SECTION 6
ERRATA

The following are revisions to the Draft REIR and Recirculated Draft REIR for the September Ranch project. These revisions are minor modifications and clarifications to these documents and do not change the significance of any of the environmental issue conclusions within the Draft REIR or the Revised Draft REIR. The revisions are listed by page number. All additions to the text are underlined and all deletions from the text are stricken.

6.1 Revisions to the Draft Revised Environmental Impact Report (December 2004)

Page 2-1
The second sentence of the first paragraph is revised as follows:

> Other appurtenant facilities and uses would include separate systems for the distribution of potable water, water tanks for fire suppression, a sewage collection and treatment system, ~~wastewater treatment system,~~ drainage system, internal road system, common open space, tract sales office, and security gate.

Page 2-2
The second bullet point has been revised as follows:

- The proposed project will result in an increased generation of wastewater at the project site. ~~Project implementation will result in construction and operation of an onsite wastewater treatment plant (WTP) or, alternatively, in the event that the project does not include the construction and operation of an onsite WTP,~~ ~~w~~Wastewater flows generated by the project will be handled by the Carmel Area Wastewater District (see Section 4.5, Wastewater Treatment and Disposal).

Page 2-3, Summary of Alternatives
The following bullet points have been revised and/or added:

- ~~Environmentally Superior Alternative~~
- Reconfigured 94/15 Alternative
- 82/27 Alternative
- 73/22 Alternative
- Environmentally Superior Alternative (73/22 Alternative)

Page 2-3, Summary of Alternatives
The following language has been added after the last paragraph on page 2-3:

> The Mitigation Measures identified in Table 2-1, Executive Summary Matrix, and throughout the Recirculated DREIR, are for the proposed project and would be revised as appropriate if one of the alternatives identified above were to be selected.

The Recirculated DREIR concludes impact of project water demand on the resources of water/availability/supply, the health of local groundwater basins and water-related biological resources is less than significant. Consequently, CEQA does not require imposition of mitigation measures for these resource areas. However, the County may impose conditions of approval to provide additional environmental protection and controls under its police power, to respond to public concerns and to account for uncertainty. Accordingly, to accommodate public concern and to provide additional environmental protection, if the project is approved the County intends to impose an overall water use limit as a condition of approval to ensure the project would stay within the demand figure analyzed in the Recirculated DREIR. This condition will be incorporated into the CEQA mitigation measures to ensure accurate public understanding of the project's water use parameters.

Additionally the Recirculated REIR may impose conditions of approval in relation to fixture unit values and conservation requirements, to assure that the project has less than significant impacts; however, no mitigation measures are required.

Page 2-11 and Page 4.6-18, Mitigation Measure 4.6-3

Mitigation measure 4.6-3 on page 2-11 and page 4.6-18 of the Draft REIR has been revised to read as follows:

Contribute fair share fees, as ~~determined by the County for CVMP Traffic Impact Fees~~ outlined in the Carmel Valley Master Plan Traffic Mitigation Fee Ordinance Fee Schedule. Fees would be required for the following improvements:

- Signalizing the Carmel Valley Road/Dorris Drive intersection;
- Signalizing the Carmel Valley Road/Laureles Grade intersection; and
- Signalizing the Rio Road/Carmel Ranch Boulevard intersection.

As of June 30, 2004 the fee per market rate home was $18,992 per unit.

Page 2-12 and Page 4.6-9

The following text has been deleted from the document:

~~***Mitigation Measure***~~

~~**4.6-7:** The project applicant shall install a safe transit stop(s) convenient to both the entrance to the planned unit development and to the existing equestrian center. The applicant shall provide a passenger shelter in each direction, an improved pullout in each direction, and onsite signage at the project site showing the transit schedule and map.~~

~~Implementation of the mitigation measure would reduce vehicle trip generation and LOS impacts to less than significant.~~

~~***Monitoring Action***~~

~~**Prior to the issuance of occupancy permits,** the project applicant shall submit verification to the County of Monterey Building Public Works Department that the project applicant has satisfied Mitigation Measure 4.6-5.~~

~~**Prior to the issuance of a building permit**, the project proponent shall submit transit plans that are subject to review and approval by the County of Monterey Public Works Department and the Monterey-Salinas Transit.~~

Mitigation Measures 4.6-8 and 4.6-9 in the Draft REIR have been subsequently renumbered:

4.6-~~8~~7: The project applicant shall install the fourth (north) leg of September Ranch Road (the project access road) at the existing stop controlled T-intersection of Carmel Valley Road/Brookdale Drive. The project applicant shall be responsible for signalizing this intersection and any signal coordination costs associated with this signalization.

4.6-~~9~~8: Prior to the issuance of building permits, install an intersection ahead warning sign on eastbound Carmel Valley Road in advance of September Ranch Road to alert drivers on Carmel Valley Road.

Pages 2-14 - 2-17 and Pages 4.9-22 - 4.9-23, Mitigation Measure 4.9-1
Mitigation Measure 4.9-1 has been revised as follows:

The project applicant shall submit a Final ~~Tentative~~ Map that is consistent with the recommendations outlined in the Forest Management Plan. The applicant shall prepare and submit an Open Space Management Plan and a Grassland Habitat Management Plan which will include the following:

- Defines development envelopes for each residential lot to minimize vegetation removal;
- The identification of potential areas for building envelopes prior to the final map. The tentative map shall show the appropriate placement of the buildings with respect to the current conditions (i.e., slope, vegetation areas). All building envelopes shall require plant surveys that shall be conducted at the appropriate time (individual blooming periods are shown in the biological report in Appendix H of the Recirculated DREIR);
- Prohibits planting/introduction of nonnative invasive plant species (such as acacia, French or Scotch broom, and pampas grass) within any portion of proposed lots, and prohibit planting/introduction of any nonnative species outside the development envelope;
- Development of landscape guidelines that encourage the use of native species indigenous to the area as ornamentals and prevent the use of invasive exotics;

- Limits the use of fencing to designated development envelopes, and prohibit fencing of parcel boundaries in order to maintain areas for wildlife movement;
- Restricts direct disturbance or removal of native vegetation to designated development envelopes, as planned, through project covenants, codes and restrictions (CC&Rs), through dedication of a conservation or open space easement, or other similar method (The project applicant currently proposes dedication of scenic easements over all portions of the site outside designated development envelopes).
- Establishes lot restrictions and common open space regulations that limit uses and prescribe management responsibilities in private and common open space areas beyond the building and development envelopes identified in the final map.
- Defines the conservation (scenic) easements dedicated to an entity acceptable to the County of Monterey. These conservation easements are legally binding use restrictions recorded on privately owned land that can provide a high degree of protection to certain areas on the property while allowing the rest of the land to be developed and used at the owner's discretion. Conservation easements to the benefit of the County of Monterey ~~should~~ shall be recorded with the sale of the lot and ~~should~~ shall run with the land regardless of the number of times the land is sold. Such easements ~~should~~ shall be set aside for as much of the private open space on the property as is feasible to guarantee the long-term preservation of the site's overall biological resource values. Examples of the types of restrictions that shall be considered in these conservation easements include the following:
- Restriction of all development rights within the easement area;
- Maintenance of natural habitat;
- Pesticide use restrictions;
- Only compatible public recreation uses allowed within easement lands, not uses that cause disturbance to native vegetation and wildlife;
- Restricted trails for pedestrians, hikers and cyclists within easement lands;
- No vehicles of any kind allowed in easement lands except for those required by the habitat/open space manager in performance of habitat monitoring or maintenance activities;
- No alteration of land including grading, disking, compacting, soil removal or dumping shall be allowed unless the work is for the purpose of habitat management/restoration and authorized by the habitat/open space manager;

- No removal of flora or fauna from the easement area including mowing or weed whacking unless authorized by the habitat/open space manager;
- Limitations/restrictions will be placed on construction of permanent or temporary facilities (e.g., picnic tables or portable toilets) within the easement areas in accordance with the goals of the open space management program;
- Leash laws within the easement areas must be enforced; and
- Right of inspection of the easement area by the easement holder and habitat/open space manager.

Refer also to mitigation measures 4.9-2, 4.9-6, 4.9-7, 4.9-8 and 4.9-9 for implementation.

Pages 2-17 – 2-19 and Pages 4.9-24 – 4.9-25, Mitigation Measure 4.9-3
Mitigation Measure 4.9-3 is revised to read as follows:

- A tree replacement plan shall be prepared by a ~~qualified professional forester, arborist, or horticulturist,~~ registered professional forester and will be subject to the review and approval of the County Planning and Building Inspection Department that includes the following:

  - Identify tree planting areas with suitable soils that will also fulfill project landscape plans and visual screening objectives, as feasible.
  - Identify monitoring requirements, such as a site inspection at the end of the first winter after planting to confirm numbers, species of replacement, and locations of plantings. Annual inspections over ~~five~~ seven years shall confirm the objective of the plan, such as the survivability of the plantings, and the percentage of healthy trees.
  - ~~At least 70 percent of the plantings shall be established/surviving by five years or monitoring (and replacement) shall continue until compliance is achieved.~~ The entire 100% of the plantings shall be established/surviving by ~~five~~ seven years or monitoring (and replacement) shall continue until compliance is achieved, unless it is found to be detrimental to the health of the stand due to overcrowding. The long term objective is 100%. If initial planting levels exceed 1:1 replacement, then whatever percent assures 1:1 replacement should be the minimum standard, subject to the above foresters's finding caveat.
  - The location and species of all required replacement trees planted shall be mapped so they can be monitored for over the ~~five~~ seven year period. The monitoring period shall be extended for individual trees that die or are in poor health and must be replaced.
  - Transplanting of onsite native seedlings within construction areas and protection of those occurring near construction areas to maintain natural diversity and adaptation.
  - All replacement trees shall be of local genetic stock.
  - ~~Use of Monterey pines grown from seed collected in locations bordering the tree clusters from which the trees were removed. Replanting should avoid open spaces where currently there are no trees unless there is evidence of soil deep enough and of good enough quality to support the plantings.~~
  - ~~All replacement pines shall be transplanted or grown from seeds collected from asymptomatic trees, found within 500 feet in elevation of the planting site. Overabundant direct seeding of open pollinated pine seed or 4:1 planting of open~~

~~pollinated seedlings is recommended for a portion of the pine replacement trees with thinning to appropriate spacing after 3 years under the direction of a professional arborist.~~

- ~~Most replacement shall be of a small size (cell or one gallon) as studies have shown that small trees more readily adapt to a site and grow larger over the mid-to long-term.~~
- ~~Provide an adaptive management scenario if the success criteria are not being met.~~
- ~~Require that tree removal of native oaks and pines 6" or larger for future lot construction be subject to County approval and appropriate tree replacement. A tree protection plan detailing tree removal and replacement and protection measures for retained trees shall be required for each lot where trees 6" or larger will be removed. The plan shall be considered a site specific amendment to the Forest Management Plan for the project, which applies to all lots.~~
- All replacement trees shall be of local, native stock. All replacement Monterey pines shall be grown from on-site native stock collected within the 500 foot elevation zone of the planting site. Replanting shall avoid open spaces where currently there are no trees unless there is evidence of soil deep enough and of good enough quality to support the plantings.

Pages 2-18- 2-19 and Page 4.9-25, Mitigation Measure 4.9-4
Mitigation Measure 4.9-4 is revised as follows:

4.9-4: Pines adjacent to ones slated for removal shall be protected individually with orange construction fencing placed around their dripline. Pines not slated for removal shall bit be damaged. To avoid mechanical damage to pines not slated for removal, the following measures are recommended:

- Minimizing impacts to retained tress by individually cutting adjacent removal trees;
- Minimize mechanical tree damage such as skinning of the trunks, partial pushovers, etc. during construction or harvesting operations; ~~Tree damage from recent logging activities favors all kinds of bark beetles~~;
- Build barricades around trees to prevent mechanical damage by equipment in yard and landscape environments. Try to minimize root damage by keeping trenching and digging to a minimum;
- During landscaping operations, maintain final soil level around tree trunks and roots ~~at~~ <u>as much as possible to</u> the same height as it was before construction;
- Direct all drainage from developed areas away from low or flat areas near trees to prevent saturation of soils at the base of trees; and
- Require protection of oak and Monterey pine trees located outside designated development envelopes unless proven to be diseased or unhealthy as determined by a registered forester.

Pages 2-19 – 2-20 and Page 4.9-26, Mitigation Measure 4.9-5
Mitigation Measure 4.9-5 has been revised as follows:

4.9-5: There is no proven method available that will prevent pitch canker from infecting susceptible trees. To prevent the spread of the fungus into the pines within the project site, some actions can be taken to slow down the spread of the fungus, including the following:

- Minimize removal or severe pruning of trees during periods of peak beetle activity, particularly during maximum growth during the spring. Remove or chip trees and debris promptly and in accordance with handling guidelines of the Oak Mortality Task Force and Agricultural Commissioner for oaks and the Pitch Canker Task Force for pines;
- ~~Debark recently killed trees and branches if they are hazardous and/or are judged to be a significant threat of spreading disease or insect manifestation. This can be achieved with timely chipping and removal of diseased or insect infested tree material from nearby susceptible trees. In addition, a~~ All trees proposed for removal shall be removed carefully so as not to injure (including breaking nearby branches, cutting trunks, etc.) adjacent trees not slated for removal. There are some Monterey pines that are pest resistant to the pathogen and these trees ~~should~~ may be used but should not constitute more than 30 percent of the planted stock as a seed-base for replanting.
- Encourage healthy growth of trees. Susceptibility to beetle attack increases with poor health or damage due to breakage, wounding, or soil compaction.

Page 2-20 and Page 4.9-27, Mitigation Measure 4.9-6
Mitigation Measure 4.9-6 has been revised as follows:

4.9-6: Submit final Forest Management Plan, which includes a Forest Mitigation and Monitoring Plan subject to review and approval by the County Planning & Building Inspection Department that includes the following:

- Avoid grading, filling, and all construction activity within the dripline of oak trees, where possible. Any construction or activity within the dripline of oak trees shall be reviewed and approved by a qualified forester or arborist with their recommendations for protection as appropriate; and
- Develop CC&Rs that shall include oak tree protection as outlined in the Forest Management Plan on individual lots as part of future home construction, as well as guidelines for appropriate landscaping management to protect remaining oaks. Wherever possible, future homes should be sited outside of the dripline of any oak.~~; and~~
- ~~Direct all drainage from developed areas away from low or flat areas near trees to prevent saturation of soils at the base of trees.~~

Pages 2-21 – 2-22 and Page 4.9-29, Mitigation Measure 4.9-8
Mitigation Measure 4.9-8 has been revised as follows:

4.9-8: Submit a final Grassland Management Program that addresses the following:

- Preservation, enhancement, and restoration of native grasslands on the site. Including:

- Clear definition of the building footprint for each lot in the grasslands areas, restrictions on the remainder of the lot; and
- Description of the implementation of an active grassland management program for both the lots and the common open space areas.
- Light rotational, seasonally-timed grazing and/or appropriately timed mowing to reduce the cover of non-native annual grasses;
- ~~Preclude~~ Limit soil disturbance through cultivation;
- Preclude the use of herbicides unless applied directly to invasive, non-native species;
- Address the removal of Monterey pine seedlings in the native grasslands (either through mowing or chipping);
- Address restoration in areas dominated by invasive species like French broom; and
- Consider the possible use of fire management on both the common open space and private open space grassland areas.

Page 2-21 and Page 4.9-29, Mitigation Measure 4.9-9
Mitigation Measure 4.9-9 is revised as follows:

4.9-9: To reduce the acreage impacts to ~~coastal terrace prairie~~ native grasslands, pre-construction surveys shall be conducted that identify areas with high concentrations of native species (areas with over 50 percent native grassland species). Native grassland acreage shall be replaced at a 1:1 ratio.

Pages 2-22 – 2-23 and Page 4.9-30, Mitigation Measure 4.9-10
Mitigation Measure 4.9-10 is revised as follows

4.9-10: To reduce the potential "take" of individuals listed species the following are recommended:

- Prior to construction of roadways or individual houses, a botanical survey shall be conducted during the appropriate blooming period for each species. If no ~~individuals~~ listed species are observed no further action is required.

- If individuals are found a report shall be prepared, detailing the habitats affected by the project, the species potentially affected by the project, and the appropriate mitigation measures to reduce the "take" of ~~individuals~~ listed species. Informal consultation with CDGF~~/USFWS~~ may be required. CDFG~~/USFWS~~ may require further actions.

- If ~~individuals~~ listed species are found a report shall be prepared, detailing the habitats affected by the project, the species potentially affected and

appropriate mitigation measures to reduce "take" of ~~individuals~~ listed species Informal consultation with the USFWS will be required if Monterey spineflower are found. Mitigation may include but not be limited to avoidance of populations, restoration, maintenance, and enhancement and obtaining an Incidental Take Permit from the USFWS and notification with the CDFG.

Pages 2-23 – 2-24 and Page 4.9-31, Mitigation Measure 4.9-11
Mitigation Measure 4.9-11 is revised as follows:

The project applicant shall submit to the Monterey County Planning and Building Inspection Department a Final ~~Tentative~~ Map that identifies the roadway realignments in the area of Lots 18-22 that avoid the identified population of Pacific Grove clover.

Page 2-24 and Pages 4.9-31 – 4.9-32, Mitigation Measure 4.9-12
Mitigation Measure 4.9-12 is revised as follows:

4.9-12: To avoid a take and/or further evaluate the presence or absence of raptors, the following is ~~recommended~~ required:

- Removal should be conducted outside the nesting season, which occurs between February 1 and August 15. If grading before February 1 is infeasible and groundbreaking must occur within the breeding season, a pre-construction nesting raptor survey should be performed by a qualified biologist. If no nesting birds are observed, no further action is required and grading may occur within one week of the survey to prevent "take" of individual birds that may have begun nesting after the survey. If birds are observed onsite after February 1 it will be assumed that they are nesting onsite or adjacent to the site. If nesting birds are observed, ground breaking will have to be delayed until after the young have fledged, as determined by bird surveys conducted by a qualified biologist, or after the nesting season.
- The CDFG Central Coast Regional office does allow grading/or tree removal to occur if nesting birds are observed onsite, providing that a ~~100-to~~ 500-foot buffer zone is created around the observed nest~~. Because nests may occur in the middle of the grading area, this method is not advised.~~

Pages 2-24 - 25 and Page 4.9-32, Mitigation Measure 4.9-13
Mitigation Measure 4.9-13 has been revised to read as follows:

To avoid a take and/or further evaluate the presence or absence of passerines, the following is ~~Recommended~~ required:

- Grading within the grasslands shall be conducted outside the nesting season, which occurs between approximately February 1 and August 15. If grading before February 1 is infeasible and groundbreaking must occur within the breeding season, a qualified biologist ~~should~~ shall perform a pre-construction nesting bird survey of the grasslands. If no nesting birds

are observed, no further action is required and grading may occur within one week of the survey to prevent "take" of individual birds that may have begun nesting after the survey. If birds are observed onsite after February 1 it will be assumed that they are nesting onsite or adjacent to the site. If nesting birds are observed, ground breaking ~~will have to~~ shall be delayed until after the young have fledged, as determined by bird surveys conducted by a qualified biologist, or after the nesting season.

- The CDFG Central Coast Regional office does allow grading to occur if nesting birds are observed onsite, providing that a 75- 100-foot buffer zone is created around the observed nest. ~~Because nests may occur in the middle of the grading area, this method is not advised.~~

Page 2-25 and Page 4.9-32, Mitigation Measure 4.9-14

4.9-14: To avoid "take" and/or further evaluate presence or absence of roosting bats, the following measures are ~~recommended~~ required:

- Snags shall not be removed without first being surveyed by a qualified bat biologist, 2-4 weeks prior to planned tree removal to determine whether bats are roosting inside the trees. If no roosting is observed, the snag shall be removed within 1 week following surveys. If bat roosting activity is observed, limbs not containing cavities, as identified by the bat biologist, shall be removed first, and the remainder of the tree removed the following day. The disturbance caused by limb removal, followed by a one night interval, will allow bats to abandon the roost.
- Remove large trees (>24" diameter at breast height [dbh]), or trees with cavities, between September 1 and October 30. This time period is after young are volant (flying), but before expected onset of torpor (winter inactivity). Smaller trees may be removed at any time.
- If trees larger than 24" dbh, or trees with cavities must be removed outside this time period, night emergence surveys ~~should~~ shall be conducted by a qualified bat biologist, 2-4 weeks prior to planned tree removal to determine whether bats are roosting inside the trees. If no roosting is observed, the tree ~~should~~ shall be removed within 1 week following surveys. If bat roosting activity is observed, limbs not containing cavities, as identified by the bat biologist, shall be removed first, and the remainder of the tree removed the following day. The disturbance caused by limb removal, followed by a one night interval, will allow bats to abandon the roost.

Page 2-25 through 2-26 and Page 4.10-2, Mitigation Measure 4.10-1

Mitigation Measure 4.10-1 is revised as follows:

4.10-1 If archaeological resources or human remains are accidentally discovered during construction, the following steps will be taken:

- There shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent human remains until:
- The coroner of the county in which the remains are discovered must be contacted to determine that no investigation of the cause of death is required, and
- If the coroner determines the remains to be Native American:
    - The coroner shall contact the Native American Heritage Commission and the RMA – Planning Department within 24 hours.
    - The Native American Heritage Commission shall identify the person or persons from a recognized local tribe of the Esselen, Salinian, Costanoas/Ohlone and Chumash tribal groups, as appropriate, to be the most likely descendent.
    - The most likely descendent may make recommendations to the landowner or the person responsible for the excavation work, for means of treating or disposing of, with appropriate dignity, the human remains and any associated grave goods as provided in Public Resources Code Section 5097.9 and 5097.993, or
    - Where the following conditions occur, the landowner or his authorized representatives shall rebury the Native American human remains and associated grave goods with appropriate dignity on the property in a location not subject to further subsurface disturbance:
        1. The Native American Heritage Commission is unable to identify a most likely descendent or the most likely descendent failed to make a recommendation within 24 hours after being notified by the commission.
        2. The descendent identified fails to make a recommendation; or
        3. The landowner or his authorized representative rejects the recommendation of the descendent, and the mediation by the Native American Heritage Commission fails to provide measures acceptable to the landowner.

~~If during the course of construction, cultural archeological, historical, or paleontological resources are uncovered at the site (surface or subsurface resources), work shall be halted immediately within 50 meters (165 feet) of the fine until a qualified professional archeologist or paleontologist can evaluate it. The County of Monterey Planning and Building Inspection Department and a qualified archeologist shall be immediately contacted by the responsible individual present onsite. When contacted, the project planner and the archeologist shall immediately visit the site to determine the extent of the resources and to develop proper mitigation measures required for the discovery.~~

Page 3-2
The second sentence of the second paragraph is revised as follows

> In addition, the project will need water for irrigating landscape features ~~and pastures~~.

Page 3-2
The last sentence of the second paragraph is revised = as follows:

> The County of Monterey retained Kennedy Jenks Consultants to conduct a ~~A~~ lengthy, multi-phase investigation (hydrogeologic report) ~~has been conducted by the applicant~~ to examine ~~and presented in this Draft REIR to establish the~~ degree of connectivity between the project terrace area and the adjacent and much larger CVA. Additionally this investigation included an evaluation of the overall water availability and potential impacts from the proposed project. This investigation is summarized in this REIR (see Section 4.3 Groundwater Supply and Availability) and is contained in its entirety as an appendix to this REIR (see Appendix C) ~~between the project terrace area, the adjacent much larger, Carmel Valley Aquifer, and the overall availability of water (Section 4.3, Groundwater Supply and Availability~~.

Page 3-2
The third sentence of the second paragraph is deleted:

> ~~At the request of the MPWMD, potable water would be provided by a small mutual water system independent of the Cal-Am water system.~~

Page 3-2
The fifth sentence of the second paragraph is revised as follows:

> A lengthy multi-phase investigation has been conducted ~~by the applicant~~.

Page 3-2
The third paragraph is deleted.

> ~~Wastewater is proposed to be treated onsite at a wastewater treatment facility located within Parcel B in the southeastern portion of the project site (Exhibit 3-3). The basic wastewater facilities will consist of a STEP collection system with on-lot septic tanks; a central enclosed treatment plant providing tertiary effluent in a lined reservoir located at the former quarry site; and final effluent disposal via spray irrigation of pasture land and recycling for residential landscape watering.~~

The following language is added on page 3-2 under the heading Wastewater Treatment and Disposal, replacing the above deleted paragraph:

> The Carmel Area Wastewater District (CAWD) will provide wastewater services to the project site. Disposal service will be via an extension of an existing pipeline that serves Del Mesa Carmel and Pacific Meadows. The CAWD treatment plant has a permitted average dry water treatment capacity of 3.0 million gallons per day. CAWD has stated that the current CAWD facilities have capacity to serve the project site.

Page 3-2
The first sentence of the sixth paragraph is revised as follows:

> In addition to the proposed residential development, the proposed project contains approximately 783 acres of open space as identified below and as shown in Exhibit 3-3, Site Plan ~~the revised Preliminary Project Review Map depicts common areas and open space as identified below~~:

Page 3-11, Project Phasing and Schedule
The following language is added after the last paragraph in this subsection:

> Phasing of the project shall be in conformance with the policies in the Carmel Valley Master Plan. Construction of the first half of the inclusionary units shall be complete prior to the issuance of the 12th building permit being issued for the market rate units. Construction of the second half of the inclusionary units shall be completed prior to the issuance of the 25th building permit being issued for the market rate units.

Page 3-11, Intended Uses of the Draft REIR, Responsible Agencies, and Approvals Needed
The following language is added after the last bullet points on page 3-11:

- Water System Permit for new water systems;
- Well construction permit, the applicant shall obtain a water well drilling permit;
- Timberland Conversion Permit, for the conversion of timberland to non-timberland uses
- Subdivision Building Envelope Approval;
- Water Tank Approval;
- Design Approval

Page 3-12, Other Responsible and Trustee Agencies
The following language has been added after item 3:

4. Department of Forestry and Fire Protection
   a. Approval of Timber Harvesting Plan
   b. Timberland Conversion Permit

Page 4.1-3, Compatibility with Onsite Land Uses
The third sentence is revised as follows:

> Onsite ancillary facilities that will support the proposed project include ~~a wastewater treatment plant,~~ a system for the distribution of potable water, water tanks for fire suppression, a drainage system, internal road system, and tract sales office and security gate.

Page 4.1-5
The following language is added after the third sentence of the second paragraph:

> There is no feasible alternative which would allow development to occur on slopes of less than 30 percent. The areas of 30 percent slope where development is allowed consist of existing ranch roads that need to be improved to accommodate the project, fire and safety requirements and County private road requirements.

Page 4.1-6
The last sentence of the third paragraph of page 4.1-6 is revised as follows:

> In the same manner, the inclusionary housing units would be located on land generally suited for the clustering of the smaller lot single-family inclusionary units ~~medium-density development~~.
>
> In addition, references to multi-family residential units have been omitted from the Draft REIR on pages 4.1-3, 4.3-40, 4.5-4, 4.5-6, and 4.8-7.

Page 4.1-8
The first sentence of the second paragraph is revised as follows:

> Currently, the project proposes to construct 15 residential units to be developed on 5.3 acres within the ~~southwestern~~ southeastern corner of the site.

Page 4.2-5
The sixth sentence in paragraph 5 is revised as follows:

> Tetratech concluded that based on their exploration, there was no evidence for the north branch of the Hatton Canyon fault as it was previously mapped; however, when the southern trace was trenched it was identified as a northwest reverse ~~trending normal~~ fault with Quaternary displacement.

Section 4.3, Water Supply and Availability
The following mitigation measures and monitoring actions have been added:

> ***Mitigation Measure***
>
> **4.3-1** Water use on the property shall not exceed the projected water demand which is 57.21 AFY
>
> ***Monitoring Action***
>
> The applicant, per the water system operator, shall document annual water use and submit reports to the Water Resources Agency and RMA Planning Department on a quarterly basis.
>
> ***Mitigation Measure***
>
> **4.3-2** The location of future wells on the September Ranch project site shall be based upon the following:
>
> - Wells will be located based on pumping tests designed and executed to yield information on the radius of influence of potential multiple pumping wells.
> - Project applicant will ensure that representative transmissivities for the three aquifer units are made available for informed decisions on

placement of future wells to ensure new wells will not impact existing wells.

- Prior to issue of permits for new wells, the County will review and approve well site plans to ensure new wells will not impact existing wells.

Monitoring Action

Prior to the issuance of permits for future groundwater wells, the County of Monterey shall review and approve well site plans to ensure that the insertion of new wells will not have an impact on neighboring wells.

Page 4.3-6
The fourth sentence of the second paragraph is revised as follows:

Cal-Am's pre-1914 appropriate rights are set at 1,137 AFA; ~~however it should be noted that according to~~ and Water Rights Decision 95-10 directed ~~allows~~ Cal-Am to cease and desist diverting any water in excess of ~~to divert a maximum of~~ 14,106 AFY from the Carmel River and required Cal-Am to divert no more than 11,990 AFY in Water Year 1996 and 11,285 AFY in each subsequent year ~~"until unlawful diversion from the Carmel river are ended"~~.

Page 4.3-11
The second sentence of the fourth paragraph is revised as follows:

This amount was determined by the Superior Court and the Court of Appeal ~~the County as the relevant condition prior to and at the time of the 1995 project application~~,

Page 4.3-13
The first sentence of the seventh paragraph is revised as follows:

Based on the mapped location of the Hatton Canyon Fault and the best available well locations at September Ranch, the September Ranch wells may all be southwest of the Hatton Canyon Fault (see ~~2~~4.3-2~~1~~, Well Locations).

Page 4.4-9
The first sentence of the first paragraph is revised as follows:

Watershed A contains two proposed detention basins**,** one of which is proposed within the western portion of the project site in Roach Canyon. The other basin is proposed to be located in the southwestern corner of the project site ~~on the south side of the 15-unit inclusionary housing component of the project~~.

Page 4.4-12
The second monitoring action is revised as follows:

Prior to the issuance of a grading permit, the project applicant shall submit a drainage plan to the MCPWD and MCRWA for review and approval. Monterey County Grading staff and

Public Works staff shall complete bi-weekly inspections of the project site, or more often if necessary depending on site conditions, to ensure compliance with BMPs. Inspections shall be at the applicant's expense.

Page 4.6-17
The last sentence of the first full paragraph is revised as follows:

The LOS analysis results are summarized in Table 4.6-3 ~~**Error! Not a valid bookmark self reference**~~,

Page 4.6-19
The monitoring action for Mitigation Measure 4.6-7 is revised as follows:

Prior to the issuance of the first residential building permit ~~**occupancy permits,**~~ the project applicant shall submit verification to the County of Monterey Public Works ~~Building~~ Department that the project applicant has satisfied Mitigation Measure 4.6-7 ~~5~~.

Page 4.6-20
The monitoring action for Mitigation Measure 4.6-9 is revised as follows:

Prior to the issuance of the first residential permit ~~**occupancy permits**~~, the project applicant shall submit for verification to the County of Monterey Public Works ~~Building~~ Department that the project applicant has satisfied Mitigation Measures 4.6-8~~6~~ and 4.6-9~~7~~.

Page 4.7-8
The monitoring action for Mitigation Measure 4.7-1 is revised as follows:

Prior to the issuance of grading permits, the Applicant shall submit a plan to the Director of Planning for review and approval, demonstrating how the best available control measures for controlling PM_{10} emissions will be implemented during grading and construction.

Contractor shall be responsible for implementing the approved plan to ensure control of PM_{10} emissions.

Applicant shall provide a monthly reporting during construction demonstrating compliance with measure.

~~The grading plans shall be reviewed and approved b y the Monterey County Planning and Building Inspection Department.~~

Page 4.7-2 and 4.7-3, Table 4.7-1
Table 4.7-1's row 3 has been revised as follows:

Pollutant	Averaging Time	California Standards		Federal Standards		
		Concentration	Method	Primary	Secondary	Method
Fine	24 Hour	12 µg/m^3		65 µg/m^3	Same as	Inertial Separation

Pollutant	Averaging Time	California Standards		Federal Standards		
		Concentration	Method	Primary	Secondary	Method
Particulate Matter ($PM_{2.5}$)	Annual Arithmetic Mean			15 µg/m^3	Primary Standard	and Gravimetic Analysis

Page 4.7-9
The second sentence of the third paragraph on page 4.7-9 of the Draft REIR has been revised to read as follows:

> A hot spot analysis is generally required if ~~daily project-related CO emissions exceed 550 pounds per day, or if they cause~~ intersection levels of service to substantially worsen at intersections that already operate at a degraded level of service.

Page 4.9-9
The last sentence of the first paragraph is revised as follows:

> On the other hand, small species, such as amphibians would find it difficult to move onto the site from the Carmel River due to the residential development and the debris-blocked culverts going under Carmel Valley Road ~~Highway 84~~.

Page 4.9-9, Special Status Natural Communities
The last sentence of this paragraph is revised to read as follows:

> Within the project site, two communities are classified as rare, the Monterey pine forest and ~~the coastal terrace prairie~~ native annual California grasslands within non-native grasslands.

Pages 4.9-10 and 4.9-11
The last paragraph of page 4.9-10 and the first paragraph of page 4.9-11 have been revised as follows:

> ~~**Coastal Terrace Prairie**~~ **Native Annual California Grasslands within Non-Native Grasslands.** ~~Coastal terrace prairie~~ Native annual California grasslands within non-native grasslands, considered rare by the CNPS, is typically comprised of dense, tall grassland, typically dominated by both sod- and tussock-forming native perennial grasses. It is naturally patchy in occurrence and variable in composition reflecting differences in slope aspect, soil texture, and moisture availability. This vegetation community occurs on ~~sandy loam soils of marine terraces near the coast and is restricted to cooler, more mesic sites within the zone of fog incursion~~ the onsite soils that are colluvial sandy to silty clays and silts derived from weathering of Monterey shale. ~~Although the coastal terrace prairie consists of many of the same native species that comprise valley/foothill needlegrass grassland, annual species are less important in community structure. It is distributed from Santa Cruz County to Oregon (Holland 1986) and its range closely matches that of northern coastal scrub (Holland and Keil 1990), with which it is generally associated. Coastal terrace prairie similarly has a long history of human disturbance and continues to be threatened by including intensive livestock grazing, the introduction of invasive exotic species, changes in the fire regime, and development~~

Within the 891-acre September Ranch Subdivision project area, 17.92 acres of grasslands, including ~~coastal terrace prairie~~ native California grasslands within non-native grasslands and non-native grasslands, have potential to be impacted by construction of roads, installation of utilities and creation of building pads.

Page 4.9-11, Special Status Plant Species

Page 4.9-11, the second sentence of the first paragraph under the heading Special Status Plant Species is revised to read as follows:

~~The CNPS listing is sanctioned by the CDFG and serves essentially as their list of "candidate" plant species~~ CDFG recognizes that lists 1A, 1B, and 2 of the CNPS Inventory consist of plants that may qualify for listing and the CDFG recommends that they be addressed in CEQA projects.

Page 4.9-11, Federal and State Threatened and Endangered Species

The first paragraph as follows:

It was initially determined that eight special status plant species had the potential to occur on the site, ~~including Monterey pine (*Pinus radiata*), Hickman's onion (*Allium hickmani*), CNPS list 1B Gairdner's yampah (*Perideridia gairdnen*), CNPS list 4, Yadon's piperia (*Piperia yadoni*), federally endangered, and CNPS List 1B Santa Cruz clover (*Trifolium buckwestorium*), and CNPS list 1B Pacific Grove clover (*Trifolium polydon*) California rare and CNPS List 1B small-leaved lomatium (*Lomatium parvifolium), and CNPS list 4 Adder's tongue (Ophioglossum californicum*),~~ including CNPS List 1B Monterey pine, CNPS List 1B Hickman's onion (*Allium hickmani*), CNPS List 4 Gairdners yampah (*Perideridia gairdnen*), federally endangered and CNPS List 1B Yadon's piperia (*Piperia yadoni*), CNPS List 1B Santa Cruz clover (*Trifolium buckwestorium*), California rare and CNPS List 1B Pacific Grove Clover (*Trifolium polydon*), CNPS List 4 small-leaved lomatium (*Lomatium parvifolium*), and the CNPS List 4 California adder's tongue (*Ophioglossum californicum*) (Denise Duffy and Associates 1998). Another federally-listed species addressed in this Draft REIR is the Monterey spineflower (*Chorizanthe pungens* var. *pungens*), a federally threatened and CNPS list 1B. Please refer to Appendix A of Appendix H of this REIR for a list of special status plant species and their survey dates.

Page 4.9-23

The second sentence of the fourth paragraph on page 4.9-23 should be revised as follows:

Approximately six percent of the coast live oak trees (890 out of conservatively estimated 15,200 trees) and approximately four percent of the Monterey pines (2,692 out of a conservatively estimated 66,540 trees) that occur onsite will be removed as a result of ~~roadway~~ project development.

Page 4.9-34

The last sentence of Policy 7.2.2.3 has been revised as follows:

Such species shall not be used in required landscaping and wherever they currently occur, they shall ~~not~~ be removed when the required landscaping is implemented

Page 4.10-2

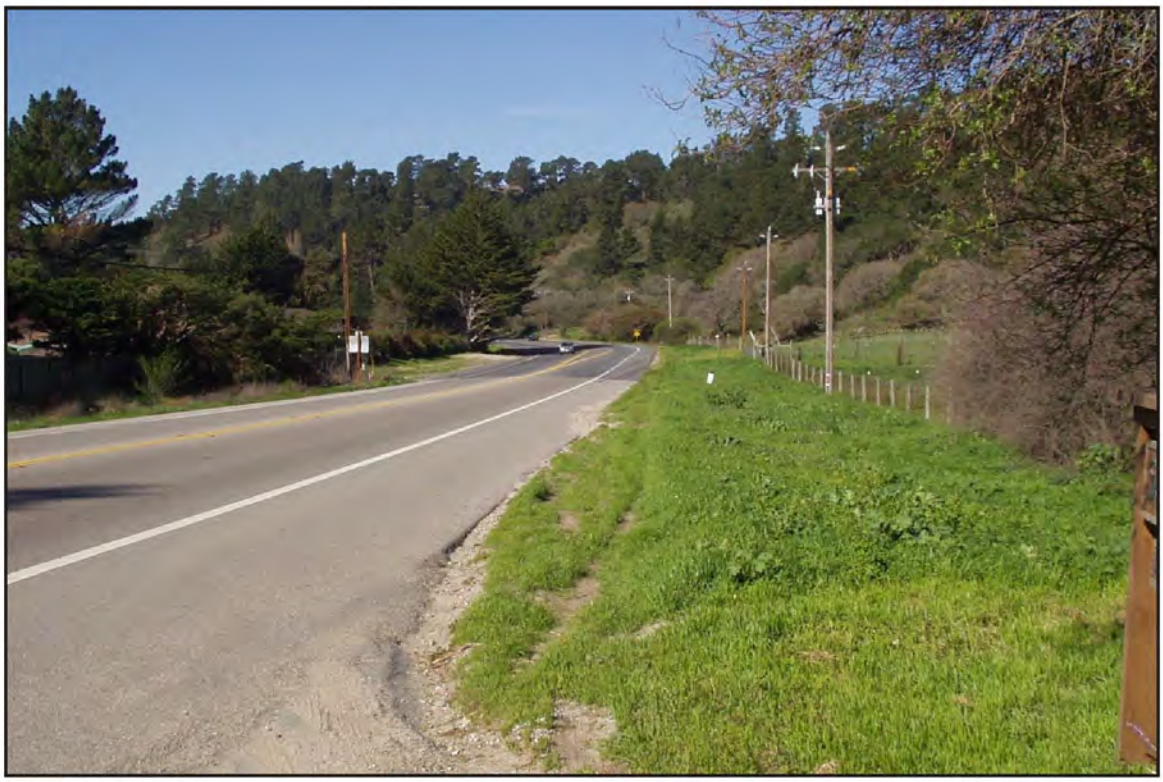
The monitoring action for Mitigation Measure 4.10-1 is revised as follows:

> **Prior to the issuance of grading permits or approval of Subdivision Improvement Plans, whichever occurs first,** the applicant shall submit the contracts with a Registered Professional Archeologist and a Registered Professional Paleontologist to the Director of Planning, Monterey County Planning and Building Inspection Department for approval.
>
> **Prior to recordation of the final map and prior to issuance of permits,** the requirements of this mitigation measure shall be included as a note on all grading and building permits, on the Subdivision Improvement Plans, in the CC&Rs, and shall be included as a note on an additional sheet of the final map.
>
> ~~**Prior to the issuance of grading permits,** the applicant shall submit the contracts with a Registered Professional Archeologist and a Registered Professional Paleontologist to the Director of Planning, Monterey County Planning and Building Inspection Department for approval.~~

Page 4.11-

Exhibit 4.11-5's captions have been associated with the correct Photographs 7 and 8. Replace the existing Exhibit 4.11-5 with the exhibit included on the next page.

Photograph 7: Looking west down Carmel Valley Road from existing access drive.



Photograph 8: Looking east down Carmel Valley Road from existing access drive.

Source: Michael Brandman Associates, May 2003.

Michael Brandman Associates

Exhibit 4.11-5
Photographs 7 and 8

6.2 Revisions to the Recirculated Portion of the DREIR (February 2006)

Page 2-3, Summary of Alternatives
The following language has been added after the last paragraph on page 2-3

> The Mitigation Measures identified in Table 2-1, Executive Summary Matrix, and throughout the Recirculated DREIR, are for the proposed project and would be revised as appropriate if one of the alternatives identified above were to be selected.
>
> The Recirculated DREIR concludes impact of project water demand on the resources of water/availability/supply, the health of local groundwater basins and water-related biological resources is less than significant. Consequently, CEQA does not require imposition of mitigation measures for these resource areas. However, the County may impose conditions of approval to provide additional environmental protection and controls under its police power, to respond to public concerns and to account for uncertainty. Accordingly, to accommodate public concern and to provide additional environmental protection, if the project is approved the County intends to impose an overall water use limit as a condition of approval to ensure the project would stay within the demand figure analyzed in the Recirculated DREIR. This condition will be incorporated into the CEQA mitigation measure to ensure accurate public understanding of the project's water use parameters.
>
> Additionally the Recirculated REIR may impose conditions of approval in relation to fixture unit values and conservation requirements to assure that the project has less than significant impacts; however, no mitigation measures are required.

Page 2-13 and Page 4.9-23, Mitigation Measure 4.9-1
Mitigation Measure 4.9-1 has been revised as follows:

> The project applicant shall submit a Final ~~Tentative~~ Map that is consistent with the recommendations outlined in the Forest Management Plan. The applicant shall prepare and submit an Open Space Management Plan and a Grassland Habitat Management Plan which will include the following:
>
> - Defines development envelopes for each residential lot to minimize vegetation removal;
> - The identification of potential areas for building envelopes prior to the final map. The tentative map shall show the appropriate placement of the buildings with respect to the current conditions (i.e., slope, vegetation areas). All building envelopes shall require plant surveys that shall be conducted at the appropriate time (individual blooming periods are shown in the biological report in Appendix H of the Recirculated DREIR);
> - Prohibits planting/introduction of nonnative invasive plant species (such as acacia, French or Scotch broom, and pampas grass) within any portion of proposed lots,

and prohibit planting/introduction of any nonnative species outside the development envelope;

- Development of landscape guidelines that encourage the use of native species indigenous to the area as ornamentals and prevent the use of invasive exotics;
- Limits the use of fencing to designated development envelopes, and prohibit fencing of parcel boundaries in order to maintain areas for wildlife movement;
- Restricts direct disturbance or removal of native vegetation to designated development envelopes, as planned, through project covenants, codes and restrictions (CC&Rs), through dedication of a conservation or open space easement, or other similar method (The project applicant currently proposes dedication of scenic easements over all portions of the site outside designated development envelopes).
- Establishes lot restrictions and common open space regulations that limit uses and prescribe management responsibilities in private and common open space areas beyond the building and development envelopes identified in the final map.
- Defines the conservation (scenic) easements dedicated to an entity acceptable to the County of Monterey. These conservation easements are legally binding use restrictions recorded on privately owned land that can provide a high degree of protection to certain areas on the property while allowing the rest of the land to be developed and used at the owner's discretion. Conservation easements to the benefit of the County of Monterey ~~should~~ shall be recorded with the sale of the lot and ~~should~~ shall run with the land regardless of the number of times the land is sold. Such easements ~~should~~ shall be set aside for as much of the private open space on the property as is feasible to guarantee the long-term preservation of the site's overall biological resource values. Examples of the types of restrictions that shall be considered in these conservation easements include the following:

    - Restriction of all development rights within the easement area;
    - Maintenance of natural habitat;
    - Pesticide use restrictions;
    - Only compatible public recreation uses allowed within easement lands, not uses that cause disturbance to native vegetation and wildlife;
    - Restricted trails for pedestrians, hikers and cyclists within easement lands;
    - No vehicles of any kind allowed in easement lands except for those required by the habitat/open space manager in performance of habitat monitoring or maintenance activities;
    - No alteration of land including grading, disking, compacting, soil removal or dumping shall be allowed unless the work is for the purpose of habitat management/restoration and authorized by the habitat/open space manager;
    - No removal of flora or fauna from the easement area including mowing or weed whacking unless authorized by the habitat/open space manager;
    - Limitations/restrictions will be placed on construction of permanent or temporary facilities (e.g., picnic tables or portable toilets) within the easement areas in accordance with the goals of the open space management program;
    - Leash laws within the easement areas must be enforced; and

- Right of inspection of the easement area by the easement holder and habitat/open space manager.

Refer also to mitigation measures 4.9-2, 4.9-6, 4.9-7, 4.9-8 and 4.9-9 for implementation.

Pages 2-14 – 2-15 and Pages 4.9-24 – 4.9-25, Mitigation Measure 4.9-3
Mitigation Measure 4.9-3 is revised to read as follows:

- A tree replacement plan shall be prepared by a ~~qualified professional forester, arborist, or horticulturist,~~ registered professional forester and will be subject to the review and approval of the County Planning and Building Inspection Department that includes the following:
  - Identify tree planting areas with suitable soils that will also fulfill project landscape plans and visual screening objectives, as feasible.
  - Identify monitoring requirements, such as a site inspection at the end of the first winter after planting to confirm numbers, species of replacement, and locations of plantings. Annual inspections over ~~five~~ seven years shall confirm the objective of the plan, such as the survivability of the plantings, and the percentage of healthy trees.
  - ~~At least 70 percent of the plantings shall be established/surviving by five years or monitoring (and replacement) shall continue until compliance is achieved.~~ The entire 100% of the plantings shall be established/surviving by ~~five~~ seven years or monitoring (and replacement) shall continue until compliance is achieved, unless it is found to be detrimental to the health of the stand due to overcrowding. The long term objective is 100%. If initial planting levels exceed 1:1 replacement, then whatever percent assures 1:1 replacement should be the minimum standard, subject to the above foresters's finding caveat.
  - The location and species of all required replacement trees planted shall be mapped so they can be monitored for over the ~~five~~ seven year period. The monitoring period shall be extended for individual trees that die or are in poor health and must be replaced.
  - Transplanting of onsite native seedlings within construction areas and protection of those occurring near construction areas to maintain natural diversity and adaptation.
  - All replacement trees shall be of local genetic stock.
  - ~~Use of Monterey pines grown from seed collected in locations bordering the tree clusters from which the trees were removed. Replanting should avoid open spaces where currently there are no trees unless there is evidence of soil deep enough and of good enough quality to support the plantings.~~
  - ~~All replacement pines shall be transplanted or grown from seeds collected from asymptomatic trees, found within 500 feet in elevation of the planting site. Overabundant direct seeding of open pollinated pine seed or 4:1 planting of open pollinated seedlings is recommended for a portion of the pine replacement trees with thinning to appropriate spacing after 3 years under the direction of a professional arborist.~~

~~- Most replacement shall be of a small size (cell or one gallon) as studies have shown that small trees more readily adapt to a site and grow larger over the mid-to long-term.~~
~~- Provide an adaptive management scenario if the success criteria are not being met.~~
~~- Require that tree removal of native oaks and pines 6" or larger for future lot construction be subject to County approval and appropriate tree replacement. A tree protection plan detailing tree removal and replacement and protection measures for retained trees shall be required for each lot where trees 6" or larger will be removed. The plan shall be considered a site specific amendment to the Forest Management Plan for the project, which applies to all lots.~~
- All replacement trees shall be of local, native stock. All replacement Monterey pines shall be grown from on-site native stock collected within the 500 foot elevation zone of the planting site. Replanting shall avoid open spaces where currently there are no trees unless there is evidence of soil deep enough and of good enough quality to support the plantings.

Page 2-16 and Page 4.9-25, Mitigation Measure 4.9-4
Mitigation Measure 4.9-4 is revised as follows:

4.9-4: Pines adjacent to ones slated for removal shall be protected individually with orange construction fencing placed around their dripline. Pines not slated for removal shall bit be damaged. To avoid mechanical damage to pines not slated for removal, the following measures are recommended:

- Minimizing impacts to retained tress by individually cutting adjacent removal trees;
- Minimize mechanical tree damage such as skinning of the trunks, partial pushovers, etc. during construction or harvesting operations; ~~Tree damage from recent logging activities favors all kinds of bark beetles;~~
- Build barricades around trees to prevent mechanical damage by equipment in yard and landscape environments. Try to minimize root damage by keeping trenching and digging to a minimum;
- During landscaping operations, maintain final soil level around tree trunks and roots ~~at~~ <u>as much as possible to</u> the same height as it was before construction;
- Direct all drainage from developed areas away from low or flat areas near trees to prevent saturation of soils at the base of trees; and
- Require protection of oak and Monterey pine trees located outside designated development envelopes unless proven to be diseased or unhealthy as determined by a registered forester.

Page 2-16 and Page 4.9-26, Mitigation Measure 4.9-5
Mitigation Measure 4.9-5 has been revised as follows:

4.9-5: There is no proven method available that will prevent pitch canker from infecting susceptible trees. To prevent the spread of the fungus into the pines within the project site, some actions can be taken to slow down the spread of the fungus, including the following:

- Minimize removal or severe pruning of trees during periods of peak beetle activity, particularly during maximum growth during the spring. Remove or chip trees and debris promptly and in accordance with handling guidelines of the Oak Mortality Task Force and Agricultural Commissioner for oaks and the Pitch Canker Task Force for pines;
- ~~Debark recently killed trees and branches if they are hazardous and/or are judged to be a significant threat of spreading disease or insect manifestation. This can be achieved with timely chipping and removal of diseased or insect infested tree material from nearby susceptible trees. In addition, a~~ All trees proposed for removal shall be removed carefully so as not to injure (including breaking nearby branches, cutting trunks, etc.) adjacent trees not slated for removal. There are some Monterey pines that are pest resistant to the pathogen and these trees ~~should~~ may be used but should not constitute more than 30 percent of the planted stock as a seed-base for replanting.
- Encourage healthy growth of trees. Susceptibility to beetle attack increases with poor health or damage due to breakage, wounding, or soil compaction.

Page 2-17 and Page 4.9-27, Mitigation Measure 4.9-6
Mitigation Measure 4.9-6 has been revised as follows:

4.9-6: Submit final Forest Management Plan, which includes a Forest Mitigation and Monitoring Plan subject to review and approval by the County Planning & Building Inspection Department that includes the following:

- Avoid grading, filling, and all construction activity within the dripline of oak trees, where possible. Any construction or activity within the dripline of oak trees shall be reviewed and approved by a qualified forester or arborist with their recommendations for protection as appropriate; and
- Develop CC&Rs that shall include oak tree protection as outlined in the Forest Management Plan on individual lots as part of future home construction, as well as guidelines for appropriate landscaping management to protect remaining oaks. Wherever possible, future homes should be sited outside of the dripline of any oak.~~; and~~
- ~~Direct all drainage from developed areas away from low or flat areas near trees to prevent saturation of soils at the base of trees.~~

Page 2-18 and Page 4.9-29, Mitigation Measure 4.9-8
Mitigation Measure 4.9-8 has been revised as follows:

4.9-8: Submit a final Grassland Management Program that addresses the following:

- Preservation, enhancement, and restoration of native grasslands on the site. Including:
  - Clear definition of the building footprint for each lot in the grasslands areas, restrictions on the remainder of the lot; and
  - Description of the implementation of an active grassland management program for both the lots and the common open space areas.
  - Light rotational, seasonally-timed grazing and/or appropriately timed mowing to reduce the cover of non-native annual grasses;
  - ~~Preclude~~ Limit soil disturbance through cultivation;
  - Preclude the use of herbicides unless applied directly to invasive, non-native species;
  - Address the removal of Monterey pine seedlings in the native grasslands (either through mowing or chipping);
  - Address restoration in areas dominated by invasive species like French broom; and
  - Consider the possible use of fire management on both the common open space and private open space grassland areas.

Pages 2-18-2-19 and Page 4.9-29, Mitigation Measure 4.9-9
Mitigation Measure 4.9-9 is revised as follows:

4.9-9: To reduce the acreage impacts to ~~coastal terrace prairie~~ native grasslands, pre-construction surveys shall be conducted that identify areas with high concentrations of native species (areas with over 50 percent native grassland species). Native grassland acreage shall be replaced at a 1:1 ratio.

Page 2-19 and Page 4.9-30, Mitigation Measure 4.9-10
Mitigation Measure 4.9-10 is revised as follows

4.9-10: To reduce the potential "take" of ~~individuals~~ listed species the following are recommended:

- Prior to construction of roadways or individual houses, a botanical survey shall be conducted during the appropriate blooming period for each species. If no ~~individuals~~ listed species are observed no further action is required.
- If individuals are found a report shall be prepared, detailing the habitats affected by the project, the species potentially affected by the project, and the appropriate mitigation measures to reduce the "take" of ~~individuals~~ listed species. Informal consultation with CDGF~~/USFWS~~ may be required. CDFG~~/USFWS~~ may require further actions.
- If ~~individuals~~ listed species are found a report shall be prepared, detailing the habitats affected by the project, the species potentially affected and

appropriate mitigation measures to reduce "take" of ~~individuals~~ listed species Informal consultation with the USFWS will be required if Monterey spineflower are found. Mitigation may include but not be limited to avoidance of populations, restoration, maintenance, and enhancement and obtaining an Incidental Take Permit from the USFWS and notification with the CDFG.

Page 2-19 and Page 4.9-30, Mitigation Measure 4.9-11
Mitigation Measure 4.9-11 is revised as follows:

The project applicant shall submit to the Monterey County Planning and Building Inspection Department a Final ~~Tentative~~ Map that identifies the roadway realignments in the area of Lots 18-22 that avoid the identified population of Pacific Grove clover.

Page 2-19 and Page 4.9-31, Mitigation Measure 4.9-12
Mitigation Measure 4.9-12 is revised as follows:

4.9-12: To avoid a take and/or further evaluate the presence or absence of raptors, the following is ~~recommended~~ required:

- Removal should be conducted outside the nesting season, which occurs between February 1 and August 15. If grading before February 1 is infeasible and groundbreaking must occur within the breeding season, a pre-construction nesting raptor survey should be performed by a qualified biologist. If no nesting birds are observed, no further action is required and grading may occur within one week of the survey to prevent "take" of individual birds that may have begun nesting after the survey. If birds are observed onsite after February 1 it will be assumed that they are nesting onsite or adjacent to the site. If nesting birds are observed, ground breaking will have to be delayed until after the young have fledged, as determined by bird surveys conducted by a qualified biologist, or after the nesting season.
- The CDFG Central Coast Regional office does allow grading/or tree removal to occur if nesting birds are observed onsite, providing that a ~~100-to~~ 500-foot buffer zone is created around the observed nest~~. Because nests may occur in the middle of the grading area, this method is not advised.~~

Page 2-20 and Page 4.9-31, Mitigation Measure 4.9-13
Mitigation Measure 4.9-13 has been revised to read as follows:

4.9-13: To avoid a take and/or further evaluate the presence or absence of passerines, the following is Recommended required:

- Grading within the grasslands shall be conducted outside the nesting season, which occurs between approximately February 1 and August 15. If grading before February 1 is infeasible and groundbreaking must occur within the breeding season, a qualified biologist ~~should~~ shall perform a

pre-construction nesting bird survey of the grasslands. If no nesting birds are observed, no further action is required and grading may occur within one week of the survey to prevent "take" of individual birds that may have begun nesting after the survey. If birds are observed onsite after February 1 it will be assumed that they are nesting onsite or adjacent to the site. If nesting birds are observed, ground breaking ~~will have to~~ shall be delayed until after the young have fledged, as determined by bird surveys conducted by a qualified biologist, or after the nesting season.

- The CDFG Central Coast Regional office does allow grading to occur if nesting birds are observed onsite, providing that a 75- 100-foot buffer zone is created around the observed nest. ~~Because nests may occur in the middle of the grading area, this method is not advised.~~

Page 2-20 and Page 4.9-32, Mitigation Measure 4.9-14
Mitigation Measure 4.9-14 has been revised to read as follows:

4.9-14: To avoid "take" and/or further evaluate presence or absence of roosting bats, the following measures are ~~recommended~~ required:

- Snags shall not be removed without first being surveyed by a qualified bat biologist, 2-4 weeks prior to planned tree removal to determine whether bats are roosting inside the trees. If no roosting is observed, the snag shall be removed within 1 week following surveys. If bat roosting activity is observed, limbs not containing cavities, as identified by the bat biologist, shall be removed first, and the remainder of the tree removed the following day. The disturbance caused by limb removal, followed by a one night interval, will allow bats to abandon the roost.
- Remove large trees (>24" diameter at breast height [dbh]), or trees with cavities, between September 1 and October 30. This time period is after young are volant (flying), but before expected onset of torpor (winter inactivity). Smaller trees may be removed at any time.
- If trees larger than 24" dbh, or trees with cavities must be removed outside this time period, night emergence surveys ~~should~~ shall be conducted by a qualified bat biologist, 2-4 weeks prior to planned tree removal to determine whether bats are roosting inside the trees. If no roosting is observed, the tree ~~should~~ shall be removed within 1 week following surveys. If bat roosting activity is observed, limbs not containing cavities, as identified by the bat biologist, shall be removed first, and the remainder of the tree removed the following day. The disturbance caused by limb removal, followed by a one night interval, will allow bats to abandon the roost.

Page 4.3-2
Second paragraph:

Replace "~~as underflow of the Carmel River~~" with "as water flowing in a subterranean stream". Remainder of the paragraph stays the same.

Page 4.3-2
Third paragraph, line 3:

Change "~~Appendix to KJA Hydrology Report~~" to "Appendix C, KJ Hydrology Report".

Page 4.3-7
Second paragraph:

Under "Water Rights Decision 1632" immediately following ". . . from the Carmel River . . ." insert "and required Cal-Am to divert no more than 11,990 AFY in Water Year 1996 and 11,285 AFY in each subsequent water year 'until unlawful diversions from the Carmel River are ended'." Remainder of paragraph stays the same.

Page 4.3-9
First bullet:

Change last sentence from: "Therefore, it is expected that there is almost no effect of pumping in the ~~SRA to the CVA AQ3.~~" to "Therefore, it is expected that pumping in CVA AQ3 would not affect the SRA."

Page 4.3-9
"Conclusions of Water Rights Evaluation," under "CVA AQ3," fifth and sixth sentences, add underlined text: ". . . . to meet the maximum senior water rights annual use in AQ3 described above."

Page 4.3-9
"Conclusions of Water Rights Evaluation," under "CVA AQ3," third sentence, change "~~During the 1984 – 1991 dry period~~" to "During the 1987 – 1991 dry period".

Page 4.3-10
First full paragraph:

Starting "Under existing conditions . . .," third sentence add underlined text "needed to meet the maximum senior water right use in AQ3 . . ."; fourth sentence add underlined text: "likely to be available to junior water users and, beyond that, to be part of excess outflow . . ."

Page 4.3-12
Paragraph 1:

Change "total precipitation for representative average water years……" to "total precipitation of representative September Ranch average water years for; 1996 is 19.02, 1997 is 18.40, 2000 is 17.29, and 2001 is 17.82 inches."

Page 4.3-14
Paragraph 3:

Change "~~(e.g. water year 1997)~~" to "(e.g. water years 1997, 2000, and 2001)".

Page 4.3-14
Paragraph 3:

Change "~~(e.g. water years 1998, 1999, and 2000)~~" to "using data from below average water year 1999 which measured 17.41 inches of rain or 3.96 inches below normal".

Exhibit 4.3-3
Change: SR1 will be added to AQ3 map.

Page 4.3-33
Paragraph 6:

WY 1996 and 1997 were used to calculate recharge and drawdowns (Table 4.3.3). Although the original analysis was accurate, to address the District's concerns, supplemental estimates using WY 2000 and WY 2001 as normal rainfall recharge years have been calculated for the response to comments. The results are presented below:

Page 4.3-35
Immediately below Table 4.3-3: Add the following table and verbiage entirely.:

WY 1996 and 1997 were used to calculate recharge and drawdowns (Table 4.3.3). Although the original analysis was accurate, to address the District's concerns, supplemental estimates using WY 2000 and WY 2001 as normal rainfall recharge years have been calculated for the response to comments. The results are presented below:

Average Water Year	San Clemente Dam Rainfall (in)	September Ranch Site Precipitation Over 561 Acres (AF)	Net Recharge with ET-loss of 70% Adjusted for Infiltration (AF)	Below Average Water Years	San Clemente Dam Rainfall (in)	September Ranch Site Precipitation Over 561 Acres (AF)	Net Recharge with ET-Loss of 70% Adjusted for Infiltration (AF)	Net Recharge with ET-Loss of 85% (AF)[1]
1996	22.4	889.1	262.0	1987	11.02	437.4	131.2	65.6
1997	21.7	860.1	244.0	1988	11.07	439.4	131.8	65.9
2000	20.37	760.9	228.5	1989	12.80	508.0	152.4	76.2
2001	20.99	785.54	235.9	1990	13.09	519.6	155.9	77.9
				1991	16.87	669.9	182.2	81.7
Yearly Average			**242.2**	**—**	**—**	**—**	**151**	**73**

Note: estimated runoffs were subtracted from ET-loss for corrected recharges rates (see Table 1).

Page 4.3-38
Third paragraph:

Change "~~water levels in Well D in both the 1992 and 1996 aquifer~~ ……" to "water levels in Well D in the 1996 aquifer ……"

Page 4.3-43
Second paragraph:

Change "~~The yearly outflow is the project demand of 57.21 AFY~~" to "Since the September Ranch watershed is relatively isolated from adjacent watersheds and that the SRA is separate from the CVA, there are virtually no surface runoffs that are not captured by the terrace deposits (aquifer). The analyses herein assumes that the yearly outflow is the project demand of 57.21 AFY"

Page 4.3-43
Table 4.3-6 Change:

Table 4.3-6: Predicted Water Level Changes in the September Ranch Aquifer

Average Rainfall Years	Inflow (AF)	Outflow (AF)	Total Flow (AF)	Cumulative Drawdown (ft)	Below Average Rainfall	Inflow (AF)	Projected Usage	Total Flow (AF)	Cumulative Drawdown (ft)
1996	262.1	-57.21	204.9	13.73	1987	65.5	-57.21	8.3	0.56
1997	244.0	-57.21	186.8	26.32	1988	65.9	-57.21	8.7	0.59
2000	228.5	-57.21	171.3	11.54	1989	76.4	-57.21	19.2	1.29
2001	235.9	-57.21	178.7	23.57	1990	78.0	-57.21	20.8	1.40
—	—	—	—	—	1991	81.9	-57.21	24.7	1.66
Source: Kennedy/Jenks Consultants July 2006.									

from "~~In either the average water year~~ ……." To "In either the average water years ……."

Page 4.3-43
Last paragraph: Change entirely to:

The total flow or net gain in storage in water years with average rainfall suggests that there is between 171 (2001 normal rainfall) and 205 (1996 slightly above normal rainfall) AFY of water that is available for exchange between the SRA and CVA (that is, to flow from the SRA to the CVA). In extended drought periods, there is approximately 8 (1987) to 25 (1991) AFY of available rejected flow for exchange. These two sets of storage results categorically suggest that in either normal or drought precipitation periods pumping the projected project demand from the SRA will not result in water being taken out of storage from the CVA.

Page 4.3-45
Second paragraph, 4th line:

Change: "KJC concludes, based on the estimated amount of yearly recharge, that a conservative estimate of groundwater available long term from the SRA during normal rainfall periods is about 244 (1996) to 228 (2000) AFY for all users within the SRA. These values (244 and 228) are primarily calculated based on the 70 percent ET loss over a 561-acre watershed for average rainfall periods.

Page 4.3-45
Table 4.3-10, S ustainable Yield Summary, change entirely to:

	Rainfall (inches per year)	Available Groundwater in the SRA[1] (AFY)	Average Usage of Other SRA Users (AFY)	Project Sustainable Yield[2] (AFY)
Average Precipitation Period (1996 and1997)	22.40 – 21.67	244 - 262	0.76	243 – 261
Average Precipitation Period (2000 and 2001)	20.37 – 20.99	228 - 235	0.76	227 – 234
Below Average Precipitation	11-02 – 16.87	65 - 81	0.76	64 – 80

Notes:
[1] Based on total recharge within the September Ranch watershed;
[2] Project sustainable yield is the amount of naturally available groundwater in SRA minus the current total usage by other SRA users.
Source: Kennedy/Jenks Consultants, July 2006.

Page 4.3-46
First paragraph, sixth sentence. "The estimated water use for the project . . ." Delete the word First paragraph, sixth sentence:

"The ~~estimated~~ water use for the project . . ." Delete the word "estimated."

	Available Groundwater in the SRA1 (AFY)		Average Usage of Other SRA Users (AFY)	Project Sustainable Yield2 (AFY)
Average Precipitation Period	244 - 262		0.76	243 - 261
Below Average Precipitation	65 - 81		0.76	64 - 80

Page 4.3-46
First paragraph, 1st sentence:

Change "~~57.90~~" to "<u>57.97</u>".

Page 4.3-46
1st paragraph, 3rd sentence:

Change "~~243~~" to "<u>228</u>".

Page 4.3-46
2nd paragraph, last sentence:

Change "~~57.90~~" to "<u>57.97</u>".

Page 4.3-46

Delete third and fourth paragraph in their entirety and replace with:

To assess the potential impacts to existing users, the amount of additional drawdown in groundwater levels that would result from the proposed project use of 57.21 AF was assessed as if it were to occur in the CVA directly. This is a very conservative analysis because such a direct impact is unlikely to occur.

In order to evaluate potential changes to water level in the CVA, the total demand of 57.21 AF/yr was assumed to come entirely out of the CVA,-AQ3. This analysis used an area for CVA – AQ3 of 1,558 acres as estimated in a geographic information system map. Then an aquifer porosity of 33% was used and it was estimated that the change in water level over the 1,558 acres as a result of pumping 57.21 AF/yr is 0.009 in/yr, which is almost indiscernible in a well. If a more conservative approach is taken and all of the pumping were to occur in 10% of the CVA-AQ3 or 155.8 acres, then the resultant change in water level is estimated to be 0.09 in/yr or almost a tenth of an inch.

To clarify the potential for cumulative long-term impacts to existing CVA users, the analysis assumed that if water levels were to drop below the perforation intervals in existing water wells, those dry wells might require existing pumpers to drill a deeper well to extract water supply from deeper in the aquifer during critically dry periods, which would be a significant impact. For purposes of this analysis the total demand in the CVA-AQ3 was assumed to include reasonably foreseeable developments with net water use, including remaining Quail Meadows lots as identified in comments, plus the proposed project. The total for this estimated demand is 112.9 AF/yr which is assumed to come entirely out of the CVA,-AQ3. Used an area for CVA – AQ3 of 1,558 acres with an aquifer porosity of 33%, it was estimated that the change in water level over the 1,558 acres as a result of pumping 112,9 AF/yr is 0.027 in/yr, which is barely measurable in a well. If a more conservative approach is taken and all of the pumping were to occur in 10% of the CVA-AQ3 or 155.8 acres, then the resultant change in water level is estimated to be 0.27 in/yr or slightly more than a quarter of an inch. Based on the foregoing, even over the long-term it is high unlikely that water levels would drop below the perforation intervals of existing wells.

While a hypothetical drawdown of water levels cannot be accurately estimated because of the uncertainty in actual amount of groundwater exchange between the two systems, a comparison can be made by reviewing the calculated drawdowns in the SRA as an alternative to the above analysis. The predicted drawdowns for 57.21 AF of discharge in the SRA (as presented in the Recirculated DREIR for the extended dry years 1987 to 1991) are 0.96 foot in the summer and fall seasons and then water level rises in the winter season. These calculated drawdowns are based on aquifer storage of 305 AF in the SRA. Since the storage in the CVA AQ3 is about 16,929 AF which is two orders of magnitude large than that in the SRA, the corresponding lowering of groundwater levels as a result of 57.21 AF of denied recharge is than 0.013 foot in the summer and 0.006 foot in the winter which is very consistent with the above analysis of average drawdown of 0.0095 using porosity of 33% over 1158 acres of AQ3. The average well screen of water supply wells in the Carmel Valley is about 20 feet long and about 135 feet deep. The small amount of potential additional lowering of water levels would not result in water level declines in a well casing to below the

pump depth and that there is no possibility of a dry well scenario. As shown in Figure 1, fluctuations in water levels are about 35 feet in normal yearly seasonal changes and between normal and dry precipitation periods. Hence, the small potential and additional changes in water levels are well within seasonal water levels fluctuations.

Separate recharge sources further supports the opinion that during an extended dry period the effect of the proposed project demand of 57.21 AF would be less than significant in terms of impact to ecology and water supply. The contribution of this maximum amount of 57.21 AFY from the SRA in dry years is likely substantially less than this amount which supports the conclusion that the proposed Project would not impact existing sustainable use in the CVA, and that the demand of the proposed project would not require existing users to look for an alternative source(s) of water in future extended dry periods.

Page 4.3-47

Sub-heading Monthly Analysis …….. (P 4.3-47, -48, -49) - Replace entire section except for the last three paragraphs (i.e. in page 4.3-51) with the following:

This chapter also provides monthly calculations of reduced flow to the Carmel River AQ3 to demonstrate the less than significant impact on steelhead and other aquatic species. In response to comments on the Recirculated DREIR analysis of impact level under project conditions on the Lower Carmel River and on AQ3, monthly calculations of reduced flow to the Carmel River AQ3 were performed to conclusively demonstrate the less than significant impact on steelhead and other aquatic species during dry months of each year. The analyses were done for below normal rainfall (Case 1) and normal rainfall periods (Case 2).

Using the value of 8 AFY of rejected flow during a dry period as calculated as 65.5 AFY of inflow less 57.21 AFY of September Ranch pumping (WY 1987) and a more conservative normal year value of 178 AFY of rejected flow as calculated as 235.9 AFY of inflow less 57.21 AFY of September Ranch pumping (WY 2001), a monthly analysis was prepared for both dry year (WY 1987 – Case 1) and normal year (WY 2001 – Case 2). The previous normal year analysis for WY 1997 remains valid. This alternative normal year analysis is provided in response to MPWMD comments. The conclusions remain the same regardless of the normal year used.

As noted above, for purposes of responding to the District's comments, the 2000 and 2001 water years were assessed. In these years, the range of potential maximum monthly reduction that can be considered potential recharge to the CVA and thence to the Carmel River remains, as with the original analysis, 0.024 to 0.033 cfs in dry years (Table 4.3-9 DREIR Case 1 – WY 1987). The potential maximum reduction is increased slightly 0.022 to 0.14 cfs flow in the Carmel River in normal rainfall year (Case 2 – WY 2001). In interpreting these results, it is important to remember that reduction in recharge to the Carmel River can only happen within the hydrogeologically feasible flow from the SRA to the CVA. The reduction is difficult to estimate since the gradients are fairly neutral at any given time in a year and the resulting flow is less than -0.033 cfs. In a conservative scenario, any reduction of flows from the SRA into the CVA will likely occur during summer months of peak water usage. However, during this time of year the reduced exchange from SRA to CVA will likely have limited impact on water levels in the Carmel River because there are generally no flows

during the summer-early fall in the River. Flows in the River were identified based on a review of USGS stream flow gage No. 11143250 immediately downstream of the proposed September Ranch development (Downstream Gage).

The analysis uses the September Ranch recharge estimates for the respective water years identified above found in Table 1 of the Project Specific Hydrogeologic Report whereby recharge is a positive number. The monthly water demands for September Ranch are then calculated by assuming that 75% of the 57.21 AFY demand occurs from June to October and the remaining 25% occurs from November to May whereby demands are a negative number. The Maximum Potential Spillover to the CVA is then calculated by summing the recharge (positive) with the demand (negative). If the resultant sum (i.e. the Maximum Potential Spillover) is negative, then the Maximum Potential Spillover to CVA is assumed to be zero (as occurs when recharge is less than pumping). If the resultant sum is positive, then the resulting value for the month is entered.

USGS provides information on each gage regarding the degree of accuracy of the records provided by any given station. Gage No. 11143250 is characterized as having "fair" records which means that 95 percent of the daily discharges are within 15 percent of the true value. Furthermore, the values of the mean daily discharge recorded are shown to a number of significant figures based solely on the magnitude of the discharge value. For example, for discharges less than 1 cfs, the values are recorded to the nearest 0.01 cfs; for discharges between 1.0 and 10 cfs, the values are recorded to the nearest 0.1 cfs; to whole numbers between 10 and 1,000 cfs; and to 3 significant figures above 1,000 cfs. USGS further caveats the gage information by indicating that the accuracy of the streamflow data depends primarily on (1) the stability of the stage-discharge relation or, if the control is unstable, the frequency of discharge measurements, and (2) the accuracy of observations of stage, measurements of discharge, and interpretations of record.

In addition to gage No. 11143250 (Downstream Gage), USGS maintains gage No. 11143200 (Upstream Gage) – both of these gage locations are shown relative to each other, the September Ranch Development, and the aquifer subunit delineations on the attached Figure A. The Upstream Gage is sufficiently upstream of both September Ranch and the Downstream Gage that it does not represent Carmel River flows in the vicinity of September Ranch. In addition, significant aquifer recharge occurs in the area downstream of the Upstream Gage.

In the location of the Downstream Gage, flows are typically high, sometimes in excess of 500 cubic feet per second (224,000 gpm) in the wintertime and then taper to zero flow in the summer months. Zero flows can occur as early as May in a relatively dry year to as late as July in a relatively wet year (Figure B in TM5). Therefore, during the wet season, the reduction of flow of up to 0.34 cfs to the CVA and potentially to the Carmel River cannot be discerned in the flow of the Carmel River because the river flows are so high. When the Carmel River is dry, the water table is below the channel bottom and the reduction of flow of up to 0.34 cfs also cannot be discerned in the Carmel River. Flow reductions to the CVA and thence to the Carmel River during the spring months when the flows are tapering are also likely to be indiscernible.

The difference in Maximum Potential Spillover with and without the September Ranch project is then calculated by subtracting the "with September Ranch" calculation from the "without September Ranch" calculation. Then, the Maximum Potential Spillover in cfs for each month is converted to AF/month. The sum of the twelve AF/month calculations is not equal to the September Ranch demand because when the Maximum Potential Spillover to the CVA is negative, the value is zero. The monthly variations in recharge can result in significant differences in the Maximum Potential Spillover estimate for any given month.

Maximum Potential Spill Over from SRA to CVA was then compared to the actual mean monthly flow in the Carmel River at US Geological Survey (USGS) stream flow gage No. 11143250 immediately downstream of the September Ranch development. When the gage flow = 0; it is assumed that the Carmel River is a losing stream (i.e. the water table is below the channel bottom) and therefore the reduced potential spill over from the SRA to the CVA results only in a reduced water table. The results of the revised monthly analysis are summarized in the revised Table 4.3-9 below. It should be noted that the revision to the analysis does not result in any changes to the conclusions in the Recirculated DREIR.

In the location of the Downstream Gage, flows are typically high, sometimes in excess of 500 cfs (224,000 gpm) in the winter time and then taper to zero flow in the summer months. Zero flows can occur as early as May in a relatively dry year to as late as July in a relatively wet year. Therefore, during the wet season, the reduction of flow of up to 0.033 cfs to the CVA and potentially to the Carmel River cannot be discerned in the flow of the Carmel River because the river flows are so high. When the Carmel River is dry, the water table is below the river bottom and the reduction of flow of up to -0.033 cfs also cannot be discerned in the Carmel River because the reduction in these months are actually in groundwater and not surface water; the flow reduction then could result in a minimal drop in groundwater level.

Flow reductions to the CVA and thence to the Carmel River during the late spring months when the flows are tapering are also likely to be indiscernible in the accuracy of the gage. The maximum potential reduction in flow of 0.033 cfs in dry years ranges from 0.05% to 0.13% of the respective monthly flows in the Carmel River for the appropriate month. It is important to note that the maximum potential reduction of flow of 0.14 cfs from the SRA to the CVA in October 2001, although numerically equal to the average flow in the Carmel River during that time, the reduction is actually of groundwater. The reduction in flow from the SRA to CVA, especially in October, is likely to be occurring only in the subsurface and would not manifest as a reduction in flow in the Carmel River.

It should be noted that pumping in the CVA by many users further complicates the analysis of impact on the Carmel River. The CVA acts as a buffer zone of groundwater flow between the river and the SRA. What limited groundwater flow occurs from the SRA to the CVA then has to travel a distance of 850 feet to the Carmel River due south of the September Ranch watershed. Potential effects on the Carmel River baseflow as a result of -0.033 cfs (dry year) up to 0.140 cfs (normal year) of possible reduced groundwater resources from the SRA is a 1:1 reduction by SRA usage on reduced flow to the River. However, the actual impact cannot be quantified with certainty because of this additional pumping in the CVA between sources and receiving waters.

It is expected that the reduction, if any, will occur in the subsurface and be indiscernible both in the subsurface and in the surface water. About 10,000 AF per year is currently diverted in AQ3 for consumptive use (MPWMD CVSIM data).

Lastly, it is estimated that the adjacent watersheds namely the Canada De La Segunda in the east and the Roach Canyon in the west have four to five times the drainage and recharge capacities to the CVA (Kleinfelder, 2004). The Canada De La Segunda is technically an upgradient source water of the CVA relative to the September Ranch Project. Its direct contribution to the CVA and then to the Carmel River may eclipse the minor contribution of recharge from the SRA.

No changes in the last three paragraphs (p 4.3-51).

Page 4.3-50
Replace Table 4.3-9 with:

Revised Table 4.3-9: Maximum Potential Spill Over of Water from SRA to CVA for Below Normal and Normal Precipitation

Case 1: Maximum Potential Spill Over of Water from SRA to CVA (cfs) for Below Normal Precipitation (WY 1987)												
	Oct	**Nov**	**Dec**	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
Case 1a: Below Normal Precipitation WITH September Ranch	0.00	-0.019	-0.061	-0.178	-0.359	-0.224	-0.0009	0.0000	0.0000	0.0000	0.0000	0.0000
Case 1b: Below Normal Precipitation WITHOUT September Ranch	0.00	-0.052	-0.094	-0.211	-0.392	-0.257	-0.034	-0.024	0.00	0.00	0.00	0.00
Difference (Case 1a minus Case 1b)	**0.00**	**-0.033**	**-0.033**	**-0.033**	**-0.033**	**-0.033**	**-0.033**	**-0.024**	0.00	0.00	0.00	0.00
WY 1987 Monthly Mean Flow in the Carmel River (cfs)	0	0	0	0	0	36.11	60.88	18.42	0	0	0	0
Case 2: Maximum Potential Spill Over of Water from SRA to CVA (cfs) for Normal Precipitation WY 1996												
	Oct	**Nov**	**Dec**	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
Case 2a: Normal Precipitation WITH September Ranch	0.496	0.032	0.019	1.156	0.868	0.548	0.454	0.000	0.000	0.000	0.000	0.000
Case 2b: Normal Precipitation WITHOUT September Ranch	0.635	0.066	0.052	1.189	0.904	0.581	0.488	0.000	0.000	0.000	0.000	0.022
Difference (Case 2a minus Case 2b)	0.140	0.034	0.033	0.033	0.037	0.033	0.034	0.000	0.000	0.000	0.000	0.022
WY 1996 Monthly Mean Flow in the Carmel River (cfs)	0.14	7.08	9.71	86.07	186.50	373.29	92.00	38.19	5.73	0.00	0.00	0.00

Page 4.3-51
Second paragraph, first sentence, add:

> "project design features and a mitigation measure are included in the project . . ."

Page 4.3-52
First paragraph: add underlined text to the last three sentences:

> "The effect of pumping in the September Ranch basin in average years will not affect the CVA significantly in part because recharge most likely exceeds usage. The effect of pumping in the September Ranch basin in drought years on the CVA is also minimal in part because recharge will most likely exceed the planned usage of 57.21 AFY. Therefore, no impacts on natural vegetation would occur."

Section 4.3, Water Supply and Availability
The following mitigation measures and monitoring actions have been added:

Mitigation Measure

4.3-1 Water use on the property shall not exceed the projected water demand which is 57.21 AFY

Monitoring Action

The applicant, per the water system operator, shall document annual water use and submit reports to the Water Resources Agency and RMA Planning Department on a quarterly basis.

Mitigation Measure

4.3-2 The location of future wells on the September Ranch project site shall be based upon the following:

- Wells will be located based on pumping tests designed and executed to yield information on the radius of influence of potential multiple pumping wells.
- Project applicant will ensure that representative transmissivities for the three aquifer units are made available for informed decisions on placement of future wells to ensure new wells will not impact existing wells.
- Prior to issue of permits for new wells, the County will review and approve well site plans to ensure new wells will not impact existing wells.

Monitoring Action

Prior to the issuance of permits for future groundwater wells, the County of Monterey shall review and approve well site plans to ensure that the insertion of new wells will not have an impact on neighboring wells.

Page 4.9-8, Special Status Plant Species
The third and fourth sentences of the first paragraph is revised o read as follows:

In addition the California Natural Diversity Data Base (CNDDB) designated a number of communities as rare: these communities such as ~~coastal terrace prairie~~ native California grasslands within non-native grasslands are given the highest priority (Holland 1986, CDFG 1999). Within the project site, two communities are classified as rare, the Monterey pine forest and the ~~coastal terrace prairie~~ native California grasslands within non-native grasslands.

Page 4.9-9 through 4.9-10, Special Status Plant Species
The seventh and eighth paragraphs are revised to read as follows:

~~Coastal Terrace Prairie~~ Native Annual California Grasslands within Non-Native Grasslands. ~~Coastal terrace prairie~~ Native annual California grasslands within non-native grasslands, considered rare by the CNPS, is typically comprised of dense, tall grassland, typically dominated by both sod- and tussock-forming native perennial grasses. It is naturally patchy in occurrence and variable in composition reflecting differences in slope aspect, soil texture, and moisture availability. This vegetation community occurs on ~~sandy loam soils of marine terraces near the coast and is restricted to cooler, more mesic sites within the zone of fog incursion~~ the onsite soils that are colluvial sandy to silty clays and silts derived from weathering of Monterey shale. ~~Although the coastal terrace prairie consists of many of the same native species that comprise valley/foothill needlegrass grassland, annual species are less important in community structure. It is distributed from Santa Cruz County to Oregon (Holland 1986) and its range closely matches that of northern coastal scrub (Holland and Keil 1990), with which it is generally associated. Coastal terrace prairie similarly has a long history of human disturbance and continues to be threatened by including intensive livestock grazing, the introduction of invasive exotic species, changes in the fire regime, and development~~

Within the 891-acre September Ranch Subdivision project area, 17.92 acres of grasslands, including ~~coastal terrace prairie~~ native California grasslands within non-native grasslands and non-native grasslands, have potential to be impacted by construction of roads, installation of utilities and creation of building pads.

Page 4.9-10, Special Status Plant Species
The second sentence of the first paragraph is revised to read as follows:

~~The CNPS listing is sanctioned by the CDFG and serves essentially as their list of "candidate" plant species~~ CDFG recognizes that lists 1A, 1B, and 2 of the CNPS Inventory

consist of plants that may qualify for listing and the CDFG recommends that they be addressed in CEQA projects.

Page 4.9-10, Federal and State Threatened and Endangered Species
The first paragraph has been revised as follows:

It was initially determined that eight special status plant species had the potential to occur on the site, ~~including Monterey pine (*Pinus radiata*), Hickman's onion (*Allium hickmani*), CNPS list 1B Gairdner's yampah (*Perideridia gairdnen*), CNPS list 4, Yadon's piperia (*Piperia yadoni*), federally endangered, and CNPS List 1B Santa Cruz clover (*Trifolium buckwestorium*), and CNPS list 1B Pacific Grove clover (*Trifolium polydon*) California rare and CNPS List 1B small-leaved lomatium (*Lomatium parvifolium), and CNPS list 4 Adder's tongue (Ophioglossum californicum*),~~ including CNPS List 1B Monterey pine, CNPS List 1B Hickman's onion (*Allium hickmani*), CNPS List 4 Gairdners yampah (*Perideridia gairdnen*), federally endangered and CNPS List 1B Yadon's piperia (*Piperia yadoni*), CNPS List 1B Santa Cruz clover (*Trifolium buckwestorium*), California rare and CNPS List 1B Pacific Grove Clover (*Trifolium polydon*), CNPS List 4 small-leaved lomatium (*Lomatium parvifolium*), and the CNPS List 4 California adder's tongue (*Ophioglossum californicum*) (Denise Duffy and Associates 1998). Another federally-listed species addressed in this Draft REIR is the Monterey spineflower (*Chorizanthe pungens* var. *pungens*), a federally threatened and CNPS list 1B. Please refer to Appendix A of Appendix H of this REIR for a list of special status plant species and their survey dates.

Page 4.9-11, Federal and State Threatened and Endangered Species
The last sentence of the third paragraph on page 4.9-11 has been revised as follows:

In addition, during the focuses surveys conducted in April 2005 a small colony of unidentifiable species of piperia was observed onsite, a later survey in May 2005 determined that the species was CNPS List 4 (plants of limited distribution but not rare, endangered, or threatened) Michael's piperia and not Yadon's piperia.

Page 4.9-12, Federal and State Threatened and Endangered Species
This section has been revised as follows:

Hooker's manzanita (*Arctostaphylos hookeri* ssp. *hookeri*), a CNPS List 1B species, occurs in various and somewhat xeric communities, such as closed-cone coniferous forest, chaparral, cismontane woodland and coastal scrub on sandy soils at an elevation range between 85-300 meters. The blooming period for this evergreen shrub is between January and June. This species was not observed during any previous surveys of the site and Zander and Associates did not observe this species during the focused field surveys conducted for this species in 2005.

Monterey manzanita (*Arctostaphylos montereyensis*), a CNPS list 1B species, occurs in maritime chaparral, cismontane woodland, and coastal scrub communities on sandy soils at an elevation range of 30-730 meters. The blooming period for this evergreen shrub is between February and March. This species was not observed during any previous surveys of

the site and Zander and Associates did not observe this species during the focused field surveys conducted for this species in 2005.

Congdon's tarplant (*Centromadia parryi* ssp. *congdonii*), a federal Species of Concern and CNPS List 1B species, occurs in valley/foothill grasslands and alkaline soils. This perennial herb blooms June through November. This species was not observed during any previous surveys of the site and this species was assessed (Zander Associates 2002) for occurrence but no focused surveys were conducted. Zander and Associates did not observe this species during the focused field surveys conducted for this species in 2005

Hutchinson's larkspur (*Delphinium hutchinsoniae*), a CNPS List 1B species, occurs in broadleaf upland forests, chaparral, coastal prairie and coastal scrub communities. This perennial herb blooms in March and June. This species was assessed for occurrence (WESCO 1981) ~~but no focused surveys were conducted~~. This species was not observed during any previous surveys of the site and Zander and Associates did not observe this species during the focused field surveys conducted for this species in 2005

Eastwood goldenbush (*Ericameria fasciculate*), a CNPS List 1B species, occurs in closed-cone coniferous forest, maritime chaparral, coastal dunes and coastal scrub communities on sandy soils in openings of the scrub at an elevation range of 30-275 meters. The blooming period for this evergreen shrub is between July and October. ~~No surveys for this species have been conducted to date.~~ This species was not observed during any previous surveys of the site and Zander and Associates did not observe this species during the focused field surveys conducted for this species in 2005

Kellogg's horkelia (*Horkelia cuneata* ssp. *sericea*), a CNPS List 1B species, occurs in closed-cone coniferous forest, maritime chaparral and coastal scrub communities on sandy or gravelly soils in openings of the scrub at an elevation range of 10-200 meters. This perennial herb blooms between April and September. ~~No surveys for this species have been conducted to date.~~ This species was not observed during any previous surveys of the site and Zander and Associates did not observe this species during the focused field surveys conducted for this species in 2005

Page 4.9-25
The following is added to the last paragraph (Monitoring Action) of page 4.9-25:

A registered forester should be present bi-weekly during construction to monitor compliance with mitigation measure. The last phase will not be recorded if tree replacement is not meeting 100 percent survival.

Page 4.9-26, Potentially Significant (Biological Resources Impact 3)
The first and second sentences of the first paragraph is revised to read as follows:

Research indicates that pitch canker symptoms decrease in frequency and severity at ~~lower~~ higher elevations and as the distance from the coast increases (Staub 2002). September Ranch, located 3 miles inland, supports pines that are growing at and above 300 feet above mean sea level in elevation.

Page 4.9-27
The Monitoring Action for Mitigation Measure 4.9-6 is revised as follows:

> **Prior to the issuance of grading permits, approval of the Subdivision Improvement Plans, or recordation of the final map, whichever occurs first,** the project applicant shall submit a Forest Mitigation and Monitoring Plan prepared by a qualified professional, subject to review and approval by the Monterey County Planning and Building Inspection Department.
>
> **Ongoing during construction,** ~~In addition,~~ the applicant shall submit quarterly ~~periodic~~ reports (dates to be negotiated by the Monterey County Planning and Building Inspection Department and the applicant) prepared by a qualified professional to the Monterey County Planning and Building Inspection Department outlining implementation and success of the Forest Management Plan.

Page 4.9-28
The Monitoring Action for Mitigation Measure 4.9-7 is revised as follows:

> **Prior to the issuance of grading permits,** the project applicant shall submit an Open Space Management Plan, subject to review and approval by the Monterey County Planning and Building Inspection Department.
>
> **Ongoing during construction,** the applicant shall submit quarterly reports prepared by a qualified professional to the Monterey County Planning and Building Inspection Department outlining implementation and success of the Open Space Management Plan. In addition, a biologist shall inspect the area to be graded, prior to and after grading, to ensure implementation of the plan.

Page 4.9-29
The Monitoring Action for Mitigation Measures 4.9-78 and 4.9-9 is revised as follows:

> **Prior to the issuance of grading permits, approval of the Subdivision Improvement Plans, or recordation of the final map, whichever occurs first**, the project applicant shall submit a Grassland Management Program, subject to review and approval by the County Planning and Building Inspection Department.
>
> **Ongoing during construction**, the applicant shall submit quarterly reports prepared by a qualified professional to the Monterey County Planning and Building Inspection Department outlining implementation and success of the Open Space Management Plan. A biologist shall inspect the area to be graded, prior to and after grading, to ensure implementation of the plan.

Page 4.9-28
The Monitoring Action for Mitigation Measure 4.9-10 is revised as follows:

> **Prior to the issuance of grading permits,** the project applicant shall prepare and submit a botanical survey, subject to review and approval by the Monterey County Planning and Building Inspection Department

Ongoing during construction, a biologist shall inspect the site bi-monthly during construction to ensure implementation of the measure.

Page 4.9-35
The fifth sentence of the first paragraph is revised as follows:

Where tree removal would occur, ~~replacement~~ dedication of lost acreage will be at a 3:1 ratio.

Page 5-6
The following language is added just prior to the Biological Resources heading:

Please see analysis contained within "Revised Technical Memorandum 6" attached to this Section 6, Errata for updates to this analysis in response to comments received on the Recirculated Draft REIR.

Page 5-6, Biological Resources
The second sentence of the second paragraph is revised as follows:

The project's Forest Management Plan includes mitigation, which requires that lost acreage of Monterey pines and coast live oak be ~~replaced~~ dedicated at a ratio of 3 acres for every 1 acre lost.

Page 6-5, Section 6.1.1, Conclusions
The first sentence is revised as follows:

The No Project Alternative would result in fewer land use and planning, geology and soils, ~~water supply and availability,~~ hydrology and water quality, wastewater treatment and disposal, transportation and circulation, air quality, noise, biological resources, cultural resources, aesthetics, and public services and utility impacts when compared to the September Ranch Subdivision project.

Page 6-5, Section 6.1.1, Conclusions
The second sentence is revised as follows:

However, this alternative would have greater water supply and availability population, housing, and employment impacts. Under the No Project Alternative, the site would remain in its present state primarily supporting open space with limited use for livestock grazing and open trail riding.

Page 6-18, Land Use and Planning
The first sentence is revised as follows:

This alternative would result in a reduction of 22 market rate residential units and a same number ~~and an increase of 7 inclusionary housing units, with~~ resulting in an overall decrease of ~~15~~ 22 onsite residential units.

Page 6-21, Water Supply and Availability
The first sentence is revised as follows:

Due to the proposed reduction of ~~15~~ 22 units, the Twenty Percent Alternative would result in a decrease in water demand when compared to the September Ranch Subdivision project.

Page 6-22, Noise
The first sentence is revised as follows:

In comparison to the September Ranch Subdivision project, construction-related noise would be ~~less because of the reduced intensity of development~~ similar as that associated with the Twenty Percent Alternative.

6.3 Revisions to Technical Appendix C, Final Project Specific Hydrogeologic Report

The following errata statemetns apply to the Technical Appendix C, Final Project Specific Hydrogeologic Report, of Februrary 13, 2006 that was updated to accompany the Recirculated Draft REIR

Tables 1 and 4
Please replace Tables 1 and 4 (presented in Appendix A "Tables" immediately following the text of the Hydrogeologic Report [Appendix C] in the 2-13-2006 update) with the Tables 1 and 4 that are attached in the following pages of this Section 6, Errata.

Section 1.2
2nd paragraph:

Change "~~no field data was acquired~~" to "no additional field data was acquired"

Section 2.2
Last paragraph:

Change from "~~total precipitation for representative average water years~~……" to "total precipitation of representative September Ranch average water years for; 1996 is 19.02, 1997 is 18.40, 2000 is 17.29, and 2001 is 17.82 inches."

Section 3.2
Paragraph 2:

Change "~~(e.g. water year 1997)~~" to "(e.g. water years 1997, 2000, and 2001)".

Section 3.2
Paragraph 2:

Change "~~(e.g. water years 1998, 1999, and 2000)~~" to "using data from below average water year 1999 which measured 17.41 inches of rain or 3.96 inches below normal".

Section 3.4
Paragraph 1:

Change "~~convergence~~" to "convergent"

Figures 1 and 2a

Well SR1 has been added to AQ3 map. Please replace Figures 1 and 2a (presented in Appendix B "Figures" immediately following Appendix A "Tables" with the Hydrogeologic Report [Appendix C] in the 2-13-2006 update) with the versions attached in the following pages of this Section 6, Errata.

Section 3.4

Under the table heading "Recharge calculations based on rainfall data at the San Clemente Dam", replace the entire table with the following table and verbiage.

> WY 1996 and 1997 were used to calculate recharge and drawdowns (results in table below). Although this original analysis was accurate, to address the District's concerns, supplemental estimates using WY 2000 and WY 2001 as normal rainfall recharge years have been calculated for the response to comments. The results are presented below:

Average Water Year	San Clemente Dam Rainfall (in)	September Ranch Site Precipitation Over 561 Acres (AF)	Net Recharge with ET-loss of 70% Adjusted for Infiltration (AF)	Below Average Water Years	San Clemente Dam Rainfall (in)	September Ranch Site Precipitation Over 561 Acres (AF)	Net Recharge with ET-Loss of 70% Adjusted for Infiltration (AF)	Net Recharge with ET-Loss of 85% Adjusted for Infiltration (AF)
1996	22.4	889.1	262.0	1987	11.02	437.4	131.2	65.6
1997	21.7	860.1	244.0	1988	11.07	439.4	131.8	65.9
2000	20.37	760.9	228.5	1989	12.80	508.0	152.4	76.2
2001	20.99	785.54	235.9	1990	13.09	519.6	155.9	77.9
				1991	16.87	669.9	182.2	81.7
Yearly Average			242.2				151	73

Note: estimated runoffs were subtracted from ET-loss for corrected recharges rates (see Table 1).

Section 3.4

Paragraph immediately below table:

> Change: ~~244~~ to <u>228</u>.

Section 3.5.1

Paragraph 4 (2nd to last):

> Change: "~~water levels in Well D in both the 1992 and 1996 aquifer~~ ……" to "<u>water levels in Well D in the 1996 aquifer</u> ……"

Section 4.3.2

Paragraph 3:

> Immediately following ". . . from the Carmel River . . ." insert "<u>and required Cal-Am to divert no more than 11,990 AFY in Water Year 1996 and 11,285 AFY in each subsequent water year</u> 'until unlawful diversions from the Carmel River are ended'." Remainder of paragraph stays the same.

Section 4.5

First bullet:

Change last sentence from: "~~Therefore, it is expected that there is almost no effect of pumping in the SRA to the CVA AQ3.~~" to "Therefore, it is expected that pumping in CVA AQ3 would not affect the SRA."

Section 4.5

"Conclusions of Water Rights Evaluation," under "CVA AQ3," fifth and sixth sentences, add underlined text: ". . . . to meet the maximum senior water rights annual use in AQ3 described above."

Section 4.5

"Conclusions of Water Rights Evaluation," under "CVA AQ3," replace paragraph entirely with the following:

CVA AQ3 - Based on the 45 year CVSIM simulation results provided in Appendix A, the water balance in AQ3 is such that the average difference between the inflow and the outflow is about 9,319 AFY. During the 1987 – 1991 dry period, the average difference between the inflow and the outflow in AQ3 is about 8,885 AFA. When compared to the approximately 2,705 AFA that is needed to meet the estimated maximum annual use in AQ3 described above, it appears that sufficient groundwater is available in storage in AQ3 on average as well as during a dry period to meet the needs of the riparian and pre-1914 appropriative rights holders. Therefore, since there appears to be sufficient water in AQ3 with excess flow to meet the needs of the riparian and pre-1914 appropriate rights holders, pumping in the SRA will not have significant effect on water rights holders in AQ3.

Section 4.5

"Conclusions of Water Rights Evaluation," under "CVA AQ4," replace paragraph entirely with the following:

CVA AQ4 - The analogous analysis of the 45-year CVSIM simulation results provided for AQ4 indicates that the average difference between the inflow and the outflow is about 3,079 AFY. During the 1987 – 1991 dry period, the average difference between the inflow and the outflow in AQ4 is about 2,814 AFA. When compared to the approximately 1,845 AFA that is needed to meet the estimated maximum senior water rights annual use in AQ4, it appears that sufficient groundwater is available in storage in AQ4 on average as well as during a dry period to meet the needs of the riparian and pre-1914 appropriative rights holders. Therefore, since there appears to be sufficient water in AQ4 with excess flow to meet the needs of the riparian and pre-1914 appropriate rights holders, pumping in the SRA will not have significant effect on water rights holders in AQ4.

Section 4.5

Last paragraph:

Starting "Under existing conditions . . .," third sentence add underlined text "needed to meet the maximum senior water right use in AQ3 . . ."; fourth sentence add underlined text: "likely to be available to junior water users and, beyond that, to be part of excess outflow . . ."

Section 6
Paragraph 4:

Change: "~~The yearly outflow is the project demand of 57.21 AFY~~" to "Since the September Ranch watershed is relatively isolated from adjacent watersheds and that the SRA is separate from the CVA, there are virtually no surface runoffs that are not captured by the terrace deposits (aquifer). The analyses herein assumes that the yearly outflow is the project demand of 57.21 AFY (Section 5)"

Section 6
Paragraph 4, unnamed Table now titled: "Predicted Water Level Changes in the September Ranch Aquifer" with the following changes:

Predicted Water Level Changes in the September Ranch Aquifer

Average Rainfall Years	Inflow (AF)	Outflow (AF)	Total Flow (AF)	Cumulative Drawdown (ft)	Below Average Rainfall	Inflow (AF)	Projected Usage	Total Flow (AF)	Cumulative Drawdown (ft)
1996	262.1	-57.21	204.9	13.73	1987	65.5	-57.21	8.3	0.56
1997	244.0	-57.21	186.8	26.32	1988	65.9	-57.21	8.7	0.59
2000	228.5	-57.21	171.3	11.54	1989	76.4	-57.21	19.2	1.29
2001	235.9	-57.21	178.7	23.57	1990	78.0	-57.21	20.8	1.40
—	—	—	—	—	1991	81.9	-57.21	24.7	1.66
Source: Kennedy/Jenks Consultants July 2006.									

Section 6
Immediately below Table:

Change from "~~In either the average water year~~ ……." To "<u>In either the average water years</u> ……."

Section 6
Second to Last paragraph change entirely to:

<u>The total flow or net gain in storage in water years with average rainfall suggests that there is between 171 (2001 normal rainfall) and 205 (1996 slightly above normal rainfall) AFY of water that is available for exchange between the SRA and CVA (that is, to flow from the SRA to the CVA). In extended drought periods, there is approximately 8 (1987) to 25 (1991) AFY of available rejected flow for exchange. These two sets of storage results categorically suggest that in either normal or drought precipitation periods pumping the projected project demand from the SRA will not result in water being taken out of storage from the CVA.</u>

Section 6
Last paragraph:

Change ~~244~~ to <u>228</u>

Section 7
Second paragraph: Change the 1st and 2nd sentences to

> "KJC concludes, based on the estimated amount of yearly recharge, that a conservative estimate of groundwater available long term from the SRA during normal rainfall periods is about 244 (1996) to 228 (2000) AFY for all users within the SRA. These values (244 and 228) are primarily calculated based on the 70 percent ET loss over a 561-acre watershed for average rainfall periods."

Section 7
Second Table, now titled "Sustainable Yield Summary" and changed entirely to:

Sustainable Yield Summary

	Rainfall (inches per year)	Available Groundwater in the SRA[1] (AFY)	Average Usage of Other SRA Users (AFY)	Project Sustainable Yield[2] (AFY)
Average Precipitation Period (1996 and1997)	22.40 – 21.67	244 - 262	0.76	243 – 261
Average Precipitation Period (2000 and 2001)	20.37 – 20.99	228 - 235	0.76	227 – 234
Below Average Precipitation	11-02 – 16.87	65 - 81	0.76	64 – 80

Notes:
[1] Based on total recharge within the September Ranch watershed;
[2] Project sustainable yield is the amount of naturally available groundwater in SRA minus the current total usage by other SRA users.
Source: Kennedy/Jenks Consultants, July 2006.

Section 7
Second to last paragraph:

> Last sentence, "The ~~estimated~~ water use for the project . . ." Delete the word "estimated."

Section 7
Second to last paragraph:

> 2nd sentence, change "~~244~~" to "228".

Section 7
Second to last paragraph:

> 3rd sentence, change "~~243~~" to "228".

Section 7
Last paragraph:

> Last sentence, change "~~57.90~~" to "57.97".

Section 8.1

Paragraph 1:

1st sentence, change "~~244~~" to "228".

Section 8.1
Paragraph 2:

Change "~~57.2~~" to "57.21"

Section 8.1
Paragraph 2:

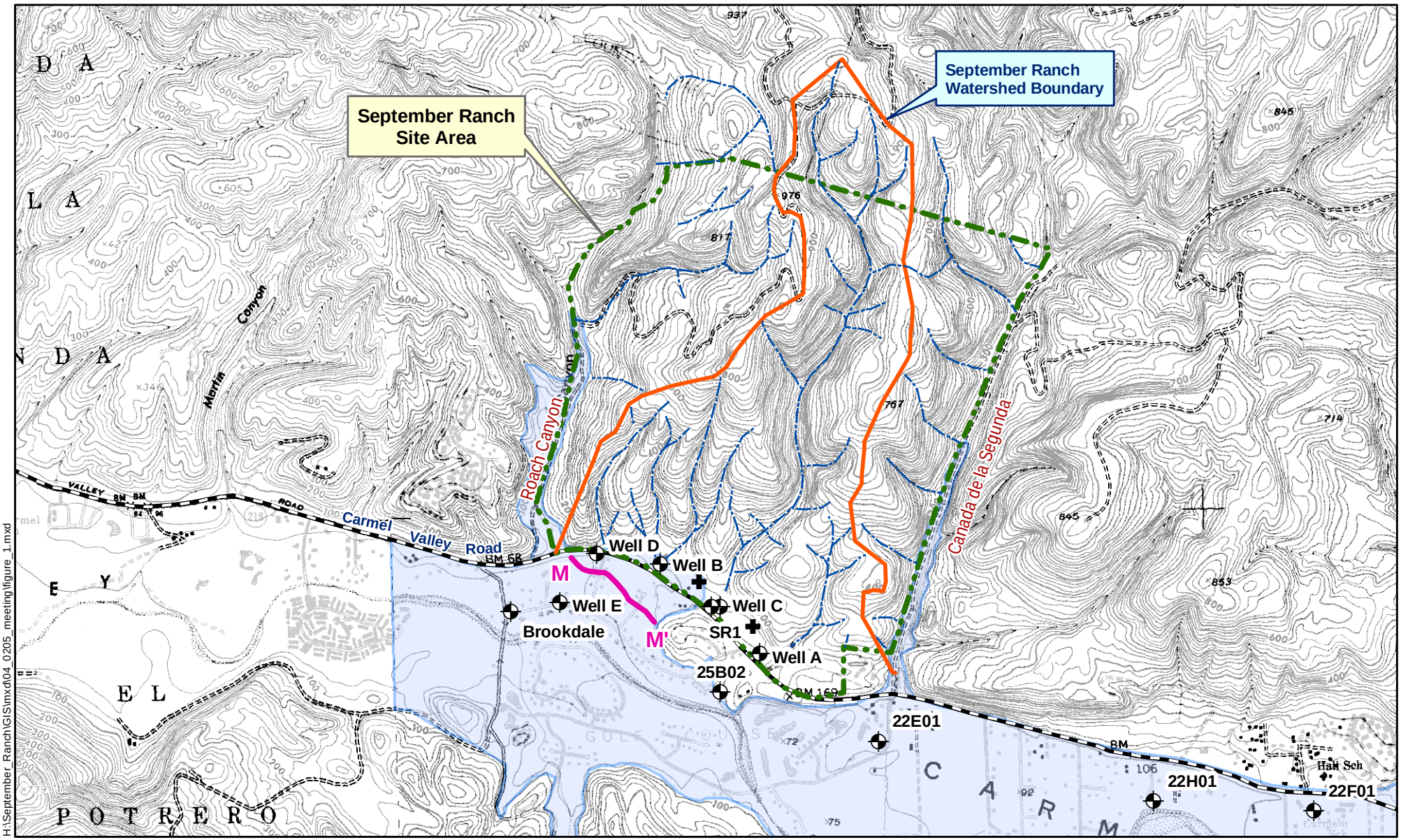
Change "~~187~~" to "171"

Section 8.1
Conclusion Item 5, replace entirely with:

To assess the potential impacts to existing users, the amount of additional drawdown in groundwater levels that would result from the proposed project use of 57.21 AF was assessed as if it were to occur in the CVA directly. This is a very conservative analysis because such a direct impact is unlikely to occur.

In order to evaluate potential changes to water level in the CVA, the total demand of 57.21 AF/yr was assumed to come entirely out of the CVA,-AQ3. This analysis used an area for CVA – AQ3 of 1,558 acres as estimated in a geographic information system map. Then an aquifer porosity of 33% was used and it was estimated that the change in water level over the 1,558 acres as a result of pumping 57.21 AF/yr is 0.009 in/yr, which is almost indiscernible in a well. If a more conservative approach is taken and all of the pumping was to occur in 10% of the CVA-AQ3 or 155.8 acres, then the resultant change in water level is estimated to be 0.09 in/yr or almost a tenth of an inch.

To clarify the potential for cumulative long-term impacts to existing CVA users, the analysis assumed that if water levels were to drop below the perforation intervals in existing water wells, those dry wells might require existing pumpers to drill a deeper well to extract water supply from deeper in the aquifer during critically dry periods, which would be a significant impact. For purposes of this analysis the total demand in the CVA-AQ3 was assumed to include reasonably foreseeable developments with net water use, including remaining Quail Meadows lots as identified in comments, plus the proposed project. The total for this estimated demand is 112.9 AF/yr which is assumed to come entirely out of the CVA,-AQ3. Used an area for CVA – AQ3 of 1,558 acres with an aquifer porosity of 33%, it was estimated that the change in water level over the 1,558 acres as a result of pumping 112,9 AF/yr is 0.027 in/yr, which is barely measurable in a well. If a more conservative approach is taken and all of the pumping were to occur in 10% of the CVA-AQ3 or 155.8 acres, then the resultant change in water level is estimated to be 0.27 in/yr or slightly more than a quarter of an inch. Based on the foregoing, even over the long-term it is high unlikely that water levels would drop below the perforation intervals of existing wells.



Base Map: U.S. Geological Survey, Monterey and Seaside 7.5-minute quadrangles.

Explanation

- Water Well
- Proposed Locations for September Ranch Subdivision Production Wells
- September Ranch drainage system
- Cross-section trace M-M'
- Aquifer Subunit 3

0 2,000 Feet

Kennedy/Jenks Consultants

September Ranch
Carmel Valley, California
Site Setting and Site Vicinity Map

034813.03
March 2004
Figure 1

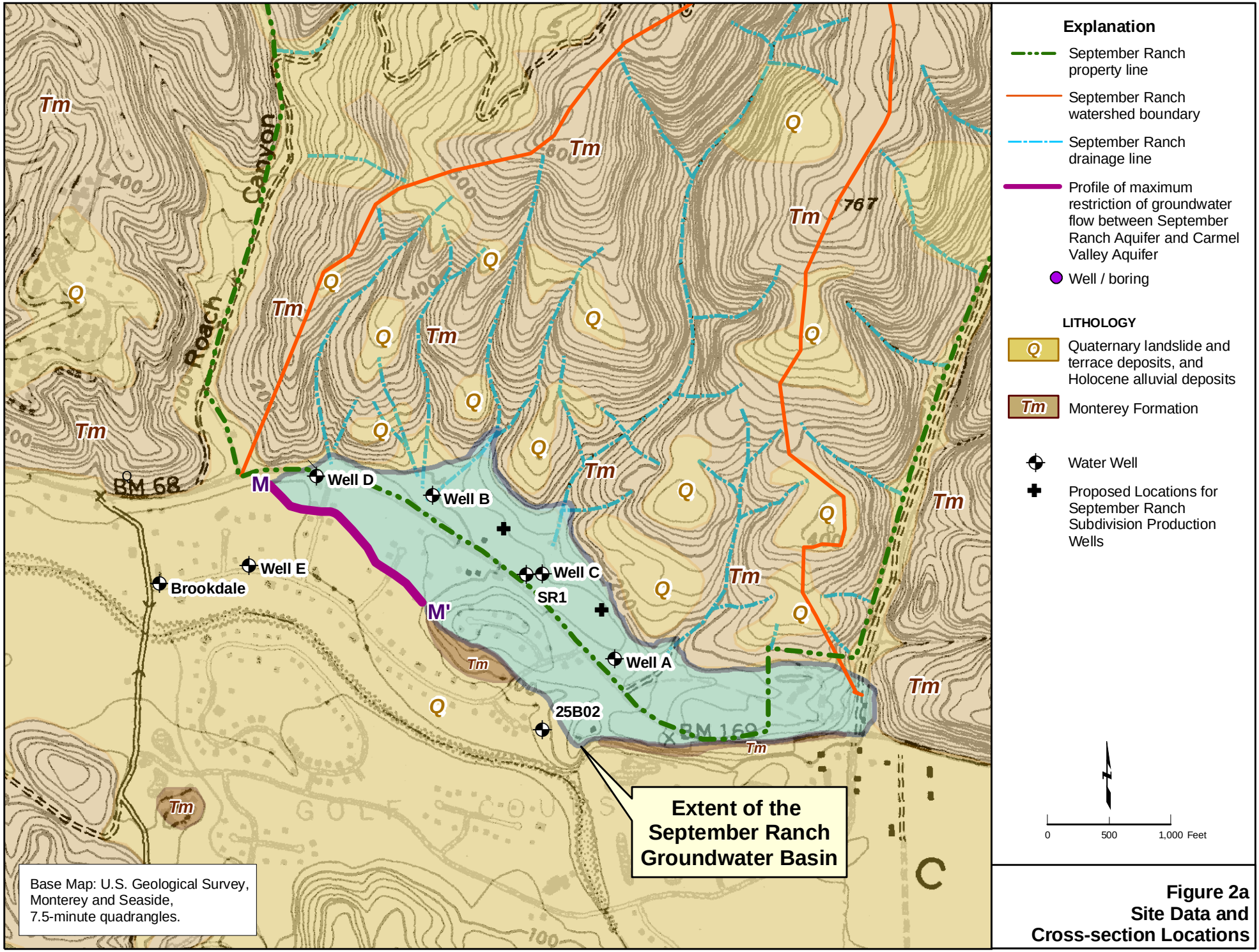


Figure 2a
Site Data and Cross-section Locations

Attorney Work Product
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Kennedy/Jenks Consultants

11 July 2006

Technical Memorandum 5 (Final)

To: Jason Brandman (MBA) and Scott Shapiro (DB)

From: Les Chau and Sachi Itagaki (K/J)

Subject: Technical Memorandum 5 – Response to specific comments on reduced flow to the Carmel Valley Aquifer and river aquatic impact – September Ranch Development Project

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The following are supplemental discussions to Kennedy/Jenks' Project Specific Hydrogeologic Report – September Ranch Project, Carmel, California issued as final on 23 December 2004 (Report). This TM-5 originates from the analyst presented in the 22 December 2005 TM-4 discussion and was updated in July 2006 to reflect comments and additions from the recirculated EIR. The materials presented in this TM are intended to clarify key points in the hydrology section of the RDEIR and to address the two primary issues expressed by commenters of the DREIR (December 2004), concerning post project impacts 1) of the reduction of flow to the Carmel Valley Aquifer (CVA) and 2) on Steelhead populations in the Carmel River. The following discussions are detailed treatments of these two issues and how we arrive at their less than significant impact conclusions.

Hydrogeologic Summary Description

Drainage within the September Ranch watershed is fairly efficient because of the well-defined (high relief) ridges that influence the convergence drainage pattern within the watershed. Surface water generally flows relatively unimpeded to the terrace deposit lying adjacent to the base of the ridges. Efficient drainage means groundwater recharge in the September Ranch Aquifer (SRA) is also fairly consistent in that the basin quickly refills itself annually under both normal rainfall years and after prolonged drought periods. Recharge is primarily through infiltration of precipitation. The September Ranch terrace is largely recharged by streams originating in the uplands of the ranch that drain water to the alluvium that make up the primary water-bearing zone of the terrace.

Groundwater flow is relatively slow within the SRA as indicated by the groundwater gradient of 0.0025 ft/ft averaged throughout the basin. The slow movement of groundwater is primarily the result of a relatively closed basin with limited outflow to adjacent groundwater systems such as the CVA. The interpretation of limited hydraulic connectivity with the CVA is further supported by aquifer test results from 1997 conducted within the SRA where the 270 gpm pumping abruptly created a groundwater divide. The groundwater divide was evident as water levels within the September Ranch aquifer dropped abruptly and more notably than water levels in the CVA wells across the divide located between wells D and E. The apparent groundwater divide is the influence of the low permeability Monterey Shale bedrock high and overlying older alluvium that are in combination interpreted as a *partial* groundwater-barrier structure between the September Ranch aquifer and the southern portion of the Carmel Valley Aquifer.

While we feel that the very low hydraulic connectivity or groundwater exchange between the two aquifers calculated based on Darcy's law (Section 6.1 of the Report) is uncertain because of lack of data, field data collected during the aquifer test and historical water levels outside of the aquifer test period showing sub-parallel groundwater flow directions in the two systems clearly suggest that the aquifers are separate, their groundwater is in equilibrium, with independent sources of recharge (see details below).

Reduction of groundwater flow to the CVA

The findings in the RDEIR hydrology section have concluded that the recharge into the September Ranch basin exceeds the existing and planned Project water usage. The extra recharge is a potential rejected flow that is available to flow to the CVA. In average rainfall years, the rejected flow is between 244 and 262 AF as estimated for WY 1996 and WY 1997. Although this original analysis was accurate, to address the District's concerns, additional estimates using WY 2000 and WY 2001 as normal rainfall recharge years have been calculated for the response to comments in the Final EIR. These alternative analyses result in recharge values of 228.5 to 235.9 AFY. These values reflect a smaller amount of groundwater (than the 1996 and 1997 estimates) available for exchange between the SRA and CVA (under project condition) of 171 AFY to 178 AFY.

In extended drought periods the potential rejected flow (recharge) is approximately 65 to 82 AF as estimated in Table 4-3.3 of the recirculated DEIR. Under project conditions however, there would be an impact to the Carmel Valley Aquifer as a result of decreased flow from the September Ranch Aquifer. Because the project has an estimated demand of 57.21 acre feet, and because the current baseline usage of water is 3 acre feet, the maximum annual impact on the Carmel Valley Aquifer could be 54.21 acre feet. Recent precipitation data indicate that an extended dry period occurred that was five years long (1987 to 1991). Therefore, a worst case impact on the Carmel Valley Aquifer of approximately 270 AF of reduced flow has been suggested by Monterey Peninsula Water Management District (MPWMD) in their 7 April 2006 comments on the recirculated DEIR. The analysis below supports that 270 AF of reduced flow is overly conservative.

An alternative monthly analysis of maximum potential reduction of recharge by the Project to the CVA during the dry period from WY 1987 – WY 1991 was conducted. The analysis included:

1. Subtraction of the estimated monthly SR Pumping (totaling 57.21 AFY) from the estimated monthly recharge to SRA (from Table 1 of Project Specific Hydrogeologic Report), and
2. Cumulative pumping from Oct 1986 and the beginning of WY 1987 to September of 1991 minus recharge value for each month.

Results of the water balance analysis are presented in Table 1 as follows:

Table 1. Monthly Water Balance

		Precip at San Clemente (inches)	Precip over SR (84.9%) (inches)	Precip - 85% ET (inches)	Runoff (inches) after ET (CN 62)	Recharge (Precip-ET-Runoff)*Area (AF)	Sept Ranch Monthly Pumping	Monthly Recharge + pumping	Cumulative
OCT	**1986**	0.00	0.00	0.00	0.00	0.0	-8.6	-8.6	-8.6
NOV	**1986**	0.53	0.45	0.07	0.00	3.2	-2.0	1.1	-7.5
DEC	**1986**	0.98	0.83	0.12	0.00	5.8	-2.0	3.8	-3.7
JAN	**1987**	2.19	1.86	0.28	0.00	13.0	-2.0	11.0	7.3
FEB	**1987**	4.05	3.44	0.52	0.00	24.1	-2.0	22.1	29.4
MAR	**1987**	2.65	2.25	0.34	0.00	15.8	-2.0	13.7	43.1
APR	**1987**	0.36	0.31	0.05	0.00	2.1	-2.0	0.1	43.2
MAY	**1987**	0.26	0.22	0.03	0.00	1.5	-2.0	-0.5	42.7
JUN	**1987**	0.00	0.00	0.00	0.00	0.0	-8.6	-8.6	34.1
JUL	**1987**	0.00	0.00	0.00	0.00	0.0	-8.6	-8.6	25.6
AUG	**1987**	0.00	0.00	0.00	0.00	0.0	-8.6	-8.6	17.0
SEP	**1987**	0.00	0.00	0.00	0.00	0.0	-8.6	-8.6	8.4
TOTAL		11.02	9.36	1.40	0.00	65.6	-57.2		
OCT	**1987**	1.13	0.96	0.14	0.00	6.7	-8.6	-1.9	6.5
NOV	**1987**	0.76	0.65	0.10	0.00	4.5	-2.0	2.5	30.5
DEC	**1987**	4.37	3.71	0.56	0.00	26.0	-2.0	24.0	39.6
JAN	**1988**	1.87	1.59	0.24	0.00	11.1	-2.0	9.1	41.0
FEB	**1988**	0.58	0.49	0.07	0.00	3.5	-2.0	1.4	39.6
MAR	**1988**	0.11	0.09	0.01	0.00	0.7	-2.0	-1.4	47.4
APR	**1988**	1.64	1.39	0.21	0.00	9.8	-2.0	7.7	48.3
MAY	**1988**	0.51	0.43	0.06	0.00	3.0	-2.0	1.0	40.4
JUN	**1988**	0.10	0.08	0.01	0.00	0.6	-8.6	-8.0	31.8
JUL	**1988**	0.00	0.00	0.00	0.00	0.0	-8.6	-8.6	23.2
AUG	**1988**	0.00	0.00	0.00	0.00	0.0	-8.6	-8.6	14.6
SEP	**1988**	0.00	0.00	0.00	0.00	0.0	-8.6	-8.6	14.6
TOTAL		11.07	9.40	1.41	0.00	65.9	-57.2		
OCT	**1988**	0.00	0.00	0.00	0.00	0.0	-8.6	-8.6	6.0
NOV	**1988**	1.42	1.21	0.18	0.00	8.5	-2.0	6.4	12.4
DEC	**1988**	4.18	3.55	0.53	0.00	24.9	-2.0	22.8	35.3
JAN	**1989**	1.37	1.16	0.17	0.00	8.2	-2.0	6.1	41.4
FEB	**1989**	1.84	1.56	0.23	0.00	11.0	-2.0	8.9	50.3
MAR	**1989**	2.24	1.90	0.29	0.00	13.3	-2.0	11.3	61.6
APR	**1989**	0.60	0.51	0.08	0.00	3.6	-2.0	1.5	63.1
MAY	**1989**	0.35	0.30	0.04	0.00	2.1	-2.0	0.0	63.2
JUN	**1989**	0.00	0.00	0.00	0.00	0.0	-8.6	-8.6	54.6

		Precip at San Clemente (inches)	Precip over SR (84.9%) (inches)	Precip - 85% ET (inches)	Runoff (inches) after ET (CN 62)	Recharge (Precip-ET-Runoff)*Area (AF)	Sept Ranch Monthly Pumping	Monthly Recharge + pumping	Cumulative
JUL	**1989**	0.00	0.00	0.00	0.00	0.0	-8.6	-8.6	46.0
AUG	**1989**	0.00	0.00	0.00	0.00	0.0	-8.6	-8.6	37.4
SEP	**1989**	0.80	0.68	0.10	0.00	4.8	-8.6	-3.8	33.6
TOTAL		12.80	10.87	1.63	0.00	76.2	-57.2		
OCT	**1989**	1.17	0.99	0.15	0.00	7.0	-8.6	-1.6	32.0
NOV	**1989**	1.23	1.04	0.16	0.00	7.3	-2.0	5.3	37.3
DEC	**1989**	0.08	0.07	0.01	0.00	0.5	-2.0	-1.6	35.7
JAN	**1990**	3.19	2.71	0.41	0.00	19.0	-2.0	16.9	52.7
FEB	**1990**	3.61	3.06	0.46	0.00	21.5	-2.0	19.4	72.1
MAR	**1990**	1.82	1.55	0.23	0.00	10.8	-2.0	8.8	80.9
APR	**1990**	0.58	0.49	0.07	0.00	3.5	-2.0	1.4	82.3
MAY	**1990**	1.06	0.90	0.13	0.00	6.3	-2.0	4.3	86.6
JUN	**1990**	0.00	0.00	0.00	0.00	0.0	-8.6	-8.6	78.0
JUL	**1990**	0.00	0.00	0.00	0.00	0.0	-8.6	-8.6	69.4
AUG	**1990**	0.00	0.00	0.00	0.00	0.0	-8.6	-8.6	60.8
SEP	**1990**	0.35	0.30	0.04	0.00	2.1	-8.6	-6.5	54.3
TOTAL		13.09	11.11	1.67	0.00	77.9	-57.2		
OCT	**1990**	0.00	0.00	0.00	0.00	0.0	-8.6	-8.6	45.8
NOV	**1990**	0.42	0.36	0.05	0.00	2.5	-2.0	0.5	46.2
DEC	**1990**	1.99	1.69	0.25	0.00	11.8	-2.0	9.8	56.0
JAN	**1991**	0.18	0.15	0.02	0.00	1.1	-2.0	-1.0	55.0
FEB	**1991**	2.11	1.79	0.27	0.00	12.6	-2.0	10.5	65.6
MAR	**1991**	11.38	9.66	1.45	-0.40	49.1	-2.0	47.0	112.6
APR	**1991**	0.30	0.25	0.04	0.00	1.8	-2.0	-0.3	112.3
MAY	**1991**	0.45	0.38	0.06	0.00	2.7	-2.0	0.6	112.9
JUN	**1991**	0.01	0.01	0.00	0.00	0.1	-8.6	-8.5	104.4
JUL	**1991**	0.00	0.00	0.00	0.00	0.0	-8.6	-8.6	95.8
AUG	**1991**	0.03	0.03	0.00	0.00	0.2	-8.6	-8.4	87.4
SEP	**1991**	0.00	0.00	0.00	0.00	0.0	-8.6	-8.6	78.9
TOTAL		16.87	14.32	2.15	-0.40	81.7	-57.2		

The result is at the end of Sept 1991, there is 78.9 AF more water in storage in the SRA than has been pumped out (i.e. recharge exceeds pumping). There is sufficient recharge to SRA on a seasonal basis that the supply exceeds the demand over the entire dry period. Therefore, the District's proposed worst case scenario of 270 AF (54 AF x 5 years) of depleted groundwater storage in the SRA (and thence the impact to the CVA) is extremely conservative and highly unlikely to occur. The analysis rather supports the conclusion that the worst case impact for reduction of

recharge by the project is more closely tied to the historical record of approximately 71.5 AF over a 19 month period in 1988 and 1989 before water levels recovered as discussed in Technical Memorandum No. 7.

In addition, the physical relationship between the SRA and CVA limit the ability of water to flow from the SRA to the CVA. One of the limitations is that groundwater conditions in the SRA and the CVA are in equilibrium; therefore, flow gradient between the two aquifers is near neutral and hence flow directions are sub-parallel. The second physical limitation is that the SRA has only limited hydrogeologic connectivity with the CVA (see Sections 4.3.3 in Final EIR or Sections 3 and 6 in Project Specific Hydrogeologic Report). The hydrogeologic limitations are a function of the underlying geology which includes the younger alluvium Qoa_1 of approximately 20 feet thickness which is more permeable by approximately 2 to 3 orders of magnitude than the underlying older alluvium Qoa_2.

The groundwater exchange occurs largely in an area above the deeper bedrock where the alluvium (Qoa_1 and Qoa_2) is the thickest (Figure 2c in Report, attached). Within that alluvium, the majority of the groundwater exchange, were it to occur, occurs in younger alluvium Qoa_1 because of the significantly higher permeability of Qoa_1 than that of the older alluvium Qoa_2. During average and above average rainfall years, the groundwater exchange occurs in Qoa_1. Dryer years can coincide, seasonally, with much larger groundwater gradients between the SRA and the CVA. In dryer years, when water levels drop below the Qoa_1, flow can occur only in Qoa_2.

Less Than Significant Impact

In addition to limited hydrogeologic connectivity between the CVA and the SRA, the small amount of flow between the two aquifers is primarily due to the near neutral groundwater gradient that exists between the SRA and CVA under average and below average rainfall conditions. The near neutral groundwater gradient is influenced by upstream reservoir releases as managed by the Monterey Peninsula Water Management District, that in turn influences the groundwater levels in the CVA. Groundwater contours in Figure 4.3-5 the Recirculated DREIR (also attached below) in demonstrate that the flow of groundwater in each aquifer is parallel to each other from southeast to northwest in the two aquifers. It is believed that parallel groundwater flow generally occurs year-round.

The reduction of 57.21 AFY of flow to the CVA is considered a less than significant impact on the CVA because of the small amount of flow between the two systems compared to the total flow in the CVA and because the aquifers have independent sources of recharge. While the CVA is fed by source waters upstream of the Carmel River, the SRA is being recharged by the watershed uplands and groundwater is stored in the terrace deposits (or alluvium). Historically, these sources of recharge have been consistently refilling both aquifers annually under both normal rainfall years and after extended drought periods (see more discussion in HMR-4).

The District commented that the SRA and CVA share the same source of recharge from the uplands of the SR watershed and that the excess recharge in the SRA is a small part of the approximately 2,600 AFY of recharge along the sidewalls of CVA AQ3. KJC agrees with this comment, but this is consistent with the conclusion that there are two sources of recharge and that only a comparatively small amount of excess recharge in the SRA is shared with the CVA as compared to subsurface recharge from AQ2.

Monthly Analysis of Potential Flow Reduction to the Carmel River

In response to comments on the RDEIR analysis of impact level under project conditions on the Lower Carmel River and on AQ3, the following are monthly calculations of reduced flow to the Carmel River Subunit 3 to conclusively demonstrate the less than significant impact on Steelhead and other aquatic species during dry months of each year. The analyses were done for below normal rainfall (Case 1) and normal rainfall periods (Case 2).

Methodology

Using the value of 8 AFY of rejected flow during a dry period as calculated as 65.5 AFY of inflow less 57.21 AFY of September Ranch pumping (WY 1987) and a more conservative normal year value of 178 AFY of rejected flow as calculated as 235.9 AFY of inflow less 57.21 AFY of September Ranch pumping (WY 2001), a monthly analysis was prepared for both dry year (WY 1987 - Case 1) and normal year (WY 2001 - Case 2). The previous normal year analysis for WY 1997 remains valid. This alternative normal year analysis is provided in response to MPWMD comments. The conclusions remain the same regardless of the normal year used.

The monthly analysis uses the September Ranch recharge estimates for the respective water years identified above found in Table 1 of the Project Specific Hydrogeologic Report whereby recharge is a positive number. The monthly water demands for September Ranch are then calculated by assuming that 75% of the 57.21 AFY demand occurs from June to October and the remaining 25% occurs from November to May whereby demands are a negative number. The Maximum Potential Spillover to the CVA is then calculated by summing the recharge (positive) with the demand (negative). If the resultant sum (i.e. the Maximum Potential Spillover) is negative, then the Maximum Potential Spillover to CVA is assumed to be zero (as occurs when recharge is < pumping). If the resultant sum is positive, then the resulting value for the month is entered.

The difference in Maximum Potential Spillover with and without the September Ranch project is then calculated by subtracting the "with September Ranch" calculation from the "without September Ranch" calculation. Then, the Maximum Potential Spillover in cfs for each month is converted to AF/month. The sum of the twelve AF/month calculations is not equal to the September Ranch demand because when the Maximum Potential Spillover to the CVA is negative, the value is zero. The monthly variations in recharge can result in significant differences in the Maximum Potential Spillover estimate for any given month.

Maximum Potential Spill Over from SRA to CVA was then compared to the actual mean monthly flow in the Carmel River at US Geological Survey (USGS) stream flow gage No. 11143250 immediately downstream of the September Ranch development. When the gage flow = 0; it is assumed that the Carmel River is a losing stream (i.e. the water table is below the channel bottom) and therefore the reduced potential spill over from the SRA to the CVA results only in a reduced water table. The results of the monthly analysis are summarized in Table 2 as follows. It should be noted that the revision to the analysis does not result in any changes to the conclusions in the Recirculated DREIR.

As described in Table 2, the range of potential maximum monthly spill over reduction of -0.024 to -0.033 cfs in Case 1 (WY 1987) to -0.022 to -0.14 cfs in Case 2 (WY 2001) can be considered as potential recharge to the CVA and thence to the Carmel River. Any reduction in recharge to the Carmel River can only happen within the hydrogeologically feasible flow from the SRA to the CVA. In interpreting these results, it is important to remember that reduction in recharge to the Carmel River can only happen within the hydrogeologically feasible flow from the SRA to the CVA. The reduction is difficult to estimate since the gradients are fairly neutral at any given time in a year and the resulting flow is less than -0.033 cfs. In a conservative scenario, any reduction of flows from the SRA into the CVA will likely occur during summer months of peak water usage. However, the reduced exchange from SRA to CVA will likely have limited impact on water levels in the Carmel River since there are generally no flows during the summer in the river based on a review of a USGS stream flow gage No. 11143250 immediately downstream of the September Ranch development. Flows in the River were identified based on a review of USGS stream flow gage No. 11143250 immediately downstream of the proposed September Ranch development (Downstream Gage).

Accuracy of Gauges

USGS provides information on each gage regarding the degree of accuracy of the records provided by any given station. Gage No. 11143250 is characterized as having "fair" records which means that 95 percent of the daily discharges are within 15 percent of the true value. Furthermore, the values of the mean daily discharge recorded are shown to a number of significant figures based solely on the magnitude of the discharge value. For example, for discharges less than 1 cfs, the values are recorded to the nearest 0.01 cfs; for discharges between 1.0 and 10 cfs, the values are recorded to the nearest 0.1 cfs; to whole numbers between 10 and 1,000 cfs; and to 3 significant figures above 1,000 cfs. USGS further caveats the gage information by indicating that the accuracy of the streamflow data depends primarily on (1) the stability of the stage-discharge relation or, if the control is unstable, the frequency of discharge measurements, and (2) the accuracy of observations of stage, measurements of discharge, and interpretations of record.

In addition to gage No. 11143250 (Downstream Gage), USGS maintains gage No. 11143200 (Upstream Gage) – both of these gage locations are shown relative to each other, the September Ranch Development, and the aquifer subunit delineations on the attached Figure A. The Upstream Gage is sufficiently upstream of both September Ranch and the Downstream Gage that it does not represent Carmel River flows in the vicinity of September Ranch. In addition, significant aquifer recharge occurs in the area downstream of the Upstream Gage.

In the location of the Downstream Gage, flows are typically high, sometimes in excess of 500 cubic feet per second (224,000 gpm) in the wintertime and then taper to zero flow in the summer months. Zero flows can occur as early as May in a relatively dry year to as late as July in a relatively wet year as shown on the attached Figure B. Therefore, during the wet season, the reduction of flow of up to 0.033 cfs to the CVA and potentially to the Carmel River cannot be discerned in the flow of the Carmel River because the river flows are so high. When the Carmel River is dry, the water table is below the channel bottom and the reduction of flow of up to 0.033 cfs also cannot be discerned in the Carmel River because the reduction in these months are actually in groundwater and not surface water; the flow reduction then could result in a minimal drop in groundwater level.

Flow reductions to the CVA and thence to the Carmel River during the spring months when the flows are tapering are also likely to be indiscernible. The maximum potential reduction in flow of 0.033 cfs in dry years ranges from 0.05% to 0.13% of the respective monthly flows in the Carmel River for the appropriate month. It is important to note that the maximum potential reduction of flow of 0.14 cfs from the SRA to the CVA in October 2001, although numerically equal to the average flow in the Carmel River during that time, the reduction is actually of groundwater. The reduction in flow from the SRA to CVA, especially in October, is likely to be occurring only in the subsurface and would not manifest as a reduction in flow in the Carmel River. During an extended drought period (e.g. 1987 to 1991) the downstream gage registered zero flow therefore the maximum reduction of 0.14 cfs is all occurring in groundwater.

Less than significant impact

Based on the annual project demand of 57.21 AFY, it is anticipated that there will be minimal to no decline in the water table in the SRA as a result of pumping (drawdowns) in the September Ranch aquifer. Estimates of potential drawdown in Table 3 as attached, show no appreciable cumulative annual drawdown. In fact, annual water levels are increasing even in below average precipitation years (i.e. cumulative drawdown is positive). On a quarterly basis, during a below average rainfall year, there could be close to a foot (-0.96 foot) of decline in the water table in the SRA in the summer months (July to September). However, the rise in the water table in the SRA in the winter months (January to March) of two to three feet (2.6 to 3.2 feet) then balances the declines during the dry months over a year.

It should be noted that the pumping in the CVA by many users further complicates the analysis of the impact on the Carmel River. The CVA acts as a buffer zone of groundwater flow between the river and the SRA. What limited

groundwater flow occurs from the SRA to the CVA then has to travel a distance of 850 feet to the Carmel River due south of the September Ranch watershed. Potential effects on the Carmel River baseflow as a result of up to -0.033 cfs (dry year) up to -0.14 cfs (normal year) of possible reduced groundwater resources from the SRA is conservatively presented as a 1:1 reduction of SRA usage on reduced flow to the River. However, in reality this is a fairly unlikely impact. The impact cannot be quantified with certainty because of the additional pumping in the CVA between sources and receiving waters, which as noted is a factor which tends to reduce the potential for SRA pumping to affect the River. Also, it is expected that the reduction, if any, will occur in the subsurface and be indiscernible both in the subsurface and in the surface water. About 10,000 AF per year is currently diverted in AQ3 for consumptive use (MPWMD CVSIM data).

Lastly, it is estimated that the adjacent watersheds namely the Canada De La Segunda in the east and the Roach Canyon in the west have four to five times the drainage and recharge capacities to the CVA (Kleinfelder, 2004). The Canada De La Segunda is technically an upgradient source water of the CVA relative to the September Ranch Project. Its direct contribution to the CVA and then to the Carmel River may eclipse the minor contribution of recharge from the SRA.

Table 2. Maximum Potential Spill Over of Water from SRA to CVA for Below Normal and Normal Precipitation

Case 1: Maximum Potential Spill Over of Water from SRA to CVA (cfs) for Below Normal Precipitation (WY 1987)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Case 1a: Below Normal Precipitation WITH September Ranch	0.00	-0.019	-0.061	-0.178	-0.359	-0.224	-0.0009	0.0000	0.0000	0.0000	0.0000	0.0000
Case 1b: Below Normal Precipitation WITHOUT September Ranch	0.00	-0.052	-0.094	-0.211	-0.392	-0.257	-0.034	-0.024	0.00	0.00	0.00	0.00
Difference (Case 1a minus Case 1b)	**0.00**	**-0.033**	**-0.033**	**-0.033**	**-0.033**	**-0.033**	**-0.033**	**-0.024**	0.00	0.00	0.00	0.00
WY 1987 Monthly Mean Flow in the Carmel River (cfs)	0	0	0	0	0	36.11	60.88	18.42	0	0	0	0

Case 2: Maximum Potential Spill Over of Water from SRA to CVA (cfs) for Normal Precipitation WY 2001

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Case 2a: Normal Precipitation WITH September Ranch	0.496	0.032	0.019	1.156	0.868	0.548	0.454	0.000	0.000	0.000	0.000	0.000
Case 2b: Normal Precipitation WITHOUT September Ranch	0.635	0.066	0.052	1.189	0.904	0.581	0.488	0.000	0.000	0.000	0.000	0.022
Difference (Case 2a minus Case 2b)	0.140	0.034	0.033	0.033	0.037	0.033	0.034	0.000	0.000	0.000	0.000	0.022
WY 2001 Monthly Mean Flow in the Carmel River (cfs)	0.14	7.08	9.71	86.07	186.50	373.29	92.00	38.19	5.73	0.00	0.00	0.00

Table 3: Predicted Drawdown in the SRA Based on 57.21 AFY Pumping

Water Year	Calendar Year	Quarter	Flow In [pos] (AF)	Flow Out [neg] (AF)	Total Flow (AF)	Predicted Quarterly Drawdown [negative sign means downward] (ft)	Cumulative Drawdown (ft)
Below Average Precipitation Period 1987 through 1991							
1987							
Oct-Dec	1986	4	9.0	-14.3	-5.3	-0.36	-0.36
Jan-Mar	1987	1	52.9	-14.3	38.6	2.60	2.24
Apr-Jun	1987	2	3.6	-14.3	-10.7	-0.72	1.52
Jul-Sep	1987	3	0.0	-14.3	-14.3	-0.96	0.56
	1987 Water Year Annual		**65.5**	**-57.20**	**8.3**		**0.56**
1988							
Oct-Dec	1987	4	37.2	-14.3	22.9	1.54	1.54
Jan-Mar	1988	1	15.3	-14.3	1.0	0.07	1.61
Apr-Jun	1988	2	13.4	-14.3	-0.9	-0.06	1.55
Jul-Sep	1988	3	0.0	-14.3	-14.3	-0.96	0.59
	1988 Water Year Annual		**65.9**	**-57.20**	**8.7**		**0.59**
1989							
Oct-Dec	1988	4	**33.4**	-14.3	19.1	1.29	1.29
Jan-Mar	1989	1	**32.5**	-14.3	18.2	1.23	2.51
Apr-Jun	1989	2	**5.7**	-14.3	-8.6	-0.58	1.93
Jul-Sep	1989	3	**4.8**	-14.3	-9.5	-0.64	1.29
	1989 Water Year Annual		**76.4**	**-57.20**	**19.2**		**1.29**
1990							

Oct-Dec	1989	4	14.8	-14.3	0.5	0.03	0.03
Jan-Mar	1990	1	51.3	-14.3	37.0	2.49	2.53
Apr-Jun	1990	2	9.8	-14.3	-4.5	-0.30	2.22
Jul-Sep	1990	3	2.1	-14.3	-12.2	-0.82	1.40
	1990 Water Year Annual		**78.0**	**-57.20**	**20.8**		**1.40**
1991							
Oct-Dec	1990	4	14.3	-14.3	0.0	0.00	0.00
Jan-Mar	1991	1	62.8	-14.3	48.5	3.27	3.27
Apr-Jun	1991	2	4.6	-14.3	-9.7	-0.65	2.61
Jul-Sep	1991	3	0.2	-14.3	-14.1	-0.95	1.66
	1990 Water Year Annual		**81.9**	**-57.20**	**24.7**		**1.66**

"Average" or Normal Precipitation Water Years 1996, 1997, 1999, 2000, and 2001

1996							
Oct-Dec	1995	4	59.1	-14.3	44.8	3.02	2.95
Jan-Mar	1996	1	165.4	-14.3	151.1	10.18	13.13
Apr-Jun	1996	2	37.4	-14.3	23.1	1.55	14.68
Jul-Sep	1996	3	0.2	-14.3	-14.1	-0.95	13.73
	1996 Water Year Annual		**262.1**	**-57.20**	**204.9**		**13.73**
1997							
Oct-Dec	1996	4	142.4	-14.3	128.1	8.63	22.36
Jan-Mar	1997	1	97.6	-14.3	83.3	5.61	27.97
Apr-Jun	1997	2	2.3	-14.3	-12.0	-0.81	27.16
Jul-Sep	1997	3	1.8	-14.3	-12.5	-0.84	26.32
	1997 Water Year Annual		**244.0**	**-57.20**	**186.8**		**26.32**
2000							

Oct-Dec	1999	4	19.3	-14.3	5.0	0.34	0.34
Jan-Mar	2000	1	177.8	-14.3	163.5	11.01	11.35
Apr-Jun	2000	2	30.4	-14.3	16.1	1.08	12.43
Jul-Sep	2000	3	1.1	-14.3	-13.2	-0.89	11.54
	2000 Water Year Annual		**228.5**	**-57.20**	**171.3**		**11.54**
2001							
Oct-Dec	2000	4	46.2	-14.3	31.9	2.15	13.69
Jan-Mar	2001	1	159.3	-14.3	145.0	9.77	23.45
Apr-Jun	2001	2	29.1	-14.3	14.8	0.99	24.45
Jul-Sep	2001	3	1.3	-14.3	-13.0	-0.87	23.57
	2001 Water Year Annual		**235.9**	**-57.20**	**178.7**		**23.57**

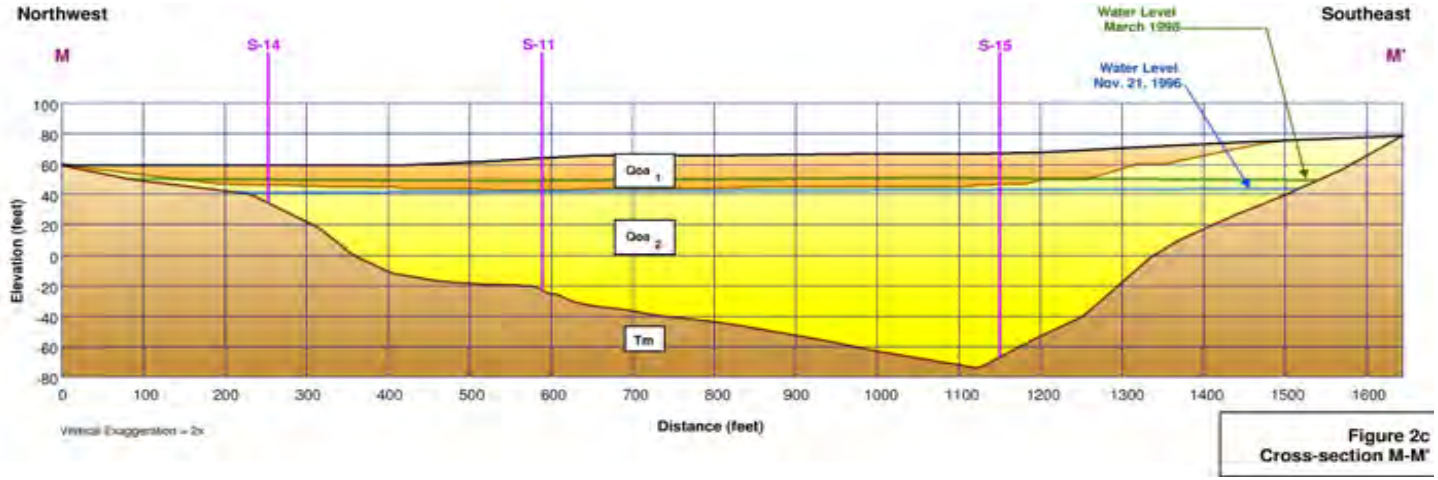


Figure 2c
Cross-section M-M'

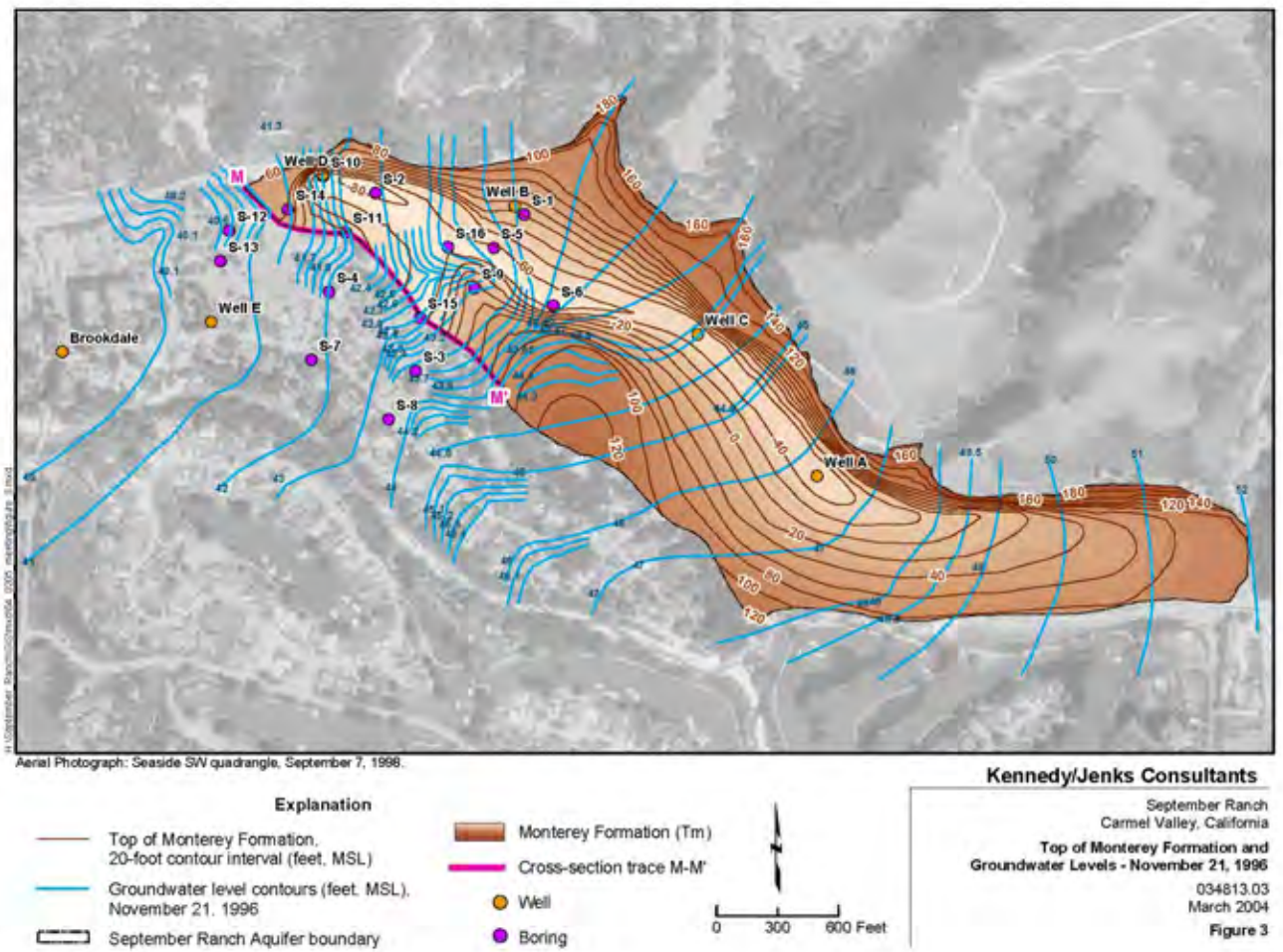

Well D
S-10
S-2
S-14
S-12
S-11
S-13
Well B
S-1
S-16
S-5
S-9
S-4
S-15
S-6
Well E
Brookdale
S-7
S-3
S-8
M
M'
Well C
Well A
Aerial Photograph: Seaside SW quadrangle, September 7, 1998.
Explanation
Top of Monterey Formation, 20-foot contour interval (feet, MSL)
Groundwater level contours (feet, MSL), November 21, 1996
September Ranch Aquifer boundary
Monterey Formation (Tm)
Cross-section trace M-M'
Well
Boring
0
300
600 Feet
Kennedy/Jenks Consultants
September Ranch
Carmel Valley, California
Top of Monterey Formation and Groundwater Levels - November 21, 1996
034813.03
March 2004
Figure 3

Figure 4.3-5

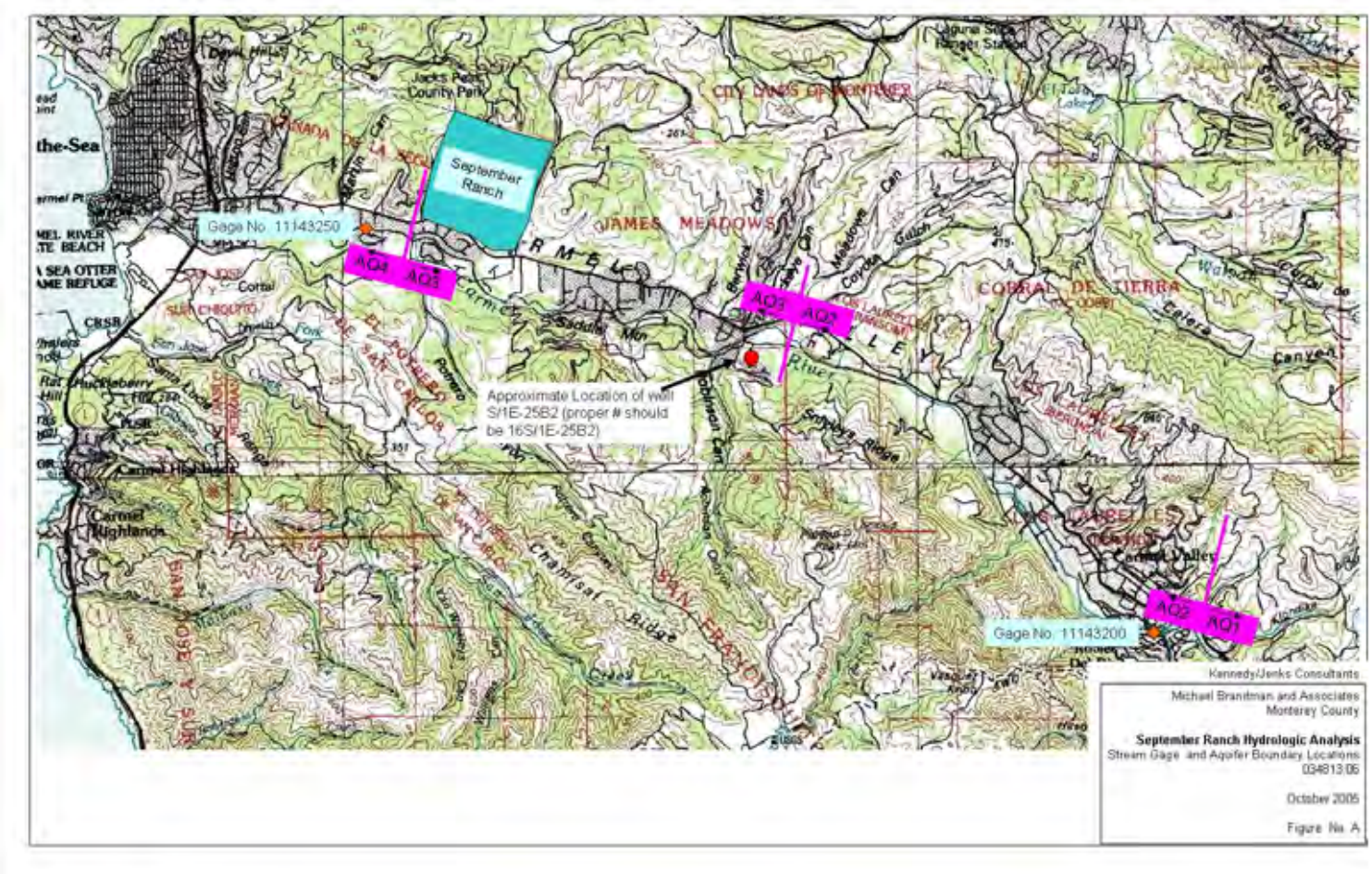
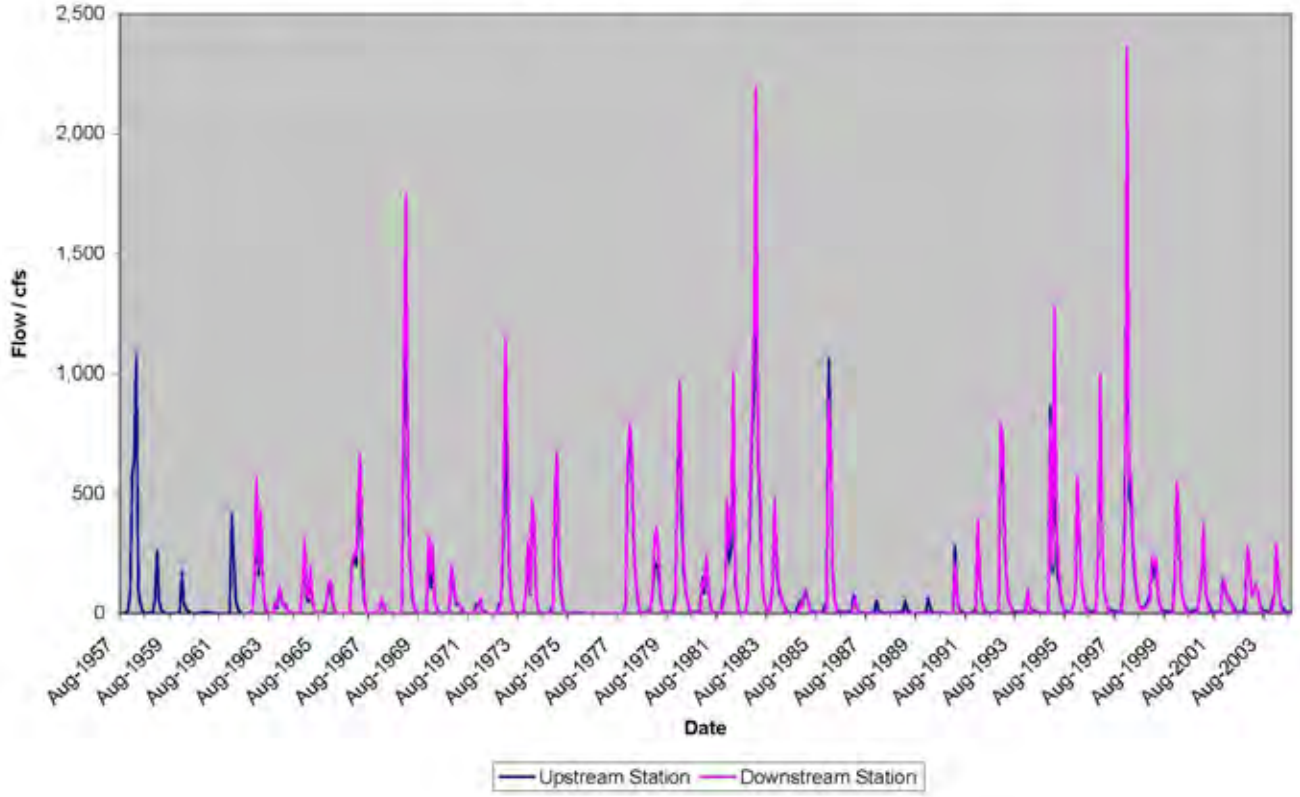

September Ranch
Gage No. 11143250
Gage No. 11143200
AQ1
AQ2
AQ3
Approximate Location of well S/1E-25B2 (proper # should be 16S/1E-25B2)
JAMES MEADOWS
CORRAL DE TIERRA
Carmel Highlands
Carmel Valley
Kennedy/Jenks Consultants
Michael Brandman and Associates
Monterey County
September Ranch Hydrologic Analysis
Stream Gage and Aquifer Boundary Locations
034813.06
October 2005
Figure No. A

Figure B: Carmel River - Upstream and Downstream Flow Comparison
Monthly Mean Flow



11 July 2006

Technical Memorandum No. 6, Revision No. 3

To: Jennifer Harder and Scott Shapiro (DB)

From: Sachi Itagaki (K/J)

Cc: Jason Brandman (MBA)

Subject: Potential Cumulative Impacts to Carmel River Flow as a Result of the September Ranch Project and Other Planned Projects in the Carmel Valley

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1. Background and Introduction

This memorandum is prepared as a follow-on to Kennedy/Jenks Consultants' (Kennedy/Jenks) preliminary assessment of possible reduction of groundwater recharge into the Carmel River as a result of the September Ranch Project demand. The assessment is done in response to public comments on the Hydrology section of the Revised EIR. The following summary of results are to supplement Kennedy/Jenks' Project Specific Hydrogeologic Report – September Ranch Project, Carmel, California issued as final on 23 December 2004 and revised in February 2006 (Revised Report). The revised report includes a discussion of the potential monthly impacts to the Carmel River as a result of the September Ranch project.

The discussion that follows in Section 3 below adapts the evaluation of potential monthly impacts to the Carmel River from only the September Ranch project and includes the impact of projects that had been identified prior to the issuance of the Notice of Preparation (NOP) for the Revised Draft Environmental Impact Report (RDEIR) for the September Ranch Project on 31 January 2003. An original cumulative impacts analysis was done in February 2006. This revised analysis is done to reflect changes in future development as identified by the Monterey County Planning Department as well as adding a WY 2001 normal water year analysis, in addition to WY 1996 in response to comments from MPWMD.

2. Summary of Analysis for Potential Impacts from only September Ranch

A detailed discussion of the Monthly Analysis of Potential Flow Reduction to Carmel River is included in the Revised Report and in Technical Memorandum No. 5. A summary is provided below.

Using the value of 8 AFY of rejected flow during a dry period as calculated as 65.5 AFY of inflow less 57.21 AFY of September Ranch pumping (WY 1987) and a more conservative normal year value of 178 AFY of rejected flow as calculated as 235.9 AFY of inflow less 57.21 AFY of September Ranch pumping (WY 2001), a monthly analysis was prepared for both dry year (WY 1987-Case 1) and normal year (WY 2001-Case 2). The previous normal year analysis for WY 1997 remains valid. This alternative normal year analysis is provided in response to MPWMD comments. The conclusions remain the same regardless of the normal year used.

The monthly analysis uses the September Ranch recharge estimates for the respective water years identified above found in Table 1 of the Project Specific Hydrogeologic Report whereby recharge is a positive number.

The monthly water demands for September Ranch are then calculated by assuming that 75% of the 57.21 AFY demand occurs from June to October and the remaining 25% occurs from November to May whereby demands are a negative number. The Maximum Potential Spillover to the CVA is then calculated by summing the recharge (positive) with the demand (negative). If the resultant sum (i.e. the Maximum Potential Spillover) is negative, then the Maximum Potential Spillover to CVA is assumed to be zero (as occurs when recharge is less than pumping). If the resultant sum is positive, then the resulting value for the month is entered.

The difference in Maximum Potential Spillover with and without the September Ranch project is then calculated by subtracting the "with September Ranch" calculation from the "without September Ranch" calculation. Then, the Maximum Potential Spillover in cfs for each month is converted to AF/month. The sum of the twelve AF/month calculations is not equal to the September Ranch demand because when the Maximum Potential Spillover to the CVA is negative, the value is zero. The monthly variations in recharge can result in significant differences in the Maximum Potential Spillover estimate for any given month.

Maximum Potential Spill Over from SRA to CVA was then compared to the actual mean monthly flow in the Carmel River at US Geological Survey (USGS) stream flow gage No. 11143250 immediately downstream of the September Ranch development. When the gage flow = 0; it is assumed that the Carmel River is a losing stream (i.e. the water table is below the channel bottom) and therefore the reduced potential spill over from the SRA to the CVA results only in a reduced water table. The results of the revised monthly analysis are summarized in the revised Table 1 that follows. It should be noted that the revision to the analysis does not result in any changes to the conclusions in the Recirculated Draft REIR.

The hydrogeologically feasible flow is a portion of the difference in maximum potential spillover and can be considered as recharge to the CVA and thence to the Carmel River. Any reduction in recharge to the Carmel River can only happen within the hydrogeologically feasible flow from the SRA to the CVA. The reduction is difficult to estimate since the gradients

are fairly neutral at any given time in a year and the resulting flow is less than 0.3 cfs. In a conservative scenario, any reduction of flows from the SRA into the CVA will likely occur during peak water usage during summer months. However, the reduced exchange from SRA to CVA will likely have limited impact on water levels in the Carmel River given the low magnitude of the reduction and the low flows that occur during the summer in the river. This is based on a review of the data of USGS stream flow gage No. 11143250 immediately downstream of the September Ranch development which has a "fair" rating of accuracy by the USGS. Gage accuracy is discussed further in Section 3.d below.

Table 1. Maximum Potential Spill Over of Water from SRA to CVA for Below Normal and Normal Precipitation

Case 1: Maximum Potential Spill Over of Water from SRA to CVA (cfs) for Below Normal Precipitation (WY 1987)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Case 1a: Below Normal Precipitation WITH September Ranch	0.00	-0.019	-0.061	-0.178	-0.359	-0.224	-0.0009	0.0000	0.0000	0.0000	0.0000	0.0000
Case 1b: Below Normal Precipitation WITHOUT September Ranch	0.00	-0.052	-0.094	-0.211	-0.392	-0.257	-0.034	-0.024	0.00	0.00	0.00	0.00
Difference (Case 1a minus Case 1b)	0.00	-0.033	-0.033	-0.033	-0.033	-0.033	-0.033	-0.024	0.00	0.00	0.00	0.00
WY 1987 Monthly Mean Flow in the Carmel River (cfs)	0	0	0	0	0	36.11	60.88	18.42	0	0	0	0

Case 2: Maximum Potential Spill Over of Water From SRA to CVA (cfs) for Normal Precipitation WY 2001

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Case 2a: Normal Precipitation WITH September Ranch	0.496	0.032	0.019	1.156	0.868	0.548	0.454	0.000	0.000	0.000	0.000	0.000
Case 2b: Normal Precipitation WITHOUT September Ranch	0.635	0.066	0.052	1.189	0.904	0.581	0.488	0.000	0.000	0.000	0.000	0.022
Difference (Case 2a minus Case 2b)	0.140	0.034	0.033	0.033	0.037	0.033	0.034	0.000	0.000	0.000	0.000	0.022
WY 2001 Monthly Mean Flow in the Carmel River (cfs)	0.14	7.08	9.71	86.07	186.50	373.29	92.00	38.19	5.73	0.00	0.00	0.00

3. Analysis for Potential Cumulative Impacts from September Ranch and Other Proposed Projects

In order to evaluate the potential cumulative impacts of September Ranch and other proposed projects, the following method was used:

- Evaluate water demand requirements of additional projects as provided by Monterey County
- Evaluate pumping requirements on the CVA as a result of the additional projects
- Estimate Maximum Potential Impact by summing difference between spillover with and without September Ranch (i.e. maximum decrease in potential spillover with September Ranch from the SRA to the CVA) and with pumping requirements of additional projects
- Evaluate impacts to the Carmel River

Each step is described below.

3.a Water Demands for Proposed Projects

Monterey County Planning provided a list of projects in the Carmel Valley Master Plan Study Area that were under consideration by the County at the time of the issuance of the NOP for September Ranch. Although the location for each of these projects is not precisely located on a map, to be conservative. it is assumed that they all would require water from Subunit 3 of the CVA. For some cases, water demand estimates were provided; for those projects where water demand estimates were not provided, the fixture count method provided by Monterey Peninsula Water Management District (MPWMD) to estimate water use and connection fees were used. The fixture count method includes a factor of 1.5 to adapt indoor water demands from water using fixtures to include water for landscape.

The Monterey County Planning indicated that there are 14 single family dwellings (SFD) at Quail Meadows that remain to be developed. MPWMD provided a list of water permits issued in Quail Meadows that included water allocated to each assessor's parcel number (APN) and the use (new SFD, pool, caretaker, fixtures etc.) as shown in Appendix A. An average demand per APN of 0.726 AFY for the combined uses of new SFD and other uses associated with the APN was calculated. This AFY/APN was then multiplied by the 14 available building sites for a total of 10.2 AFY. The 6 AFY of water demand associated with the conference center that will be constructed is added to the demand for the SFD for a total Quail Meadows estimated demand of 16.2 AFY.

A summary of the projects, the number of units proposed, and the estimated water demand are provided in Table 2 below.

Table 2: Proposed Project Water Demands

Project Name	Description	Estimated Demand (AFY) w/o Dow	Estimated Demand (AFY) w/Dow	
Dow	89 Affordable Housing Units, assumed to be 3 bedroom, 2 bath	0	17.9	Deman using Fixt
Canada Woods	15@ 3 bedroom, 2 bath; 54 @ 5 bedroom 4.5 bath	60	60	Deman using Fixt
Potrero Subdivision	29 lots, assumed to be large estate lots	13.7	13.7	Deman using Fixt
Mirabito Self Storage	70,000 Square Feet	0.3	0.3	Deman by
Gamboa Assisted Living	78 beds (about 30,000 square feet)	4.8	4.8	Deman by
Quail Meadows	14 Remaining SFD lots plus other uses and Conference Center	16.2	16.2	Deman allocati by M
	Total (AFY)	95	112.9	

3.b Pumping Requirements for Proposed Projects

The February 2006 TM6, Revision 1 prepared an analysis with a total demand of 36.7 Acre-Feet per Year (AFY) on the CVA (with Dow but without Quail Meadows, or Canada Woods).

This analysis focuses on the higher demand of 112.9 AFY which assumes that Dow, Canada Woods and Quail Meadows are developed. The 112.9 AFY is assumed to be distributed such that 75% is pumped from June through October and the remaining 25% is pumped from November through May. The monthly acre-feet (AF) were then converted to cubic feet per second for each month assuming that the cfs flow rate occurred 24 hours per day for each month.

3.c Pumping Requirements for Proposed Projects Plus Decrease in Maximum Potential Spillover from SRA to CVA with September Ranch

In order to estimate the maximum potential cumulative impact to the CVA from the September Ranch and the proposed projects with a demand of 112.9 AFY, the difference, by

month, in maximum potential spillover with and without the September Ranch project was summed with the monthly pumping requirements for the proposed projects for both the below normal precipitation and normal precipitation case. Table 3 below summarizes the two calculations and compares the net reduction in flow to the CVA from both the September Ranch and the proposed projects to the actual mean monthly flow in the Carmel River.

3.d Evaluation of Cumulative Impacts to Carmel River of Proposed Projects and Decrease in Maximum Potential Spillover with September Ranch

As shown in Table 3, in Case 1:Below Normal Precipitation, the maximum potential spillover varies from -0.090 cfs to -0.275 cfs when both September Ranch and the proposed projects are included. During the months when the mean monthly flow in the Carmel River was zero, there would be no net impact to the river itself as the reduced flows would result in nominal decreases in the water table of the CVA. In the months where the mean monthly flow in the Carmel River was greater than zero, the net impact to the river of -0.090 to -0.275 cfs is most likely occurring in the groundwater but could potentially be discerned at the gage, albeit not very accurately. The months during which the maximum potential spillover decrease is -0.275 cfs occur when the Carmel River flow is zero and the changes in flow will only alter groundwater levels. Since the depths to groundwater in the CVA are between 30 to 70 feet below ground surface and similar depths below river bottom, the maximum reduction of flow of 0.275 cfs (cumulative impact) in groundwater from June to October would not affect baseflow of the river.

It should be noted that USGS provides information on each gage regarding the degree of accuracy of the records provided by any given station. Gage No. 11143250 is characterized as having “fair” records which means that 95 percent of the daily discharges are within 15 percent of the true value. In addition, the values of the mean daily discharge recorded at the USGS gage are shown to a number of significant figures based solely on the magnitude of the discharge value. For example, for discharges less than 1 cfs, the values are recorded to the nearest 0.01 cfs; for discharges between 1.0 and 10 cfs, the values are recorded to the nearest 0.1 cfs; to whole numbers between 10 and 1,000 cfs; and to 3 significant figures above 1,000 cfs. USGS further caveats the gage information by indicating that the accuracy of the streamflow data depends primarily on (1) the stability of the stage-discharge relation or, if the control is unstable, the frequency of discharge measurements, and (2) the accuracy of observations of stage, measurements of discharge, and interpretations of record.

In Case 1: Below Normal Precipitation, the reduction in recharge in the CVA Subunit 3 is estimated to be -124.12 where 112.9 AF/yr is attributable to Additional Proposed Projects and 11.22 AF/yr is attributable to reduced potential maximum spillover from SRA to CVA as a result of the September Ranch project. These monthly negative values reflects that

water is, overall, coming out of the SRA or CVA, albeit at a modest level when compared to the other pumping that occurs in the CVA.

Table 3. Maximum Potential Impact to CVA from September Ranch and Proposed Projects for Below Normal and Normal Precipitation

Case 1: Below Normal Precipitation (WY 1987)

Month –>	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Difference (Case 1b minus Case 1a) i.e. Maximum Potential Decrease in Flow (cfs) in Carmel River as a Result of September Ranch	0.000	-0.033	-0.033	-0.033	-0.033	-0.033	-0.033	-0.024	0.000	0.000	0.000	0.000
Additional Pumping From Potential Projects in CVA (cfs)	-0.275	-0.066	-0.066	-0.066	-0.066	-0.066	-0.066	-0.066	-0.275	-0.275	-0.275	-0.275
Maximum Potential Impact = Maximum Potential Spillover Decrease into CVA as a Result of September Ranch plus Addiitonal Pumping from Potential Projects in CVA (cfs)	-0.275	-0.098	-0.099	-0.099	-0.099	-0.099	-0.099	-0.090	-0.275	-0.275	-0.275	-0.275
Maximum Potential Impact to recharge (AF/Month)*	-16.60	-5.92	-5.96	-5.96	-5.96	-5.96	-5.96	-5.42	-16.60	-16.60	-16.60	-16.60
Monthly Mean Flow in the Carmel River (cfs)	0	0	0	0	0	36.11	60.88	18.42	0	0	0	0

* Total AF/yr = -124.12 where 112.9 AF/yr is attributable to Additional Proposed Projects and 11.22 AF/yr is attributable to reduced potential maximum spillover from SRA to CVA as a result of the September Ranch project. These monthly negative values reflects that water is, overall, coming out of the SRA or CVA, albeit at a modest level when compared to the other pumping that occurs in the CVA.

Table 2. Maximum Potential Impact to CVA from September Ranch and Proposed Projects for Below Normal and Normal Precipitation (continued)

Case 2: Normal Precipitation (WY 2001)

Month –>	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Difference (Case 2b minus Case 2a) i.e. Maximum Potential Decrease in Flow (cfs) in Carmel River as a Result of September Ranch	0.140	0.034	0.033	0.033	0.037	0.033	0.034	0.000	0.000	0.000	0.000	0.022
Additional Pumping From Potential Projects in CVA (cfs)	-0.275	-0.066	-0.066	-0.066	-0.066	-0.066	-0.066	-0.066	-0.275	-0.275	-0.275	-0.275
Maximum Potential Impact = Maximum Potential Spillover Decrease into CVA as a Result of September Ranch plus Additional Pumping from Potential Projects in CVA (cfs)	-0.136	-0.031	-0.032	-0.032	-0.029	-0.032	-0.031	-0.066	-0.275	-0.275	-0.275	-0.253
Maximum Potential Impact to Recharge (AF/Month)*	-8.18	-1.88	-1.95	-1.95	-1.73	-1.95	-1.88	-3.95	-16.60	-16.60	-16.60	-15.27
Monthly Mean Flow in the Carmel River- WY 2001 (cfs)	0.14	7.08	9.71	86.07	186.50	373.29	92.00	38.19	5.73	0.00	0.00	0.00

* The distribution and quantity of rainfall and recharge during WY 2001 is such that the calculation results in a total AF/yr = -88.55 which is less than the -124.12 AF/Yr for the below normal maximum potential impact because of the higher rainfall and recharge. That there are negative monthly values indicate that water is, overall, coming out of the SRA and/or CVA.

Therefore, based on the discussion regarding the accuracy of the gage, the potential reduction in flow from -0.090 cfs to -0.275 cfs in the below normal precipitation case is near the limits of the accuracy of the gage. The -0.275 cfs occurs when the river flows are zero and there would be no impact on the river although could have a nominal impact on water levels in the groundwater.

In Case 2: Normal Precipitation, the maximum potential impact varies from -0.029 cfs to -0.275 cfs. During normal precipitation years, there is some flow most times of the year, although the flows are quite low, with mean daily flows that range from 0 cfs and 4.4 cfs in October 2000 to 0.5 cfs and 0.05cfs in July 2001 respectively. It should be noted that in the months from June through October, the pumping from the potential projects is a much larger component of the maximum cumulative impact and dominates the maximum potential decrease in flow from September Ranch. As with the below normal precipitation case, the maximum potential cumulative impact of -0.029 cfs to -0.275 cfs is below or near the limits of the gage accuracy.

In Case 2: Normal Precipitation, the distribution and quantity of rainfall and recharge during WY 2001 is such that the calculation results in a total AF/yr = -88.55 which is less than the -124.12 AF/Yr for the below normal maximum potential impact because of the higher rainfall and recharge. That there are negative monthly values indicate that water is, overall, coming out of the SRA and/or CVA.

Potential Water Level Adjustments in CVA

As an alternative analysis to evaluate potential changes to water level in the CVA, the total demand of 112.9 AF/yr was assumed to come entirely out of the CVA Subunit 3. This analysis used an area for CVA – AQ3 of 1,558 acres as estimated in a geographic information system map. Then an aquifer porosity of 33% was used and it was estimated that the change in water level over the 1,558 acres as a result of pumping 112,9 AF/yr is 0.027 in/yr, which is barely measurable in a well. If a more conservative approach is taken and all of the pumping were to occur in 10% of the CVA-AQ3 or 155.8 acres, then the resultant change in water level is estimated to be 0.27 in/yr or slightly more than a quarter of an inch.

Appendix A

Permits Issued in Quail Meadows per MPWMD, June 2006

	Permit No.	Property Address	APN	USE	AF	APN SUM
1	13176	Quail Meadows Place	157-121-007	Gatehouse	0.100	
2	22888	5452 Quail Meadows Drive	157-171-001	Caretaker	0.087	
3	22887	5452 Quail Meadows Drive	157-171-001	Fixtures	0.030	
4	22887	5452 Quail Meadows Drive	157-171-001	New SFD	0.739	0.856
5	16186	5454 Quail Meadows Drive	157-171-002	Bar Sink	0.010	
6	16186	5454 Quail Meadows Drive	157-171-002	New SFD	0.332	
7	18540	5454 Quail Meadows Drive	157-171-002	Pool	0.050	0.392
8	15426	5458 Quail Meadow Drive	157-171-003	New SFD	0.624	
9	16230	5458 Quail Meadow Drive	157-171-003	Pool/Spa	0.082	0.706
10	16270	5464 Quail Way	157-171-005	Caretaker	0.201	
11	16271	5464 Quail Way	157-171-005	New SFD	0.608	0.809
12	17429	5498 Quail Meadows Drive	157-171-006	Bathroom	0.047	
13	23497	5460 Quail Way	157-171-007	Hays	0.689	
14	15589	5466 Quail Meadow Drive	157-171-008	Caretaker	0.087	
15	16210	5466 Quail Way	157-171-008	Bathroom	0.047	
16	15672	5466 Quail Way	157-171-008	New SFD	0.744	
17	16210	5466 Quail Way	157-171-008	Pool/Spa	0.060	0.938
18	18647	5468 Quail Way	157-171-009	Fruit Trees	0.008	
19	18647	5468 Quail Way	157-171-009	New SFD	0.520	0.528
20	19284	5472 Quail Way	157-171-010	Pool	0.068	
21	19462	5472 Quail Way	157-171-011	Fixtures	0.010	
22	14802	5472 Quail Way	157-171-011	New SFD	0.788	
23	19462	5472 Quail Way	157-171-011	Pool	0.104	0.970
24	14281	5476 Quail Meadow Drive	157-171-013	New SFD	0.648	
25	15170	5776 Quail Meadow Drive	157-171-013	Fountain	0.020	
26	15170	5776 Quail Meadow Drive	157-171-013	Pool	0.070	0.738
27	16355	5478 Quail Meadows Drive	157-171-014	Caretaker	0.107	
28	19066	5478 Quail Meadows Drive	157-171-014	Guest House	0.084	
29	13436	5478 Quail Meadows Drive	157-171-014	New SFD	0.610	0.801
30	14569	5480 Quail Meadow Drive	157-171-015	New SFD	0.548	0.548
31	19741	5482 Quail Meadows Drive	157-171-016	New SFD	0.734	0.734
32	18716	5484 Quail Meadows Drive	157-171-018	Caretaker	0.067	
33	18715	5484 Quail Meadows Drive	157-171-018	New SFD	0.456	0.523
34	17037	5488 Quail Meadows	157-171-019	Fixtures	0.040	
35	17037	5488 Quail Meadows	157-171-019	New SFD	0.492	0.532
36	17518	5490 Quail Meadows Drive	157-171-020	New SFD	0.470	0.470
37	20155	5494 Quail Meadows Drive	157-171-021	Caretaker	0.067	
38	20154	5494 Quail Meadows Drive	157-171-021	New SFD	0.476	0.543
39	18655	5485 Quail Meadows Drive	157-171-026	New SFD	0.473	0.473
40	17077	5489 Oak Trail	157-171-029	New SFD	0.588	
41	18056	5489 Oak Trail	157-171-029	Pool	0.053	0.641
42	18806	5491 Oak Trail	157-171-030	Caretaker	0.087	
43	18805	5491 Oak Trail	157-171-030	New SFD	0.506	0.593
44	18594	5493 Oak Trail	157-171-031	New SFD	0.598	
45	18073	5493 Oak Trail	157-171-031	Studio	0.261	0.859
46	23183	5479 Covey Court	157-171-032	Billiard Room	0.037	
47	21610	5479 Covey Court	157-171-032	Guest House	0.057	
48	19665	5479 Covey Court	157-171-032	New SFD	1.884	
49	19664	5479 Covey Court	157-171-032	Pool/Pavilion	0.174	2.152
50	21386	5477 Covey Court	157-171-033	Pavilion	0.067	
51	15770	5475 Covey Court	157-171-034	New SFD	0.412	0.412
52	14606	5465 Quail Meadow Drive	157-171-039	New SFD	0.683	0.683
53	22438	5463 Quail Meadows Drive	157-171-040	New SFD	0.523	0.523
54	22826	5441 Qauil Meadows Drive	157-171-041	New SFD	1.025	1.025
55	22537	5461 Quail Meadows Drive	157-171-041	New SFD	0.522	0.522
56	13682	5459 Quail Meadows Drive	157-171-042	New SFD	0.306	
57	13859	5459 Quail Meadows Drive	157-171-042	Upgrade Tub	0.010	0.316
58	17726	5455 Quail Meadows Drive	157-171-044	New SFD	0.869	
59	18490	5455 Quail Meadows Drive	157-171-044	Pool	0.056	0.925
60	15632	5453 Quail Meadow Drive	157-171-045	New SFD	0.377	0.377
61	18836	5449 Quail Way	157-171-047	New SFD	0.486	0.486
62	20571	5447 Quail Way	157-171-048	Caretaker	0.114	
63	20570	5447 Quail Way	157-171-048	New SFD	0.701	
64	21033	5447 Quail Way	157-171-048	Pool	0.092	0.907
65	17103	5439 Quail Way	157-171-049	Bathroom	0.027	
66	17103	5439 Quail Way	157-171-049	New SFD	0.598	0.625
67	13743	5445 Quail Meadows Drive	157-171-050	New SFD	0.674	0.674
68	13974	5443 Quail Way	157-171-051	New SFD	0.567	0.567
69	14542	5437 Quail Meadow Drive	157-171-053	New SFD	0.567	1.241
70	19554	5600 Quail Meadows Drive	157-171-055	New SFD	0.719	
71	21539	5600 Quail Meadows Drive	157-171-055	Pool	0.071	0.790
72	14010	1 Grey Goose Gulch	157-171-058	Condo	0.181	
73	14011	2 Grey Goose Gulch	157-171-058	Condo	0.161	
74	14012	3 Grey Goose Gulch	157-171-058	Condo	0.161	
75	14013	4 Grey Goose Gulch	157-171-058	Condo	0.161	
76	14014	5 Grey Goose Gulch	157-171-058	Condo	0.181	
77	14015	6 Grey Goose Gulch	157-171-058	Condo	0.181	
78	14016	7 Grey Goose Gulch	157-171-058	Condo	0.161	
79	14017	8 Grey Goose Gulch	157-171-058	Condo	0.161	
80	14018	9 Grey Goose Gulch	157-171-058	Condo	0.181	
81	16845	5483 Covey Court	157-171-071	Caretaker	0.067	
82	16844	5483 Covey Court	157-171-071	New SFD	0.421	0.488
83	19256	5473 Quail Meadows Drive	157-171-074	New SFD	0.518	0.518
84	23128	5469 Quail Meadows Drive	157-171-076	New SFD	1.686	1.686

29.329 Total Acre Feet Permitted
24.492 Total AF Permitted to New SFD only
27.571 Total AF Permitted to all New SFD & other related uses
0.726 New SFD plus other related use - average AF Permitted.Lot
2.152 New SFD plus other related use - Maximum AF Permitted per Lot
0.316 New SFD plus other related use - Minimum AF Permitted per Lot

14 # of Empty lots remaining to be developed (per MPWMD)
10.158 Est AF for total lots remaining to be developed based on Average AF permitted
6 AF Demand for Conference Center
16.158 Total AF Quail Meadows demand

6 July 2006

Technical Memorandum 7 (Draft Final)

To: Jason Brandman (MBA) and Jennifer Harder (DB)

From: Les Chau and Sachi Itagaki (K/J)

Subject: Technical Memorandum 7 – Recharge in the Carmel Valley Aquifer in Below Normal Precipitation Periods

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The following Technical Memorandum 7 ("TM-7") supplements the Kennedy/Jenks' Project Specific Hydrogeologic Report – September Ranch Project, Carmel, California issued in December 2004 and revised in February 2006 ("Report"). This TM-7 responds to comments received from the Monterey Peninsula Water Management District ("MPWMD"), among others, regarding Kennedy Jenks' conclusion that the Carmel Valley Aquifer ("CVA") refills efficiently during and after drought periods which then lessens the effect of use of 54.21 acre-feet (Project demand 57.21 AFY less baseline of 3 AFY) per year and 270 acre-feet ("AF") over five consecutive dry years of groundwater that are unavailable to be stored in the CVA. The comments requested that the County further demonstrate the ability of the CVA to recharge during and after extended drought conditions.

The materials presented in this TM are intended to respond to those requests by clarifying and providing evidence to support the conclusion that the CVA efficiently refills during and after drought periods. Based on groundwater elevation data (attached Table TM7-1) provided by the Monterey County Water Resources Agency (5 February, 2004 from R. Johnson), this TM demonstrates that groundwater levels immediately upstream of the SRA in the CVA AQ3 (Figure 1, in wells 16S/1E25-B02, 16S/1E22-E01, 16S/1E22-H01, 16S/1E22-J01 [no data from 1985 on], 16S/1E23-J02, 16S/1E23-F01, and 16S/1E23-K01) do recover during the critically dry period of 1987 to 1991 to their pre-drought levels. Groundwater recoveries during this extended and critically dry period are nearly completely the same as the groundwater elevations during normal rainfall years; moreover, recoveries occur consistently during the winter and spring months (February through May) in a water year.

Data Analysis

This analysis is based on the Carmel River flow rates and rainfall records serving as recharge information. Figure 2 graphically displays precipitation (relative changes only no scale shown), river flow rates, and groundwater levels on the same time scale. This graph demonstrates that groundwater levels respond to fluctuations of rainfall, and that this response is

correlated to changes in Carmel River flow rates. This data indicates that the CVA is highly efficient in replenishing its groundwater supply to pre-drought volumes.

Peak rainfall during the critically dry period of 1987 through 1991 occurs during the months of February and March (Figure 2). Corresponding increase in river flows occurs in about the same months as peak rainfall with only days of lag time. The highest groundwater levels as a result of percolations of surface runoffs (rainfall) and riverbed recharge are apparent in the months of March to May which means on a yearly basis the CVA completes recharging its water supply in one to four months after peak rainfall. The lowest water levels occur in the summer months from August to early winter of January.

Figure 2 shows the yearly recurring decline and recovery of groundwater elevations for water years 1986 to 1990. Given that 1987 to 1991 are considered critically dry years (MPWMD Classifications of Unimpaired Flow at the San Clemente Dam, 2006), a notable extended period of groundwater decline is apparent in 1988 and half the water year of 1989. Water level start to decrease in a normal seasonal cycle starting in May (1986 normal rainfall year) and in July of 1987 but the latter remained depressed throughout the water year of 1988. The water year 1987 is the start of an extended dry period. The extended period of water level declines lasted for a year and a half from 1988 to early 1989. During these two years, rainfall and river flow were the lowest in this five year drought period. Importantly, groundwater levels in 1989 and 1990 recovered without notable delay from normal seasonal recoveries and completely to their pre-drought conditions. The years 1989 and 1990 are still considered to be critically dry years.

Table TM7-2 is a summary of available groundwater elevations (feet - AMSL) from wells upgradient of September Ranch. Data were provided by the Monterey County Water Resources Agency. Low and High values are averaged groundwater elevations for the years indicated and the complete data set is presented in Table TM7-1.

Table TM7-2 Summary of available groundwater elevations (feet - AMSL) from wells upgradient of September Ranch

Well Name	**Normal Years (85, 86) Low** **Column A**	**Normal Years (85, 86) High** **Column B**	**Dry Years (87 to 91) Low** **Column C**	**Dry Years (87 to 91) High** **Column D**	**Difference in Groundwater Level Lows between dry and normal years (A – C)**	**Difference in Groundwater Level Highs between dry and normal years (B – D)**
16S/1E-23K01	65	77	55	77	-10[(2)]	
16S/1E-23F01	57	67	50	68	-7	+1
16S/1E-23J02	65	75	50	79	-15	+4
16S/1E-22H01	40	56	30	55	-10	-1
16S/1E-22E01	27	37	12	40	-15	+3
16S/1E-25B02	30[(1)]	40	20	40	-10	0

				Average Change	11.17	0.17

Note: (1) – Estimated
(2) – Negative values indicate declines in groundwater levels

Table TM7-2 shows that during dry periods groundwater levels could decline between 7 to 15 feet below normal during the summer months of August to the early winter months of January (Column A-C). Column D in Table 1 indicates that groundwater level recoveries are generally complete to their highs during normal rainfall years (Column B) unlike their counterpart low levels. Differences between normal and dry years in groundwater level recovery range from zero to four feet above normal levels (Column B-D).

Lessened Impact

The fact during extended dry periods that aquifer Subunit 3 of the CVA refills to nearly pre-drought groundwater levels supports the opinion that water supply impact of maximum 57.21 acre feet of project demand on the CVA is accurately characterized as less than significant, even with the assumption of zero recharge (runoff and river during dry years) in the CVA. We agree with the District that during the period of 1987 to 1991, over a period of five years it is possible that a maximum amount of 270 AF (54.21 AF x 5 years) of groundwater will not reach AQ3 (MPWMD 4/7/06 comment on page 4.3-44, 2nd paragraph). Thos finding shows at the end of Sept 1991, there is 78.9 AF more water in storage in the SRA than has been pumped out (i.e. recharge exceeds pumping). There is sufficient recharge to SRA on a seasonal basis that the supply exceeds the demand over the entire dry period. Therefore, the District's proposed worst case scenario of 270 AF of depleted groundwater storage in the SRA (and thence the impact to the CVA) is extremely conservative and highly unlikely to occur. The analysis rather supports the conclusion that the worst case impact for reduction of recharge by the project is more closely tied to the historical record of approximately 71.5 AF over a 19 month period before water levels recovered.

However, based on the data discussed in this memo, which indicates that groundwater levels remained depressed only one and a half years (19 months from October 1987 to April 1989) in a five year critically dry period and that water levels fully recover to their normal levels during these dry years, it appears that the impact based on the recovery of groundwater water levels to their pre-drought conditions is not substantially adverse. The aquifer efficiently recovers during an extended drought period.

Significance of impact should also account for *depleted groundwater storage* over the drought period at issue. We agree with the District that there was a notable depletion of perennial groundwater storage from 18,979 AF (1986) to 14,286 AF (1990) in AQ3 during the critically dry years of 1986 to 1991 (MPWMD CVSIM3). The historical average yearly storage in AQ3 is approximately 16,927 AFY and the high storage of 18,979 AF in 1986 was due to a particularly wet winter in 1986 which was followed by a dry summer and the beginning of the extended dry period. The average storage during the five year dry period is 16,745 AFY. A reduction of recharge by the Project of 270 AF then represents 1.5 percent of total storage over this time period in AQ3 which is considered insignificant even for reduced storage caused by prolonged below normal precipitation condition.

Two Sources of Groundwater

The replenishment of the CVA AQ3 and hence the variations of water levels discussed above is primarily dependent on surface recharge by the Carmel River and percolating into groundwater and secondarily by subsurface inflow from the upgradient AQ2 unit. Subsurface inflow according to CVSIM information is fairly steady at 2,781 AFY; hence groundwater level fluctuations are then primarily a response to surface recharge by the Carmel River.

CVSIM data show that the historical average yearly surface recharge is 8,000 AFY. The averaged yearly recharge between 1987 and 1991 is 7,000 AFY or 35,000 AF over five years. Recharge dropped from 7,451 AF in 1986 to 5,476 AF in 1987 followed by a slight rise of 6,176 AF of recharge in 1988. A notable rise in groundwater recharge during this critically dry period of 7,383 AF occurred in 1989 followed by a repeating low recharge of 5,396 AF in 1990. Surface recharge then again achieved a high during 1991 of 10,370 AF. The cyclical pattern of rise and fall of subsurface recharge is consistent with the groundwater level fluctuations shown in Figure 2. Groundwater responded efficiently to the combined surface and subsurface recharges in the drought period of 1987 to 1991.

A reduction of recharge by the Project of 270 AF then represents 0.7 percent of total recharge over this time period in AQ3 which is again considered insignificant even for reduced recharge caused low rainfall condition. Moreover, it is our opinion that the groundwater exchange between the two systems in a yearly basis has been substantially less than 57.21AFY due to a low permeability groundwater barrier. During normal precipitation years, groundwater would spill over the low permeability barrier when water levels rise above 47 feet MSL. However, during prolonged dry period, groundwater levels would be lowered during but only part of the dry period such as 1987 and 1988. As shown in Figure 2, the closest well to SRA is 16S/1E-25B2 with a normal water level of about 43 feet MSL. This means that water levels in the SRA would have to be higher than firstly the top of Qoa2 (about 47 feet MSL) and then higher than 43 feet MSL of the nearby CVA water levels. During dry years, water levels in both systems would drop below their normal elevations of about 43 feet MSL such as those exhibited in well 16S/1E-25B2 during 1987 and 1988. In this scenario, there would be very limited to no groundwater exchange between the two systems.

While the CVA is fed by source waters upstream of the Carmel River, the SRA is being recharged by the watershed uplands and groundwater is stored in the terrace deposits (or alluvium). Hence groundwater flows are parallel to each other in the CVA and the SRA and at approximately equal water surface elevations resulting in near neutral groundwater gradients between the two aquifers. Historically, these sources of recharge have been consistently refilling both aquifers annually under both normal rainfall years and after extended drought periods. Comment by the MPWMD questions the opinion of independent sources of water by stating that a small portion of recharge into the CVA along its northern sidewalls of AQ3 would still be affected by increased pumping from the SRA (MPWMD 4/7/06 comment on Appendix C, page iv, paragraph 5).

Impact on Existing CVA Pumpers

We agree with the MPWMD that there would be an impact as a result of project demand, but this impact is accurately characterized as non-substantial to the overall sustainable

yields of existing users of groundwater in the Carmel Valley Aquifer in light of the fact that the two systems are separate with limited hydraulic communications and that there are two sources of groundwater recharge. Impact on existing users can be assessed by the amount of additional drawdowns in groundwater levels that the 57.21AF can impose. If water levels drop below acceptable levels in the perforation intervals in water wells then the scenario of dry wells exist and that means existing pumpers may be required to look for alternative water supply during critically dry periods.

While a hypothetical drawdown of water levels cannot be accurately estimated because of the uncertainty in actual amount of groundwater exchange between the two systems, a comparison can be made by reviewing the calculated drawdowns in the September Ranch Aquifer. The predicted drawdowns for 57.21 AF of discharge in the SRA (as presented in the FDEIR for the extended dry years 1987 to 1991) are 0.96 feet in the summer and fall seasons and 0.6 foot in the winter season. These calculated drawdowns are based on aquifer storage of 275 AF in the SRA. Since the storage in the CVA AQ3 is about 16,929 AF which is two orders of magnitude large than that in the SRA, the corresponding lowering of groundwater levels as a result of 57.21AF of denied recharge is than 0.013 foot in the summer and 0.006 foot in the winter. The average well screen of water supply wells in the Carmel Valley is about 20 feet and about 135 feet deep. The small amount of potential additional lowering of water levels would not result in water level declines in a well casing to below the pump depth and that there is no possibility of a dry well scenario. As shown in Figure 2, fluctuations in water levels are about 35 feet in normal yearly seasonal changes and between normal and dry precipitation periods. Hence, the small potential and additional changes in water levels are well within seasonal water levels fluctuations.

Separate recharge sources further supports the opinion that during an extended dry period the effect of 57.21AF can be less than significant in terms of impact to ecology and water supply. The contribution of this maximum amount of 57.21AFY from the SRA in dry years is likely substantially less than this amount which supports the conclusion that the proposed Project would not impact existing sustainable use in the CVA and that no alternative source(s) of water need to be considered for existing users in the CVA in extended dry periods in the future.

Figure 1 Carmel Valley Groundwater Wells Upstream of September Ranch

Figure 2 Groundwater Elevations from Carmel Valley Aquifer Wells Upstream of September Ranch