From: Megan Lawson
To: Gungle, Ashley
Cc: Bennett, Jim
Subject: Groundwater Responses to Comments
Date: Friday, September 20, 2013 10:43:06 AM
Attachments: Copy of PDS2012-3300-12-007-PDS-PLN-Specialist Checklist-Groundwater.xls
Copy of PDS2012-3600-12-005-PDS-PLN-Specialist Checklist-Groundwater.xls

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Hi Ashley,

The responses to County comments on the EIR section are embedded in the comment bubbles in the actual section.

Below are responses to comments in Attachments B & C, and attached are responses to the additional comments sent.

TDS:

16 - 2	Groundwater- MAJOR PROJECT ISSUE	Groundwater information received from Dudek in a memorandum dated July 23, 2012 indicates the project will require approximately 550,000 gallons per day of water during a 40 day peak demand period. This would equate to 381 gallons per minute of production if wells were pumped 24 hours a day over a 40 day period. It is unlikely that the existing 7 on-site wells would have combined ability to pump 381 gallons per minute. Off-site water will likely be required to supplement on-site groundwater demand. These offsite source(s) need to be identified now and impacts to groundwater from off-site source(s) need to be evaluated.	The water demand information contained herewith is out of date. Updated water demands for the project are up to 272,000 gallons per day over approximately 50 working days. A maximum quantity of 18 acre-feet is to be supplied form on-site Well B during constriction. The remaining water demand of 32 acre-feet will be imported form off-site sources. Recycled water from Padre Dam MWD has been identified as the ultimate source of water if other groundwater dependent sources are not available.	8/15/2012	
16 - 4	Groundwater - Well Test Plan	Besides the monitoring of on-site wells, It will also be required that ALL property owners located within 1/2-mile radius of the Well B be contacted and asked whether they wish to participate in having any of their wells monitoring during the well testing of Well B. Please send letters to each property owner and include a list of property owners contacted in the groundwater investigation. All groundwater level data collected from each offsite well shall be compiled within the groundwater investigation.	Completed. Documentation provided in the groundwater resources investigation report Appendix G and Table 2-8 lists off-site wells monitored.	8/15/2012	
16 - 5	Groundwater	Jim Bennett, County Groundwater Geologist, has reviewed the Draft Groundwater Resources Investigation Report, Tierra Del Sol Solar Farm Project, prepared by Dudek dated December 2012. The report is inadequate and requires revisions. Comments are provided as follows.	For information purposes only	3/12/2013	
16 - 6	Groundwater	Well Interference Analysis, Offsite Well Users: Figure 10 needs to be updated to show the location of all off-site well users. A map showing all confidential well logs that are within the Department of Environmental Health Database will be given to the consultant along with confidential well logs. Figure 10 should be updated to reflect these additional well locations. Also highlight all parcels that have been developed with single-family residences.	Resolved. Map Revised	3/12/2013	8/6/2013
16 - 7	Groundwater	Sections 2.6 and 2.7: County staff has obtained data from 14 confidential well logs located in the nearby area which will be provided to the consultant. Please include this data in the report to augment the discussion in Sections 2.6 and 2.7. The text should discuss the range of well yields reported in the well logs, the lithology (residuum/bedrock contact), and range of depth of wells. Since this data is confidential, do not correlate the data with the mapped well locations.	Resolved	3/12/2013	8/6/2013
16 - 8	Groundwater	Section 3.1.2.1 Runoff, Page 3-5: Desert scrub was selected as the groundwater cover which has a CN of 49 for A Soils and CN of 68 for B Soils. Please change the numbers in the report to reflect these values.	Resolved	3/12/2013	8/6/2013
16 - 9	Groundwater	Section 3.1.2.1 Runoff, Page 3-5: The runoff was changed based on utilizing a PZN adjustment factor. This factor should not be used since the study is looking at long-term runoff rates at a monthly time scale. Adjusting the PZN would not be appropriate for this type of application. Please use the published non-adjusted values.	Resolved	3/12/2013	8/6/2013
16 - 10	Groundwater	Section 3.1.2.1 Runoff, Calculation Spreadsheet: Runoff was not correctly calculated in the spreadsheet for lower rainfall events due to an incorrect IF statement utilized. The IF statement that was utilized was IF P>0.5. Please revise and use the following: IF P=0.2S. Additionally, the report on Page 3-5 that average runoff would be 2.4 inches or 21% of precipitation. This is incorrect due to adding the amount of runoff that occurred in each of the three soil type areas analyzed and dividing by the total precipitation that fell. Please re-calculate by looking at each individual sub-watershed that was analyzed and comparing the runoff in that sub-watershed to the total precipitation that fell in that sub-watershed. The result will be roughly 1/3 the amount of runoff as compared to what was reported in the study.	Resolved	3/12/2013	8/6/2013
		Section 3.1.2.2 Groundwater Demand: The project construction water demand appears to be 25.7 acre-feet from Well B as indicated in Table 3-3 and the rest of the water would be imported. However, in the footnote of Table 3-3 it indicates that construction water demand requires a one-time extraction of approximately 39 acre-feet. Please fix this			

16 - 11	Groundwater	discrepancy. Additionally, under Scenario 4, 21 acre-feet of groundwater is included to be exported to Rugged Solar Farm. Since the project already requires imported water to meet its construction needs, County staff requests that exportation of water to other projects not be included. Please remove exportation of groundwater from Well B from the project.	Resolved	3/12/2013	8/6/2013
16 - 12	Groundwater	Section 3.2.1.1. Well Interference in Fractured Rock: Define in this subsection what the total demand of production from Well B is anticipated to be during the project. It is assumed this would be 25.7 acre-feet during the first 11 months of the project and then 4 acre-feet per year for the life of the project. All well interference analysis will be based on the anticipated groundwater demand from Well B.	Resolved	3/12/2013	8/6/2013
16 - 13	Groundwater	Section 3.2.2.3. Well Test Analysis, Significance of Impacts Prior to Mitigation, First Paragraph: A five-year projection of drawdown using the straight line method is the incorrect method to use to evaluate potential well interference impacts on off-site wells. Revise this analysis to evaluate potential well interference impacts on the closest offsite well using the Cooper-Jacob approximation of the Theis non-equilibrium flow equation. Utilize anticipated groundwater demand during the construction period as the first analysis and then a second analysis considering pumping for 5 years at the anticipated ongoing rate of demand. Include distances ranging from 50 feet to 5,280 feet (1-mile) in a Table to summarize potential well interference impacts. The pumping during the construction phase should realistically consider whether the well will be pumped 24 hours a day or whether it will be pumped at higher rates for shorter periods each day. A worst-case scenario of how pumping will occur should be evaluated.	Resolved. This was provided in revised groundwater investigation however additional comments have been made on results and methodology utilized to calculate drawdown.	3/12/2013	8/6/2013
16 - 14	Groundwater	Section 3.2.2.3. Well Test Analysis, Significance of Impacts Prior to Mitigation, First Paragraph: The first paragraph should be revised to summarize the significance of impacts from the construction phase of groundwater pumping and then the ongoing water use based on well interference calculations.	Resolved. Revisions still required per comments below.	3/12/2013	8/6/2013
16 - 15	Groundwater	Section 3.2.2.3. Well Test Analysis, Significance of Impacts Prior to Mitigation, Hydraulic Isolation: Fractured rock aquifer systems are complicated and very difficult to adequately characterize. The spacing, orientation, and interconnectivity of fractures are complex and difficult to thoroughly analyze even with a robust groundwater monitoring network. The pathways of fractured zones at Well B are undefined and may result in potential impacts to nearby wells. Additionally, the well test conducted was for only 72 hours where impacts to wells at the distances monitored for the majority of the wells would be expected to be negligible given the time and the amount of water pumped. Substantial additional characterization of the fractured rock system would be required before the conclusion of hydraulic isolation could be made likely far beyond the scope of a project of this magnitude. Please remove the statement that the project well production will not exceed the County threshold of significance based on hydraulic isolation.	Resolved. Additional analysis conducted.	3/12/2013	8/6/2013
16 - 16	Groundwater	Section 5.2. Well Interference, Summary of Project Impacts and Mitigation: The fact that there was not drawdown in the monitoring wells during well testing is not a standard the County employs to indicate whether there will be well interference on off-site wells. This would have potentially catastrophic consequences if used as a standard given the nature of fractured rock aquifers. Rather, drawdown calculations as requested above are the standard. Please revise this section along with any mitigation measures necessary.	Resolved. Additional analysis conducted.	3/12/2013	8/6/2013
16 - 17	Groundwater	Section 5.5 Mitigation Measures: Based on revised well interference analysis, it will be necessary to develop a maximum amount of groundwater that can be safely pumped during the construction phase without resulting in significant well interference impacts on the closest well user to Well B. Additionally, a maximum amount of groundwater will also be established for the ongoing water use needed. A monitoring well network will be required to be setup with maximum drawdown thresholds to ensure impacts to offsite wells remain less than significant. Ongoing monitoring of well RM-1 which is located in the Coast Live Woodland will be required during the construction phase of pumping to evaluate potential impacts to the shallow groundwater system beneath the Coast Live Oak Woodland habitat. After the groundwater investigation is revised with the above changes requested and reviewed by County staff, a meeting will be setup to discuss the details of this plan and any additional wells needed to be installed for monitoring.	Resolved. Groundwater Monitoring and Management Plan included.	3/12/2013	8/6/2013
		Imported Groundwater: Once the groundwater investigation is revised and the amount of water to be produced from Well B is finalized, the amount of water to be imported to the site will be known. Prior	Resolved. The amount of water to be pumped from Well B still remains to be determined based upon well interference		

16 - 18	Groundwater	to public review, the project will be required to have identified all offsite water sources to provide the imported water to the site. If the water sources are from groundwater dependent entities, a groundwater investigation will be required to evaluate potential groundwater impacts from any of these entities which must be reviewed and approved prior to the project going out for public review.	calculations. See comments below for details. (Amount of water to be pumped form Well B is 18 acre-feet over the approximate 1 year construction period as per the September 2013 updated groundwater resources investigation report).	3/12/2013	8/6/2013

Rugged:

16 - 1	Groundwater Resources	The groundwater investigation must evaluate potential impacts to groundwater resources when taking into account the Tule Wind Farm, Rough Acres Ranch and Rugged Solar projects into account along with other existing groundwater uses, and groundwater use at maximum buildout of the General Plan. The report must determine whether all three projects can be supported by local groundwater resources. If they can't, please identify where/how other water resources will be utilized. **Update 8/28/2012: The groundwater investigation was waived for XIS1, but will be required to be submitted with XIS2. Pursuant to the scoping letter requirements for the groundwater investigation, a meeting is required to be setup between the applicant's hydrogeologist(s) and County Groundwater Geologist to discuss the wells to be drilled/tested for the groundwater investigation. Please setup this meeting as soon as possible so testing can be conducted and included in the groundwater investigation with the next iteration submittal.**	Please see comments 16-9 through 16-28 below.	6/15/2012 **8/28/2012**	5/7/2013
16 - 2	Groundwater Resources	Please determine if any ground-water-dependent-vegetation will result in potential groundwater impacts from proposed groundwater extraction. Please note that this could result in a severe curtailing of potential groundwater use from any wells near groundwater dependent habitat. This also may result in the requirement of identifying wells within other areas of the project site for adequate groundwater resources. **8/28/12 Pending groundwater investigation.**	Please see comments 16-9 through 16-28 below.	6/15/2012 **8/28/2012**	5/7/2013
16 - 3	Groundwater Resources	If it is found that on-site groundwater resources cannot serve this project, additional water will be required from off-site source(s). Pursuant to CEQA, impacts to groundwater resources from using any of these sources must be evaluated now as part of this project. Therefore, please identify any off-site sources of groundwater in which this project is considering. **Update 8/23/2012: Two off-site sources, Jacumba Community Services District and Live Oak Springs Water Company have been identified as potential offsite uses. If the project cannot prove out adequate on-site groundwater, groundwater evaluation(s) of these offsite source(s) will be required.**	Please see comments 16-9 through 16-28 below.	6/15/2012 **8/28/2012**	5/7/2013
16 - 4	Groundwater Resources	Since elevated radionuclide concentrations above the Maximum Contaminant Level (MCL) could pose a threat to human health, water quality sampling will be required to ensure that there is a safe and potable water supply for any new wells to be used for the project. Please address how wells with constituents that exceed MCL's will be addressed. For wells with constituents found to exceed any primary MCL, a water treatment system could be implemented to reduce detectable concentrations to below the MCL. **8/28/12 Pending groundwater investigation.**	Please see comments 16-9 through 16-28 below.	6/15/2012 **8/28/2012**	5/7/2013
		Potential Groundwater-Dependent Habitat: Any supply well for this project that is located within the center of McCain Valley is within an area regionally mapped as containing vegetation that could be groundwater dependent (alkali seep) and RPO Wetland. Guideline 4.2.C from the			

16 - 5	Groundwater Resources	Biological Guidelines for Determining Significance have the following threshold for determining a significant impact to riparian habitat or a sensitive natural community: "The project would draw down the groundwater table to the detriment of groundwater-dependent habitat, typically a drop of 3 feet or more from historical low groundwater levels." The requested biology report will be required to evaluate whether the vegetation community is groundwater dependent as well as other vegetation communities throughout the project site. Any vegetation found to be groundwater dependent will be required to be evaluated for potential groundwater impacts from proposed groundwater extraction. This could result in a severe curtailing of potential groundwater use from any wells near groundwater dependent habitat. This also may result in the requirement of identifying wells within other areas of the project site for adequate groundwater resources.	Please see comments 16-9 through 16-28 below.	6/15/2012 **8/28/2012**	5/7/2013
16 - 6	Groundwater Resources	Any Offsite Groundwater Sources Must Be Evaluated: If it is found that on-site groundwater resources cannot serve this project, additional water will be required from off-site source(s). The project description indicates that the project may pursue water from the following sources if there is not adequate on-site groundwater for this project: Jacumba Service District, Live Oak Springs Water Company, any County permitted Groundwater Extraction operations located within the Mountain Empire, the contiguous Rough Acres Ranch public, non-community water system. Pursuant to CEQA, impacts to groundwater resources from using any of these sources must be evaluated now as part of this project. Therefore, please indicate any off-site source(s) of groundwater in which this project is considering. An appropriate evaluation of potential impacts to groundwater resources will be determined by DPLU based on the source(s) identified by the applicant. **8/28/12 Pending groundwater investigation.**	Please see comments 16-9 through 16-28 below.	6/15/2012 **8/28/2012**	5/7/2013
16 - 7	Groundwater Resources	Groundwater Quality: There is a potential risk for naturally-occurring radionuclides to be present at levels above drinking water standards in wells used for domestic supply in areas underlain by fractured crystalline bedrock in the backcountry of our County. Since elevated radionuclide concentrations above the Maximum Contaminant Level (MCL) could pose a threat to human health, water quality sampling will be required to ensure that there is a safe and potable water supply for any new wells to be used for the project. For wells with constituents found to exceed any primary MCL, a water treatment system could be implemented to reduce detectable concentrations to below the MCL. The treatment of radionuclides is expensive and may prove to be economically infeasible. It is therefore recommended that for any new wells to be included for this project and used for potable water, that water quality testing portion of your project proceed as soon as possible to evaluate potential impacts. **8/28/12 Pending groundwater investigation.**		6/15/2012 **8/28/2012**	5/7/2013
16 - 8	Groundwater Resources	Jim Bennett, County Groundwater Geologist, has reviewed the Draft Groundwater Resources Investigation Report, Rugged Solar Farm Project, prepared by Dudek dated February 2013. The report is inadequate and requires revisions. Comments are provided as follows.	Informational Only	3/12/2013	
16 - 9	Groundwater Resources	Offsite Well Users: Figure 10 needs to be updated to show the location of all off-site well users including the conservation camp well near Well 8 including the conservation camp well. A map showing all confidential well logs that are within the Department of	Resolved.	3/12/2013	8/6/2013

		Environmental Health Database will be given to the consultant. Also, highlight all parcels that have been developed with single-family residences.			
16 - 10	Groundwater Resources	Sections 2.6 and 2.7: Please obtain data from confidential well logs located in the nearby area of Well 6a/6b and Well 8. A spreadsheet of existing confidential well logs will be provided by County staff. Please make a request to the Department of Environmental Health to make copies of well logs for the list given to you. Include this data in the report to augment the discussion in Sections 2.6 and 2.7. The text should discuss the range of well yields reported in the well logs, the lithology (residuum/bedrock contact), and range of depth of wells. Since this data is confidential, do not correlate the data with the mapped well locations.	Resolved.	3/12/2013	8/6/2013
16 - 11	Groundwater Resources	Section 2.4.1 Construction Water Demand, Page 2-10: The last paragraph indicates that approximately 47 acre-feet of groundwater will be supplied by on-site wells for the construction phase of the project. This should be stated in the executive summary and throughout the report. This number should be based on what is available from Well 6a/6b and Well 8 taking all other projects into consideration that intend on using these wells. It should also be stated that the remaining water to provide the 90.7 acre-feet of water necessary for the construction phase will be imported by offsite sources (if that is the case). The offsite sources should be named in the report and impacts to groundwater resources from those sources are required to be analyzed now.	Resolved. The report indicates 44 acre-feet of groundwater will be supplied from on-site wells of the construction phase of the project. Imported water will include up to 16 acre-feet for construction phase. Offsite sources include Pine Valley Mutual Water Company, Jacumba Springs Community Services District and Padre Dam Municipal Water District.	3/12/2013	8/6/2013
16 - 12	Groundwater Resources	Section 2.4.1 Construction Water Demand, Page 2-10: The last paragraph indicates that Rough Acres Ranch Campground is using Well 6a. The campground project (P12-021) is in process at the County and has not yet been approved. Additionally, Tule Wind Farm has been approved to use Well 6, 6a, and Well 8 which needs to be discussed and included as part of the groundwater analysis for this project. A maximum of 56 acre-feet of groundwater can be removed for the Tule project from Well 6/6a and a maximum of 20 acre-feet from Well 8 within a nine month period for construction. These maximum uses should be included in the analysis of this project. An additional 2,500 gpd ongoing O&M water use for Tule Wind project will be provided from Well 6/6a and should be included in the analysis. Revise to include all uses that are currently approved to use these wells and the quantities to be utilized. This may impact the amount of groundwater proposed to be utilized from these wells for this project. **8/6/2013: The well interference calculations don't incorporate drawdown that will occur from the Tule Wind project pumping for construction of 56 acre-feet in 9 months. There will be residual drawdown after pumping. Since this is a rather unique situation, how to include impacts from the Tule pumping will be discussed in an upcoming working meeting.**	Well interference calculation have been updated in the September 2013 groundwater resources investigation to account for the Tule Wind Project.	3/12/2013 **8/6/2013**	
16 - 13	Groundwater Resources	Section 3.1.2.1 Runoff, Page 3-5: The runoff was changed based on utilizing a PZN adjustment factor. This factor should not be used since the study is looking at long-term runoff rates at a monthly time scale. Adjusting the PZN would not be appropriate for this type of application. Please use the published non-adjusted values.	Resolved	3/12/2013	8/6/2013
16 - 14	Groundwater Resources	Section 3.1.2.1 Runoff, Calculation Spreadsheet: Runoff was not correctly calculated in the spreadsheet for lower rainfall events due to an incorrect IF statement utilized. The IF statement that was utilized was IF P>0.5. Please revise and use the following: IF P=0.2S. Additionally, the report on	Resolved	3/12/2013	8/6/2013

		Page 3-6 should be updated to discuss the average amount of runoff that was calculated for this study from the water balance calculation spreadsheets.			
16 - 15	Groundwater Resources	Section 3.1.2.2 Groundwater Production Area Demand: Table 3-3 Existing Conditions should include the Tule Wind Project which has been approved to use 56 acre-feet from Well 6/6a during the 9-month construction phase of its project. This should be carried over into Table 3-4 and Table 3-5. Also the Tule Wind project was approved to utilize 2,500 gallons per day for their ongoing O&M facility which should be included in Table 3-3, Table 3-4, and Table 3-5.	Resolved	3/12/2013	8/6/2013
16 - 16	Groundwater Resources	Section 3.1.2.2 Groundwater Production Area Demand: Table 3-6 Existing Conditions should include the Tule Wind Project which has been approved to use 20 acre-feet from Well 8 during the 9-month construction phase of its project. This should be carried over into Table 3-7 and 3-8.	Resolved	3/12/2013	8/6/2013
16 - 17	Groundwater Resources	Section 3.1.2.2. Groundwater Production Area Demand: There are export quantities of groundwater to be provided to the Tierra Del Sol Solar Farm project when this project itself does not appear to have enough groundwater to serve its short-term needs. Additionally, these wells are approved to serve the Tule Wind Project which has not been analyzed and must be included. Lastly, the well field has a limited amount of saturated alluvium (~51 to 56 feet based on recent water level readings) which based on projected drawdown in the wells after one year of pumping will be substantially dewatered (180 feet) at a rate of 39 gallons per minute (less than the projected rate of demand during the first year of groundwater pumping). An analysis needs to be performed now on the production capacity of this well field when the alluvium is dewatered as a result of pumping. Please calculate the quantity of drawdown that is anticipated to occur at the projected pumping rate after the alluvium is dewatered using parameters typical of fractured rock aquifer. If the wells cannot sustain the production proposed, maximum pumping rates must be curtailed accordingly. This analysis should be placed in Section 3.2 Well Testing. Given the potential limitations of multiple project uses on a few wells which may not support the proposed demand, it is requested to remove the exportation option from the report.	Resolved	3/12/2013	8/6/2013
16 - 18	Groundwater Resources	Section 3.2.1.1. Well Interference in Fractured Rock: Define in this subsection what the total demand from Well 6/6a/6b and Well 8 will be for the project and all other uses to utilize the well. The well interference calculation should include a short-term demand analysis and an ongoing well interference calculation. The pumping during the construction phase should realistically consider whether the well will be pumped 24 hours a day or whether it will be pumped at higher rates for shorter periods each day. It should be clear to the reader what the amount of demand for the one year projection of drawdown is based upon and what the five year projection of drawdown is based upon. The demand should include all other projects which intend on using these wells. **Update 8/6/2013: The project needs to include pumping from the construction phase of the Tule Wind Farm project in the well interference calculations as well as the entire construction schedule & ongoing use anticipated by the Rough Acres Ranch project. This will be discussed at the working meeting on Friday.**	Well interference calculation have been updated in the September 2013 groundwater resources investigation to account for the Tule Wind Project and ongoing use anticipated by the Rough Acres Ranch project.	3/12/2013 **8/6/2013**	
		Section 3.2.1.1 Well Interference in Fractured Rock: Update to include a table of the closest well users within 1 mile of each of well sites indicating the			

16 - 19	Groundwater Resources	APN, Well Name, distance from proposed pumping wells, and the use of the well. For residential parcels, the nearest property line should be used. APN 611-091-07 (property line) is located 1,742 feet from Wells 6/6a/6b. Please correct the text to include this as the closest residential land use with a well in proximity of the Well 6/6a/6b.	Resolved.	3/12/2013	8/6/2013
16 - 20	Groundwater Resources	Section 3.2.1.2 Groundwater-Dependent Habitat, Page 3-22 and 3-23: The text states that 7.3 feet of drawdown would occur in an area with Coast Live Oaks with the projected water table to be 21.3 feet below ground surface. It was concluded that this would have no impact to the trees since they have been documented to have rooting depths up to 36 feet. There have been documented cases in which sudden decreases in water levels of just 3 feet caused sudden death to phreatophytes in the desert southwest which are the basis of the County's 3-foot threshold within the County Biological Guidelines. This subsection will be required to be reviewed by a County Biologist to determine whether or not the decrease in water levels will result in any impacts to phreatophytes.	Resolved.	3/12/2013	8/6/2013
16 - 21	Groundwater Resources	Section 3.2.2.2. Wells 6a and 6b Test Analysis: On Page 3-27 projected drawdown was included at one and five years using the Cooper-Jacob straight line method at 39 gallons per minute which was the rate that the aquifer test was performed. Please update to 88 gallons per minute to match the rate used in the Cooper-Jacob approximation of the Theis Non-Equilibrium Flow Equation and is representative of the project anticipated flow rate.	Resolved.	3/12/2013	8/6/2013
16 - 22	Groundwater Resources	Section 3.2.2.2 Wells 6a and 6b Test Analysis, Page 3-28: Include a table with the results of the drawdown analysis at distances of 50, 100, 250, 439, 500, 750, 1000, 1,742, 2,640, and 5,280 feet. For any numbers in which the Coefficient u exceeds the cutoff for method solution, please indicate this as an asterisk or other symbol within the table. Please include both a short-term well interference analysis of one year of pumping at projected rates and a five year projection of drawdown.	Resolved.	3/12/2013	8/6/2013
16 - 23	Groundwater Resources	Section 3.2.2.2 Wells 6a and 6b Test Analysis: Include a separate analysis to evaluate impacts on drawdown when this well field dewaters the upper alluvial aquifer. A meeting should be held between the applicant's hydrogeologists and County staff to develop the parameters to be included.	Resolved.	3/12/2013	8/6/2013
16 - 24	Groundwater Resources	Section 3.2.2.4 Well 8 Test Analysis, Page 3-32: Include a table with the results of the drawdown analysis at distances of 50, 100, 250, 500, 750,1000, 1,800, 2,640, and 5,280 feet. For any numbers in which the coefficient u exceeds the cutoff for the method solution, please indicate with an asterisk or other symbol within the table. Please include both a short-term interference analysis of one year of pumping at projected rates and a five year projection of drawdown.	Resolved.	3/12/2013	8/6/2013
16 - 25	Groundwater Resources	Section 3.2.2.4 Well 8 Test Analysis, Page 3-32: The five year projected drawdown in Well 8 indicates 345 feet of drawdown which would be very close to dewatering the entire well. Considering the interface between broken rocks and D.G. and solid bedrock is at 310 feet, there is likelihood that pumping at depths below 310 may be unproductive. Please revise the report to discuss whether the well will be able to handle the flow rates anticipated based on the lithology and projected drawdown within the well at 5 years.	Resolved.	3/12/2013	8/6/2013
		Section 3.2.3. Well Test Analysis, Significance of Impacts Prior to Mitigation, First Paragraph: The first paragraph should be revised to summarize the significance of impacts from the construction phase of			

16 - 26	Groundwater Resources	groundwater pumping and then the ongoing water use based on well interference calculations. **8/6/2013: Table 3-21, Drawdown calculations contained an error in the formula which resulted in an underestimation of drawdown to occur from project pumping. The formula, s=0.183Q/T * LOG 2.25 T/t2/s included "1,000" instead of "T" in the first part of the formula. All results require to be revised throughout the well interference analysis section.**	Drawdown calculations for Rugged have been updated using the Hantush solution as approved in meeting with County Groundwater Geologist.	3/12/2013 **8/6/2013**	
16 - 27	Groundwater Resources	Section 5.5 Mitigation Measures: Based on revised well interference analysis, it will be necessary to develop a maximum amount of groundwater that can be safely pumped during the construction phase without resulting in significant well interference impacts on the closest well users to Well 6a/6b and Well 8. Additionally, a maximum amount of groundwater will also be established for the ongoing water use needed. Development of a Groundwater Monitoring and Mitigation Plan will be required which will require monitoring wells in both locations with thresholds in which pumping shut-down requirements would be included to ensure impacts to off-site wells remain less than significant. After the groundwater investigation is revised with the above changes requested and reviewed by County staff, a meeting will be setup to discuss the details of this plan. The plan will need to consider groundwater pumping from existing groundwater use, Tule Wind Farm (P09-019), Rugged Solar (P12-007), and the Rough Acres Ranch Campground (P12-021). It is clear that these projects during the construction phases will need to be coordinated so as to have no overlap in groundwater pumping since the wells could not support the level of demand required.	Resolved	3/12/2013	8/6/2013
16 - 28	Groundwater Resources	Imported Groundwater: Once the groundwater investigation is revised and the amount of water to be produced from Well B is finalized, the amount of water to be imported to the site will be known. Prior to public review, the project will be required to have identified all offsite water sources to provide the imported water to the site. If the water sources are from groundwater dependent entities, a groundwater investigation will be required to evaluate potential groundwater impacts from any of these entities which must be reviewed and approved prior to the project going out for public review.	Resolved.	3/12/2013	8/6/2013

Megan Lawson, LEED AP ND
760.479.4243

ATTACHMENT A
PROJECT ISSUE CHECKLIST

DPLU (Department of Planning and Land Use) Planning and CEQA Comments					
Item	**No.**	**Subject Area**	**Issue, Revision or Information Required**	**Issue Resolution Summary (Include Conditions)**	**Date Identified**
	1	Project Description	Project Description, Page 51: The project is proposing to provide groundwater for water uses on the project through two wells. Please identify the location of the two wells. Please also provide any well logs for the wells which would be on file with the Department of Environmental Health, and any other information in regard to the wells (well depth, production characteristics, etc.).	Resolved	6/5/2012
	2	Project Description	Project Description, Page 51: The project description indicates that water will be provided by two wells and from other sources if there is not enough water from the two wells. It is possible that the construction water required for this project of 73 acre-feet may not be possible to be produced from just two wells. Please have your hydrogeologist evaluate the total production needs during the construction phase and update your project description to identify all possible sources of water for this project. All sources of water are required to be identified now and evaluation of potential impacts to groundwater resources shall be conducted on these sources now.	The updated September 2013 report indicates 44 acre-feet of groundwater will be supplied from on-site wells for the construction phase of the project. Imported water will include up to 16 acre-feet for construction phase. Off-site sources include Pine Valley Mutual Water Company, Jacumba Springs Community Services District and Padre Dam Municipal Water District.	6/5/2012
	3	Project Description	Project Description Page 51: The text indicates that less water intensive methods of dust suppression are currently under review. It is strongly recommended that alternative forms of grading/dust suppression be considered to reduce the amount of groundwater necessary for the construction portion of the project. Please update the project description with any alternatives to reduce the amount of groundwater to be utilized as feasible.	Minimized grading and use of soil tackifier have been incorporated into project design to minimize use of water.	6/5/2012
	4	Project Description	Project Description, Table 3, Page 52: The number of total gallons for site preparation contains a discrepancy. The total should be 22,374,800 gallons, not 32,585,100 gallons.	Report has been updated with resvised water deamnds.	6/5/2012

ATTACHMENT A
PROJECT ISSUE CHECKLIST

	5	Groundwater	Jim Bennett, County Groundwater Geologist, has reviewed the Draft Groundwater Resources Investigation Report, Rugged Solar Farm Project, prepared by Dudek dated February 2013. The report is inadequate and requires revisions. Comments are provided as follows.	For information purposes only	3/12/2013
	6	Groundwater	Offsite Well Users: Figure 10 needs to be updated to show the location of all off-site well users including the conservation camp well near Well 8 including the conservation camp well. A map showing all confidential well logs that are within the Department of Environmental Health Database will be given to the consultant. Also, highlight all parcels that have been developed with single-family residences.	Resolved.	3/12/2013
	7	Groundwater	Sections 2.6 and 2.7: Please obtain data from confidential well logs located in the nearby area of Well 6a/6b and Well 8. A spreadsheet of existing confidential well logs will be provided by County staff. Please make a request to the Department of Environmental Health to make copies of well logs for the list given to you. Include this data in the report to augment the discussion in Sections 2.6 and 2.7. The text should discuss the range of well yields reported in the well logs, the lithology (residuum/bedrock contact), and range of depth of wells. Since this data is confidential, do not correlate the data with the mapped well locations.	Resolved.	3/12/2013
	8	Groundwater	Section 2.4.1 Construction Water Demand, Page 2-10: The last paragraph indicates that approximately 47 acre-feet of groundwater will be supplied by on-site wells for the construction phase of the project. This should be stated in the executive summary and throughout the report. This number should be based on what is available from Well 6a/6b and Well 8 taking all other projects into consideration that intend on using these wells. It should also be stated that the remaining water to provide the 90.7 acre-feet of water necessary for the construction phase will be imported by offsite sources (if that it the case). The offsite sources should be named in the report and impacts to groundwater resources from those sources are required to be analyzed now.	Resolved. The report indicates 44 acre-feet of groundwater will be supplied from on-site wells for the construction phase of the project. Imported water will include up to 16 acre-feet for construction phase. Off-site sources include Pine Valley Mutual Water Company, Jacumba Springs Community Services District and Padre Dam Municipal Water District.	3/12/2013

ATTACHMENT A
PROJECT ISSUE CHECKLIST

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	10	Groundwater	Section 3.1.2.1 Runoff, Page 3-5: The runoff was changed based on utilizing a PZN adjustment factor. This factor should not be used since the study is looking at long-term runoff rates at a monthly time scale. Adjusting the PZN would not be appropriate for this type of application. Please use the published non-adjusted values.	Resolved	3/12/2013
	11	Groundwater	Section 3.1.2.1 Runoff, Calculation Spreadsheet: Runoff was not correctly calculated in the spreadsheet for lower rainfall events due to an incorrect IF statement utilized. The IF statement that was utilized was IF P>0.5. Please revise and use the following: IF P=0.2S. Additionally, the report on Page 3-6 should be updated to discuss the average amount of runoff that was calculated for this study from the water balance calculation spreadsheets.	Resolved	3/12/2013

ATTACHMENT A
PROJECT ISSUE CHECKLIST

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	13	Groundwater	Section 3.1.2.2 Groundwater Production Area Demand: Table 3-6 Existing Conditions should include the Tule Wind Project which has been approved to use 20 acre-feet from Well 8 during the 9-month construction phase of its project. This should be carried over into Table 3-7 and 3-8.	Resolved	3/12/2013
	14	Groundwater	Section 3.1.2.2. Groundwater Production Area Demand: There are export quantities of groundwater to be provided to the Tierra Del Sol Solar Farm project when this project itself does not appear to have enough groundwater to serve its short-term needs. Additionally, these wells are approved to serve the Tule Wind Project which has not been analyzed and must be included. Lastly, the well field has a limited amount of saturated alluvium (~51 to 56 feet based on recent water level readings) which based on projected drawdown in the wells after one year of pumping will be substantially dewatered (180 feet) at a rate of 39 gallons per minute (less than the projected rate of demand during the first year of groundwater pumping). An analysis needs to be performed now on the production capacity of this well field when the alluvium is dewatered as a result of pumping. Please calculate the quantity of drawdown that is anticipated to occur at the projected pumping rate after the alluvium is dewatered using parameters typical of fractured rock aquifer. If the wells cannot sustain the production proposed, maximum pumping rates must be curtailed accordingly. This analysis should be placed in Section 3.2 Well Testing. Given the potential limitations of multiple project uses on a few wells which may not support the proposed demand, it is requested to remove the exportation option from the report.	Resolved	3/12/2013

ATTACHMENT A
PROJECT ISSUE CHECKLIST

	15	Groundwater	Section 3.2.1.1. Well Interference in Fractured Rock: Define in this subsection what the total demand from Well 6/6a/6b and Well 8 will be for the project and all other uses to utilize the well. The well interference calculation should include a short-term demand analysis and an ongoing well interference calculation. The pumping during the construction phase should realistically consider whether the well will be pumped 24 hours a day or whether it will be pumped at higher rates for shorter periods each day. It should be clear to the reader what the amount of demand for the one year projection of drawdown is based upon and what the five year projection of drawdown is based upon. The demand should include all other projects which intend on using these wells. **Update 8/6/2013: The project needs to include pumping from the construction phase of the Tule Wind Farm project in the well interference calculations as well as the entire construction schedule & ongoing use anticipated by the Rough Acres Ranch project. This will be discussed at the working meeting on Friday.**	Well interference calculation have been updated in the September 2013 groundwater resources investigation to account for the Tule Wind Project, the entire construction schedule and ongoing use anticipated by the Rough Acres Ranch project.	3/12/2013 **8/6/2013**
	16	Groundwater	Section 3.2.1.1 Well Interference in Fractured Rock: Update to include a table of the closest well users within 1 mile of each of well sites indicating the APN, Well Name, distance from proposed pumping wells, and the use of the well. For residential parcels, the nearest property line should be used. APN 611-091-07 (property line) is located 1,742 feet from Wells 6/6a/6b. Please correct the text to include this as the closest residential land use with a well in proximity of the Well 6/6a/6b.	Resolved.	3/12/2013

ATTACHMENT A
PROJECT ISSUE CHECKLIST

	17	Groundwater	Section 3.2.1.2 Groundwater-Dependent Habitat, Page 3-22 and 3-23: The text states that 7.3 feet of drawdown would occur in an area with Coast Live Oaks with the projected water table to be 21.3 feet below ground surface. It was concluded that this would have no impact to the trees since they have been documented to have rooting depths up to 36 feet. There have been documented cases in which sudden decreases in water levels of just 3 feet caused sudden death to phreatophytes in the desert southwest which are the basis of the County's 3-foot threshold within the County Biological Guidelines. This subsection will be required to be reviewed by a County Biologist to determine whether or not the decrease in water levels will result in any impacts to phreatophytes.	Resolved.	3/12/2013
	18	Groundwater	Section 3.2.2.2. Wells 6a and 6b Test Analysis: On Page 3-27 projected drawdown was included at one and five years using the Cooper-Jacob straight line method at 39 gallons per minute which was the rate that the aquifer test was performed. Please update to 88 gallons per minute to match the rate used in the Cooper-Jacob approximation of the Theis Non-Equilibrium Flow Equation and is representative of the project anticipated flow rate.	Resolved.	3/12/2013
	19	Groundwater	Section 3.2.2.2 Wells 6a and 6b Test Analysis, Page 3-28: Include a table with the results of the drawdown analysis at distances of 50, 100, 250, 439, 500, 750, 1000, 1,742, 2,640, and 5,280 feet. For any numbers in which the Coefficient u exceeds the cutoff for method solution, please indicate this as an asterisk or other symbol within the table. Please include both a short-term well interference analysis of one year of pumping at projected rates and a five year projection of drawdown.	Resolved.	3/12/2013
	20	Groundwater	Section 3.2.2.2 Wells 6a and 6b Test Analysis: Include a separate analysis to evaluate impacts on drawdown when this well field dewaters the upper alluvial aquifer. A meeting should be held between the applicant's hydrogeologists and County staff to develop the parameters to be included.	Resolved.	3/12/2013

ATTACHMENT A
PROJECT ISSUE CHECKLIST

	21	Groundwater	Section 3.2.2.4 Well 8 Test Analysis, Page 3-32: Include a table with the results of the drawdown analysis at distances of 50, 100, 250, 500, 750,1000, 1,800, 2,640, and 5,280 feet. For any numbers in which the coefficient u exceeds the cutoff for the method solution, please indicate with an asterisk or other symbol within the table. Please include both a short-term interference analysis of one year of pumping at projected rates and a five year projection of drawdown.	Resolved.	3/12/2013
	22	Groundwater	Section 3.2.2.4 Well 8 Test Analysis, Page 3-32: The five year projected drawdown in Well 8 indicates 345 feet of drawdown which would be very close to dewatering the entire well. Considering the interface between broken rocks and D.G. and solid bedrock is at 310 feet, there is likelihood that pumping at depths below 310 may be unproductive. Please revise the report to discuss whether the well will be able to handle the flow rates anticipated based on the lithology and projected drawdown within the well at 5 years.	Resolved.	3/12/2013
	23	MAJOR PROJECT ISSUE, Groundwater	Section 3.2.3. Well Test Analysis, Significance of Impacts Prior to Mitigation, First Paragraph: The first paragraph should be revised to summarize the significance of impacts from the construction phase of groundwater pumping and then the ongoing water use based on well interference calculations. **8/6/2013: Table 3-21, Drawdown calculations contained an error in the formula which resulted in an underestimation of drawdown to occur from project pumping. The formula, s=0.183Q/T * LOG 2.25 T/t2/s included "1,000" instead of "T" in the first part of the formula. All results require to be revised throughout the well interference analysis section.**	Drawdown calulations for Rugged have been updated using the Hantush solution as approved in meeting with County Groundwater Geologist.	3/12/2013 **8/6/2013**

	24	Groundwater	Section 5.5 Mitigation Measures: Based on revised well interference analysis, it will be necessary to develop a maximum amount of groundwater that can be safely pumped during the construction phase without resulting in significant well interference impacts on the closest well users to Well 6a/6b and Well 8. Additionally, a maximum amount of groundwater will also be established for the ongoing water use needed. Development of a Groundwater Monitoring and Mitigation Plan will be required which will require monitoring wells in both locations with thresholds in which pumping shut-down requirements would be included to ensure impacts to off-site wells remain less than significant. After the groundwater investigation is revised with the above changes requested and reviewed by County staff, a meeting will be setup to discuss the details of this plan. The plan will need to consider groundwater pumping from existing groundwater use, Tule Wind Farm (P09-019), Rugged Solar (P12-007), and the Rough Acres Ranch Campground (P12-021). It is clear that these projects during the construction phases will need to be coordinated so as to have no overlap in groundwater pumping since the wells could not support the level of demand required.	Resolved	3/12/2013
	25	Groundwater	Imported Groundwater: Once the groundwater investigation is revised and the amount of water to be produced from Well B is finalized, the amount of water to be imported to the site will be known. Prior to public review, the project will be required to have identified all offsite water sources to provide the imported water to the site. If the water sources are from groundwater dependent entities, a groundwater investigation will be required to evaluate potential groundwater impacts from any of these entities which must be reviewed and approved prior to the project going out for public review.	Resolved.	3/12/2013
	26	Groundwater	Jim Bennett, County Groundwater Geologist, has reviewed the Draft Groundwater Resources Investigation Report, Rugged Solar Farm Project, prepared by Dudek dated July 2013. The report is inadequate and requires revisions. Comments are provided as follows.	For information purposes only	8/6/2013
	27	Groundwater	Executive Summary, Page ES-2: Please remove the second to last bullet from the text.	Removed.	8/6/2013

ATTACHMENT A
PROJECT ISSUE CHECKLIST

	28	Groundwater	Executive Summary, Page ES-3: Please remove the last bullet from the text.	Removed.	8/6/2013
	29	Groundwater	Section 1.4: Please add the required finding that is required for Major Use Permits from Groundwater Ordinance Section 67.722.B.	Added.	8/6/2013
	30	Groundwater	Tables 3-3 through 3-8, Well 6a/6b and Well 8 Water Demand Scenarios: The water demand for each of these scenarios has been reviewed and changes are requested to each of the scenarios and will be provided in a spreadsheet for your review. These scenarios shall be discussed in the working meeting.	Tables have been revised based on working meeting comments.	8/6/2013
	31	Groundwater	50% Reduction in Storage Results: The results are based on precipitation values that are definitely conservative and perhaps overly conservative given they may be underestimating rainfall by 20 to 25%. It should be discussed in the meeting of adding a scenario to show the results with what is deemed realistic for the project area and also with the more conservative analysis as presented in the report.	Added precipitation record using Campo rainfall data.	8/6/2013
	32	Groundwater	Table 3-21 and 3-27: Drawdown calculations contained an error in the formula which resulted in an underestimation of drawdown to occur from project pumping. The formula, $s=0.183Q/T * LOG\ 2.25\ Tt/r^2s$ included "1,000" instead of "T" in the first part of the formula. Please revise calculations.	Table 3-20 and Table 3-24 Drawdown calculations have been revised using the Hantush solution.	8/6/2013
	33	Groundwater and Biological Resources	Groundwater Dependent Habitat: Drawdown calculations need to be revised to take into account the error in the drawdown formula as noted above.	Table 3-20 and Table 3-24 Drawdown calculations have been revised using the Hantush solution.	8/6/2013
	34	Groundwater	Well Interference Analysis, Wells 6a/6b: The 60 day, 1-year, and 5-year pumping scenarios have been reviewed and changes are requested to each scenario and will be provided in a spreadsheet for your review. These scenarios shall be discussed in the working meeting. At the nearest property the analysis indicated the pumping will drawdown water levels to below the threshold of 10 feet during the 60-day pumping scenario. This should be discussed within the report.	Well interference analysis has been revised based on pumping scenario described in Table 3-13.	8/6/2013

ATTACHMENT A
PROJECT ISSUE CHECKLIST

	35	Groundwater	Well Interference Analysis, Well 8: The 60 day, 1-year, and 5-year pumping scenarios have been reviewed and changes are requested to each scenario and will be provided in a spreadsheet for your review. Revised 60-day, 2-year, and 7-year scenarios are provided. For the 2-year scenario there may also be additional demand from a rock crusher/batch plant for the Tule Wind Farm project that have not been analyzed. This will be discussed at the working meeting.	Well interference analysis has been revised based on pumping scenario described in Table 3-14.	8/6/2013
	36	Groundwater	Well Interference Analysis, Table 3-20 and 3-26, Hantush Method: The Hantush Method seems potentially like the more appropriate method in which to calculate drawdown for the project. It will be discussed in the working meeting which method is the most appropriate for use on the wells for the project project. It is indicated that the Hantush method was a better fit with drawdown calculations. If that is so, the drawdown calculations should be re-calculated using the Hantush Method. Please only calculate drawdown based on projected amounts to be used in the project scenarios.	The Hantush solution was used for the well interference calcualtions (see Table 3-20 and 3-24).	8/6/2013
	37	Groundwater	Page 3-22: Please remove Table 3-22 and 3-28 and all text associated with these tables from the report. Any discussion regarding these tables contained elsewhere in the report should be removed.	Removed.	8/6/2013
	38	Groundwater	Jim Bennett, County Groundwater Geologist and Maggie Loy, County staff Biologist, has reviewed the Groundwater Monitoring and Mitigation Plan by Dudek dated July 2013. The report will be required to be revised to take into account changes that will be required within the groundwater investigation report related to the amount of groundwater that can be pumped without causing potentially significant impacts to offsite well users and groundwater dependent habitat. Additional comments are provided below.	Inforamtion Only	8/6/2013
	39	Groundwater	The number and size of sampling plots should be established for this plan.	The number (72) and size (0.1 acre) of sampling plots has been added to the first bullet in section 3.2.1	8/6/2013
	40	Groundwater	Add a figure showing the general location of the plots.	Figure has been added (Figure 3)	8/6/2013
	41	Groundwater	Consider full data collection on some plots and general health data collection on other plots.	The data collection procedure will include full data collection so that consistency is maintained	8/6/2013

ATTACHMENT A
PROJECT ISSUE CHECKLIST

	42	Groundwater	The third bullet under Groundwater Mitigation Criteria (Section 3.3) should be: If the groundwater levels drop more than 10 feet below the pre-pumping level and there is evidence of deteriorating oak tree health by the Arborist or Forester, there may be a temporary or permanent cessation of pumping at Well 6a/6b. If the evidence of deterioration persists after the 5 year period, mitigation will consist of off-site wetland/oak woodland credits at a 3:1 ratio. Add the following to the third bullet: "**…as long as the wells operate only as intended under the project's conditions of approval.**	First part of comment is addressed in bullet three. Unclear where to add language about well operation. It has been added to the fifth bullet.	8/6/2013
	43	Groundwater	Add to Section 4.0, second paragraph: "… within five working days."	It is unclear as to where this language should be added. The second paragraph (beginning with "If the water levels at well MW-SPB…") already contains this language, and it does not make sense to include it in the following paragraph, which disucsses submission of the annual reports	8/6/2013
	44	Groundwater	Reports are usually due by the end of January of the next calendar year.	Text added to reflect this fact	8/6/2013
	45	Groundwater	To ensure you have participation from the individuals noted in the GMMP, please obtain signed letter agreements from offsite well users that they are willing to participate in the groundwater monitoring program for the full duration of the program. Without their participation, the project would require on-site monitoring well(s) to be drilled and monitored.	Signed letter agreements will be obtained from off-site monitoired wells at a future date as part of the GMMP.	8/6/2013
	46	Groundwater	In the working meeting, please be prepared to explain the 15-foot threshold in proposed monitoring well MW-SPB. Additionally, the Hantush Method might be more appropriate to apply a threshold in this monitoring well.	The 15-foot threshold in the monitoirng well 350 feet away from the pumpung center of Wells 6a and 6b is based on a 10-foot drawdown that would occur at the nearest residential property line located 1,742 feet from Wells 6a and 6b.	8/6/2013

ATTACHMENT A
PROJECT ISSUE CHECKLIST

	47	Groundwater	Baseline pre-pumping groundwater conditions: Please discuss the fact that there are three projects (Tule, Rugged, and Rough Acres Ranch) which will be utilizing Wells 6a/6b and Well 8. The baseline water levels for the project will be required set prior to pumping from any of these projects. Therefore, it is the responsibility of Rugged Solar to drill the monitoring wells prior to any of the three projects commencing groundwater pumping to establish the baseline at that time. The GMMP should state this as a requirement.	To be stated in GMMP.	8/6/2013

ATTACHMENT A
PROJECT ISSUE CHECKLIST

DPLU (Department of Planning and Land Use) Planning and CEQA Comments					
Item	**No.**	**Subject Area**	**Issue, Revision or Information Required**	**Issue Resolution Summary (Include Conditions)**	**Date Identified**
	1	Project Description	Project Description, Page 51: The project is proposing to provide groundwater for water uses on the project through two wells. Please identify the location of the two wells. Please also provide any well logs for the wells which would be on file with the Department of Environmental Health, and any other information in regard to the wells (well depth, production characteristics, etc.).	Resolved	6/5/2012
	2	Project Description	Project Description, Page 51: The project description indicates that water will be provided by two wells and from other sources if there is not enough water from the two wells. It is possible that the construction water required for this project of 73 acre-feet may not be possible to be produced from just two wells. Please have your hydrogeologist evaluate the total production needs during the construction phase and update your project description to identify all possible sources of water for this project. All sources of water are required to be identified now and evaluation of potential impacts to groundwater resources shall be conducted on these sources now.	The updated September 2013 report indicates 44 acre-feet of groundwater will be supplied from on-site wells for the construction phase of the project. Imported water will include up to 16 acre-feet for construction phase. Off-site sources include Pine Valley Mutual Water Company, Jacumba Springs Community Services District and Padre Dam Municipal Water District.	6/5/2012
	3	Project Description	Project Description Page 51: The text indicates that less water intensive methods of dust suppression are currently under review. It is strongly recommended that alternative forms of grading/dust suppression be considered to reduce the amount of groundwater necessary for the construction portion of the project. Please update the project description with any alternatives to reduce the amount of groundwater to be utilized as feasible.	Minimized grading and use of soil tackifier have been incorporated into project design to minimize use of water.	6/5/2012
	4	Project Description	Project Description, Table 3, Page 52: The number of total gallons for site preparation contains a discrepancy. The total should be 22,374,800 gallons, not 32,585,100 gallons.	Report has been updated with resvised water deamnds.	6/5/2012

ATTACHMENT A
PROJECT ISSUE CHECKLIST

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	7	Groundwater	Sections 2.6 and 2.7: Please obtain data from confidential well logs located in the nearby area of Well 6a/6b and Well 8. A spreadsheet of existing confidential well logs will be provided by County staff. Please make a request to the Department of Environmental Health to make copies of well logs for the list given to you. Include this data in the report to augment the discussion in Sections 2.6 and 2.7. The text should discuss the range of well yields reported in the well logs, the lithology (residuum/bedrock contact), and range of depth of wells. Since this data is confidential, do not correlate the data with the mapped well locations.	Resolved.	3/12/2013
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ATTACHMENT A
PROJECT ISSUE CHECKLIST

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	10	Groundwater	Section 3.1.2.1 Runoff, Page 3-5: The runoff was changed based on utilizing a PZN adjustment factor. This factor should not be used since the study is looking at long-term runoff rates at a monthly time scale. Adjusting the PZN would not be appropriate for this type of application. Please use the published non-adjusted values.	Resolved	3/12/2013
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ATTACHMENT A
PROJECT ISSUE CHECKLIST

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	13	Groundwater	Section 3.1.2.2 Groundwater Production Area Demand: Table 3-6 Existing Conditions should include the Tule Wind Project which has been approved to use 20 acre-feet from Well 8 during the 9-month construction phase of its project. This should be carried over into Table 3-7 and 3-8.	Resolved	3/12/2013
	14	Groundwater	Section 3.1.2.2. Groundwater Production Area Demand: There are export quantities of groundwater to be provided to the Tierra Del Sol Solar Farm project when this project itself does not appear to have enough groundwater to serve its short-term needs. Additionally, these wells are approved to serve the Tule Wind Project which has not been analyzed and must be included. Lastly, the well field has a limited amount of saturated alluvium (~51 to 56 feet based on recent water level readings) which based on projected drawdown in the wells after one year of pumping will be substantially dewatered (180 feet) at a rate of 39 gallons per minute (less than the projected rate of demand during the first year of groundwater pumping). An analysis needs to be performed now on the production capacity of this well field when the alluvium is dewatered as a result of pumping. Please calculate the quantity of drawdown that is anticipated to occur at the projected pumping rate after the alluvium is dewatered using parameters typical of fractured rock aquifer. If the wells cannot sustain the production proposed, maximum pumping rates must be curtailed accordingly. This analysis should be placed in Section 3.2 Well Testing. Given the potential limitations of multiple project uses on a few wells which may not support the proposed demand, it is requested to remove the exportation option from the report.	Resolved	3/12/2013

ATTACHMENT A
PROJECT ISSUE CHECKLIST

	15	Groundwater	Section 3.2.1.1. Well Interference in Fractured Rock: Define in this subsection what the total demand from Well 6/6a/6b and Well 8 will be for the project and all other uses to utilize the well. The well interference calculation should include a short-term demand analysis and an ongoing well interference calculation. The pumping during the construction phase should realistically consider whether the well will be pumped 24 hours a day or whether it will be pumped at higher rates for shorter periods each day. It should be clear to the reader what the amount of demand for the one year projection of drawdown is based upon and what the five year projection of drawdown is based upon. The demand should include all other projects which intend on using these wells. **Update 8/6/2013: The project needs to include pumping from the construction phase of the Tule Wind Farm project in the well interference calculations as well as the entire construction schedule & ongoing use anticipated by the Rough Acres Ranch project. This will be discussed at the working meeting on Friday.**	Well interference calculation have been updated in the September 2013 groundwater resources investigation to account for the Tule Wind Project, the entire construction schedule and ongoing use anticipated by the Rough Acres Ranch project.	3/12/2013 **8/6/2013**
	16	Groundwater	Section 3.2.1.1 Well Interference in Fractured Rock: Update to include a table of the closest well users within 1 mile of each of well sites indicating the APN, Well Name, distance from proposed pumping wells, and the use of the well. For residential parcels, the nearest property line should be used. APN 611-091-07 (property line) is located 1,742 feet from Wells 6/6a/6b. Please correct the text to include this as the closest residential land use with a well in proximity of the Well 6/6a/6b.	Resolved.	3/12/2013

ATTACHMENT A
PROJECT ISSUE CHECKLIST

	17	Groundwater	Section 3.2.1.2 Groundwater-Dependent Habitat, Page 3-22 and 3-23: The text states that 7.3 feet of drawdown would occur in an area with Coast Live Oaks with the projected water table to be 21.3 feet below ground surface. It was concluded that this would have no impact to the trees since they have been documented to have rooting depths up to 36 feet. There have been documented cases in which sudden decreases in water levels of just 3 feet caused sudden death to phreatophytes in the desert southwest which are the basis of the County's 3-foot threshold within the County Biological Guidelines. This subsection will be required to be reviewed by a County Biologist to determine whether or not the decrease in water levels will result in any impacts to phreatophytes.	Resolved.	3/12/2013
	18	Groundwater	Section 3.2.2.2. Wells 6a and 6b Test Analysis: On Page 3-27 projected drawdown was included at one and five years using the Cooper-Jacob straight line method at 39 gallons per minute which was the rate that the aquifer test was performed. Please update to 88 gallons per minute to match the rate used in the Cooper-Jacob approximation of the Theis Non-Equilibrium Flow Equation and is representative of the project anticipated flow rate.	Resolved.	3/12/2013
	19	Groundwater	Section 3.2.2.2 Wells 6a and 6b Test Analysis, Page 3-28: Include a table with the results of the drawdown analysis at distances of 50, 100, 250, 439, 500, 750, 1000, 1,742, 2,640, and 5,280 feet. For any numbers in which the Coefficient u exceeds the cutoff for method solution, please indicate this as an asterisk or other symbol within the table. Please include both a short-term well interference analysis of one year of pumping at projected rates and a five year projection of drawdown.	Resolved.	3/12/2013
	20	Groundwater	Section 3.2.2.2 Wells 6a and 6b Test Analysis: Include a separate analysis to evaluate impacts on drawdown when this well field dewaters the upper alluvial aquifer. A meeting should be held between the applicant's hydrogeologists and County staff to develop the parameters to be included.	Resolved.	3/12/2013

ATTACHMENT A
PROJECT ISSUE CHECKLIST

	21	Groundwater	Section 3.2.2.4 Well 8 Test Analysis, Page 3-32: Include a table with the results of the drawdown analysis at distances of 50, 100, 250, 500, 750,1000, 1,800, 2,640, and 5,280 feet. For any numbers in which the coefficient u exceeds the cutoff for the method solution, please indicate with an asterisk or other symbol within the table. Please include both a short-term interference analysis of one year of pumping at projected rates and a five year projection of drawdown.	Resolved.	3/12/2013
	22	Groundwater	Section 3.2.2.4 Well 8 Test Analysis, Page 3-32: The five year projected drawdown in Well 8 indicates 345 feet of drawdown which would be very close to dewatering the entire well. Considering the interface between broken rocks and D.G. and solid bedrock is at 310 feet, there is likelihood that pumping at depths below 310 may be unproductive. Please revise the report to discuss whether the well will be able to handle the flow rates anticipated based on the lithology and projected drawdown within the well at 5 years.	Resolved.	3/12/2013
	23	MAJOR PROJECT ISSUE, Groundwater	Section 3.2.3. Well Test Analysis, Significance of Impacts Prior to Mitigation, First Paragraph: The first paragraph should be revised to summarize the significance of impacts from the construction phase of groundwater pumping and then the ongoing water use based on well interference calculations. **8/6/2013: Table 3-21, Drawdown calculations contained an error in the formula which resulted in an underestimation of drawdown to occur from project pumping. The formula, s=0.183Q/T * LOG 2.25 T/t2/s included "1,000" instead of "T" in the first part of the formula. All results require to be revised throughout the well interference analysis section.**	Drawdown calulations for Rugged have been updated using the Hantush solution as approved in meeting with County Groundwater Geologist.	3/12/2013 **8/6/2013**

	24	Groundwater	Section 5.5 Mitigation Measures: Based on revised well interference analysis, it will be necessary to develop a maximum amount of groundwater that can be safely pumped during the construction phase without resulting in significant well interference impacts on the closest well users to Well 6a/6b and Well 8. Additionally, a maximum amount of groundwater will also be established for the ongoing water use needed. Development of a Groundwater Monitoring and Mitigation Plan will be required which will require monitoring wells in both locations with thresholds in which pumping shut-down requirements would be included to ensure impacts to off-site wells remain less than significant. After the groundwater investigation is revised with the above changes requested and reviewed by County staff, a meeting will be setup to discuss the details of this plan. The plan will need to consider groundwater pumping from existing groundwater use, Tule Wind Farm (P09-019), Rugged Solar (P12-007), and the Rough Acres Ranch Campground (P12-021). It is clear that these projects during the construction phases will need to be coordinated so as to have no overlap in groundwater pumping since the wells could not support the level of demand required.	Resolved	3/12/2013
	25	Groundwater	Imported Groundwater: Once the groundwater investigation is revised and the amount of water to be produced from Well B is finalized, the amount of water to be imported to the site will be known. Prior to public review, the project will be required to have identified all offsite water sources to provide the imported water to the site. If the water sources are from groundwater dependent entities, a groundwater investigation will be required to evaluate potential groundwater impacts from any of these entities which must be reviewed and approved prior to the project going out for public review.	Resolved.	3/12/2013
	26	Groundwater	Jim Bennett, County Groundwater Geologist, has reviewed the Draft Groundwater Resources Investigation Report, Rugged Solar Farm Project, prepared by Dudek dated July 2013. The report is inadequate and requires revisions. Comments are provided as follows.	For information purposes only	8/6/2013
	27	Groundwater	Executive Summary, Page ES-2: Please remove the second to last bullet from the text.	Removed.	8/6/2013

ATTACHMENT A
PROJECT ISSUE CHECKLIST

	28	Groundwater	Executive Summary, Page ES-3: Please remove the last bullet from the text.	Removed.	8/6/2013
	29	Groundwater	Section 1.4: Please add the required finding that is required for Major Use Permits from Groundwater Ordinance Section 67.722.B.	Added.	8/6/2013
	30	Groundwater	Tables 3-3 through 3-8, Well 6a/6b and Well 8 Water Demand Scenarios: The water demand for each of these scenarios has been reviewed and changes are requested to each of the scenarios and will be provided in a spreadsheet for your review. These scenarios shall be discussed in the working meeting.	Tables have been revised based on working meeting comments.	8/6/2013
	31	Groundwater	50% Reduction in Storage Results: The results are based on precipitation values that are definitely conservative and perhaps overly conservative given they may be underestimating rainfall by 20 to 25%. It should be discussed in the meeting of adding a scenario to show the results with what is deemed realistic for the project area and also with the more conservative analysis as presented in the report.	Added precipitation record using Campo rainfall data.	8/6/2013
	32	Groundwater	Table 3-21 and 3-27: Drawdown calculations contained an error in the formula which resulted in an underestimation of drawdown to occur from project pumping. The formula, $s=0.183Q/T * LOG\ 2.25\ Tt/r^2s$ included "1,000" instead of "T" in the first part of the formula. Please revise calculations.	Table 3-20 and Table 3-24 Drawdown calculations have been revised using the Hantush solution.	8/6/2013
	33	Groundwater and Biological Resources	Groundwater Dependent Habitat: Drawdown calculations need to be revised to take into account the error in the drawdown formula as noted above.	Table 3-20 and Table 3-24 Drawdown calculations have been revised using the Hantush solution.	8/6/2013
	34	Groundwater	Well Interference Analysis, Wells 6a/6b: The 60 day, 1-year, and 5-year pumping scenarios have been reviewed and changes are requested to each scenario and will be provided in a spreadsheet for your review. These scenarios shall be discussed in the working meeting. At the nearest property the analysis indicated the pumping will drawdown water levels to below the threshold of 10 feet during the 60-day pumping scenario. This should be discussed within the report.	Well interference analysis has been revised based on pumping scenario described in Table 3-13.	8/6/2013

ATTACHMENT A
PROJECT ISSUE CHECKLIST

	35	Groundwater	Well Interference Analysis, Well 8: The 60 day, 1-year, and 5-year pumping scenarios have been reviewed and changes are requested to each scenario and will be provided in a spreadsheet for your review. Revised 60-day, 2-year, and 7-year scenarios are provided. For the 2-year scenario there may also be additional demand from a rock crusher/batch plant for the Tule Wind Farm project that have not been analyzed. This will be discussed at the working meeting.	Well interference analysis has been revised based on pumping scenario described in Table 3-14.	8/6/2013
	36	Groundwater	Well Interference Analysis, Table 3-20 and 3-26, Hantush Method: The Hantush Method seems potentially like the more appropriate method in which to calculate drawdown for the project. It will be discussed in the working meeting which method is the most appropriate for use on the wells for the project project. It is indicated that the Hantush method was a better fit with drawdown calculations. If that is so, the drawdown calculations should be re-calculated using the Hantush Method. Please only calculate drawdown based on projected amounts to be used in the project scenarios.	The Hantush solution was used for the well interference calcualtions (see Table 3-20 and 3-24).	8/6/2013
	37	Groundwater	Page 3-22: Please remove Table 3-22 and 3-28 and all text associated with these tables from the report. Any discussion regarding these tables contained elsewhere in the report should be removed.	Removed.	8/6/2013
	38	Groundwater	Jim Bennett, County Groundwater Geologist and Maggie Loy, County staff Biologist, has reviewed the Groundwater Monitoring and Mitigation Plan by Dudek dated July 2013. The report will be required to be revised to take into account changes that will be required within the groundwater investigation report related to the amount of groundwater that can be pumped without causing potentially significant impacts to offsite well users and groundwater dependent habitat. Additional comments are provided below.	Inforamtion Only	8/6/2013
	39	Groundwater	The number and size of sampling plots should be established for this plan.	The number (72) and size (0.1 acre) of sampling plots has been added to the first bullet in section 3.2.1	8/6/2013
	40	Groundwater	Add a figure showing the general location of the plots.	Figure has been added (Figure 3)	8/6/2013
	41	Groundwater	Consider full data collection on some plots and general health data collection on other plots.	The data collection procedure will include full data collection so that consistency is maintained	8/6/2013

ATTACHMENT A
PROJECT ISSUE CHECKLIST

	42	Groundwater	The third bullet under Groundwater Mitigation Criteria (Section 3.3) should be: If the groundwater levels drop more than 10 feet below the pre-pumping level and there is evidence of deteriorating oak tree health by the Arborist or Forester, there may be a temporary or permanent cessation of pumping at Well 6a/6b. If the evidence of deterioration persists after the 5 year period, mitigation will consist of off-site wetland/oak woodland credits at a 3:1 ratio. Add the following to the third bullet: "**…as long as the wells operate only as intended under the project's conditions of approval.**	First part of comment is addressed in bullet three. Unclear where to add language about well operation. It has been added to the fifth bullet.	8/6/2013
	43	Groundwater	Add to Section 4.0, second paragraph: "… within five working days."	It is unclear as to where this language should be added. The second paragraph (beginning with "If the water levels at well MW-SPB…") already contains this language, and it does not make sense to include it in the following paragraph, which disucsses submission of the annual reports	8/6/2013
	44	Groundwater	Reports are usually due by the end of January of the next calendar year.	Text added to reflect this fact	8/6/2013
	45	Groundwater	To ensure you have participation from the individuals noted in the GMMP, please obtain signed letter agreements from offsite well users that they are willing to participate in the groundwater monitoring program for the full duration of the program. Without their participation, the project would require on-site monitoring well(s) to be drilled and monitored.	Signed letter agreements will be obtained from off-site monitoired wells at a future date as part of the GMMP.	8/6/2013
	46	Groundwater	In the working meeting, please be prepared to explain the 15-foot threshold in proposed monitoring well MW-SPB. Additionally, the Hantush Method might be more appropriate to apply a threshold in this monitoring well.	The 15-foot threshold in the monitoirng well 350 feet away from the pumpung center of Wells 6a and 6b is based on a 10-foot drawdown that would occur at the nearest residential property line located 1,742 feet from Wells 6a and 6b.	8/6/2013

ATTACHMENT A
PROJECT ISSUE CHECKLIST

	47	Groundwater	Baseline pre-pumping groundwater conditions: Please discuss the fact that there are three projects (Tule, Rugged, and Rough Acres Ranch) which will be utilizing Wells 6a/6b and Well 8. The baseline water levels for the project will be required set prior to pumping from any of these projects. Therefore, it is the responsibility of Rugged Solar to drill the monitoring wells prior to any of the three projects commencing groundwater pumping to establish the baseline at that time. The GMMP should state this as a requirement.	To be stated in GMMP.	8/6/2013

SUBMITTAL REQUIREMENTS FOR SCOPING/ITERATION LETTER		
Date Requested	**Name of Study**	**Number of Copies Required**
	Groundwater Investigation Report	Planner (1); Groundwater Geologist (1)
	Well Test Plan (submitted via special handling form)	Planner (1); Groundwater Geologist (1)

	Scoping	Well Test Plan
Date Submitted:	N/A	
Date of Study:	No Study yet	
Name of Specialist Reviewing:	Jim Bennett	
Date of Site Visit (if applicable)	N/A	
Enter balance of DPLU account (check KIVA financial resp. screen): *If funds are not adequate to complete your review, stop review and email project manager asking how to proceed*		
MOU Required and Submitted? (Yes, No, or N/A) (required if project scoped on or after July 1, 2006)	N/A	
Consultant on applicable list? enter "yes", "no" or "N/A"	N/A	
Does study comply with applicable Guideline for Determining Significance and Report Format and Content Requirement? (Yes, No, or N/A) *Required if project was scoped after approval of the relevant Guideline*	N/A	
Make KIVA entry made in the "comment" field. Enter either "Incomplete","Accepted" or "Accepted with Minor Revisions"	N/A	
If study accepted, have you completed Initial Study Responses and provided Project Manager with Conditions and/or Mitigation Measures? w	N/A	
Completed Consultant Evaluation Form and emailed to Don Kraft? Always fill out form if Guidelines not followed, for notable poor performance, and when review is accepted.	N/A	

First Iteration	Second Iteration	Third Iteration	Fourth Iteration	Fifth Iteration

ATTACHMENT A
PROJECT ISSUE CHECKLIST

PDS Planning and CEQA Comments						
Item	**No.**	**Subject Area**	**Issue, Revision or Information Required**	**Issue Resolution Summary (Include Conditions)**	**Date Identified**	**Date Resolved**
	1	Groundwater-MAJOR PROJECT ISSUE	Groundwater information received from Dudek in a memorandum dated July 23, 2012 indicates the project will require approximately 550,000 gallons per day of water during a 40 day peak demand period. This would equate to 381 gallons per minute of production if wells were pumped 24 hours a day over a 40 day period. It is unlikely that the existing 7 on-site wells would have combined ability to pump 381 gallons per minute. Off-site water will likely be required to supplement on-site groundwater demand. These offsite source(s) need to be identified now and impacts to groundwater from off-site source(s) need to be evaluated.	For information purposes only	8/15/2012	
	2	Groundwater - Well Test Plan	The County Groundwater Geologist has reviewed the Well Test Plan dated July 2012 prepared by Dudek. The plan is accepted with one comment below.	For information purposes only	8/15/2012	
	3	Groundwater - Well Test Plan	Besides the monitoring of on-site wells, It will also be required that ALL property owners located within 1/2-mile radius of the Well B be contacted and asked whether they wish to participate in having any of their wells monitoring during the well testing of Well B. Please send letters to each property owner and include a list of property owners contacted in the groundwater investigation. All groundwater level data collected from each offsite well shall be compiled within the groundwater investigation.	Resolved. Property owners within 1/2-mile radius of Well B were contacted via mail and site visits with the property owners by applicant's hydrogeologist. Wells were monitored for those who volunteered	8/15/2012	8/6/2013
	4	Groundwater	Jim Bennett, County Groundwater Geologist, has reviewed the Draft Groundwater Resources Investigation Report, Tierra Del Sol Solar Farm Project, prepared by Dudek dated December 2012. The report is inadequate and requires revisions. Comments are provided as follows.	For information purposes only	3/12/2013	

ATTACHMENT A
PROJECT ISSUE CHECKLIST

	5	Groundwater	Well Interference Analysis, Offsite Well Users: Figure 10 needs to be updated to show the location of all off-site well users. A map showing all confidential well logs that are within the Department of Environmental Health Database will be given to the consultant along with confidential well logs. Figure 10 should be updated to reflect these additional well locations. Also highlight all parcels that have been developed with single-family residences.	Resolved. Map revised.	3/12/2013	8/6/2013
	6	Groundwater	Sections 2.6 and 2.7: County staff has obtained data from 14 confidential well logs located in the nearby area which will be provided to the consultant. Please include this data in the report to augment the discussion in Sections 2.6 and 2.7. The text should discuss the range of well yields reported in the well logs, the lithology (residuum/bedrock contact), and range of depth of wells. Since this data is confidential, do not correlate the data with the mapped well locations.	Resolved.	3/12/2013	8/6/2013
	7	Groundwater	Section 3.1.2.1 Runoff, Page 3-5: Desert scrub was selected as the groundwater cover which has a CN of 49 for A Soils and CN of 68 for B Soils. Please change the numbers in the report to reflect these values.	Resolved.	3/12/2013	8/6/2013
	8	Groundwater	Section 3.1.2.1 Runoff, Page 3-5: The runoff was changed based on utilizing a PZN adjustment factor. This factor should not be used since the study is looking at long-term runoff rates at a monthly time scale. Adjusting the PZN would not be appropriate for this type of application. Please use the published non-adjusted values.	Resolved.	3/12/2013	8/6/2013

ATTACHMENT A
PROJECT ISSUE CHECKLIST

	9	Groundwater	Section 3.1.2.1 Runoff, Calculation Spreadsheet: Runoff was not correctly calculated in the spreadsheet for lower rainfall events due to an incorrect IF statement utilized. The IF statement that was utilized was IF P>0.5. Please revise and use the following: IF P=0.2S. Additionally, the report on Page 3-5 that average runoff would be 2.4 inches or 21% of precipitation. This is incorrect due to adding the amount of runoff that occurred in each of the three soil type areas analyzed and dividing by the total precipitation that fell. Please re-calculate by looking at each individual sub-watershed that was analyzed and comparing the runoff in that sub-watershed to the total precipitation that fell in that sub-watershed. The result will be roughly 1/3 the amount of runoff as compared to what was reported in the study.	Resolved.	3/12/2013	8/6/2013
	10	Groundwater	Section 3.1.2.2 Groundwater Demand: The project construction water demand appears to be 25.7 acre-feet from Well B as indicated in Table 3-3 and the rest of the water would be imported. However, in the footnote of Table 3-3 it indicates that construction water demand requires a one-time extraction of approximately 39 acre-feet. Please fix this discrepancy. Additionally, under Scenario 4, 21 acre-feet of groundwater is included to be exported to Rugged Solar Farm. Since the project already requires imported water to meet its construction needs, County staff requests that exportation of water to other projects not be included. Please remove exportation of groundwater from Well B from the project.	Resolved.	3/12/2013	8/6/2013
	11	Groundwater	Section 3.2.1.1. Well Interference in Fractured Rock: Define in this subsection what the total demand of production from Well B is anticipated to be during the project. It is assumed this would be 25.7 acre-feet during the first 11 months of the project and then 4 acre-feet per year for the life of the project. All well interference analysis will be based on the anticipated groundwater demand from Well B.	Resolved.	3/12/2013	8/6/2013

ATTACHMENT A
PROJECT ISSUE CHECKLIST

	12	Groundwater	Section 3.2.2.3. Well Test Analysis, Significance of Impacts Prior to Mitigation, First Paragraph: A five-year projection of drawdown using the straight line method is the incorrect method to use to evaluate potential well interference impacts on off-site wells. Revise this analysis to evaluate potential well interference impacts on the closest offsite well using the Cooper-Jacob approximation of the Theis non-equilibrium flow equation. Utilize anticipated groundwater demand during the construction period as the first analysis and then a second analysis considering pumping for 5 years at the anticipated ongoing rate of demand. Include distances ranging from 50 feet to 5,280 feet (1-mile) in a Table to summarize potential well interference impacts. The pumping during the construction phase should realistically consider whether the well will be pumped 24 hours a day or whether it will be pumped at higher rates for shorter periods each day. A worst-case scenario of how pumping will occur should be evaluated.	Resolved. This was provided in revised groundwater investigation, however additional comments have been made on the results and methodology utilized to calculate drawdown.	3/12/2013	8/6/2013
	13	Groundwater	Section 3.2.2.3. Well Test Analysis, Significance of Impacts Prior to Mitigation, First Paragraph: The first paragraph should be revised to summarize the significance of impacts from the construction phase of groundwater pumping and then the ongoing water use based on well interference calculations.	Resolved. Revisions still required per comments below	3/12/2013	8/6/2013

ATTACHMENT A
PROJECT ISSUE CHECKLIST

	14	Groundwater	Section 3.2.2.3. Well Test Analysis, Significance of Impacts Prior to Mitigation, Hydraulic Isolation: Fractured rock aquifer systems are complicated and very difficult to adequately characterize. The spacing, orientation, and interconnectivity of fractures are complex and difficult to thoroughly analyze even with a robust groundwater monitoring network. The pathways of fractured zones at Well B are undefined and may result in potential impacts to nearby wells. Additionally, the well test conducted was for only 72 hours where impacts to wells at the distances monitored for the majority of the wells would be expected to be negligible given the time and the amount of water pumped. Substantial additional characterization of the fractured rock system would be required before the conclusion of hydraulic isolation could be made likely far beyond the scope of a project of this magnitude. Please remove the statement that the project well production will not exceed the County threshold of significance based on hydraulic isolation.	Resolved. Additional analysis conducted.	3/12/2013	8/6/2013
	15	Groundwater	Section 5.2. Well Interference, Summary of Project Impacts and Mitigation: The fact that there was not drawdown in the monitoring wells during well testing is not a standard the County employs to indicate whether there will be well interference on off-site wells. This would have potentially catastrophic consequences if used as a standard given the nature of fractured rock aquifers. Rather, drawdown calculations as requested above are the standard. Please revise this section along with any mitigation measures necessary.	Resolved. Additional analysis conducted.	3/12/2013	8/6/2013

	16	Groundwater	Section 5.5 Mitigation Measures: Based on revised well interference analysis, it will be necessary to develop a maximum amount of groundwater that can be safely pumped during the construction phase without resulting in significant well interference impacts on the closest well user to Well B. Additionally, a maximum amount of groundwater will also be established for the ongoing water use needed. A monitoring well network will be required to be setup with maximum drawdown thresholds to ensure impacts to offsite wells remain less than significant. Ongoing monitoring of well RM-1 which is located in the Coast Live Woodland will be required during the construction phase of pumping to evaluate potential impacts to the shallow groundwater system beneath the Coast Live Oak Woodland habitat. After the groundwater investigation is revised with the above changes requested and reviewed by County staff, a meeting will be setup to discuss the details of this plan and any additional wells needed to be installed for monitoring.	Resolved. Groundwater monitoring and mitigation plan included.	3/12/2013	8/6/2013
	17	Groundwater	Imported Groundwater: Once the groundwater investigation is revised and the amount of water to be produced from Well B is finalized, the amount of water to be imported to the site will be known. Prior to public review, the project will be required to have identified all offsite water sources to provide the imported water to the site. If the water sources are from groundwater dependent entities, a groundwater investigation will be required to evaluate potential groundwater impacts from any of these entities which must be reviewed and approved prior to the project going out for public review.	Resolved. The amount of water to be pumped from Well B still remains to be determined based upon well interference calculations. See comments below for details. (The amount of groundwater to be pumped is 18 acre-feet over the approximate 1 year construction period. See below).	3/12/2013	8/6/2013
	17	Groundwater	Jim Bennett, County Groundwater Geologist, has reviewed the Draft Groundwater Resources Investigation Report, Tierra Del Sol Solar Farm Project, prepared by Dudek dated July 2013. The report is inadequate and requires revisions. Comments are provided as follows.	For information purposes only	8/6/2013	N/A
	18	Groundwater	Section 1.4: Please add the required finding that is required for Major Use Permits from Groundwater Ordinance Section 67.722.B.	The required finding has been added to Section 1.4.		

ATTACHMENT A
PROJECT ISSUE CHECKLIST

	18	Groundwater	Section 3.1 50% Reduction of Groundwater in Storage: For Scenario 2 and 3, please move the water demand for the construction portion of the project to have a start time of July 1983 rather than the start time of July 1982 provided in the analysis. This will allow for analysis of the proposed project's impacts through the longest dry period (Spring 1983 to Dec. 1990) in the 30 year period analyzed. This will changes the results to 80% and 78% respectively for minimum groundwater in storage for the 30 year period analyzed.	Water demand for Scenarios 2 and 3 have been moved to July 1983.	8/6/2013	
	19	Groundwater	Section 3.1.1.1 Well Interference, bottom of page 3-14: The first bullet point indicates that the calculations assume no rainfall recharge occurs over the 5-year period analyzed. This is true but may not be overly conservative given the fact that twice in the 30 year water balance there was no rainfall recharge estimated during two different periods exceeding 5 years (Dec. 1984 to Dec. 1990, 6 years, and Feb. 1984 to Sep. 2004, 6.5 years). Please remove this bullet.	As per consultation with the County Groundwater Geologist, the condition that recharge will offset water level decline related to groundwater extraction during periods of average to above average annual rainfall (non-drought conditions) was added to the bullet.	8/6/2013	
	20	MAJOR PROJECT ISSUE, Groundwater	Table 3-11 and 3-12: Drawdown calculations contained an error in the formula which resulted in a gross underestimation of drawdown to occur from project pumping. The formula, $s=0.183Q/T * LOG\ 2.25\ Tt/r^2s$ included "1,000" instead of "T" in the first part of the formula. For the 60 day pumping scenario at 51 gpm, drawdown was calculated to be 48.3 feet at the nearest offsite well 784 feet away which exceeds the 10-foot threshold of significance chosen to be used for this project. For the 1 year pumping scenario at 17 gpm, drawdown was calculated to be 29.6 feet at the nearest offsite well also exceeding the 10-foot threshold. All calculations have been revised and will be provided in a spreadsheet for your review. During a working meeting, we will discuss revisions required to be made within the report.	Error has been fixed and calculations updated.	8/6/2013	

ATTACHMENT A
PROJECT ISSUE CHECKLIST

	21	MAJOR PROJECT ISSUE, Groundwater and Biological Resources	Groundwater Dependent Habitat: The calculation of drawdown in the report of 1.3 feet after 60 days of pumping within the groundwater dependent habitat is a gross underestimation. Drawdown within the groundwater dependent habitat is calculated at 41.6 feet during the 60 day pumping scenario, 27.1 feet during the 1 year pumping scenario, and 9.3 feet during the 5 year pumping scenario. During the working meeting, we will discuss revisions required to be made within the report and development of mitigation strategy as needed.	Error has been fixed and calculations updated.	8/6/2013	
	22	Groundwater	Well Interference Analysis, One Year and Five Year Scenarios: In the one year analysis scenario, pumping is anticipated to be at 51 gpm for 60 days and then 10 gpm for the remaining 305 days of the year. In the report an average value of 17 gpm was used for the one year analysis It should be discussed in the working meeting whether different methodology should be employed to capture the differences in flow rate throughout the 1 year analyzed rather than using an average rate smoothed out over the period analyzed. This discussion also applies to the 5-year analysis where three flow rates are lumped into an average of 4 gpm over the period analyzed.	Based on the production cap of 18 acre-feet for the approximate 1 year construction period, the pumping rate amortized over the first 90 days would be set at 18 gpm or 7 acre-feet. The pumping rate over the approximate 1 year construction period would be 11.2 gpm or 18 acre-feet.	8/6/2013	
	23	Groundwater	Drawdown Calculations: The transmissivity rate of 33.48ft2/day was selected in the calculations which appears to be associated with the Gringarten et. Al Solution Method. Please justify the use of this method over the other methods in the report. Additionally, in the executive summary it discusses that transmissivity was 30.48 ft2/day on average. Please revise to 33.48 ft2/day if in your professional opinion the Gringarten et al solution method was the best fit of the analysis methodologies.	Based on the solutions used to calculate transmissivity values, the Theis Recovery solution best fit the data with a sum of squares of 12.07 and a transmissivity of 31.53 $feet^2$/day.	8/6/2013	

ATTACHMENT A
PROJECT ISSUE CHECKLIST

	24	MAJOR PROJECT ISSUE, Groundwater and Biological Resources	Impacts Prior to Mitigation, Mitigation Measures, and Conclusions: The project pumping as analyzed within the report would result in potentially significant impact to groundwater resources based on the well interference calculations both to nearby well users and to groundwater dependent habitat. Curtailment of on-site groundwater to take into account the drawdown calculations will be necessary to avoid potentially significant impacts. In the working meeting we will discuss revisions required to reduce impacts to groundwater resources and groundwater dependent habitat to a level that is less than significant.	A production cap of 18 acre-feet over the approximate 1 year construction period has been included to mitigate potential impacts. Additionally, a Groundwater Monitoring and Management Plan has been prepared to develop thresholds for well interference and groundwater dependent habitat.	8/6/2013	
	25	Groundwater	Please remove Scenario 4 from the impacts analysis for the 50% Reduction of Groundwater in Storage. Any discussion of Scenario 4 in the report should be removed.	Scenario 4 has been removed.	8/6/2013	
	26	Groundwater	Page 3-22: Please remove Table 3-12 and all text associated with this table from the report. Any discussion regarding this table contained elsewhere in the report should be removed.	Table has been removed.	8/6/2013	
	27	Groundwater	Minor Edit: In Scenario 1 of the cumulative impacts analysis, June 1983 was reported with 16.78" of precipitation which should be reported as 0.00".	Error has been revised.	8/6/2013	
	28	Groundwater	Minor Edit: Table 3-6 is missing the explanation of footnote a). Please include.	Corrected.	8/6/2013	
	29	Groundwater	Jim Bennett, County Groundwater Geologist and Maggie Loy, County staff Biologist, has reviewed the Groundwater Monitoring and Mitigation Plan by Dudek dated July 2013. The report will be required to be revised to take into account changes that will be required within the groundwater investigation report related to the amount of groundwater that can be pumped without causing potentially significant impacts to offsite well users and groundwater dependent habitat. Additional comments are provided below.	For information purposes only	8/6/2013	
	28	Groundwater	The number and size of sampling plots should be established for this plan.	The number (72) and size (0.1 acre) of sampling plots has been added to the first bullet in section 3.2.1	8/6/2013	8/23/2013
	29	Groundwater	Add a figure showing the general location of the plots.	Figure has been added (Figure 3)	8/6/2013	8/23/2013

ATTACHMENT A
PROJECT ISSUE CHECKLIST

	30	Groundwater	Consider full data collection on some plots and general health data collection on other plots.	The data collection procedure will include full data collection so that consistency is maintained among sampling plots.	8/6/2013	8/23/2013
	31	Groundwater	The second bullet under Groundwater Mitigation Criteria (Section 3.3) should be: If the groundwater levels drop more than 10 feet below the pre-pumping level and there is evidence of deteriorating oak tree health by the Arborist or Forester, there may be a temporary or permanent cessation of pumping at Well B. If the evidence of deterioration persists after the 5 year period, mitigation will consist of off-site wetland/oak woodland credits at a 3:1 ratio. 5. Add the following to the third bullet: "…as long as the wells operate only as intended under the project's conditions of approval.	First part of comment is addressed in bullet 3. Unclear where to add language about well operation. It has been added to the fourth bullet.	8/6/2013	8/23/2013
	32	Groundwater	Add to Section 4.0, second paragraph: "… within five working days."	Added to last sentence of second paragraph of Section 4.0	8/6/2013	8/23/2013
	33	Groundwater	Reports are usually due by the end of January of the next calendar year.	Text added to reflect this fact	8/6/2013	8/23/2013
	34	Groundwater	To ensure you have participation from the individuals noted in the GMMP, please obtain signed letter agreements from offsite well users that they are willing to participate in the groundwater monitoring program for the full duration of the program. Without their participation, the project would require on-site monitoring well(s) to be drilled and monitored.	Participation letters will be obtained at a future date.	8/6/2013	

ATTACHMENT A
PROJECT ISSUE CHECKLIST

PDS Planning and CEQA Comments						
Item	**No.**	**Subject Area**	**Issue, Revision or Information Required**	**Issue Resolution Summary (Include Conditions)**	**Date Identified**	**Date Resolved**
	1	Groundwater-MAJOR PROJECT ISSUE	Groundwater information received from Dudek in a memorandum dated July 23, 2012 indicates the project will require approximately 550,000 gallons per day of water during a 40 day peak demand period. This would equate to 381 gallons per minute of production if wells were pumped 24 hours a day over a 40 day period. It is unlikely that the existing 7 on-site wells would have combined ability to pump 381 gallons per minute. Off-site water will likely be required to supplement on-site groundwater demand. These offsite source(s) need to be identified now and impacts to groundwater from off-site source(s) need to be evaluated.	For information purposes only	8/15/2012	
	2	Groundwater - Well Test Plan	The County Groundwater Geologist has reviewed the Well Test Plan dated July 2012 prepared by Dudek. The plan is accepted with one comment below.	For information purposes only	8/15/2012	
	3	Groundwater - Well Test Plan	Besides the monitoring of on-site wells, It will also be required that ALL property owners located within 1/2-mile radius of the Well B be contacted and asked whether they wish to participate in having any of their wells monitoring during the well testing of Well B. Please send letters to each property owner and include a list of property owners contacted in the groundwater investigation. All groundwater level data collected from each offsite well shall be compiled within the groundwater investigation.	Resolved. Property owners within 1/2-mile radius of Well B were contacted via mail and site visits with the property owners by applicant's hydrogeologist. Wells were monitored for those who volunteered	8/15/2012	8/6/2013
	4	Groundwater	Jim Bennett, County Groundwater Geologist, has reviewed the Draft Groundwater Resources Investigation Report, Tierra Del Sol Solar Farm Project, prepared by Dudek dated December 2012. The report is inadequate and requires revisions. Comments are provided as follows.	For information purposes only	3/12/2013	

ATTACHMENT A
PROJECT ISSUE CHECKLIST

	5	Groundwater	Well Interference Analysis, Offsite Well Users: Figure 10 needs to be updated to show the location of all off-site well users. A map showing all confidential well logs that are within the Department of Environmental Health Database will be given to the consultant along with confidential well logs. Figure 10 should be updated to reflect these additional well locations. Also highlight all parcels that have been developed with single-family residences.	Resolved. Map revised.	3/12/2013	8/6/2013
	6	Groundwater	Sections 2.6 and 2.7: County staff has obtained data from 14 confidential well logs located in the nearby area which will be provided to the consultant. Please include this data in the report to augment the discussion in Sections 2.6 and 2.7. The text should discuss the range of well yields reported in the well logs, the lithology (residuum/bedrock contact), and range of depth of wells. Since this data is confidential, do not correlate the data with the mapped well locations.	Resolved.	3/12/2013	8/6/2013
	7	Groundwater	Section 3.1.2.1 Runoff, Page 3-5: Desert scrub was selected as the groundwater cover which has a CN of 49 for A Soils and CN of 68 for B Soils. Please change the numbers in the report to reflect these values.	Resolved.	3/12/2013	8/6/2013
	8	Groundwater	Section 3.1.2.1 Runoff, Page 3-5: The runoff was changed based on utilizing a PZN adjustment factor. This factor should not be used since the study is looking at long-term runoff rates at a monthly time scale. Adjusting the PZN would not be appropriate for this type of application. Please use the published non-adjusted values.	Resolved.	3/12/2013	8/6/2013

ATTACHMENT A
PROJECT ISSUE CHECKLIST

	9	Groundwater	Section 3.1.2.1 Runoff, Calculation Spreadsheet: Runoff was not correctly calculated in the spreadsheet for lower rainfall events due to an incorrect IF statement utilized. The IF statement that was utilized was IF P>0.5. Please revise and use the following: IF P=0.2S. Additionally, the report on Page 3-5 that average runoff would be 2.4 inches or 21% of precipitation. This is incorrect due to adding the amount of runoff that occurred in each of the three soil type areas analyzed and dividing by the total precipitation that fell. Please re-calculate by looking at each individual sub-watershed that was analyzed and comparing the runoff in that sub-watershed to the total precipitation that fell in that sub-watershed. The result will be roughly 1/3 the amount of runoff as compared to what was reported in the study.	Resolved.	3/12/2013	8/6/2013
	10	Groundwater	Section 3.1.2.2 Groundwater Demand: The project construction water demand appears to be 25.7 acre-feet from Well B as indicated in Table 3-3 and the rest of the water would be imported. However, in the footnote of Table 3-3 it indicates that construction water demand requires a one-time extraction of approximately 39 acre-feet. Please fix this discrepancy. Additionally, under Scenario 4, 21 acre-feet of groundwater is included to be exported to Rugged Solar Farm. Since the project already requires imported water to meet its construction needs, County staff requests that exportation of water to other projects not be included. Please remove exportation of groundwater from Well B from the project.	Resolved.	3/12/2013	8/6/2013
	11	Groundwater	Section 3.2.1.1. Well Interference in Fractured Rock: Define in this subsection what the total demand of production from Well B is anticipated to be during the project. It is assumed this would be 25.7 acre-feet during the first 11 months of the project and then 4 acre-feet per year for the life of the project. All well interference analysis will be based on the anticipated groundwater demand from Well B.	Resolved.	3/12/2013	8/6/2013

ATTACHMENT A
PROJECT ISSUE CHECKLIST

	12	Groundwater	Section 3.2.2.3. Well Test Analysis, Significance of Impacts Prior to Mitigation, First Paragraph: A five-year projection of drawdown using the straight line method is the incorrect method to use to evaluate potential well interference impacts on off-site wells. Revise this analysis to evaluate potential well interference impacts on the closest offsite well using the Cooper-Jacob approximation of the Theis non-equilibrium flow equation. Utilize anticipated groundwater demand during the construction period as the first analysis and then a second analysis considering pumping for 5 years at the anticipated ongoing rate of demand. Include distances ranging from 50 feet to 5,280 feet (1-mile) in a Table to summarize potential well interference impacts. The pumping during the construction phase should realistically consider whether the well will be pumped 24 hours a day or whether it will be pumped at higher rates for shorter periods each day. A worst-case scenario of how pumping will occur should be evaluated.	Resolved. This was provided in revised groundwater investigation, however additional comments have been made on the results and methodology utilized to calculate drawdown.	3/12/2013	8/6/2013
	13	Groundwater	Section 3.2.2.3. Well Test Analysis, Significance of Impacts Prior to Mitigation, First Paragraph: The first paragraph should be revised to summarize the significance of impacts from the construction phase of groundwater pumping and then the ongoing water use based on well interference calculations.	Resolved. Revisions still required per comments below	3/12/2013	8/6/2013

ATTACHMENT A
PROJECT ISSUE CHECKLIST

	14	Groundwater	Section 3.2.2.3. Well Test Analysis, Significance of Impacts Prior to Mitigation, Hydraulic Isolation: Fractured rock aquifer systems are complicated and very difficult to adequately characterize. The spacing, orientation, and interconnectivity of fractures are complex and difficult to thoroughly analyze even with a robust groundwater monitoring network. The pathways of fractured zones at Well B are undefined and may result in potential impacts to nearby wells. Additionally, the well test conducted was for only 72 hours where impacts to wells at the distances monitored for the majority of the wells would be expected to be negligible given the time and the amount of water pumped. Substantial additional characterization of the fractured rock system would be required before the conclusion of hydraulic isolation could be made likely far beyond the scope of a project of this magnitude. Please remove the statement that the project well production will not exceed the County threshold of significance based on hydraulic isolation.	Resolved. Additional analysis conducted.	3/12/2013	8/6/2013
	15	Groundwater	Section 5.2. Well Interference, Summary of Project Impacts and Mitigation: The fact that there was not drawdown in the monitoring wells during well testing is not a standard the County employs to indicate whether there will be well interference on off-site wells. This would have potentially catastrophic consequences if used as a standard given the nature of fractured rock aquifers. Rather, drawdown calculations as requested above are the standard. Please revise this section along with any mitigation measures necessary.	Resolved. Additional analysis conducted.	3/12/2013	8/6/2013

	16	Groundwater	Section 5.5 Mitigation Measures: Based on revised well interference analysis, it will be necessary to develop a maximum amount of groundwater that can be safely pumped during the construction phase without resulting in significant well interference impacts on the closest well user to Well B. Additionally, a maximum amount of groundwater will also be established for the ongoing water use needed. A monitoring well network will be required to be setup with maximum drawdown thresholds to ensure impacts to offsite wells remain less than significant. Ongoing monitoring of well RM-1 which is located in the Coast Live Woodland will be required during the construction phase of pumping to evaluate potential impacts to the shallow groundwater system beneath the Coast Live Oak Woodland habitat. After the groundwater investigation is revised with the above changes requested and reviewed by County staff, a meeting will be setup to discuss the details of this plan and any additional wells needed to be installed for monitoring.	Resolved. Groundwater monitoring and mitigation plan included.	3/12/2013	8/6/2013
	17	Groundwater	Imported Groundwater: Once the groundwater investigation is revised and the amount of water to be produced from Well B is finalized, the amount of water to be imported to the site will be known. Prior to public review, the project will be required to have identified all offsite water sources to provide the imported water to the site. If the water sources are from groundwater dependent entities, a groundwater investigation will be required to evaluate potential groundwater impacts from any of these entities which must be reviewed and approved prior to the project going out for public review.	Resolved. The amount of water to be pumped from Well B still remains to be determined based upon well interference calculations. See comments below for details. (The amount of groundwater to be pumped is 18 acre-feet over the approximate 1 year construction period. See below).	3/12/2013	8/6/2013
	17	Groundwater	Jim Bennett, County Groundwater Geologist, has reviewed the Draft Groundwater Resources Investigation Report, Tierra Del Sol Solar Farm Project, prepared by Dudek dated July 2013. The report is inadequate and requires revisions. Comments are provided as follows.	For information purposes only	8/6/2013	N/A
	18	Groundwater	Section 1.4: Please add the required finding that is required for Major Use Permits from Groundwater Ordinance Section 67.722.B.	The required finding has been added to Section 1.4.		

ATTACHMENT A
PROJECT ISSUE CHECKLIST

	18	Groundwater	Section 3.1 50% Reduction of Groundwater in Storage: For Scenario 2 and 3, please move the water demand for the construction portion of the project to have a start time of July 1983 rather than the start time of July 1982 provided in the analysis. This will allow for analysis of the proposed project's impacts through the longest dry period (Spring 1983 to Dec. 1990) in the 30 year period analyzed. This will changes the results to 80% and 78% respectively for minimum groundwater in storage for the 30 year period analyzed.	Water demand for Scenarios 2 and 3 have been moved to July 1983.	8/6/2013	
	19	Groundwater	Section 3.1.1.1 Well Interference, bottom of page 3-14: The first bullet point indicates that the calculations assume no rainfall recharge occurs over the 5-year period analyzed. This is true but may not be overly conservative given the fact that twice in the 30 year water balance there was no rainfall recharge estimated during two different periods exceeding 5 years (Dec. 1984 to Dec. 1990, 6 years, and Feb. 1984 to Sep. 2004, 6.5 years). Please remove this bullet.	As per consultation with the County Groundwater Geologist, the condition that recharge will offset water level decline related to groundwater extraction during periods of average to above average annual rainfall (non-drought conditions) was added to the bullet.	8/6/2013	
	20	MAJOR PROJECT ISSUE, Groundwater	Table 3-11 and 3-12: Drawdown calculations contained an error in the formula which resulted in a gross underestimation of drawdown to occur from project pumping. The formula, $s=0.183Q/T * LOG\ 2.25\ Tt/r^2s$ included "1,000" instead of "T" in the first part of the formula. For the 60 day pumping scenario at 51 gpm, drawdown was calculated to be 48.3 feet at the nearest offsite well 784 feet away which exceeds the 10-foot threshold of significance chosen to be used for this project. For the 1 year pumping scenario at 17 gpm, drawdown was calculated to be 29.6 feet at the nearest offsite well also exceeding the 10-foot threshold. All calculations have been revised and will be provided in a spreadsheet for your review. During a working meeting, we will discuss revisions required to be made within the report.	Error has been fixed and calculations updated.	8/6/2013	

ATTACHMENT A
PROJECT ISSUE CHECKLIST

	21	MAJOR PROJECT ISSUE, Groundwater and Biological Resources	Groundwater Dependent Habitat: The calculation of drawdown in the report of 1.3 feet after 60 days of pumping within the groundwater dependent habitat is a gross underestimation. Drawdown within the groundwater dependent habitat is calculated at 41.6 feet during the 60 day pumping scenario, 27.1 feet during the 1 year pumping scenario, and 9.3 feet during the 5 year pumping scenario. During the working meeting, we will discuss revisions required to be made within the report and development of mitigation strategy as needed.	Error has been fixed and calculations updated.	8/6/2013	
	22	Groundwater	Well Interference Analysis, One Year and Five Year Scenarios: In the one year analysis scenario, pumping is anticipated to be at 51 gpm for 60 days and then 10 gpm for the remaining 305 days of the year. In the report an average value of 17 gpm was used for the one year analysis It should be discussed in the working meeting whether different methodology should be employed to capture the differences in flow rate throughout the 1 year analyzed rather than using an average rate smoothed out over the period analyzed. This discussion also applies to the 5-year analysis where three flow rates are lumped into an average of 4 gpm over the period analyzed.	Based on the production cap of 18 acre-feet for the approximate 1 year construction period, the pumping rate amortized over the first 90 days would be set at 18 gpm or 7 acre-feet. The pumping rate over the approximate 1 year construction period would be 11.2 gpm or 18 acre-feet.	8/6/2013	
	23	Groundwater	Drawdown Calculations: The transmissivity rate of 33.48ft2/day was selected in the calculations which appears to be associated with the Gringarten et. Al Solution Method. Please justify the use of this method over the other methods in the report. Additionally, in the executive summary it discusses that transmissivity was 30.48 ft2/day on average. Please revise to 33.48 ft2/day if in your professional opinion the Gringarten et al solution method was the best fit of the analysis methodologies.	Based on the solutions used to calculate transmissivity values, the Theis Recovery solution best fit the data with a sum of squares of 12.07 and a transmissivity of 31.53 $feet^2$/day.	8/6/2013	

ATTACHMENT A
PROJECT ISSUE CHECKLIST

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ATTACHMENT A
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SUBMITTAL REQUIREMENTS FOR SCOPING/ITERATION LETTER		
Date Requested	**Name of Study**	**Number of Copies Required**
	Revised Groundwater Investigation Report	Planner (1); Groundwater Geologist (1)
	Revised Well Test Report	Planner (1); Groundwater Geologist (1)
	Revised Groundwater Information	Planner (1); Groundwater Geologist (1)

	Scoping	Well Test Plan
Date Submitted:		
Date of Study:		
Name of Specialist Reviewing:		
Date of Site Visit (if applicable)		
Enter balance of DPLU account (check KIVA financial resp. screen): *If funds are not adequate to complete your review, stop review and email project manager asking how to proceed*		
MOU Required and Submitted? (Yes, No, or N/A) (required if project scoped on or after July 1, 2006)		
Consultant on applicable list? enter "yes", "no" or "N/A"		
Does study comply with applicable Guideline for Determining Significance and Report Format and Content Requirement? (Yes, No, or N/A) *Required if project was scoped after approval of the relevant Guideline*		
Make KIVA entry made in the "comment" field. Enter either "Incomplete","Accepted" or "Accepted with Minor Revisions"		
If study accepted, have you completed Initial Study Responses and provided Project Manager with Conditions and/or Mitigation Measures? w		
Completed Consultant Evaluation Form and emailed to Don Kraft? Always fill out form if Guidelines not followed, for notable poor performance, and when review is accepted.		

First Iteration	Second Iteration	Third Iteration	Fourth Iteration	Fifth Iteration