated into the plan, policy, regulation, or project design"].)

In addition, this "process" measure was not circulated for public comment. The Board argues in its brief that it was, but the record shows only that it is dated October 1, 2010, only four days before the Board approved the TMDL/BPA on October 5, 2010. (AR Index, page 2.) Even if four days was a reasonable time for public comment, which it is not, there is no evidence that the Board notified the public of the availability of this response to comments before the October 5, 2012 approval hearing.

C. THE ENVIRONMENTAL DOCUMENT PIECEMEALS ENVIRONMENTAL REVIEW OF THE PROJECT'S WDR WAIVER POLICY.

Under CEQA, in assessing whether a project may have a significant effect on the environment, EIRs and EIR-level Environmental Documents must include the entire "project." "Project" is broadly defined and construed

in order to maximize protection of the environment. (*Nelson v. County of Kern* (2010) 190 Cal.App.4th 252, 271, citing *San Joaquin Raptor I, supra,* 27 Cal.App.4th at p. 730), and includes "the whole of an action" or the entire activity which has a potential to directly or indirectly result in a physical change in the environment, and which is undertaken, supported or approved by a public agency. (Guidelines, § 15378(a) & (c).) Similarly, EIRs and EIR-level Environmental Documents must assess the environmental impacts of reasonably foreseeable future activities associated with the project where these activities may contribute to significant environmental effects. (*Laurel Heights I*, *supra*, 47 Cal.3d at 395-396.)

The Board's Environmental Document was required to assess the environmental impact of the WDR waiver policy because the waiver is part of the whole of the project or a reasonably future activity associated with the project. The Board opposition arguments are without merit.

1. The WDR Waiver Policy Is Part of the TMDL/BPA CEQA "Project."

a. The evidence showing that the WDR waiver policy is part of the TMDL/BPA "project" is uncontradicted.

The evidence showing that the WDR waiver policy is part of the TMDL/BPA "project" is uncontradicted, and includes:.

• The TMDL/BPA includes "Required and Trackable TMDL Implementation Measures for Sediment Discharges Associated with Vineyards." (AR:19 [Table 4.1].) These measures specify "Actions" that a vineyard discharger must take to comply with the Basin Plan. (*Ibid.*) A vineyard discharger must either submit a "Report of Waste Discharge(RoWDs)" and obtain "Waste Discharge Requirements (WDRs)" or develop and implement a "farm plan" pursuant to a WDR waiver policy:

> Submit a Report of Waste Discharge[fn2] (RoWD) to the Water Board that provides, at a minimum, the following: a description of the vineyard; identification of site-specific erosion control measures needed to achieve performance standard(s) specified in this table; and a schedule for implementation of identified erosion control measures.
> Or
> Develop and begin implementing a farm plan certified under Fish Friendly Farming Environmental Certification Program or other farm plan certification program, approved as part of a waiver of WDRs. All dischargers applying for coverage under a waiver of WDRs also will be required to file a notice of intent (NOI) for coverage, and to comply with all conditions of the WDR waiver.[fn4]

(AR:19 [Table 4.1].) Footnote 2 provides that the discharger may comply with "applicable conditional waivers of WDRs that may be adopted by the Water Board" in lieu of submitting RoWDs. (*Ibid.*) Footnote 4 provides that the discharger seeking enrollment under a "waiver of WDRs" may be required to comply with additional conditions that "may be required under a General WDR and/or waiver program." (*Ibid.*)

- In response to a comment requesting more information regarding WDR waiver policies, the Board stated:

> [T[he Basin Plan amendment by its nature is a policy document, which sets a general course to be followed and achieved, through subsequent specific regulatory measures: i.e., the WDR waiver programs. <u>Staff's expectations regarding actions on the ground needed to achieve the TMDL</u>, its performance standards, and numeric targets <u>remain unchanged. Evidence of this has been in our commitment to the Fish Friendly Farming Program throughout this process, beginning in 2005</u>.

(AR863 [emphasis added].)

- In another response to comment, the Board affirmed its commitment to allowing vineyards to comply with the TMDL's performance criteria by

implementing farm plan in lieu of submitting WDRs or ROWDs, explicitly stating that "implementation of a farm plan certified under the Fish Friendly Farming Program, when considered together with the Napa County Conservation Regulations, and attainment of the performance standards specified in Table 4.1, do comprise an effective means of achieving the TMDL and its numeric targets for sediment." (AR896.)

- At a 2009 hearing, Regional Board staff Mike Napolitano described "what will be required" in the "proposed Vineyard Waiver." He explained that the Board "ha[s] consistently supported fish friendly farming and indicated that this program provides a vehicle for grape growers to comply with the TMDL...." and that "[t]he Fish Friendly Farming Program ... reli[es] on development of farm or ranch plans, BMPs to control all pollutants of concern, effectiveness monitoring, and site inspections. We expect these elements to be key parts of the Napa River Water Waivers, as well." (AR:8245, 8254-55.)
- As early as 2006, Board staff testified that

> Development of waiver conditions for vineyards ... will be a new effort and, fortunately, a lot of work has already been done in this area and we look forward to building upon programs like fish friendly farming and the Napa County regulations aimed at protecting water quality.

(AR8145.)

- The Regional Board's 2010 Final Staff Report admits that "[i]n the Basin Plan amendment, we have formally recognized the Fish Friendly Farming Environmental Certification Program as an effective means of controlling pollutant discharges associated with vineyards." (AR7904.)

b. Whether the TMDL/BPA can go forward without a WDR waiver policy is immaterial.

The Board argues that the Environmental Document is not required to

assess the environmental impact of the WDR waiver policy because the Basin Plan Amendment does not "require" a waiver policy and the TMDL "can go forward" without one. (RB 41, 44.) The courts have rejected this approach to determining whether an activity is part of the CEQA "project." (See e.g., *Tuolumne County Citizens for Responsible Growth, Inc. v. City of Sonora* (2007) 155 Cal.App.4th 1214, 1231 (*Tuolumne County Citizens*).) In *Tuolumne County Citizens*, the CEQA "project" was a large retail center. The associated activity was a road realignment that would serve the center. The lead agency argued that the road realignment was not part of the retail center project "because they could 'be implemented independently of each other.'" (*Id.*, p. 1229.) The court rejected this test, stating:

> [W]e disagree with Lowe's definition of the term "integral." According to Lowe's appellate brief, acts "are not integral" if they "can be implemented independently of each other." . . . [W]e conclude that the question whether an activity is an "integral" part of a CEQA project merely restates the question whether that activity is part of the "whole of an action" . . . .

(*Id.*, pp. 1229-1230.) Thus, whether the TMDL can proceed without the WDR waiver policy is immaterial. The issue is whether it is part of the CEQA Project as proposed and as adopted by the Board. It was and it still is.

c. The Board's evidence that the TMDL and WDR waiver policy are independent is inadmissable and irrelevant.

Even if whether the TMDL can proceed without the WDR waiver policy is material, the Board's evidence supporting its contention on this point is inadmissable and irrelevant. The Board's Motion for Judicial Notice asks the Court to consider Board staff's notice withdrawing its proposed WDR waiver policy, asserting that staff's "notice" establishes that the Board is "going to proceed with general waste discharge requirements" instead of a

WDR waiver policy. (Answering Brief, p. 44.) However, the notice merely states that "Board staff intend on moving forward with preparation of general waste discharge requirements for vineyard discharges and an associated environmental document under the California Environmental Quality Act in the near future. . . ." (Ruud Decl. ISO Board MJN, Exh. 1 at p. 1 [emphasis added].) This general statement of intent by staff does not establish that the Board will, in fact, abandon the WDR waiver policy in favor of developing general Waste Discharge Requirements. Thus, the Board's evidence has no "tendency in reason to prove or disprove" (Evid Code § 210) anything regarding what the Board will ultimately decide to do in this regard (even if the Board's decision were "of consequence to the determination of the action").

Moreover, the Board does not merely ask the court to take judicial notice of the existence of the notice purportedly withdrawing the WDR waiver policy, it asks the Court to notice the truth of the inference that the Board's litigation counsel derives from it: i.e., that the Board intends to (or will) forever abandon the WDR waiver policy and its Mitigated Negative Declaration and will instead develop general Waste Discharge Requirements. This is improper. "While courts may notice official acts and public records, "[they] do not take judicial notice of the truth of all matters stated therein." (*Mangini v. R. J. Reynolds Tobacco Co.* (1994) 7 Cal.4th 1057, 1063.) "The taking of judicial notice of the official acts of a governmental entity does not in and of itself require acceptance of the truth of factual matters which might be deduced therefrom, since in many instances what is being noticed, and thereby established, is no more than the existence of such acts and not, without supporting evidence, what might factually be associated with or flow therefrom." (*Mangini, surpa,* 7 Cal.4th at pp. 1063-1064.)

d. The differences in the number of pollutants and gerographic areas covered by the TMDL and the WDR waiver policy are immaterial.

The Board argues that the TMDL/BPA and WDR waiver policy are not "integral" because the WDR waiver is "narrower" than the TMDL (RB 40). Ironically, it also argues that the TMDL is narrower than the WDR in terms of the range of pollutants and the geographic area that it covers (RB 41).

More important, the Board presents no reason why the purported difference in range of pollutants prevents joint environmental review of the TMDL and the WDR waiver. This difference is irrelevant under CEQA, because environmental review of both must include an assessment of each activity's effects of increasing the discharge of all pollutants. Joint environmental review ensures that the effects are considered in combination rather than in isolation from each other.

Also, there is no legal requirement that the WDR waiver regulate more pollutants than the TMDL. The Water Board may conditionally waive the requirement for filing a ROWD and issuance of WDRs for a <u>specific</u> type of discharge. (Water Code § 13269, subd. (a)(1).) While the Board may have the authority to regulate other types of discharges (such as nutrients and fertilizers) from vineyards, it has no obligation under the Water Code to regulate those discharges in a WDR waiver specifically tied to the Napa Sediment TMDL.

Similarly, the Board is not legally required to include a larger geographic area in the WDR waiver or general WDRs that Board staff intend to develop. The Board cannot use a voluntary intention regarding geographic scope of the WDR waiver policy to bootstrap itself into an argument that this

difference in scope renders the two activities less than "integral."[6]

2. CEQA's Tiering Provisions Do Not Excuse the Board from Including the Vineyard WDR Waiver Policy in its Environmental Review of the TMDL/BPA.

The Board suggests that CEQA's tiering provisions allow it to defer environmental review of the WDR waiver policy because environmental review of a programmatic planning decision may focus solely on "general" matters, regardless of whether there is sufficient information to analyze the more "narrow" aspects of a proposed plan. (RB 39-40.) This is incorrect for two reasons. First, it assumes the WDR waiver policy is more "project-specific" than the TMDL/BPA in some legally significant way, which is incorrect. Second, tiering does not allow deferred environmental review of parts of the project where, as here, environmental review of all parts is possible before the initial approval.

a. The WDR waiver policy, like the TMDL/BPA, is a program-level legislative rule, not a project-specific approval.

The Board's primary defense to Living Rivers piecemealing claim is that it can use "tiering" under CEQA, stating:

> "In light of the relationship between the Basin Plan Amendment and *permits just described*, tiering environmental review - addressing the Basin Plan issues that were ripe for review first, and deferring consideration of *project-specific permits* until they are developed - was the proper course, and is consistent with CEQA. (See, e.g., Pub. Resources Code, § 21159, subd. (d) [agency need not do project level analysis when adopting rule or regulation].)"

(RB 42 [emphasis added].) The fallacy in this argument is that the "*permits*

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[6] This is especially true where, as here, Staff's intention has not ripened into a final decision by the Board.

just described" (i.e., the WDR waiver policy and the general waster discharge requirements) are not "*project-specific*." They are legislative rules that apply to entire classes of specific projects carried out by landowners who qualify for and elect to "enroll" in the WDR waiver policy or general WDR.

The evidence of this fact is uncontradicted and includes:

- Table 4.1 of the TMDL/BPA states: "All dischargers applying for coverage under a waiver of WDRs also will be required to file a notice of intent (NOI) for coverage . . ." (AR:19.)
- The Board's WDR waiver web page that this Court has judicially noticed states: "The proposed conditions would require vineyard owners and/or operators to: 1. Enroll in the Vineyard Waiver program by submitting a Notice of Intent form, stating their intent to comply with the conditions of the Vineyard Waiver." (Living Rivers' Motion for Judicial Notice, Exh. 3.)
- The Board's proposed "Tentative Order No. 2012-XXXX Conditional Waiver of Waste Discharge Requirements For Discharges from Vineyard Properties in the Napa River and Sonoma Creek Watersheds" (published in November 2012 and now purportedly "withdrawn") proposes to "conditionally waive[] the requirement to file a ROWD and to obtain WDRs pursuant to Water Code sections 13260 and 13263 for discharges of waste from a Vineyard Property" that meets the requirements of the Order. (Living Rivers' Second Motion for Judicial Notice, Exh. 2, pp. 2-3, ¶ 13; p. 6, ¶ 27.)
- The Board's Answering Brief states: "A waiver thus allows a discharger who qualifies, and abides by the conditions, to discharge waste without obtaining a waste discharge requirement . . . ." (RB 7.)
- The July 2010 Staff Summary Report indicates that vineyards may apply for "coverage" under a broadly applicable WDR waiver, stating:

For all nonpoint sources dischargers, landowners and operators

> will be require to file a Report of Waste Discharge (RoWD) by October 2014. Vineyards may choose to participate in a farm plan certified under Fish Friendly Farming Environmental Certification Program or other farm plan certification program in lieu of an RoWD, approved as part of a waiver of Waste Discharge Requirements (WDRs). All dischargers applying for coverage under a waiver of WDRs also will be required to file a notice of intent (NOI) for coverage, and to comply with all conditions of the WDR waiver.

(AR7994, 8003 [discussing the implementation and monitoring plan] [emphasis added].)

b. Tiering under CEQA does not allow deferred environmental review where environmental review of the whole project is possible.

Under CEQA's "rule of reason," "the sufficiency of an EIR is to be reviewed in the light of what is reasonably feasible...." (*Friends of Mammoth v. Town of Mammoth Lakes Redevelopment Agency* (2000) 82 Cal.App.4th 511, 534, quoting Guidelines, § 15151.) Also, CEQA requires impacts analysis at the "earliest possible stage, even though more detailed environmental review may be necessary later."' (*Environmental Protection Information Center v. California Dept. of Forestry and Fire Protection* (2008) 44 Cal.4th 459, 503 (*EPIC v. CDF*), quoting *Rio Vista Farm Bureau Center v. County of Solano* (1992) 5 Cal.App.4th 351, 370.) Tiering does not excuse analysis of reasonably foreseeable environmental effects of known aspects of a proposed project and does not justify deferring such analysis to a later tier. (*Id.* at p. 502, quoting § 15152, subd. (b). See also *id.* [""CEQA's demand for meaningful information 'is not satisfied by simply stating information will be provided in the future.'"].)

The Environmental Document is inadequate under this "rule of reason" because it does not include a "reasonably feasible" analysis of the impacts of

the Basin Plan's provisions permitting vineyards to comply with the TMDL by enrolling in a general WDR waiver. Under Supreme Court case law, CEQA's tiering provisions allow deferred analysis only when the impacts "are not determined by the first-tier approval decision but are specific to the later phases." (*In re Bay-Delta Programmatic Environmental Impact Report Coordinated Proceedings* (2008) 43 Cal.4th 1143, 1170 (*Bay Delta*), quoting *Vineyard Area Citizens for Responsible Growth, Inc. v. City of Rancho Cordova* (2007) 40 Cal.4th 412, 431; see also *EPIC v. CDF*, *supra,* 44 Cal.4th at p. 502 [tiering is proper when certain details of phased or complex projects will not materialize until a later date]; Guidelines, § 15152, subd. (c) .) As a corollary to this rule, the degree of specificity required in an EIR must correspond with the degree of specificity involved in the underlying activity which is described in the EIR. (Guidelines, § 15146.)

Here, the environmental impacts of the TMDL's surface erosion performance standard (discussed in relation to the first and second issues presented in this appeal) are determined by the "first-tier" approval because the impacts arise from the adoption of that surface erosion control standard in the TMDL/BPA. Also, as noted above, both the TMDL and the WDR waiver policy are program level legislative actions, therefore, both operate at the same level of specificity. Finally, the Board has not demonstrated why it is not possible to jointly evaluate the environmental impacts of the WDR waiver policy with the environmental impacts of the TMDL.

The record contains much evidence that analysis of the vineyard WDR waiver policy was reasonably feasible, as follows:

- The record contains the entire 300+ page workbook for the Fish Friendly Farming Environmental Certification Program for Napa County, which describes Farm Conservation Plan Instructions and BMPs in detail.

(AR:8310-8601 [Farm Conservation Plan Workbook].)

- Board staff completed farm plan reviews and site inspections "for approximately eighty-six vineyards in the Napa River watershed that have been certified under the Fish Friendly Farming Program[] during the past five years." (AR:7904; AR:654 ["This collective Board staff experience will be brought to the development of the vineyard WDR waiver."].)
- A number of experts commented on the impacts of establishing a WDR waiver program that would permit vineyards to comply with the TMDL by obtaining and implementing a farm plan under the guidance of a third party. (See AR:7452-57 [Dr. Curry: concern that TMDL will not avoid significant impacts because the "Science Advisory Group to the Fish Friendly Farming Program has recommended that peak storm runoff rates following hillside vineyard development (at all sites) should not increase by more than 10 to 15 percent above pre-project rates to reduce the risk of off-site channel enlargement to an acceptable a less than significant level."]; AR:615 [LRC: objecting to adoption of the peak runoff performance standard specified in the Fish Friendly farming Environmental Certification Program]; AR:1767 [LRC (Higgins): "Although Water Board staff proposes a solution to flow problems through cooperative efforts with other agencies, additional development of vineyards will be permitted under the TMDL if they comply with sediment mitigation measures embodied in Napa County ordinances and Fish Friendly Farming methods. Any additional vineyard development will increase water demand and further diminish steelhead habitat."]; LRC(Higgins): numerous studies indicate that the impacts of watershed disturbance on aquatic ecosystems in northern California cannot be prevented with on-site mitigation, if disturbance is too widespread ...; compliance with Fish Friendly Farming measures will not prevent increased sediment yield and elevated peak flows

despite the fact that these activities cover tens of thousands of acres]; AR:7472 [Napa County: raising concern that there is insufficient "third party" capacity to permit the vineyards to enroll in the WDR waiver program and implement a certified farm plan]; AR:5811 [Department of Fish and Game: concern that third party monitoring of farm plan effectiveness may hamper accountability of sediment control by vineyards enrolled in the WDR waiver program].)

In light of the foregoing, the salient details of the vineyard WDR waiver program and its potential impacts were not so unspecified and uncertain that the Board would have had to "foresee the unforeseeable" or engage in sheer speculation as to future environmental consequences. (*EPIC v. CDF*, *supra,* 44 Cal.4th at p. 503, quoting *Rio Vista, supra,* 5 Cal.App.4th at p. 372; Guidelines, § 15144.) Thus, the Environmental Document is inadequate because the Board entirely failed to employ existing information and to "use its best efforts to find out and disclose all that it reasonably can" regarding the impacts of the vineyard waiver policy adopted as part of the TMDL implementation plan. (See Guidelines, § 15144.)

For the same reasons, the Board's argument that "this is not a case where the agency possessed detailed information about the project that it excluded from consideration in the EIR" fails. (RB 44-45, citing *Citizens Assn. for Sensible Development of Bishop Area v. County of Inyo* (1985) 172 Cal.App.3d 151, 169 (*County of Inyo*); *Laurel Heights Improvement Assn. v. Regents of University of California* (1988) 47 Cal.3d 376, 396 (*Laurel Heights I*).) Just as in *County of Inyo,* in which an EIR failed to analyze later phases of a staged development plan, the Environmental Document here fails to analyze the WDR waiver incorporated into the TMDL Implementation Plan even though there is sufficient information about the conditions of the waiver to analyze its impacts. And, as in *Laurel Heights*, the Board must analyze the

WDR waiver based on the available information, because it is reasonably foreseeable that the Board will carry out a farm plan-based method for vineyards to comply with the TMDL.

The Board's reliance on *Bozung v. Local Agency Formation Commission* (1975) 13 Cal.3d 263, 283-284 [superseded by statute as stated in *City of Redding v. Shasta County Local Agency Formation Com*. (1989) 209 Cal.App.3d 1169, 1177] is misplaced. (RB 40.) In that case, the Court held that a LAFCO should be the lead agency for an annexation project, noting that the LAFCO (as a regional agency) was in a better position than the city to analyze subsequent projects resulting from the annexation in a single EIR. (*Bozung, supra,* 13 Cal.3d at pp. 283-284.) Nothing in the opinion suggests that an agency may defer impacts analysis to a later tiered EIR when the information necessary to conduct that analysis exists at the time that the original EIR is prepared. To the contrary, *Bozung* confirms CEQA's requirement that agencies address the whole of a phased or long-term project in a single EIR. (*Id.* at p. 284.) Contrary to the Board's position, CEQA's tiering provisions are a discrete exception to the rule against piecemealing, and they apply only where it is not reasonably feasible environmental analysis of some aspect of a proposed project – not unfettered discretion to defer analysis of known, proposed elements of a plan that the agency deems to be more "narrow" than the plan as a whole. (See RB 40.)

Here, the TMDL implementation plan specifically includes the vineyard WDR waiver as an "action" required for compliance with the TMDL and provides detail about the conditions that will be included in the waiver (namely, implementation of a farm plan under a "certified" program). Yet the Board decided not to analyze the impacts of the WDR waiver policy in conjunction with the impacts of the Basin Plan Amendment. As a result, the

Environmental Document unlawfully piecemealed review of a known integral component of the Basin Plan Amendment.

c. Tiered review is not consistent with or required by the Board's obligation to determine whether the WDR waiver is consistent with the Basin Plan

The Board argues that tiered review is consistent with the Board's obligation to determine whether "the waiver is consistent with any applicable state or regional water quality control plan [basin plan]." (RB 43, citing Water Code, § 13269, subd. (a)(l).) However, there is no logical or practical reason that the Board must adopt a Basin Plan Amendment before making a consistency determination; the Board can just as easily determine whether a WDR waiver is consistent with a proposed Basin Plan as it can with an existing Basin Plan.[7] Further, the Board's position conflicts with the NPS Implementation Policy, which allows the Board to adopt a "categorical waiver of [WDRs] ... as [part of a] basin plan amendment." (Living Rivers Motion for Judicial Notice, Exh. 1 [NPS Implementation Policy], p. 4.)

The Board also argues that it would be inefficient to adopt a WDR waiver in conjunction with the Basin Plan Amendment because waivers "only last five years (Wat. Code, § 13269(a)(2)) and Basin Plan amendments require a rulemaking process that is more extensive than the process for modifying waivers. (RB 43, n.18, citing Water Code, § 13245; Gov. Code, § 11353(b).) The Board is incorrect.

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[7] This occurs on a regular basis with respect to development projects that require General or Specific Plan amendments and are often reviewed and adopted concurrently. In light of this standard accepted practice, the Board is patently wrong that it must adopt a Basin Plan amendment prior to adopting a WDR waiver and that this "is exactly the sort of situation that program-level CEQA documents and tiering are intended to address." (See RB 43.)

Just as the Board must reevaluate WDR waivers every five years, the Board must also reevaluate the Napa Sediment TMDL and implementation plan and schedule every five years. (23 Cal. Code Regs. § 3919.9; see also AR:7897 ["Monitoring is required to evaluate the effectiveness of the control actions specified in the TMDL and the progress made towards meeting the targets. The San Francisco Bay Water Board will evaluate the monitoring results and any new information approximately every five years, and may revise the TMDL as necessary."].) Accordingly, it makes more sense to adopt any WDR waiver policy at the same time as the adoption of the TMDL and implementation plan so that their effectiveness evaluations and revisions occur at the same time.[8]

III. CONCLUSION

For the reasons set forth above, Living Rivers seeks a writ of mandate pursuant to 21168.9(a)(1), compelling Respondent to set aside its adoption of the Amendment to the Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan) to Establish a Total Maximum Daily Load (TMDL) for Sediment in the Napa River, and an Implementation Plan to Achieve the TMDL and Related Habitat Enhancement Goals (also known as the "Napa River Sediment TMDL"); and pursuant to 21168.9(a)(3), compelling Respondent to recirculate and adopt an Environmental Document that

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[8] Also, it is not true that the WDR waiver policy is not subject to the APA rulemaking requirements if they are initially adopted as part of a basin plan amendment. Instead, Government Code, § 11352 explicitly exempts waivers from the APA's procedures. (Gov. Code § 11352, subd. (b) ["The issuance, denial, or revocation of waste discharge requirements and permits pursuant to Sections 13263 and 13377 of the Water Code and waivers issued pursuant to Section 13269 of the Water Code" are not subject to Government Code Chapter 3.5: Administrative Regulations and Rulemaking.].)

complies with CEQA.

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WORD COUNT CERTIFICATION

I, Thomas N. Lippe, appellate counsel for Petitioner and Appellant Living Rivers Council, hereby certify that the word count of this brief is 13,085 words according to the word processing program (i.e., Corel Wordperfect) used to prepare the brief.

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