Jay Hardy
550 Sycamore Creek Lane
Nipomo, CA 03444
JayRayHardy@SBDGlobal.net

August 22, 2013

Brian Pedrotti
County Planning Department
976 Osos Street, Rm 300
San Luis Obispo, CA 93408-2040

Dear Mr. Pedrotti,

Regarding the Recirculated and Revised Draft Environmental Impact Report for the proposed Laetitia housing development in Nipomo, I am enclosing a letter from the land use attorney, Peter Candy. Mr. Candy had conducted a thorough evaluation of the Laetitia project, which needs to be considered with the new RRDEIR. Mr. Candy was hired by the Nipomo Hills Alliance to study this issue. Please include this with your comments for this project.

Sincerely,

Jay Hardy

Jay Hardy

Enclosed: Letter to SLO County from Peter Candy, dated June 6, 2011

HOLLISTER & BRACE

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ATTORNEYS AT LAW

RICHARD C. MONK
STEVEN EVANS KIRBY
BRADFORD F. GINDER
PAUL A. ROBERTS
JOHN G. BUSBY
SUSAN H. McCOLLUM
ROBERT L. BRACE
MARCUS S. BIRD
PETER L. CANDY
MICHAEL P. DENVER
KEVIN R. NIMMONS
SARAH J. BERKUS

Of Counsel
JOHN S. POUCHER
JOHN B. GALVIN

SANTA BARBARA OFFICE
1126 SANTA BARBARA STREET
P.O. BOX 630
SANTA BARBARA, CA 93102

805.963.6711
FAX: 805.965.0329

SANTA YNEZ VALLEY OFFICE
2933 SAN MARCOS AVENUE
SUITE 201
P.O. BOX 206
LOS OLIVOS, CA 93441

805.688.6711
FAX: 805.688.3587

www.hbsb.com

June 11, 2012

Mr. Brian Pedrotti
Project Manager
Planning & Building Department
County of San Luis Obispo
970 Osos Street
San Luis Obispo, CA 93408-2040

RE: Recirculated Draft Environmental Impact Report (RDEIR)
Laetitia Agricultural Cluster Tract Map and CUP

Dear Mr. Pedrotti:

This office is legal counsel to the Nipomo Hills Alliance (NiHA). NiHA is an organization made up of residents of the Dana Foothill and Upper Los Berros communities, who are concerned about overdevelopment of the Nipomo Hills. NiHA's goal is to protect and preserve not only the rural beauty of the Nipomo Hills, but also its limited water supply. This letter is submitted on behalf of NiHA in response to the RDEIR prepared for the Laetitia Agricultural Cluster Tract Map and CUP.

I. INTRODUCTION

In recent years, water supply planning has received increasing attention in the California Legislature and in Court of Appeal decisions interpreting CEQA. The clear message of recent legislation and case law is that lead agencies and preparers of environmental documents must be fully transparent when evaluating the availability of long-term water supplies intended to serve new development. Transparency is impossible without a clear and complete explanation of the circumstances surrounding the reliability of a proposed water supply. If any uncertainties exist, transparency requires lead agencies to be forthright in the disclosure of these uncertainties, and provide substantial evidence supporting a conclusion that new water will be available to serve the proposed growth.

In *California Oak Foundation v. City of Santa Clarita* (2005) 133 Cal. App. 4th 1219, the court invalidated an EIR for a proposed development project, finding that it was not sufficiently transparent, because it did not adequately inform decision-makers and the public of the circumstances surrounding the reliability of the project's proposed water supply. In particular, the EIR failed to disclose several key uncertainties associated with obtaining the proposed water supply, failed to describe the nature and extent of these uncertainties, and, perhaps most importantly, failed to realistically analyze the availability of water to serve the project in light of the uncertainties.

As the following comments indicate, the RDEIR prepared for the Laetitia Agricultural Cluster suffers similar inadequacies, because it fails to disclose key uncertainties associated with obtaining water from the fractured bedrock formations that underlie the Nipomo Hills. These fractured-rock aquifers are the project's exclusive proposed source of water supply. Decision-makers and the public must be made aware of the uncertainties surrounding reliance on these aquifers, in order to understand the project's potential for environmental effects, and to make informed decisions on whether, or under what conditions, to approve new growth in the area.

II. DISCUSSION

Comment 1: The RDEIR fails to disclose the uncertainty inherent in relying on fractured-rock aquifers as an exclusive source of water supply to serve new development.

In a fractured-rock aquifer, groundwater is stored in the fractures, joints, bedding planes, and cavities of the rock mass. These features exist as a result of the folding and faulting that occurs in the rock over time. Because almost no water can pass through the rock itself, water can only be transmitted through the cracks, fissures and fractures existing between the rock. The hydrologic interconnection of these features comprise the aquifer system.

Fractured-rock aquifers are commonly known to have a much lower capacity to transmit water (permeability) than aquifers found in sediments. As a consequence, fractured-rock aquifers tend to be less predictable and less reliable than other wells. This lower capacity results from both a smaller amount of open space (the size of the fracture), and a smaller lateral extent of the aquifer (fracture zones are not consistent throughout the rock), as compared to aquifers found in sediments. Because of this, many rock wells are limited in the amount of water that they can reliably produce in the long term. Typically, these wells can have an apparent production during short-term testing that is higher than the actual amount that can be supported by the surrounding fractured-rock aquifer in the long-term. As a result, the incidence of "well failure" is much higher in fractured rock wells than in other settings. (See generally, white paper discussion on *Fractured-Rock Wells in the Pacific Northwest Foothills*, authored by F. Michael Krautkramer, Robinson Noble, Inc., 2004, attached hereto as Exhibit A.)[1]

In addition to poor transmissivity, fractured-rock aquifers typically have less ability to collect and store water to transmit. This is because an appreciably lower percentage of the precipitation over the area ends up getting into the fractured-rock groundwater system. As a result, a smaller volume of water is available annually throughout the region served by such an aquifer. This concept is known as the aquifer water budget. When more water is being removed through the wells in a region than is recharged from the precipitation (and other sources), the water levels in the wells of that region fall through time. If this is a chronic problem, eventually some or all of the wells become unable to produce water at the rate necessary to meet their demand. (Id., Krautkramer, attached.)

While the RDEIR mentions some of these concerns, it stops short of providing a fully transparent discussion of the vulnerabilities associated with relying on fractured-rock wells as an exclusive source of water supply for new development. The RDEIR briefly mentions that yields from wells in fractured bedrock aquifers are often not representative of longer-term yields, which are typically lower. The RDEIR also mentions that, as groundwater is released from storage in fractures, the hydraulic gradient toward the well becomes progressively lower over time, which causes the well yield to decline. However, the RDEIR does not mention the critically important fact that, due to the generally lower permeability of fractured-rock, and the inherent water budget constraints associated with fractured-rock aquifers, wells completed in such formations result in a much higher incident of "well failure" than wells completed in sediments. The importance of this for the Nipomo Foothills area is underscored by multiple documented incidents of well problems and even failures experienced by residents of the Dana Foothill and Upper Los Berros communities.

Since each fractured-rock aquifer system is unique, caution must be exercised when attempting to predict a long-term sustainable production rate for newly developed wells. Short-term pump testing is not a reliable method for determining a production rate that can be sustained over the long-term. (Id., Krautkramer, attached.) Monitoring of the water levels and production from rock wells over longer periods is essential, as is being aware of regional changes occurring in the area during the monitoring period, such as variations between different water years, and whether neighboring wells are experiencing similar patterns of drawdown and change. (Id., Krautkramer, attached.) The RDEIR fails to disclose these important considerations in an

1 Although Mr. Krautkramer's white paper is focused on the fractured-rock groundwater environment found in the mountain foothills located west of the Cascades, his discussion has equal applicability to the fractured-rock aquifers found in the Obispo and Monterey Formations located beneath the foothills of the Central California Coast.

apparent effort to gloss over uncertainties and reach a finding that the water supply impacts of the project are Class II.

Comment 2: The RDEIR fails to disclose uncertainty associated with relying on short-term well production rates as the basis for estimating long-term sustainable yield.

The RDEIR estimates that 62.4 AFY is a viable long-term groundwater production rate (sustainable yield) for the four "project" Wells 10, 11, 14 and 15. This estimate is based on the evaluation of water levels recorded in the four wells for the period from October 2009 to March 2011. The wells were pumped according to a three-phase cyclic pumping schedule running from October 2009 to December 2010. For each phase, the pumping alternated between two pairs of wells: simultaneous pumping at Wells 10 and 11 (completed in the tuffaceous rocks of the Obispo Formation), alternating with simultaneous pumping at Wells 14 and 15 (completed in the siliceous shales of the Monterey Formation).

During the first phase of pumping (October 16, 2009 to January 16, 2010), the wells were pumped for 2 to 5 days and then shut off for 4 to 15 days. During the second phase of pumping (January 16 to May 10, 2010), the wells were pumped for 3 to 8 days and then shut off for 2 to 9 days. During the third phase of pumping (September 27 to December 31, 2010), the wells were pumped for 2 to 3 days and then shut off for 4 to 5 days. As such, during the entire three-phase pumping period, Wells 10, 11, 14 and 15 were pumped a maximum of only a few months total.

The hydrographs from the pump tests illustrate that water levels in Wells 10, 14, and 15 never stabilized, but instead exhibited continuing drawdown throughout the course of the three phases of pumping. The hydrographs also illustrate that recovery of water levels was incomplete at Wells 14 and 15 between the pumping phases. Full recovery of water levels occurred only at Well 11, which is within a few hundred feet of Los Berros Creek. The hydrograph for Well 11 shows a strong correlation between rainfall and groundwater levels in the vicinity of Well 11, which indicates that groundwater levels in the vicinity of Well 11 are influenced by the base flow of Los Berros Creek.

The general decline of water levels observed in Wells 10, 14, and 15 during the three phases of pumping suggested that stable groundwater equilibrium could not be achieved at a pumping rate of 87 AFY (the rate estimated by the Draft EIR (2008) to be sustainable). As a result, the RDEIR revised the estimated long-term groundwater production rate downward to 62.4 AFY for purposes of arriving at a new "sustainable" production rate. The downward revision was arrived at by extrapolation. No pumping tests or other observations, short-term or long-term, were conducted to confirm that a production rate of 62.4 AFY is sustainable and will avoid long-term depletion of the groundwater supply.

In an effort to corroborate the 62.4 AFY revised sustainable yield estimate, the RDEIR relies on production data from two irrigation wells operated by the applicant elsewhere on the property. The RDEIR states that these two irrigation wells produce at 21 AFY each. However, the RDEIR does not identify these wells, where they are located, the formation in which they are completed, or whether they draw from one or more of the fractured-rock aquifers that feed Wells 10, 11, 14 and 15. In sum, the RDEIR provides no information or analysis enabling the reader to determine whether these wells are appropriate reference points to rely upon for purposes of corroborating the revised sustainable yield estimate.

An examination of the peer review documents prepared by Geosyntec reveals limited information regarding the two irrigations wells in a single footnote. (See *Baseline Water Demand* (April 2012), footnote 6, page 6; see also *Review of Well Testing and Sustainable Yield Estimate* (October 2011), footnote 16, page 23.) The footnote indicates that the two irrigation wells are Wells 5 and 9, both screened in the Obispo Formation. This suggests at least a theoretical correlation with "project" Wells 10 and 11, also completed in the Obispo Formation. However, Wells 5 and 9 have no correlation, theoretical or otherwise, with "project" Wells 14 and 15, both of which are completed in the Monterey Formation.

As for Wells 10 and 11, although they are completed in the same formation as reference Wells 5 and 9, there is no evidence to suggest that they draw from the same hydrologically connected fractured-rock aquifer system that feeds either Wells 5 or 9. Reference Well 5 is located over a mile away from Wells 10 and 11. Reference Well 9 is located over 0.5 miles away from the two "project" wells. In the absence of substantial evidence demonstrating that either Wells 5 or 9 draw from the same fractured-rock aquifer system that feeds either Wells 10 or 11, there is no basis to conclude that the long-term yields from any of these wells will be similar. The most the RDEIR can do is suggest that, given the 0.5 mile proximity between Well 9 and Wells 10 and 11, there may be the possibility of a subsurface hydrologic connection. However, in the RDEIR's discussion of well interference, the statement is made that cyclic pump testing conducted on the "project" wells did not show any correlation with either Well 5 or 9. Thus, as it stands, neither the RDEIR, nor the Geosyntec documents, provide any evidence, let alone substantial evidence, indicating that either Well 5 or 9 are appropriate reference points to rely upon for purposes of corroborating the revised sustainable yield estimate of 62.4 AFY.

An adequate discussion in the RDEIR requires full disclosure of all uncertainties surrounding use of the proposed water supply. A key uncertainty in this case is the RDEIR's reliance on short-term pump tests as a basis for estimating long-term sustainable yield. This is especially true given multiple documented incidents of well problems and even well failures experienced with other wells completed in the fractured-rock formations of the surrounding Nipomo Hills. The estimate of sustainable yield provided in the RDEIR is based on observations made over the course of a matter of a few months. During this period, stable groundwater equilibrium was never achieved, despite conditions of above average rainfall. The reality is that without actually pumping the wells over the long-term to document the rate of decline that is experienced, there is no way to know with certainty the rate at which the wells can be reliably produced. CEQA's fundamental policy of promoting transparency and informed government decision-making requires disclosure of these important facts.

Comment 3: The RDEIR fails to disclose uncertainty associated with the applicant's legal right to pump up to 62.4 AFY.

The applicant's legal right to produce water from Wells 10, 11, 14 and 15 depends on the location of the wells within the watershed or drainage basin of origin, whether the water pumped from the wells is being used on a portion of the applicant's land located within the same watershed or drainage basin, and whether other water users located within the same watershed or drainage basin are drawing from the same source supply. Simply stated, groundwater is a shared resource, the rights to which can only be determined in relation to other users of the same resource. The owner of a well has no right to pump more than his or her correlative share of the resource and, in order to maintain the priority of his or her correlative share, the owner can only use the pumped water on that portion of his or her land located within the watershed or drainage basin of origin.

A basic understanding of the correlative nature of the riparian and overlying right, including how priority of the right is defeated when the watershed limitation is exceeded, is useful to understanding the complexities associated with the applicant's legal right to produce up to 62.4 AFY for project. With respect to the correlative nature of the right, the California Supreme Court explained it best:

> "A riparian owner [and by analogy an overlying owner] has no right to any mathematical or specific amount of the water of a stream [or basin] as against other like owners. He has only a right in common with the owners to take a proportional share from the stream [or basin] — a correlative right which he shares reciprocally with the other riparian [and overlying] owners. No mathematical rule has been formulated to determine such a right, for what is a reasonable amount varies not only with the circumstances of each case but also varies from year to year and season to season."

Prather v. Hoberg (1944) 24 Cal. 2d 549, 559-560.

As indicated above, the applicant's legal right to produce up to 62.4 AFY can only be determined in relation to other potential users of the same resource. This requires identification of other landowners capable of drawing from the same fractured-rock aquifers which feed Wells 10, 11, 14 and 15. This, in turn, requires an examination of the physical location and/or geologic extent of the aquifers. It also requires an understanding of the capacity of the aquifers to store and transmit water, so that landowners know the amount they can sustainably withdraw without causing overdraft and injury to other users.[2]

To further complicate matters, the correlative right of a riparian or overlying owner is inchoate, which means that a landowner's present right to use water in the future is preserved. *Peabody v. City of Vallejo* (1935) 2 Cal. 2d 351, 374-375. Thus, not only must the project applicant identify other landowners who are presently using the same fractured-rock aquifers, but he must also try to identify those that are likely to initiate use of the aquifers in the future.

Superimposed on the correlative right is the watershed limitation, which states that a person who owns real property abutting or contiguous to a watercourse (riparian owner), or overlying a groundwater basin (overlying owner), has a corresponding right to divert or extract water for use only on riparian or overlying land. *City of Los Angeles v. Aitken* (1935) 10 Cal. App. 2d 460. Riparian and overlying land is limited to land located within the natural watershed of the stream or basin, or the area of land within which precipitation drains into the water source. This means that a riparian user can divert water from the flow of a stream and use the water anywhere on his or her parcel that is within the watershed of the stream. *Rancho Santa Margarita v. Vail* (1938) 11 Cal.2d 501, 528, 533. Similarly, an overlying owner has the right to extract ground water from one point on the property and export it for use anywhere on the same parcel that is within the watershed or drainage area of the basin. *See,* Schneider, *Groundwater Rights in California, The Governor's Commission to Review California Water Law* (1978) at p. 7.

If a landowner transports water over a ridgeline for use on a portion of his or her parcel that is non-riparian or non-overlying, i.e., on a portion located outside the watershed or drainage area of the basin, the use is converted to an appropriation, which defeats the priority afforded the riparian or overlying right. Thus, without an examination of the watersheds and drainage areas which feed the aquifers supplying Wells 10, 11, 14 and 15, there is no way to determine whether the applicant's proposed use of water is consistent with his riparian and/or overlying rights. Water pumped from Wells 10, 11, 14 and 15 will be commingled in the project's water system and exported over multiple ridgelines forming the various subareas of the larger Los Berros watershed. An analysis is necessary to determine those areas of the applicant's property that are riparian and/or overlying versus the areas that are not. As to any water used on non-

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2 In *Cadiz Land Co. v. Rail Cycle* (2000) 83 Cal. App. 4th 74, the court struck down an EIR for a landfill project on the ground that the document did not adequately quantify the amount of groundwater in the aquifer underlying the project site. Although the court in *Cadiz* was concerned about groundwater contamination, the reasoning of the decision is analogous to a situation involving potential groundwater overdraft. Unless the lead agency knows approximately how much water exists in an affected basin, the agency cannot possibly know what levels of withdrawals would trigger significant impacts.

riparian or non-overlying land, the priority of the applicant's use is lost vis a vis other correlative users. In such a case, the applicant's legal right to access the resource must yield to the reasonable needs of other landowners drawing from the same source.

Well 11 presents a unique situation in that the well may be drawing from the underflow of Los Berros Creek. Well 11 is located within a few hundred feet of Los Berros Creek, and the hydrograph for the well demonstrates a strong correlation between the well and the base flow of the creek. If Well 11 is in fact drawing underflow from the creek, the applicant's use of the water is riparian, and subject to the limitations imposed on riparian use. Under circumstances where the applicant proposes to commingle the water and use it on other areas of the property that are non-riparian, use of the water would be by appropriation. Appropriation of the underflow of a surface stream is subject to the permitting jurisdiction of the State Water Resources Control Board (SWRCB). (Water Code § 1201; *In the Matter of Application 29664 of Garrapata Water Company* (1999) D-1639.) Thus, before the applicant could lawfully pump and use the underflow of Los Berros Creek in any manner inconsistent with the riparian right, the applicant would need to apply for and obtain a permit to appropriate from the SWRCB.

The RDEIR provides only brief mention of groundwater rights without any substantive discussion. The RDEIR states that: "An overlying property owner is entitled to all of the water the owner can pump and beneficially use on his property until it adversely affects another neighboring property owner's ability to adequately produce water for use on their property." (RDEIR p. V-49.) This is certainly a true statement from the standpoint of correlative rights. However, it ignores the numerous other issues that must be examined before one can determine with certainty the applicant's legal right to pump up to 62.4 AFY.

The RDEIR avoids any effort to discuss, let alone resolve, the uncertainty which surrounds the applicant's legal right to draw up to 62.4 AFY from Wells 10, 11, 14 and 15. The RDEIR provides no discussion of the physical location and/or geologic extent of the fractured-rock aquifers from which the wells draw. It does not attempt to identify other landowners capable of drawing from the same fractured-rock aquifers, nor to quantify the amount of water that can be safely withdrawn without adversely affecting other legal users. There is no discussion regarding the location of the wells within the watershed or drainage areas of origin, nor whether use of the water pumped will be confined to riparian or overlying land. A comprehensive understanding of these issues and possibly others is necessary to determine whether and to what extent the applicant has the legal right to pump 62.4 AFY from the wells. At the very least, full disclosure and transparency regarding the uncertainty surrounding these issues is necessary in order for the public and government decision-makers to make informed decisions regarding the availability of a long-term water supply for the project.

Comment 4: The RDEIR fails to disclose uncertainty regarding the project's revised water demand estimate.

The RDEIR's discussion of revised water demand is confusing, lacks transparency, and is inadequate. The estimated total water demand of the project reported in the Draft EIR (2008) was 143 AFY. This original demand factor assumed up to 30,500 square feet of on-site irrigated landscaping, with up to 7,000 square feet of turf per residential lot, and an equestrian center. Water usage estimates were revised following circulation of the Draft EIR (2008) based on modifications to certain project components, including elimination of the equestrian center and incorporation of outdoor landscaping limitations (Cleath-Harris Geologists, 2010). The revised estimated total water demand of the project reported in the RDEIR is now 46.3 AFY. The revised estimate represents a 96.7 AFY reduction in water demand. However, apart from eliminating the equestrian center, all that is known about the revised estimate is that it assumes certain identified limitations on allowable landscaping (i.e., 1,500 square feet of irrigated landscaping, with up to 300 square feet of warm-season turf (maximum), and the remaining landscaping as drought-tolerant, low-water use plants per residential lot). If additional assumptions were made for purposes of arriving at the 46.3 AFY estimate, they are not disclosed.

The RDEIR does not explain, nor provide any documentation to support, how the revised indoor and outdoor water duty factors of 0.381 and 0.0626 respectively were calculated. While the RDEIR does mention water conservation measures, such as the use of low-flush and low-flow appliances; insulation and circulation of hot water systems; minimized use of water for outdoor cleaning; use of drought-tolerant landscape plant species; use of automatic irrigation systems; use of water-conserving pumps and filters for swimming pools and spas; and regular maintenance of all appliances, systems, and facilities, it is unclear exactly how these measures convert quantitatively into the revised water duty factors identified. Absent any substantive discussion regarding specific project modifications, including how these modifications result in changes to the water duty factors, the reader lacks important information regarding the assumptions relied upon to estimate project water demand. Without this important information, the reader is not able to understand the basis for the revised demand estimate of 46.3 AFY, let alone draw a conclusion regarding the reasonableness of the revised estimate.

In addition, the RDEIR proposes development of a Water Master Plan as a mitigation measure to ensure that over-pumping and inefficient use of domestic water resources does not occur. However, there is nothing proposed in the RDEIR, nor specifically in the requirements applicable to the Water Master Plan, which make the revised indoor and outdoor water duty factors enforceable. The requirements of the Water Master Plan are entirely qualitative as opposed to quantitative. In other words, compliance with the Water Master Plan can be achieved through implementation of the identified conservation measures, but there is nothing in the RDEIR which indicates that compliance will result in an actual per lot water demand closely approximating that assumed in the water duty factors. In order to effectively mitigate the project's potential for water supply impacts, the Water Master Plan must incorporate quantitatively enforceable water demand requirements which ensure the water duty factors are achieved. Without quantitative, enforceable limits on water use, there is no basis for decision makers or the public to conclude the revised demand estimate of 46.3 AFY is realistic.

Comment 5: The RDEIR fails to disclose uncertainty associated with supplying water to the project in single dry and multiple dry water years.

The RDEIR makes note of the fact that rainfall during the cyclic pump testing program was documented to be 138 percent of average. Despite this period of above average rainfall, a downward trend in water levels was observed in all wells except Well 11, with equilibrium pumping conditions never being achieved. As it stands, the time frame needed to achieve equilibrium groundwater conditions remains unknown. Furthermore, as the RDEIR notes, climate change is predicted to result in rainfall occurring in fewer and more intense periods (DWR, 2002), which would likely result in more runoff, perhaps less recharge to groundwater, and possibly long-term decrease in base flow of creeks.

Despite these admissions, the RDEIR makes no effort to discuss the reliability of the 62.4 AFY safe yield estimate in water years that are not 138 percent of average. What happens if the project is approved and the sustainable yield predictions set forth in the RDEIR turn out to be wrong? The RDEIR avoids this topic by instead glossing over key uncertainties and giving the reader a false sense of security regarding the availability of water supply. As it stands, it appears the applicant would have to shift pumping demand to other wells located on the property. However, there is no evidence in RDEIR or elsewhere to support a conclusion that other wells can support the increased demand.

California Water Code § 10910 requires lead agencies to incorporate, in the CEQA documents they prepare, assessments of total projected water supplies available to serve new growth during normal, single dry, and multiple dry water years, over a 20-year projection horizon. While Water Code § 10910 do not apply directly to the Laetitia Agricultural Cluster, the policy rationale underlying the statute does apply. In this regard, an adequate environmental document requires at least some analysis of drought conditions, and the possible effects that drought conditions could have on the project's intended water supply. No such analysis is provided in the RDEIR, nor is any effort made to discuss reasonably foreseeable water shortage contingencies, such as what would happen if well yields decline substantially below the 62.4 AFY safe yield estimate in single dry or multiple dry water years.

Comment 6: The RDEIR fails to analyze the impacts of project withdrawals on reduced flows to the Santa Maria Groundwater Basin.

The project site is located to the immediate east of the Santa Maria Groundwater Basin ("Santa Maria Basin"), as defined by the Santa Clara Superior Court (Case CV 770214). The Tri-Cities Mesa Arroyo Grande Plain and Nipomo Mesa HSA are portions of the Santa Maria Basin located to the west and southwest of the project site. The rights to extract water from the Santa Maria Basin have been in litigation since the late 1990s. By stipulation and Court action, three separate management areas of the Basin were established, the Northern Cities Management Area, the Nipomo Mesa Management Area (NMMA), and the Santa Maria Valley Management Area. The boundaries of the NMMA are located to the immediate west of the project site.

The NMMA covers approximately 33 square miles or 21,100 acres. Approximately 13,000 acres of the NMMA, or 60 percent, is developed land requiring that water be pumped from the underground aquifers to sustain agricultural and urban development. Land uses include agricultural, urban (residential/commercial), and native or undeveloped areas. There are also three golf courses and one oil-processing facility. In 2009, the crop types grown in the order of largest acreage were strawberries, nursery, avocado, and rotational vegetables (broccoli, lettuce, etc.). (See generally, *Nipomo Mesa Management Area, 4th Annual Report,* Calendar Year 2011, prepared by the NMMA Technical Group.)

Total estimated groundwater production within the NMMA for the calendar year 2011 was 10,538 acre-feet. According to the 4th Annual Report, there are a number of direct measurements indicating that demand within the management area exceeds the ability of the supply to replace the water pumped from the aquifers. (Id., Section 7.1.2 Hydrologic Inventory.) The report finds that "Potentially Severe Water Shortage Conditions" (as defined by the court stipulation) continue to exist in the NMMA, as indicated by the Key Wells Index. (Id., Section 7.2 Water Shortage Conditions.)

Los Berros Creek is thought to be a significant source of water supply to the NMMA (base flow and surface flow combined). Although not much is known about the actual amount the creek contributes, even modest withdrawals from the Los Berros watershed could have potentially significant impacts on the NMMA groundwater budget. As indicated previously, Well 11 is known to have direct hydrologic connectivity with the base flow of Los Berros Creek, such that pumping the well reduces base flow of the creek. Wells 12 and 13 are similarly situated, and although they are not being proposed as "project" wells, they are influenced by, and influence in turn, flow within Los Berros Creek. While the RDEIR proposes mitigation to limit operation of Well 11 in the dry season, nothing is being proposed to prohibit the use of Wells 12 and 13. These wells will likely become important, and perhaps even critical, in the event well problems similar to those experienced by the Dana Foothill and Upper Los Berros communities are experienced by the applicant with Wells 10, 14 or 15.

III. CONCLUSION

As the court in *California Oak Foundation* explained, "[T]o be adequate, the EIR must include sufficient detail to enable those who did not participate in its preparation to understand and 'meaningfully' consider the issues raised by the project." *California Oak Foundation, supra*, 133 Cal. App. 4th at p. 1237 (quoting *Santa Clarita Organization for Planning the Environment v. County of Los Angeles* (2d Dist. 2003) 106 Cal. App. 4th 715, 721). "This standard is not met in the absence of a forthright discussion of a significant factor that could affect water supplies." *California Oak Foundation, supra*, 133 Cal. App. 4th at p. 1237. "The EIR is intended to serve as an informative document to make government action transparent. Transparency is impossible without a clear and complete explanation of the circumstances surrounding the reliability of the water supply." *Id.* at pp. 1237-1238.

In view of the foregoing, and for the reasons articulated in comments 1-6 above, it is our legal opinion that the RDEIR is presently inadequate, lacks the required transparency, and cannot be used to support a finding that water supply impacts of the proposed project are Class II.

Respectfully submitted,

HOLLISTER & BRACE
A Professional Corporation

By____________________
Peter L. Candy
Attorneys for the Nipomo Hills Alliance

EXHIBIT A

Robinson Noble

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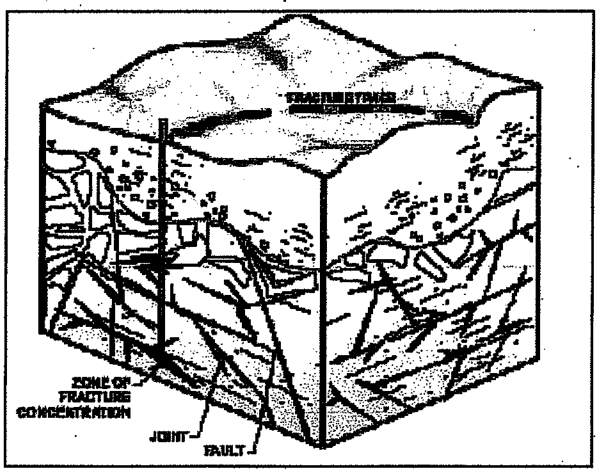
Fractured-rock Wells in the Pacific Northwest Foothills: Not Your Average Water Source

By: F. Michael Krautkramer, Robinson Noble, Inc.

Very generally, there are three different geologic settings that support water wells in the Pacific Northwest. The most common setting is unconsolidated sediments laid down by glaciers and rivers (or other erosional processes). While the aquifers formed in these sediments can vary, this setting is clearly the most successful in providing ground water. The next major setting, mostly found east of the Cascade Mountains, is the regionally extensive basalts like those of the Columbia Plateau. Wells completed in the basalts (or more accurately between the basalt flows) can also be highly variable, but the current understanding of the geometry and hydrogeology of the basalt layers provides some certainty to water development projects. The final geologic setting is much more enigmatic: the fractured-rock groundwater environment of the mountain foothills (particularly the CoastRanges or

Cascades). While wells completed in fractured rock are invaluable in many areas as a source for domestic wells, and occasionally serve as a reliable source for higher production, they tend to be less predictable and less reliable than other wells. The reason lies in the fundamental difference in the way fractured-rock aquifers transmit water.

The ability to transmit water (permeability) in an unconsolidated aquifer is a result of the interstitial spaces (pore spaces) between each individual clast of sediment and the degree to which these spaces are connected to one another. As such, there is a significant amount of open area through which water can flow (typically 10% to 30%). What is more, these characteristics are usually found consistently over a significant lateral extent. Similar characteristics can be found in some rock settings, such as sandstone, where significant amounts of water can flow through the spaces inherent in those types of rock. In hydrogeology, this is called the "primary permeability" of the material.



In a fractured-rock environment, such as found in the foothills of the Cascades and the Coast Ranges (and below the sediment cover elsewhere in the Pacific Northwest), the primary permeability is extremely low. Almost no water at all can pass through the rock itself, so water can only be transmitted through cracks and fractures that result from the folding and faulting of the rock over time. Fractures create "secondary" permeability. Aquifers which rely on secondary permeability generally have a much lower capacity to transmit water. This lower capacity results from both a smaller amount of open space (the size of the fracture) and a smaller lateral extent of the aquifer (fracture zones are not consistent throughout the rock), as compared to the primary permeability found in sediments. As a consequence, many rock wells are limited in the amount of water that they can reliably produce in the long term. Typically, these wells can have an apparent production during short-term testing that is higher than the actual amount that can be supported by the surrounding fractured-rock aquifer. As a result, the incidence of "well failure" is much higher in fractured rock wells than in other settings.

As if the poor ability to transmit water isn't enough, such settings also usually have difficulty collecting and storing water to transmit. In fractured-rock environments, an appreciably lower percentage of the precipitation over the area ends up getting into the groundwater system. This means that a smaller volume of water is available annually throughout the region served by an aquifer. This concept is known as the aquifer water budget. When more water is being removed through the wells in a region than is recharged from the precipitation (and other sources), the water levels in the wells of that region fall through time. If this is a chronic problem, eventually some or all of the wells become unable to produce water at the rate necessary to meet their demand.

Between the production constraints imposed by permeability issues in fractured-rock and the inherent water budget issues, caution must be used in the use of fractured-rock wells. Monitoring of the water levels and production of a rock well is essential, as is being aware of the regional level changes (such as: is it a low water year? are neighboring wells experiencing similar patterns of change?). It is easy to be fooled into thinking a fractured-rock well will have a sustainable level of water production based on the initial (short-term) testing. Since these aquifer systems are unique, predicting a long-term production rate takes more care and often cannot be determined just from the testing done when the well is completed. Clearly, when dealing with this type of rockwell, forewarned is forearmed-more than one vacation dream property has lost its value when the well gave out. Whether operating a water system or a single well for a home in the hills, keeping records of water levels and production will provide key information in defining a sustainable yield for fractured-rock wells.

The Washington State Ground Water Association is dedicated to technical and professional leadership in the advancement of the drilling and ground water industry. The Association produces these informational flyers to educate the public and its membership on the proper protection and use of ground water resources. The Association can be contacted at: (360) 757-1551 or online at www.wsgwa.org.

Robinson Noble, Inc. is a hydrogeologic, environmental, and geotechnical consulting firm specializing in environmental property assessments and the development and protection of groundwater resources. The company has supported the well-drilling industry for over 20 years as a Technical Division member of the Washington State Ground Water Association. The author may be contacted at: (253) 475-7711 or by email at mkrautkramer@robinson-noble.com.

Tacoma
3011 South Huson Street, Suite A
Tacoma, Washington 98409
253.475.7711
Woodinville
17625 130th Avenue NE, Suite 102
Woodinville, Washington 98072
425.488.0599