SAN JOAQUIN SOLAR 1 & 2 HYBRID PROJECT
12-AFC-08

Supplemental Information
In Response To Cure Data Request Set #4

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San Joaquin Solar 1 & 2 Hybrid Project
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Data Request 100: Please provide documentation supporting the AFC's statement on page 5.6-1 that the Project site is recently planted with wheat and pistachios, including cotton, safflower and garlic.

Response: Please see Objections To Data Requests Of California Unions For Reliable Energy, Set 4, dated September 14, 2009.

Data Request 101: Please explain the AFC's statement on page 5.6-5 that a "majority of the Project site is actively cultivated at this time" by describing the number and location of acres actively cultivated at this time.

Response: The property has been tilled in 2009 and is planted seasonally. The number of acres actively planted varies depending on the season. Currently pistachio trees are planted and cultivated on over 150 acres of the project site. It is appropriate to consider that the entire site is planted periodically, and seasonal plantings occur on portions of the site.

Data Request 102: Please provide documentation reflecting the last date of planting of each crop type at the Project site. The response should provide the year and month.

Response: Please see Objections To Data Requests Of California Unions For Reliable Energy, Set 4, dated September 14, 2009.

Data Request 103: Please provide documentation supporting the AFC's statement that the majority of the proposed transmission line alignment is comprised of orchards and row crops.

Response: Majority means more than 50%. As shown in Figure DR-103 less than one mile of the approximate 6 mile transmission line route is not comprised of orchards and row crops.

Data Request 104: Please clarify what the AFC means by a "majority" of the transmission line has been comprised of orchards and row crops, by stating how many acres of the proposed southern and northern transmission line alignments are in active agricultural production, and provide documentation to support your answer. Please provide the zoning of the proposed transmission line alignments for both the southern and northern route alignments. Your response should include acreages subject to each type of zone.

Response: Please see Objections To Data Requests Of California Unions For Reliable Energy, Set 4, dated September 14, 2009.

Data Request 100(2): Please clarify when the site was last irrigated and planted.

Response: Please see Objections To Data Requests Of California Unions For Reliable Energy, Set 4, dated September 14, 2009.

Data Request 101(2): Please explain whether the transmission line routes are on prime farmland, farmland of statewide importance, unique farmland, or farmland of local importance.

Response: As shown on Figure DR-101(2), the transmission line route is on a service road adjacent to approximately 5 miles of Prime Farmland and less than one mile of Farmland of local importance. However, it is not anticipated that agriculture would be impacted within the transmission route easement area, since cultivation may still take place. The transmission pole locations are most likely to be along the existing dirt road and will not occur on areas that are actively cultivated.

Data Request 103(2): Please provide an analysis of the Project's impacts on agriculture.

Response: Please see AFC section 5.9.1.3.2 Agricultural Williamson Act Lands for a discussion of the cancellation process and fees and mitigation for removal of Williamson Act Lands from agricultural use. The project will remove 640 acres of non-prime farmland from productive capacity, of which approximately 469 acres are currently under a Williamson Act contract.

Data Request 104(2): Please provide the LESA score for the 640 acres that will be withdrawn from agricultural use as a result of the Project and the analysis that supports the score obtained.

Response: Please see Objections To Data Requests Of California Unions For Reliable Energy, Set 4, dated September 14, 2009.

Data Request 105: Please discuss the project's consistency with LORS, including the Fresno County Planning Code's requirement that the proposed use will have no adverse effect on abutting property or the permitted use thereof.

Response: Please see AFC Section 5.9.5.3.6 Conditional Use Permit (CUP) Process. The proposed development will not have any adverse impacts on property abutting the project site. The project is self contained and will not prevent the continuous use of adjacent properties for their existing uses, namely agriculture and the Coalinga State Hospital.

Data Request 106: Please discuss the impacts on agriculture from each of the proposed transmission line routes.

Response: As stated in the Supplemental Information in Response to CEC Data Request, docketed on February 4, 2009, the southern transmission route is the preferred route. There are no anticipated impacts to agriculture caused by the transmission line route. The transmission line route is on a service road adjacent to approximately 5 miles of Prime Farmland and less than one mile of Farmland of local importance. However, it is not anticipated that agriculture would be impacted within the transmission route easement area, since cultivation may still take place. The transmission pole locations are most likely to be along the existing dirt road and will not occur on areas that are actively cultivated.

Data Request 107: Please provide the AFC's referenced list of new projects planned within the six miles from the proposed site.

Response: Please see AFC Section 5.18 for a discussion of cumulative impacts and for the list of discretionary permit applications and reasonably foreseeable projects considered in conjunction with the project. In addition Please see attachment 107A for a list of permit applications provided by the City of Coalinga.

Data Request 108: Please provide a revised discussion of cumulative impacts on agriculture in light of the wastewater treatment project FEIR's conclusion that the wastewater treatment site was in active agricultural production and any other past, present and reasonably foreseeable projects identified by the Applicant.

Response: The combined effect of the Project and the Coalinga Waste Water Treatment facility to agriculture would include the removal of 960 acres of agricultural land from agricultural production to be designated for other uses. The Project proposes to mitigate for the loss of agricultural lands as part of the Williamson Act Cancellation process and thereby is committed to a fair share of mitigation costs for loss of agricultural lands.

Data Request 109: Please explain how withdrawing 640 acres of agricultural land for renewable energy production is an inherent form of mitigation for the loss of agricultural land.

Response: The use of former agricultural land for renewable energy production creates a recognized public benefit compared with other potential uses of such agricultural land. While not mitigation of the lost acreage of agricultural land per se, this public benefit merits consideration by the Commission in balancing the benefits of the project with its potential adverse impacts as required by CEQA.

Data Request 110: Please provide documentation to support the statement that the Project will not substantially diminish the agricultural productivity of the region. Your response should include dollar amounts lost due to cessation of agricultural production on the Project site.

Response: Please see Objections To Data Requests Of California Unions For Reliable Energy, Set 4, dated September 14, 2009.

Data Request 111: Please explain whether the Project proposes any mitigation for significant impacts to agriculture, such as an irrigated agricultural conservation easement, as required for the wastewater treatment plant, or the payment of a fee to an agricultural land trust for the purchase of a conservation easement in Fresno County, as required for the Panoche Energy Project.

Response: Please see AFC section 5.9.1.3.2 Agricultural Williamson Act Lands for a discussion of the cancellation process and fees and mitigation for removal of Williamson Act Lands from agricultural use. The project will remove 640 acres of non-prime farmland from productive capacity, of which approximately 469 acres are currently under a Williamson Act contract.

Data Request 112: Please explain the AFC's distinction on page 5.14-10 between a "major" HTF flow line and other HTF flow lines.

Response: Most HTF process lines are considered major flow lines. Examples of "non-major" or "other" HTF lines include drain lines, sample ports, pressure safety valve connector lines, etc.

Data Request 113: Please describe the number and location of all "major" HTF flow lines associated with the Project.

Response: The HTF lines are located mainly in the power block and along each row of the solar field. The HTF lines in the power block can be as large as 24 inches in diameter, they flow through the pumps, steam drums and expansion vessel, and they are located within a containment area. Each solar field has a hot and cold header, and the headers are connected by 90 loops, which run down one row of mirrors and return down a second row. The loops are made of 70mm tubing (66 mm internal diameter). Additionally, there will be two HTF lines connecting the power block and the biomass boiler.

Data Request 114: Please specify how many isolation valves will be installed.

Response: Each HTF loop in the solar field will contain three isolation valves; each power block will have approximately twelve isolation valves. The total isolation valve count for the entire plant is approximately 600. The exact valve count is not available until detailed design is completed.

Data Request 115: Please clarify whether isolation valves will be installed on non-major HTF flow lines throughout the solar field.

Response: Isolation valves will not be installed on "non-major" lines since these lines consist of drain lines, sample ports, pressure safety valve connector lines, etc., as stated in response number 112.

Data Request 116: If the Project will employ isolation valves on non-major HTF flow lines, please describe how many isolation valves will be installed.

Response: Please see response to number 115.

Data Request 117: Please quantify the maximum quantity of HTF that could potentially leak from the system between two isolation valves. Please provide documentation to support your answer.

Response: The maximum quantity of HTF that could potentially leak from the system between two isolation valves on a loop in the solar field is less than 300 gallons as stated in response to CURE data requests set #3, response number 48. Using a tubing wall thickness of 2 mm the maximum amount of HTF contained between two isolation valves in each solar loop is 275 gallons (66mm inner diameter of 1000 ft of tubing equals 36.8 cubic feet, or 275 gallons).

The maximum quantity of HTF that could potentially leak from the system between two isolation valves not located on the solar field loops varies depending on the line size and distance between two isolation valves. Most of the HTF lines not located in the solar field will be within containment areas which means a leak of HTF will not impact soil or become a "spill". HTF lines in the power block and biomass areas will have isolation valves installed according to code and good engineering practices.

Data Request 118: Please explain the basis for the Applicant's estimate made during the August 6, 2009 data request workshop that the maximum spill of HTF that could occur from an expansion valve is 250 gallons, or provide a revised estimate regarding the maximum spill that could occur from an expansion valve. Please provide documentation to support your answer.

Response: The 250 gallons stated as the maximum spill during the August 6, 2009 workshop was an estimated value. A revised estimate of less than 300 gallons was presented in response to CURE data requests set #3, response number 48. This value has been further refined as presented in response number 117, above, to be approximately 275 gallons.

Data Request 119: Please provide the volume of HTF fluid that can be contained in an expansion vessel.

Response: As stated in the response to CURE data requests set #3, response number 49, the HTF expansion tank volume is 59,000 gallons. Operational liquid level in the vessel will vary slightly diurnally but the volume of HTF typically in the expansion vessel will be roughly 30,000 gallons.

Data Request 120: Please provide the volume of HTF fluid that can be contained in the secondary containment pits to be located under each expansion vessel that the AFC states will be of "sufficient size."

Response: The secondary containment will hold 65,000 gallons.

Data Request 121: Please provide a discussion of potential fire and explosion risks due to the flammability of Therminol VP-1, the heat transfer fluid used in the solar arrays for the Project.

Response: Information regarding Therminol VP-1 was included in the Response to Cure Set #3, including a discussion on fire safety considerations. The suggested national fire protection association (NFPA) rating is 1, which means the flammability hazard is "slight". Equipment design and employee training will include all potential safety concerns, including the HTF flammability. With proper safety device installation and personnel safety training, the potential fire and explosion risks due to the flammability of the HFT are limited. The SEGS plants have been operating successfully for over twenty years and SJS will use similar methods and procedures as developed at these facilities to ensure fire safety.

Data Request 122: Please clarify if spills of HTF will trigger hazardous waste reporting requirements or CERCLA spill notification and any necessary facility response to the notification, such as containment, diking, or temporary cover.

Response: A release of Therminol VP-1 would not require hazardous waste reporting requirements. Contaminated soil containing Therminol VP-1 that is considered a hazardous waste would be accumulated onsite for less than 90 days, and then removed for disposal according to applicable regulations. The US Department of Transportation Reportable Quantity (RQ) of biphenyl is reported to be 100 lbs. The average concentration of biphenyl in Therminol VP-1 is 26.5%. Therefore a release of more than 377 pounds of Therminol VP-1 would require CERCLA notification. The project would comply with applicable regulations regarding containment, reporting, and disposal of any onsite release.

Data Request 123: Please explain the basis for the AFC's estimate on page 5.14-10 that the amount of contaminated soil from HTF spills should not exceed 20 cubic yards in a 3-month period.

Response: This estimate is based on 25 years of operational experience at the SEGS facilities.

Data Request 124: Please provide a revised project layout diagram showing the location of the Project's proposed 2 acre parcel for temporary storage of HTF contaminated soil.

Response: A figure presenting this information was included in the Workshop Action Item response, docketed on August 21, 2009.

Data Request 125: Please provide the number of hours in which HTF leaks would be abated following detection.

Response: Please see Objections To Data Requests Of California Unions For Reliable Energy, Set 4, dated September 14, 2009.

Data Request 126: Please described how HTF contaminated soil will be transported to the proposed 2-acre parcel for temporary storage.

Response: As stated in Response to CURE data set #3, response number 95, contaminated soil will be transported to the hazardous waste accumulation area via a front end loader.

Data Request 127: Please explain how the proposed 2-acre parcel for temporary storage of HTF contaminated soil will be constructed, including whether the storage area will be lined.

Response: The temporary storage structure is a concrete slab with concrete walls on 3 sides with water proof joints.

Data Request 128: Please explain whether the 2-acre parcel for temporary storage of HTF contaminated soil will be constructed to meet any necessary requirements for storage of hazardous waste.

Response: The 2-acre parcel for temporary storage would be constructed to meet the requirements of accumulation of hazardous waste. Signage, labeling and security would meet the applicable hazardous waste requirements of California Code of Regulations, Title 22.

Data Request 129: Please state the length of time that contaminated soil will remain in the 2-acre parcel and how it would be treated.

Response: Contaminated soil that is considered a hazardous waste would be accumulated onsite for less than 90 days. Hazardous waste would be removed from the facility by a licensed hazardous waste hauler and treated and disposed of at a licensed hazardous waste landfill in accordance with applicable regulations.

Data Request 130: Please explain how many trucks will be required to haul the HTF contaminated soil and whether these trucks are included in the AFC's analysis of truck trips during Project operation.

Response: Approximately one truck per quarter will be required to remove the expected amount of HTF contaminated soil. The AFC's traffic and transportation analysis included these truck trips.

Data Request 131: Please explain whether the Project includes groundwater monitoring for HTF compounds, including biphenyl and diphenyl oxide.

Response: The project will include a groundwater monitoring program during operations. The exact constituents to be monitored have not yet been determined.

Data Request 132: Please state the number of gallons of HTF that would be necessary to generate 53.4 MW.

Response: Please see Objections To Data Requests Of California Unions For Reliable Energy, Set 4, dated September 14, 2009.

Data Request 133: Please explain what measures will be taken to segregate stormwater that may contain HTF.

Response: Good housekeeping and spill prevention and monitoring will minimize the potential for HTF to mix with stormwater. In the power block stormwater will be contained in an oil water separator. In the solar fields, prompt clean up and appropriate BMPs will keep the HTF segregated from stormwater.

Data Request 134: Please clarify whether focused surveys were conducted within the Project site to identify the presence of burrows.

Response: An initial habitat assessment for burrowing owl was conducted on site per Phase I of the burrowing owl survey protocol. Phase II of the survey protocol was not implemented on the Project site as URS and CDFG biologists deemed the site unsuitable due to recent disking and actively maintained agriculture in April 2008.

Data Request 135: Please provide the Phase II and III burrowing owl survey results. Your response should include the date and time of visits including weather and visibility conditions; survey methods including transect spacing and burrow monitoring; and a description of the area(s) surveyed.

Response: According to the burrowing owl survey protocol, Phase II and Phase III surveys are not required due to the lack of suitable habitat on the Project site (see DR-134). Phase II of the protocol states, "A survey for burrows and owls should be conducted by walking through suitable habitat over the entire project site...." Phase II surveys were conducted within suitable habitat along the southern transmission line; however, no burrowing owls or burrowing owl sign were detected. No Phase III surveys were required based on the same survey protocol which states, "If the project site contains burrows that could be used by burrowing owls, then survey efforts should be directed towards determining owl presence on the site."

Data Request 135a: For any and all Phase II and III burrowing owl surveys conducted, please provide a map of burrow concentrations.

Response: Phase II and Phase III surveys were not required.

Data Request 135b: For any and all Phase II and III burrowing owl surveys conducted, please provide a discussion of any burrowing owls or burrowing owl sign detected.

Response: Phase II and Phase III surveys were not required.

Data Request 136: Please provide the anticipated schedule for the burrowing owl winter survey and provision of the Phase IV report required of the protocol.

Response: No burrowing owl or burrowing owl sign were detected; therefore, no winter surveys or burrowing owl survey report that are a part of Phase IV are required.

Data Request 137: Please provide the rationale behind the conclusion that smaller raptors (including burrowing owl) will still be able to use the site after Project grading and construction.

Response: Burrowing owl (and other raptor species) are known to perch on fences and other elevated areas to forage and to begin hunting forays as well as look out for potential predators. Please note; however, that burrowing owl are not present on the Project site, and burrowing owls have not been detected in the vicinity for several years. Regardless, the proposed offsite mitigation will benefit burrowing owl and other raptors.

Data Request 138: Please discuss the measures that will be implemented to avoid direct impacts to burrowing owls.

Response: Burrowing owls and burrowing owl sign were not detected on site or along the proposed transmission line alignment; however, clearance surveys will still be conducted prior to construction activities.

Data Request 139: Please discuss the measures that will be implemented to offset impacts to burrowing owl habitat if owls are detected once protocol surveys have been completed.

Response: Burrowing owls and burrowing owl sign were not detected on the project site or along the proposed transmission line alignment or waterline; however, clearance surveys will be conducted prior to construction activities. If owls are detected, standard BMP and protocol requirements will be followed.

Data Request 140: Please provide documentation that supports the statement in the AFC that no burrowing owls were detected during the 2005 and 2006 HCP planning process.

Response: The survey results of the 2005 and 2006 HCP planning process were obtained from the Coalinga HCP database and survey results from CDFG.

Data Request 141: Please identify the methods that were used to determine whether owls were using the burrows that were detected within the Project study area, including any visual burrow monitoring that occurred. The response should include information on the length of time spent observing burrows to minimize potential for false absence (in the event that an owl was flushed from its burrow or was foraging when the burrow was scoped).

Response: No potential burrowing owl burrows were detected.

Data Request 142: Please provide a revised Sensitive Species Locations map that accurately depicts historic burrowing owl occurrences within the Project vicinity.

Response: Please see Objections To Data Requests Of California Unions For Reliable Energy, Set 4, dated September 14, 2009.

Data Request 143: If the Applicant intends to apply for a Section 404 permit, please describe the Project component that would require such permit.

Response: Please see Objections To Data Requests Of California Unions For Reliable Energy, Set 4, dated September 14, 2009.

Data Request 144: Please describe the status of the Applicant's application to the USACE and provide a copy of any application that has been filed with USACE.

Response: No federally jurisdictional features will be impacted by Project-related activities; therefore, no application will be filed with USACE.

Data Request 145: Please describe the status of consultations between the USACE and USFWS.

Response: No federally jurisdictional features will be impacted by Project-related activities; therefore, no application will be filed with USACE.

Data Request 146: Please list the species that will be subject to Section 7 consultation between USACE and USFWS.

Response: Please see Objections To Data Requests Of California Unions For Reliable Energy, Set 4, dated September 14, 2009.

Data Request 147: Please provide any correspondence or other documentation among the Applicant, federal action agencies, and state and federal wildlife agencies regarding Section 7 consultation for the Project.

Response: Please see Objections To Data Requests Of California Unions For Reliable Energy, Set 4, dated September 14, 2009.

Data Request 148: Please state whether the Applicant intends to apply for an Incidental Take Permit under Section 10 of the ESA.

Response: The Applicant is meeting with the City of Coalinga and plans to participate in the HCP that they are currently preparing.

Data Request 149: If the Applicant intends to apply for an Incidental Take Permit, please provide the status of Applicant's Habitat Conservation Plan.

Response: The Applicant is meeting with the City of Coalinga and plans to participate in the HCP that they are currently preparing.

Data Request 150: Please clarify whether all vegetation removal (including trees) will occur during the non-breeding season.

Response: No native vegetation removal is needed on the project site. The only potential native vegetation disturbance is along the transmission line route and will be removed during the non-breeding season.

Data Request 151: Since most birds construct new nests for each breeding attempt, please explain how surveys during the non-breeding season will ensure that birds are not impacted during the breeding season.

Response: The surveys during the non-breeding season are to confirm that no active nests are present prior to clearing the vegetation. Once the vegetation is surveyed and no active nests are found, the vegetation can be cleared safely without the possibility of taking nesting birds.

Data Request 152: If vegetation and tree-clearing occurs during the non-breeding season, please discuss the Project's potential impacts on migratory birds in the subsequent breeding season.

Response: As stated by CURE in request number 151, most migratory birds construct new nests for each breeding attempt. In the subsequent breeding season (after vegetation is potentially removed during the non-breeding season for construction) these nests would be built offsite where vegetation is present, away from construction activities. Therefore, there will be no impacts to nesting migratory birds in the subsequent breeding season.

Data Request 153: If any vegetation removal will occur during the breeding season, please discuss the following:

a) How the Applicant intends to comply with the Migratory Bird Treaty Act which provides protection to most nesting bird species.
b) The vegetation types that will be removed.
c) The approximate number of trees that will be removed, by species, and the heights of the trees that will be removed.

Response: All vegetation removal will occur during the non-breeding season.

Data Request 154: Please provide the results of the 2009 rare plant surveys.

Response: The results of the 2009 rare plant surveys will be provided to the CEC, CDFG and USFWS in early October 2009 and will be available on the Docket web site.

Data Request 155: Please clarify the portions of the Project study area that were (or will be) surveyed for rare plants.

Response: This information will be provided in the rare plant survey report.

Data Request 156: Please provide any ecological evidence that helps rule out the possibility that the plant species that were detected, but that were not identified to the species level, were not special-status species.

Response: This information will be provided in the rare plant survey report that will be available on the Docket web site.

Data Request 157: Please clarify whether the Applicant considered potential Project impacts to pale yellow layia (Layia heterotricha).

Response: No impacts are anticipated as this species was not detected during the 2008 or 2009 rare plant surveys. The results of the 2009 rare plant surveys will be provided to the CEC, CDFG and USFWS soon and will be available on the Docket web site.

Data Request 158: Please clarify whether the Applicant considered potential Project impacts to the Miles' milk-vetch Astragalus didymocarpus var. milesianus).

Response: No impacts are anticipated as this species was not detected during the 2008 or 2009 rare plant surveys. The results of the 2009 rare plant surveys will be provided to the CEC, CDFG and USFWS soon and will be available on the Docket web site.

Data Request 159: Please provide a map that shows the relationship among the Pleasant Valley Preserve, the southern transmission line route, and the location of the BNLL that was detected.

Response: Please see Figure 3 from the Biological Resources Technical Report (attached) and Figure DR-49 from the docketed response to the California Energy Commission (CEC) Data Request 49.

Data Request 160: Since the Applicant's surveys have already established presence of the BNLL along the southern transmission line route, please clarify why the results of 2009 surveys will be relied on to dictate the need for monitoring and avoidance of native vegetation.

Response: The 2009 survey results came up negative for BNLL along the remainder of the transmission line alignment. Pre-construction clearance surveys and monitoring will be implemented along the southern transmission line route.

Data Request 161: Please qualify the statement that no BNLL were observed on the SJS 1&2 Project site by discussing the focused survey effort that was dedicated to the site (including number of hours spent surveying the site).

Response: As discussed in the AFC and Biological Resources Technical Report, during the April 2008 site visit with CDFG, BNLL surveys were deemed unnecessary on the Project site because it was recently tilled and partially under active orchard operations.

Data Request 162: Please provide the results of the 2009 BNLL surveys conducted for the Project.

Response: The results of the 2009 BNLL surveys will be provided to the CEC, CDFG and USFWS soon and will be available on the Docket web site.

Data Request 163: Please provide the Applicant's analysis of the Project's impacts on BNLL, including a discussion of the following:

a) the habitat associated with the BNLL that was detected,
b) the amount of potential BNLL habitat that may be impacted by the Project, and
c) the significance of Project impacts on the BNLL.

Response: Please refer to Section 3.4 of the Biological Resources Technical Report, attached.

Data Request 164: Please indicate whether the Applicant intends to implement a raven control plan to minimize increased raven predation on the BNLL (and other sensitive wildlife species) resulting from the Project.

Response: A raven plan is not necessary as there are no sensitive species on site which ravens can prey upon.

Data Request 165: Please provide a discussion of the Project's impacts on migratory birds traveling through the Pacific Flyway.

Response: Please see Objections To Data Requests Of California Unions For Reliable Energy, Set 4, dated September 14, 2009.

Data Request 166: Please state whether the Applicant's consultant has conducted any waterfowl surveys within the Project study area during the times of year when waterfowl are most abundant in the central valley (i.e., migration and winter).

Response: Waterfowl surveys are not necessary as there is no permanent standing water or other suitable habitat on site.

Data Request 167: Please quantify the AFC's estimate of 10 to 430 birds (killed) by providing the unit of measurement (e.g., per mile) associated with the estimate.

Response: The AFC and the Biological Resources Technical Report state, "Based on previous studies (e.g., McCrary et al 1986, Koops 1987), a conservative estimate of between 10 and 430 birds (all bird species) ***per year*** could be killed from collisions with the proposed transmission line associated with the Project, or with buildings or other structures greater than 90 feet high."

Data Request 168: Please clarify whether bird flight diverters will be installed on transmission lines associated with the Project.

Response: Bird diverters are identified as a mitigation measure in the Biological Resources Technical Report, attached.

Data Request 169: Please clarify whether Project transmission line poles will encourage or discourage perching and nesting of predatory bird species.

Response: Many predatory bird species are known to perch on fences and other elevated areas to forage and to begin hunting forays as well as look out for potential predators (Sibley 2001). The transmission line poles are anticipated to encourage perching by raptors; however, nesting on transmission line poles is uncommon for many species of raptor detected in the Project vicinity. Red-tailed hawk is the only raptor species detected in the area that may utilize the transmission line poles for nesting substrate. Barn owl and long-eared owl may use the transmission line poles if abandoned raven or hawk nests exist but it is unlikely (Sibley 2001).

Data Request 170: Please identify the habitats that may support special-status species that will be spanned by transmission poles.

Response: Section 5.6.1.2.3 of the AFC states, "Sensitive habitats are those that support sensitive plant or animal species, or unique vegetation communities considered rare within the region. No sensitive habitats are present within the Project study area."

Data Request 171: Please cite the protocol used for the small mammal trapping study.

Response: Please refer to the small mammal trapping report that was provided as an appendix to the biological resource technical report.

Data Request 172: Please provide the objectives and justification for the small mammal trapping efforts.

Response: Please refer to the small mammal trapping report that was provided as an appendix to the biological resource technical report.

Data Request 173: Please provide justification for why only the western portions of the transmission line routes were sampled.

Response: Please refer to the small mammal trapping report that was provided as an appendix to the biological resource technical report.

Data Request 174: Please describe and quantify the habitat variables associated with each trap site.

Response: Please refer to the small mammal trapping report that was provided as an appendix to the biological resource technical report.

Data Request 175: Please clarify whether the black-tailed jackrabbit is a species of special concern impacted by the project, as indicated in the AFC.

Response: The species detected in the Project vicinity (Lepus californicus) is not the subspecies of special concern (Lepus californicus bennetti) which is found near the coast of southern California.

Data Request 176: Please provide information on the Applicant's proposed efforts to restore habitat, such that their likely effectiveness can be evaluated.

Response: The Applicant is planning to participate in the City of Coalinga HCP that is currently under development.

Data Request 177: Because the AFC states that the Project site is not near a perennial waterbody and that glint and glare impacts are anticipated to be similar to a body of water to pilots in aircraft flying over the site, please provide a discussion of the Project's glint and glare impacts on birds that may require stopover sites during migration.

Response: Observations of migratory birds suggest that because they encounter a variety of unfamiliar habitats with unpredictable suitability during their migrations, migratory birds will assess alternative habitats at a potential stopover site before staying for a length of time (Moore et al. 2005). Therefore, if a bird were to perceive the Project site as a body of water, because there is no riparian vegetation or other suitable habitat near the Project site, the bird would move on to the next potential site. It is also unlikely that birds would use the Project site as a stopover site because it is not near a perennial water body or a known migratory bird stopover site. They would be more likely to use the riparian habitats associated with the California aqueduct or Los Gatos Creek.

References:

Moore, F.R., M.S. Woodrey, J.J. Buler, S.Woltmann, and T.R. Simons. 2005. Understanding the Stopover of Migratory Birds: A Scale Dependent Approach. USDA Forest Service Gen. Tech. Rep. PSW-GTR-191. 2005.

Sibley, D.A. 2001. The Sibley Guide to Bird Life and Behavior. Chanticleer Press, Inc. New York, NY.

Data Request 178: Please specify the biological resources that will be monitored and the contents of the associated compliance reports. In your response please include:

a) The frequency and duration of monitoring and reporting.
b) Monitoring methods.
c) Success criteria and triggers for additional mitigation if success criteria are not met.

Response: Construction monitoring will occur for any species that is detected within the Project area during pre-construction surveys. Other monitoring programs may be identified during the City of Coalinga HCP process that the Applicant is planning to participate in. Details will be provided as available.

Also please see Objections To Data Requests Of California Unions For Reliable Energy, Set 4, dated September 14, 2009.

Data Request 179: Please provide a discussion of all proposed off-site habitat mitigation and habitat improvement or compensation, and an identification of contacts for compensation habitat and management.

Response: The Applicant is planning to participate in the City of Coalinga HCP that is currently under development.

Data Request 180: Please discuss how the mortality hazards associated with HTF contamination and other discharges held in the evaporation pond will be minimized for waterfowl and shorebirds that may use it for resting, foraging, and nesting.

Response: Please see the Docketed response to CEC Data Request #44.

Data Request 181: Please clarify whether the Applicant's consultant conducted protocol surveys for the Swainson's hawk.

Response: There is no protocol for Swainson's hawk; however, one was detected along the southern transmission route during the 2009 surveys.

Data Request 182: If protocol surveys for Swainson's hawk were conducted, please provide the methods that were used to conduct the surveys.

Response: There is no survey protocol for Swainson's hawk. No focused surveys were conducted or necessary as one was detected along the southern transmission route during the 2009 surveys.

Data Request 183: If protocol surveys for Swainson's hawk were not conducted, please provide the anticipated schedule for conducting the surveys.

Response: There is no survey protocol for Swainson's hawk. No focused surveys will be conducted or are necessary as one was detected along the southern transmission route during the 2009 surveys.

Data Request 184: Please clarify why Swainson's hawk nest locations were not included on the "Sensitive Species Locations" map provided in the AFC (i.e., Figure 5.6-3).

Response: There were no Swainson's hawk nests detected during the 2008 surveys and none were identified as such in the CNDDB maps utilized when preparing the AFC. However, the Applicant recently discovered that two nest sites were described in the CNDDB report.

Data Request 185: Please provide a revised "Sensitive Species Locations" map that depicts at least the two active Swainson's hawk nest locations documented by DFG within 10 miles of the Project site.

Response: The two potentially active Swainson's hawk nest locations that are identified in the most recent CNDDB report were detected in 2005 and are located north of Huron near the California Aqueduct. These locations are northeast of the Project site and not anticipated to be impacted by the SJS 1&2 Project. Please see the CNDDB for these locations.

Data Request 186: Please provide information on any correspondence between the Applicant and the CDFG related to the Swainson's hawk, including any needed studies and the presence of more recent nest records (that have yet to be entered into the CNDDB).

Response: We will provide the requested correspondence as it occurs.

Data Request 187: Please quantify the amount of potential Swainson's hawk foraging habitat that will be impacted by the Project.

Response: Please refer to Section 5.6 of the AFC. Mitigation Measure BIO-2 states, "Impacts to large raptor species (golden eagle, red tailed hawk, barn owl, great-horned owl) are anticipated to be significant due to the permanent loss of 640 acres of raptor foraging habitat. A total of 1.3 acres of temporary loss of raptor foraging habitat would be less than significant because the habitat will be returned to its original land use that currently supports foraging for raptors." Swainson's hawk is included in the classification of "large raptor species".

Data Request 188: Please specify any measures that will be implemented to mitigate potential impacts to Swainson's hawk nest sites and foraging habitat.

Response: Please see Section 5.6.4.1.1.2 of the AFC.

Data Request 189: Please characterize the Applicant's referenced disturbance within the Valley Saltbrush Scrub habitat present in the Project study area by discussing the features that make it disturbed (e.g., roads, recent agricultural activity, off-road vehicle use) and quantifying the level(s) of disturbance.

Response: Please see Objections To Data Requests Of California Unions For Reliable Energy, Set 4, dated September 14, 2009.

Data Request 190: Please provide a more thorough description of the vegetation present along Zapato Chino Creek within the Applicant's Project study area and justify the inclusion of bank vegetation in the Non-Vegetated Channel community.

Response: Please see Objections To Data Requests Of California Unions For Reliable Energy, Set 4, dated September 14, 2009.

Data Request 191: Please characterize the vegetation along the creek bank in the Applicant's Project study area such that its ecological values can be inferred. In particular, please provide:

a) The height range of tamarisk trees.
b) The height range of cottonwood trees.
c) The relative abundance of tamarisk trees to cottonwood trees.
d) The density and distribution of trees along the creek banks.
e) The approximate minimum, maximum, and mean distance trees extend from the bank.

Response: Please see Objections To Data Requests Of California Unions For Reliable Energy, Set 4, dated September 14, 2009.

Data Request 192: Please provide the minimum mapping unit used by the Applicant to map vegetation communities within the Project study area.

Response: The minimum mapping unit used to map vegetation communities was 1/10 of an acre.

Data Request 193: Please clarify the vegetation community present (baseline) at the following locations within the Project site:
Lat 36.136411°, Lon –120.221974°
Lat 36.135362°, Lon –120.222403°
Lat 36.135439°, Lon –120.220004°
Lat 36.135534°, Lon –120.224342°
Lat 36.136587°, Lon –120.226192°
Lat 36.132468°, Lon –120.221586°
Lat 36.123411°, Lon –120.229823°
Lat 36.124231°, Lon –120.227991°
Lat 36.125118°, Lon –120.227346°
Lat 36.125115°, Lon –120.228099°

Response: All of the locations fall within the Project site, which is identified as agricultural use.

Data Request 194: Please describe the methods used by the Applicant to characterize the vegetation and habitat for the southern transmission line alignment given "general" plant surveys had not yet been performed when the AFC was submitted.

Response: The results of the 2009 rare plant surveys will be provided to the CEC, CDFG and USFWS soon and will be available on the Docket web site.

Data Request 195: Please provide the results of focused trapping efforts for the San Joaquin antelope squirrel or provide the schedule for their completion.

Response: Trapping is not necessary to detect this species. Additionally, surveys for San Joaquin antelope squirrel were conducted concurrent with BNLL surveys, as described in the AFC and the Biological Resources Technical Report.

Data Request 196: Please provide a discussion of potential Project impacts to the San Joaquin antelope squirrel, including the amount of suitable habitat that may be impacted.

Response: No impacts are anticipated to habitat as the species was not detected.

Data Request 197: Please discuss any measures that will be implemented to minimize and mitigate impacts to the San Joaquin antelope squirrel, including whether compensation will be provided for impacts to the species' habitat.

Response: Mitigation for impacts to potential kit fox habitat will also provide mitigation for potential impacts to San Joaquin antelope squirrel habitat.

Data Request 198: Please clarify the portion(s) of the Project study area covered by the Applicant's jurisdictional waters delineation.

Response: Please see the Biological Resources Technical Report, attached. Figures 4A-4C provide the results of the delineation.

Data Request 199: If the Applicant's jurisdictional waters delineation does not encompass the entirety of the Project study area, please provide wetland delineations for all areas to be impacted by the Project.

Response: All jurisdictional areas within the project area have been delineated.

Data Request 200: Please provide a copy of all correspondence with the U.S. Army Corps of Engineers regarding potential wetlands within the Project study area.

Response: No impacts to jurisdictional waters are anticipated, therefore there is no need to correspond with the USACE.

Data Request 201: Please clarify the Project's impacts to San Joaquin kit fox habitat, both within the Project site and along each proposed transmission line route, and specify whether the proposed habitat compensation is intended to mitigate impacts to habitat in both areas.

Response: Kit fox have been recorded within the vicinity up to 1999. None have been recorded since then based on the most current data available from CNDDB and recent CDFG surveys. Impacts to kit fox habitat will be addressed in the City of Coalinga HCP in which the Applicant is planning to participate.

Data Request 202: Please clarify how surveyors concluded potential kit fox dens were not active as opposed to not occupied (when inspected).

Response: One potential kit fox den was detected during the 2008 surveys north of Jayne Avenue in the northern transmission route survey area (the northern route option has since been eliminated). It was determined that this den was most likely a badger den because a badger body was found within 100 feet of the den. This den is not within the Project study area (northern transmission route was eliminated), and no other potential kit fox dens or sign were detected during the 2008 and 2009 surveys.

Data Request 203: Please identify the other species that could have created (or used) the "potential" kit fox dens that were detected.

Response: No potential kit fox dens were detected within the Project study area (see response to number 202, above).

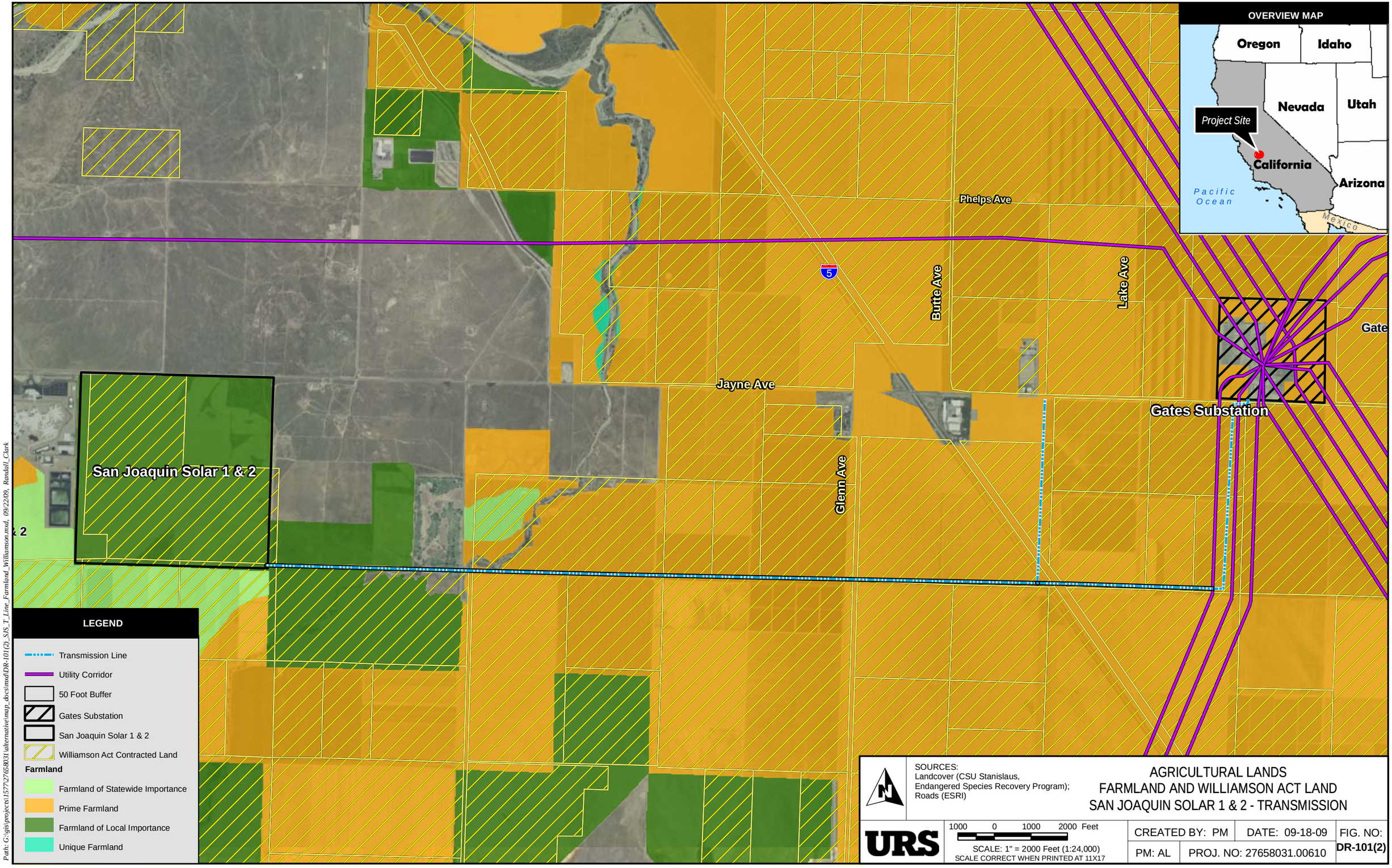
Data Request 204: Please state how the Applicant's proposed 1.1:1 mitigation for impacts to San Joaquin kit fox was derived.

Response: This ratio was based on past projects that occurred on agricultural lands that required the 1.1:1 ratio, as discussed in the AFC and Biological Resources Technical Report.

Data Request 205: Please explain how the Applicant's proposed 1.1:1 mitigation ratio is consistent with other CEC-permitted projects located on active agricultural lands within a landscape also dominated by agricultural lands.

Response: This ratio was based on past projects that occurred on agricultural lands that required the 1.1:1 ratio, as discussed in the AFC and Biological Resources Technical Report.

ATTACHMENTS



SOURCES:
Landcover (CSU Stanislaus, Endangered Species Recovery Program);
Roads (ESRI)

AGRICULTURAL LANDS
FARMLAND AND WILLIAMSON ACT LAND
SAN JOAQUIN SOLAR 1 & 2 - TRANSMISSION

URS

1000 0 1000 2000 Feet
SCALE: 1" = 2000 Feet (1:24,000)
SCALE CORRECT WHEN PRINTED AT 11X17

CREATED BY: PM	DATE: 09-18-09	FIG. NO:
PM: AL	PROJ. NO: 27658031.00610	DR-101(2)

Path: G:\gis\projects\27727658031\alternative\map_docs\mxd\DR-101(2)_SJS_T_Line_Farmland_Williamson.mxd, 09/22/09, Randall_Clark

OVERVIEW MAP

LEGEND

Phelps Ave

Butte Ave

Lake Ave

Gates Substation

Jayne Ave

5

Glenn Ave

San Joaquin Solar 1 & 2

LEGEND

- Transmission Line
- Utility Corridor
- 50 Foot Buffer
- Gates Substation
- San Joaquin Solar 1 & 2
- Field crops
- Vineyards/Orchards

SOURCES:
Landcover (CSU Stanislaus, Endangered Species Recovery Program);
Roads (ESRI)

AGRICULTURAL LANDS
FIELD CROPS AND VINEYARDS/ORCHARDS
SAN JOAQUIN SOLAR 1 & 2 - TRANSMISSION LINE

URS

1000 0 1000 2000 Feet

SCALE: 1" = 2000 Feet (1:24,000)
SCALE CORRECT WHEN PRINTED AT 11X17

CREATED BY: PM	DATE: 09-18-09	FIG. NO: DR-106
PM: AL	PROJ. NO: 27658031.00610	

Path: G:\gis\projects\15772\27658031\alternative\map_docs\mxd\DR-106_SJS_T_Line_Landuse_Crop_vs_Orchards.mxd, 09/22/09, Randall_Clark

New Permits Issued

Report Date Range : 01/01/2007 to 04/30/2009

Class	Permit #	Type of Permit	Date Issued	Valuation	# of Units	Zoning	Census	APN	Job Address	Owner Contractor
434	0611-001	Addition to home Additions	5/15/2008	76,000.48	0.00	R-1	80.00	072-113-04	258 E. Birch St.	Jesus & Annie Juarez
434	0611-006	New Addition and Remodel	1/8/2007	125,496.00	0.00	R/1/PD	81.00	070-112-09 S	190 PORTOLA CT	Jeffery Allen & Michelle Jolie
102	0611-016	2619 s.f. SFH New	2/1/2007	250,411.90	0.00	R-1	5451		935 Merlot Way	Clyde Miles Const
102	0611-018	S.F.R. New Residential -	2/1/2007	179,741.10	0.00	R-1	5451		864 Petite Sirah Lane	Clyde Miles Const.
102	0611-019	S.F.R. New Residential -	2/1/2007	230,408.90	0.00	R-1			874 Petite Sirah Lane	Clyde Miles Const.
102	0611-020	S.F.R. New Residential -	2/1/2007	237,990.50	0.00	R-1			955 Merlot Way	Clyde Miles Const.
102	0611-021	S.F.R New Residential -	2/1/2007	312,908.50	0.00	R-1			945 Merlot Way	Clyde Miles Const.
102	0611-022	S.F.R New Residential -	2/1/2007	250,411.90	0.00	R-1			925 Merlot Way	Clyde Miles Const.
102	0611-023	S.F.R. New Residential -	2/1/2007	204,368.50	0.00	R-1	5451		865 Petite Sirah Lane	Clyde Miles Const.
102	0611-024	S.F.R New Residential -	7/6/2007	279,127.50	0.00	R-1			855 Petite Sirah Lane	Clyde Miles Const.
434	0611-034	Shower remodel, Carpet,	3/27/2008	3,000.00	0.00		80.00	072-085-14	250 CALIFORNIA ST	Israel P & Mercedes M
437	0611-035	Addition to existing sign	4/26/2007	3,000.00	0.00			072-210-21 S	155 S. 5th St.	Reed Martin
434	0612-014	Build a Storage Building	2/7/2007	1,350.00	0.00		81.00	071-155-08 S	396 HOOVER ST	Efrain C & Rosa E.
328	0612-015	Build a new 14,820sf	1/17/2008	889,200.00	0.00	C-M		072-200-01 S	265 W. Forest	Interra Development
434	0701-002	Install a new electric panal	1/2/2007	1,500.00	0.00		81.00	071-156-07 S	384 COOLIDGE ST	Miguel A Diaz
322	0701-004	Interior Remodel New Non-	1/9/2007	40,000.00	0.00			071-085-02S	600 E. Elm Ave.	Anwar and Fatima Javed
434	0701-006	New Roof Additions and	1/12/2007	8,000.00	0.00		80.00	072-136-08	155 2nd St	Magaly Gonzales
102	0701-007	S. F. Home New Residential -	1/17/2007	185,234.80	0.00	R-1			308 San Ramon Court	Terry Otis Construction, Inc.
434	0701-008	Shade type Car Port in	1/22/2007	2,564.57	0.00			072-191-10 S	664 N. Monterey	John & Dee Greffith
434	0701-009	Re hab House after letter to do	1/22/2007		0.00		80.00	072-124-04	261 Durian Ave.	C Warren & Natalie Ayers
328	0701-011	Re Roof Units 45 to 48 New	1/23/2007	8,300.00	0.00			071-020-53 S	552 E. Glenn	TARA GLENN
328	0701-012	Re Roof Units 53 to 56 New	1/23/2007	6,050.00	0.00			071-020-53 S	554 E Glenn	TARA GLENN
434	0701-013	Install new A/C unit Additions	1/23/2007	8,000.00	0.00			071-145-04 S	360 Roosevelt St.	Lisa Annette DeLeon
102	0701-014	1843 sf. SFR New Residential	4/4/2007	164,862.50	0.00	R-1			344 San Ramon Court	OTIS CONSTRUCTION
102	0701-015	1843 s.f. - SFR New	1/23/2007	164,862.50	0.00	R-1			273 San Ramon Court	OTIS CONSTRUCTION
102	0701-017	1557 s. f. - S.F.H. New	1/31/2007	142,914.60	0.00	R-1			155 Adobe Court	Terry Otis Construction, Inc.
434	0701-018	Re plumb btthroom, Install	1/24/2007	7,000.00	0.00			072-136-11	373 1/2 E. Forest	Jose C Macias
434	0701-019	Remove old roof sheet roof	1/25/2007	12,000.00	0.00		81.00	071-151-16 S	111 COOLIDGE ST	William A & Debra A Morris
O/S Demo C	0701-020	Demo Service Station Out of	1/26/2007		0.00			072-133-10	285 E Elm Ave.	Howard C Amron
O/S C	0701-021	Install a 100 amp panal for	1/29/2007	2,000.00	0.00			070-120-08ST	116 Gale Ave.	AT&T TURNUPSEED
ELECTRIC										
434	0702-002	Rebuild a fire dammaged home	2/5/2007	20,000.00	0.00		79.00	071-281-10 S	1448 SPRINGBROOK ST	Hector M Espinoza
327	0702-003	Build a new Commerical	8/4/2008	231,488.10	0.00	C-M		072-200-03 S	183 E. Polk St.	Interra Vision Development
O/S C	0702-004	Soil Boring 3 to 15 ft. deep for	2/7/2007		0.00			071-117-03 S	10 Washington ST.	TETRA TECH

New Permits Issued

Report Date Range : 01/01/2007 to 04/30/2009

Class	Permit #	Type of Permit	Date Issued	Valuation	# of Units	Zoning	Census	APN	Job Address	Owner Contractor
102	0702-006	1912 s.f. Single Family Home	2/7/2007	174,983.20	0.00	R-1			953 Chianti Circle	The Hofmann Company
102	0702-007	2831 s.f. Single Family Home	2/7/2007	250,258.60	0.00	R-1			943 Chianti Circle	The Hofmann Company
102	0702-008	3075 s.f. Single Family Home	2/7/2007	271,822.80	0.00	R-1			933 Chianti Circle	The Hoffmann Company
102	0702-009	2447 s.f. Single Family Home	2/7/2007	218,386.60	0.00	R-1			923 Chianti Circle	The Hofmann Company
102	0702-010	3075 s.f. Single Family Home	2/7/2007	271,822.80	0.00	R-1			913 Chianti Circle	The Hofmann Company
102	0702-011	1550 s.f. Single Family Home	2/7/2007	141,093.50	0.00	R-1			903 Chianti Circle	The Hofmann Compnay
102	0702-012	1912 s.f. Single Family Home	2/7/2007	174,983.20	0.00	R-1			893 Chianti Circle	The Hofmann Compmay
102	0702-013	3075 s.f. Single Family Home	2/7/2007	271,822.80	0.00	R-1			883 Chianti Circle	The Hofmann Compnay
102	0702-014	2831 s.f. Single Family Home	2/7/2007	250,258.60	0.00	R-1			873 Chianti Circle	The Hofmann Company
102	0702-015	3075 s.f. Single Family Home	2/7/2007	271,822.80	0.00	R-1	5451		863 Chianti Circle	The Hofmann Company
102	0702-016	1550 s.f. Single Family Home	2/7/2007	141,093.50	0.00	R-1	5451		853 Chianti Circle	The Hofmann Compnay
102	0702-017	3075 s.f. Single Family Home	2/7/2007	271,822.80	0.00	R-1	5451		843 Chianti Circle	The Hofmann Company
102	0702-020	1320 sf. S.F.R. New	2/14/2007	119,766.00	0.00	R-1			101 Trotter Street	Oakfield, LLC
102	0702-021	1617 sf. S.F.R. New	2/14/2007	145,972.20	0.00	R-1			107 Trotter	Oakfield, LLC
102	0702-022	1320 SF. S.F.R. New	2/14/2007	119,766.00	0.00	R-1			150 Palamino Street	Oakfield, LLC
102	0702-023	1320 sf. S.F.R. New	2/14/2007	119,766.00	0.00	R-1			138 Arabian Street	Oakfield, LLC
102	0702-024	1802 sf. S.F.R. New	2/14/2007	161,327.20	0.00	R-1			113 Trotter Street	Oakfield, LLC
434	0702-026	Reroof a SFH Additions and	2/14/2007	3,600.00	0.00			072-068-07	117 Walnut Ave.	Alex Smith
O/S C	0702-027	Install hand wash, Mop, Dish	2/14/2007	3,000.00	0.00			083-123-01	608 E. Polk	Jose G Duarte
434	0702-029	Elect. Panal change out 125	2/16/2007	1,700.00	0.00		80.00	071-044-19 S	1404 NEVADA ST	David K Maynard
434	0702-030	Build a Patio Cover onto his	2/20/2007	3,500.00	0.00		81.00	083-332-06 S	155 CHENEY LN	Sotero & Linda Quintanilla
434	0702-031	Install new windows, Replumb	2/22/2007	25,800.00	0.00		80.00	072-074-08	207 MONROE ST	Sulejmam Tokmo
434	0702-032	Install a solar power System	2/22/2007	25,000.00	0.00		81.00	070-111-29 S	308 SAN SIMEON LN	Kurt L & Mary T Shults
102	0702-033	2639 sf SFR New Residential	2/23/2007	224,340.80	0.00	R-1			272 San Ramon Court	OTIS CONSTRUCTION
434	0702-035	Demo Additions and	2/28/2007	0.00	0.00		81.00	071-200-18 S	500 HAYES ST	Mark Kalemos
434	0702-036	Remodel Fire Damage, Rewire	3/1/2007	55,000.00	0.00		81.00	071-200-18 S	500 HAYES ST	Mark Kalemos
434	0703-003	Install new Windows, Plaster	3/7/2007	15,000.00	0.00			083-131-14	165 E Houston	Donald Thiesen
434	0703-004	Install 4 ABS sewer line	3/9/2007	400.00	0.00		81.00	071-212-03 S	436 ROOSEVELT ST	Joy Winthrop
434	0703-006	Install New Roof Additions	3/12/2007	10,000.00	0.00			083-131-14	165 E Houston	Donald Thiesen
434	0703-007	Install a new Roof, Over new	3/13/2007	10,000.00	0.00		80.00	072-052-16 S	385 WASHINGTON ST	Marcial Lopez
434	0703-008	Install a new patio 12' x 23'	3/13/2007	2,500.00	0.00		81.00	071-151-19 S	240 HAYES ST	Paul W & Ala Mae
O/S C	0703-009	Install a power panel for cable	3/14/2007	3,000.00	0.00				366 Juniper Ridge Boulevard	Comcast Cable
O/S C	0703-010	Install a power panel for cable	3/14/2007	3,000.00	0.00				812 Chardonnay Lane	Comcast Cable

New Permits Issued

Report Date Range : 01/01/2007 to 04/30/2009

Class	Permit #	Type of Permit	Date Issued	Valuation	# of Units	Zoning	Census	APN	Job Address	Owner	Contractor
434	0703-011	Building Addition Additions	3/16/2007	41,417.00	0.00		81.00	071-155-10 S	383 COOLIDGE ST	Robert Montoya Jr.	
102	0703-012	2200 sf SFR New Residential	4/4/2007	204,521.30	0.00	R-1			3006 Carmele Court	OTIS CONSTRUCTION	
434	0703-013	Build a new Patio Cover	3/26/2007	9,000.00	0.00		0.00	083-344-09 S	1821 ROCKVIEW WAY	Jesus Rios	
102	0703-014	2101 sf. S.F.R. New	3/30/2007	145,972.20	0.00	R-1	81		161 Pinto Street	OAKFIELD, LLC	
102	0703-015	2286 sf. S.F.R. New	3/30/2007	161,327.20	0.00	R-1			144 Arabian Street	OAKFIELD, LLC	
102	0703-016	S.F.R. New Residential -	3/30/2007	119,766.00	0.00	R-1	5246		131 Arabian Street	OAKFIELD, LLC	
102	0703-017	2101 sf. S.F.R. New	3/30/2007	145,972.20	0.00	R-1	5246		102 Sacramento Street	OAKFIELD, LLC	
434	0703-018	Change out Panal on a house	3/28/2007	3,000.00	0.00			072-153-10	305 E. Polk	Sergio & Margarita D Parra	
O/S C	0703-019	Interior Remodel of the	4/6/2007	5,000.00	0.00			083-080-77 S	193 W. Polk	Donlon H & Agnes H	
434	0703-020	New in ground Pool Additions	3/30/2007	25,600.00	0.00			000-000-00	2011 Hacienda	Wanda Johnson	
434	0704-001	Car Port of 432sf. Additions	4/4/2007	8,000.00	0.00		80.00	072-040-08 S	414 MADISON ST	Elmer D & Shirley M Wright	
437	0704-002	Garage/ Shop Expansion	4/11/2007	20,000.00	0.00	R-H	80.00	072-243-08 S	273 HILL VIEW LN	Tito & Linda Balling	
434	0704-003	Install A new Roof Additions	4/9/2007	9,190.00	0.00		80.00	072-135-10	385 E ELM AVE	Wilma Maxine Gentry	
434	0704-004	Add a new Patio Cover 440	4/9/2007	9,000.00	0.00		81.00	071-154-07 S	284 COOLIDGE ST	Gary S Deike	
434	0704-005	Change Out A/C Unit	4/9/2007	4,000.00	0.00		80.00	083-232-13 S	450 W SACRAMENTO ST	Miguel A & Maria F Torres	
434	0704-007	Re-roof Additions and	4/13/2007	5,000.00	0.00		80.00	071-061-06 S	445 COLLEGE AVE	David & Debra Holland	
434	0704-009	Install a new A/C System	4/16/2007	6,245.00	0.00		80.00	083-270-01 S	575 S MONTEREY AVE	Jane A Harper	
434	0704-010	Replumb, Rewire, New panal,	6/14/2007	18,000.00	0.00		80.00	071-105-02 S	445 COLLEGE AVE	Bill Hanson	
434	0704-011	Re Roof Additions and	5/17/2007	6,800.00	0.00	R-1	80.00	072-074-12	250 JACKSON ST	Mark Kalemos	
102	0704-012	2101 sf. S.F.R. New	4/19/2007	145,972.20	0.00	R-1	5246		149 Palamino	OAKFIELD, LLC	
102	0704-013	S.F.R. New Residential -	4/30/2007	119,766.00	0.00	R-1	81		150 Pinto St.	OAKFIELD, LLC	
102	0704-014	S.F.R. New Residential -	4/30/2007	119,766.00	0.00	R-1	81		750 Mustang Way	OAKFIELD, LLC	
438	0704-015	New Car port of 384 SF	4/19/2007	10,000.00	0.00		81.00	072-155-24	170 E HAWTHORNE ST	Bruce Andrew & Karla Kay	
434	0704-016	Re-Roof Additions and	4/19/2007	8,900.00	0.00		80.00	071-064-02 S	435 HARVARD AVE	Rick Spradling	
434	0704-018	Temp power Additions and	4/30/2007	0.00	0.00				943 Chianti Circle	The Hofmann Company	
434	0704-019	Temp Power Additions and	4/30/2007	0.00	0.00	R-1			893 Chianti Circle	The Hofmann Company	
434	0704-020	Temp Power Additions and	4/30/2007	0.00	0.00		5451		853 Chianti Circle	The Hofmann Company	
438	0704-021	New Patio cover 336 sf.	4/23/2007	8,900.00	0.00	R-3	81.00	072-155-10	185 IVY AVE	Valentina V Lee	
434	0704-022	Replace Elect Panal, AC Unit	4/24/2007	20,000.00	0.00		80.00	071-105-02 S	445 COLLEGE AVE	Ben Hanson	
434	0704-024	Re- Roof Permit Additions	4/30/2007	9,000.00	0.00		80.00	071-051-12 S	444 STANFORD AVE	Ramiro & Maria M Benitez	
434	0704-025	Re-plumb sewer line Additions	4/30/2007	3,000.00	0.00		80.00	072-085-09	130 TYLER ST	Maria Hernandez	
434	0705-003	Additions and Alterations -	5/4/2007	8,400.00	0.00		81.00	071-161-02 S	1134 E ELM AVE	Frank J & Susan K	
434	0705-004	Re-Roof Additions and	5/4/2007	6,190.00	0.00		80.00	071-044-24 S	302 DARTMOUTH AVE	Walter W & Darleen Ann	

New Permits Issued

Report Date Range : 01/01/2007 to 04/30/2009

Class	Permit #	Type of Permit	Date Issued	Valuation	# of Units	Zoning	Census	APN	Job Address	Owner	Contractor
434	0705-005	Re-Roof Additions and	5/10/2007	9,000.00	0.00		80.00	083-182-04 S	212 S COALINGA ST	Chris M Bjarnson	
328	0705-006	740 sq. ft. warehouse,	5/7/2007	20,000.00	0.00		81.00	072-161-18	249 S 4TH ST	Mark Lindsey	
437	0705-007	Owner installed addition of a	5/7/2007	6,000.00	0.00		81.00	083-142-17	311 E SACRAMENTO ST	Roberto Sarabia	
O/S Demo C	0705-008	Electrical for Lift Station	5/8/2007		0.00				1308 E Polk	City of Coalinga	
434	0705-009	264 SF. , Convert a Garage	5/8/2007	15,000.00	0.00	R-1	80.00	000-000-00	217 S COALINGA ST	Stephen S & Heidi A Garza	
434	0705-011	Re-roof Additions and	5/10/2007	10,000.00	0.00		80.00	072-071-03 S	365 MADISON ST	William W & Mari E Lair	
434	0705-012	Install a patio cover at the front	5/9/2007	9,000.00	0.00		81.00	083-303-05 S	335 WALNUT AVE	Robert D & Deanna E	
434	0705-013	Pool Re-Plaster and Remodel	5/15/2007	15,000.00	0.00		80.00	071-044-24 S	302 DARTMOUTH AVE	Tim Billingsley	
102	0705-014	2286 sf. S.F.R. New	6/5/2007	161,327.20	0.00	R-1			155 Pinto	OAKFIELD, LLC	
434	0705-016	Re-Roof Additions and	5/14/2007	9,000.00	0.00		80.00	072-194-03 S	425 ADAMS ST	Constance Burns	
434	0705-017	Install a Hot Tub unit, and	5/14/2007	6,000.00	0.00				316 Janay Ct.	Wendell Powell	
434	0705-018	New Roof Additions and	5/14/2007	8,000.00	0.00		80.00	072-194-03 S	1405 NEVADA ST	Brad Mitchel	
434	0705-019	Temp Power Panel for sales	5/15/2007	2,000.00	0.00				137 Adobe Court - Temp	Otis Construction	
434	0705-020	Re-Roof Additions and	5/15/2007	7,000.00	0.00		80.00	083-181-13 S	217 S JOAQUIN ST	James M & Lorene E Dihel	
434	0705-021	Gas Line Replacement	5/16/2007	0.00	0.00		80.00	072-085-09	130 TYLER ST	Maria Hernandez	
434	0705-024	Install a new A/C unit	5/18/2007	8,000.00	0.00		80.00	072-072-11 S	376 JACKSON ST	Alfredo A & Juanita T Urbina	
434	0705-025	Restore Fire Damage portion	11/19/2007	30,000.00	0.00		81.00	083-134-10	264 E HOUSTON ST	Paul L & Patsy Jo	
434	0705-027	Install New HVAC Additions	5/22/2007	5,500.00	0.00		80.00	072-072-11 S	376 JACKSON ST	Alfredo A & Juanita T Urbina	
434	0705-028	Panel change out Additions	5/23/2007	2,500.00	0.00		81.00	071-211-10 S	547 ROOSEVELT ST	Laurie L Baker	
438	0705-029	two car garage 400 SF.	6/5/2007	20,000.00	0.00		81.00	071-154-04 S	248 COOLIDGE ST	Wanda Sue Trippel	
434	0705-030	New Roof Additions and	5/25/2007	8,000.00	0.00		80.00	083-181-04 S	409 CINDY LN	Kathleen D Perez	
434	0705-031	Re-roof Additions and	5/30/2007	7,000.00	0.00		81.00	071-253-01 S	596 KIMBERLY PL	Gary H & Maureen Mahoney	
434	0705-032	Re-Roof and reframe front	5/30/2007	12,000.00	0.00		80.00	071-044-02 S	385 CAMBRIDGE AVE	Shane D & Katie A Minor	
434	0706-001	Re-roof Additions and	6/1/2007	1,000.00	0.00		80.00	071-073-07 S	204 YALE AVE	Samuel M & Gloria Bravo -	
434	0706-002	Replace 1/2 the roof of the	6/4/2007	5,000.00	0.00			072-061-02 S	385 W ADAMS ST	Shirley A Wolfe	
102	0706-003	New Single Family Home,	8/2/2007	309,228.67	0.00		81.00	071-164-06 S	850 FOLSOM ST	Richard G & Shelly R	
434	0706-004	Install A new sewer line	6/5/2007	1,000.00	0.00		80.00	071-105-03 S	435 COLLEGE AVE	Donna J Pressey	
327	0706-006	Install a new Mexican	6/7/2007	60,480.00	0.00			72-131-22	133 E Elm Ave	Tecubaya Mexican Icecream	
434	0706-007	Replace Main Electric Panel	6/6/2007	1,200.00	0.00		81.00	083-133-01	204 E PLEASANT ST	Aurelio Aiorato	
434	0706-008	Roof Replacement Additions	6/13/2007	10,000.00	0.00		80.00	071-041-33 S	445 CAMBRIDGE AVE	William C & Daisy L Johnson	
434	0706-009	Re-Roof Additions and	6/6/2007	5,000.00	0.00				524 - 530 E. Polk	Dennis Drelick	
434	0706-010	Install a New Roof Additions	6/6/2007	5,000.00	0.00		80.00	071-101-01 S	629 COLLEGE AVE	Wyant & Robin Leach	
434	0706-011	Temp Power Additions and	6/11/2007	100.00	0.00				868 Cabernet Way	The Hofmann Company	

New Permits Issued

Report Date Range : 01/01/2007 to 04/30/2009

Class	Permit #	Type of Permit	Date Issued	Valuation	# of Units	Zoning	Census	APN	Job Address	Owner	Contractor
434	0706-014	Install a new swimming pool	6/8/2007	45,000.00	0.00			070-082-11S	560 Buena Vista	Jennifer Wong	
434	0706-015	Fix Gas Leak Additions and	6/8/2007	800.00	0.00		81.00	071-142-02 S	124 HARRISON ST	OXFORD PLUMBING	
434	0706-017	Install new roof over exesting	6/26/2007	3,250.00	0.00		81.00	083-102-05	238 E POLK ST	Raymond E & Rosie N Smith	
434	0706-020	REPLACE WATER PIPE	6/18/2007	1,000.00	0.00		80.00	072-132-13	186 N 5TH ST	Zhi Kuang Yu	
434	0706-022	Install a new swimming pool	6/25/2007	45,000.00	0.00		80.00	071-106-05 S	384 COLLEGE AVE	Martin O & Cynthia M	
434	0706-023	Replace 100 Amp Power	6/26/2007	800.00	0.00		81.00	083-134-19	261 E SACRAMENTO ST	Cindy Slater	
O/S C	0706-024	Replacement of Stairways Out	8/20/2007	75,000.00	0.00		0.00	083-240-46 S	654 LUCILLE AVE	Roy A & Luz A Spragg	
434	0706-026	Install a new roof on the	6/26/2007	700.00	0.00		81.00	083-103-18	203 E PLEASANT ST	Daniel W & Mercedes G	
434	0706-027	Install a new roof on home.	7/2/2007	20,000.00	0.00		81.00	083-103-17	211 E PLEASANT ST	Ken Smith	
438	0706-028	Build a new Garage 1024 SF.	9/14/2007	37,795.84	0.00	R-1	80.00	072-074-06	235 MONROE ST	Keiton Wong	
438	0706-029	Install a Car Port of 240 SF.	6/29/2007	6,000.00	0.00	R-1	81.00	083-131-14	165 E HOUSTON ST	Louis Haros	
434	0707-001	Install A new Sewer line	7/6/2007	800.00	0.00		81.00	083-134-19	261 E SACRAMENTO ST	Keither L & Barbara A	
O/S C	0707-003	Foundation for a dust	7/18/2007	7,329.29	0.00	M-3	55.11	083-280-26 S	500 W ENTERPRISE AVE	SEQUOIA PACKING	
434	0707-004	Re-Roof Additions and	7/3/2007	10,000.00	0.00		80.00	071-041-33 S	455 CAMBRIDGE AVE	Gary A & Frances C Price	
434	0707-005	Electrical Panel Change Out	7/5/2007	500.00	0.00		80.00	072-194-08 S	434 JEFFERSON ST	Zaragoza A Rodriguez Jr.	
434	0707-007	Relocate Gas Meter and run	7/6/2007	200.00	0.00		81.00	071-161-12 S	1134 MAPLE RD	Bruce A & Karla K Brumana	
434	0707-010	Bathroom Addition Additions	7/10/2007	0.00	0.00		80.00	071-043-07 S	1405 NEVADA ST	Astrid Ebury	
102	0707-011	2285 s.f. S.F.R. New	7/11/2007	204,368.50	1.00	R-1	5451		774 PETITE SIRAH LANE	CLYDE MILES	
102	0707-012	1967 s. f. S.F.R. New	7/11/2007	179,741.10	1.00	R-1	5451		754 PETITE SIRAH LANE	CLYDE MILES	
102	0707-013	3157 sf S.F.R New	7/11/2007	360,207.59	1.00	R-1	5451		724 PETITE SIRAH LANE	CLYDE MILES	
434	0707-014	Re-Roof Additions and	7/11/2007	6,200.00	0.00		80.00	071-102-07 S	616 COLLEGE AVE	David & Valerie Popejoy	
434	0707-015	Install a new inground	7/11/2007	35,851.00	0.00		79.00	083-344-17 S	1820 DEERFIELD CT	Margaret Ann Flores	
434	0707-016	Complete Re-Roof Additions	7/11/2007	6,200.00	0.00		80.00	072-085-03	153 JACKSON ST	Douglas & Patricia M Harvey	
434	0707-017	Re-Roof over existing Roof	7/19/2007	1,000.00	0.00		81.00	071-151-10 S	183 COOLIDGE ST	Ruben & Elida Ayala	
434	0707-018	Re-Roof Additions and	7/16/2007	6,200.00	0.00		80.00	071-052-12 S	414 HARVARD AVE	Greg Price	
434	0707-019	Re-Roof Additions and	7/16/2007	6,200.00	0.00		81.00	071-163-25 S	227 LOCUST AVE	Gregory A Price	
434	0707-020	Construction of New Pool	7/17/2007	40,400.00	0.00		81.00	070-111-06 S	291 CASA BUENA LN	Brian & Penny Williams	
434	0707-022	Addition to Garage Additions	7/18/2007	2,500.00	0.00		80.00	072-040-34 S	505 MADISON ST	Kevin W & Shawna L Hicks	
434	0707-023	New duct work and central air	7/18/2007	8,000.00	0.00		80.00	072-194-08 S	434 JEFFERSON ST	Zaragoza A Rodriguez Jr.	
101	0707-025	Temp Power Pole New	7/19/2007	500.00	0.00				754 Petite Sirah Ln	Clyde Miles Construction	
434	0707-026	Replacement 0f Windows-	8/3/2007	2,000.00	0.00		80.00	072-072-06	345 FRESNO ST	Roberto Rojas Santoya	
434	0707-027	Tear off and re-roof Additions	7/23/2007	5,490.00	0.00		80.00	072-191-10 S	664 N MONTEREY AVE	Jon B & Delaine L Griffith	
434	0707-028	Patio Cover Additions and	7/24/2007	2,000.00	0.00		81.00	071-141-15 S	123 HARRISON ST	Carlos Villegas	

New Permits Issued

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Class	Permit #	Type of Permit	Date Issued	Valuation	# of Units	Zoning	Census	APN	Job Address	Owner Contractor
102	0707-029	3157 sf. S.F.R New	7/24/2007	279,127.50	0.00	R-1	5451		844 Petite Sirah Lane	CLYDE MILES
434	0707-033	Replacement of Condenser	7/30/2007	1,000.00	0.00		80.00	072-084-16	298 W POLK ST	Franklin Portillo
434	0708-002	Change Electric Panel	8/6/2007	1,600.00	0.00		80.00	071-053-11 S	310 STANFORD AVE	Lawrence Maurice & Lois A
437	0708-003	Electrical Panel Change out	8/8/2007	500.00	0.00		80.00	072-193-03 S	425 WASHINGTON ST	Timothy K & Suzanne D
434	0708-004	Replace Windows in	8/9/2007	4,000.00	0.00		80.00	072-071-10 S	358 MONROE ST	Bradly A & Stephanie G
434	0708-006	Re- Roof Additions and	8/15/2007	6,700.00	0.00		81.00	072-162-03	224 E HAWTHORNE ST	Hubert Audie & Bessie
434	0708-007	Replace Water & Gas Lines	8/14/2007	500.00	0.00		80.00	071-083-29 S	284 LINCOLN ST	Robert W & Claudia A
434	0708-008	Re-Roof, re-plumb house and	8/15/2007	20,000.00	0.00		81.00	083-134-08	250 E HOUSTON ST	Jennifer L & Michael E
434	0708-013	Tear Sheet and Re-Roof	8/14/2007	8,600.00	0.00		80.00	072-072-13	305 MONROE ST	Roy N & Jan E DeShazo
434	0708-014	Patio Cover Additions and	8/15/2007	2,000.00	0.00		80.00	083-182-05 S	216 S COALINGA ST	Debbie Elizabeth Adams
102	0708-015	2101 sf. S.F.R. New	8/21/2007	145,972.20	0.00	R-1	5246		138 Pinto St	OAKFIELD, LLC
102	0708-016	S.F.R. New Residential -	8/21/2007	119,766.00	0.00	R-1	5246		119 Arabian St	OAKFIELD, LLC
102	0708-017	S.F.R. New Residential -	8/21/2007	119,766.00	0.00	R-1	5246		143 Palomino St.	OAKFIELD, LLC
434	0708-018	Replace water and gas lines	8/15/2007	500.00	0.00		81.00	071-155-10 S	383 COOLIDGE ST	Robert Montoya Jr.
434	0708-020	Remodel Fire Damaged	8/21/2007	25,000.00	0.00		81.00	083-133-15	264 E HOUSTON ST	Paul L & Patsy Jo
434	0708-022	Installation of Transfer Switch	8/17/2007	1,700.00	0.00		80.00	071-053-05 S	305 CORNELL AVE	Hans J Zwang
434	0708-023	Install New Gas Line	8/22/2007	600.00	0.00		80.00	083-192-18 S	107 S MONTEREY AVE	Laurie L Baker
434	0708-024	Hot Mop Car Port & Re-roof	8/24/2007	2,000.00	0.00		80.00	083-181-23 S	407 W POLK ST	Nancy Simpson
434	0708-027	Replace (2) windows at	8/17/2007	1,000.00	0.00		81.00	083-141-14	458 E PLEASANT ST	Marcelino V & Martha G
434	0708-030	Install of New A/C Unit on	8/24/2007	4,200.00	0.00		79.00	083-303-05 S	335 BUCKEYE SPRINGS	Robert Denberg
434	0708-032	Replacement of Windows and	8/28/2007	2,000.00	0.00		80.00	083-181-07 S	202 CINDY LN	Bruce & Allena Parkins
434	0708-033	Tear off and resheet new roof	9/4/2007	6,390.00	0.00		80.00	083-270-17 S	555 PACIFIC ST	Joy A Redding
434	0708-034	Tear down and re-roof	8/29/2007	8,900.00	0.00		80.00	072-241-06 S	670 MONROE ST	John L Berkey III
434	0708-035	New windows, exterior	9/10/2007	20,000.00	0.00		80.00	083-181-04 S	409 CINDY LN	Kathleen D Perez
101	0708-036	Build a new Patio cover in the	9/14/2007	15,000.00	0.00			070-085-01 S	461 Buena Vista Dr	Ike & Elizabeth Williamson
102	0709-001	2286 sf. S.F.R. New	9/13/2007	187,360.56	0.00	R-1	5246		125 Arabian Street	OAKFIELD, LLC
434	0709-002	Re- Roof and Replacement of	9/7/2007	14,000.00	0.00		81.00	072-154-14	265 S 5TH ST	Eric Mireles
434	0709-004	Re-Roof Additions and	9/7/2007	6,000.00	0.00		80.00	071-062-11 S	620 COLLEGE AVE	Edward J & Elizabeth A
434	0709-005	Install new solar panel unit	9/13/2007	40,000.00	0.00				560 Buena Vista	Jennifer Wong
434	0709-006	Install windows, Siding,	9/13/2007	15,000.00	0.00		80.00	071-083-08 S	247 GRANT ST	Terry Brumana - Cell Phone
434	0709-007	Tear off and re-roof Additions	9/12/2007	5,190.00	0.00		81.00	071-163-03 S	212 WALNUT AVE	M Scott & Aurelia M
434	0709-008	New Pool and Retaining wall	9/11/2007	32,500.00	0.00			070-082-12 S	561 Malibu Dr	Jose G & Lorena A Salazar
434	0709-010	Tear off and re-roof Additions	9/17/2007	8,190.00	0.00		80.00	083-182-05 S	216 S COALINGA ST	Debbie Elizabeth Adams

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434	0709-011	Tear off and Re-Roof	9/18/2007	10,660.00	0.00		80.00	072-081-01 S	250 N COALINGA ST	Donald O & Marjorie D	
434	0709-012	Electrical Replacement	9/24/2007	6,000.00	0.00		80.00	072-193-11 S	414 ADAMS ST	Patrick & Bobbie Griffin	
434	0709-013	Insall Fiberglass Pool and spa	9/20/2007	40,000.00	0.00				570 Mustang Way	Mike Wilson	
O/S C	0709-014	Install a ballasted roof mount	9/25/2007	0.00	0.00				155 W Durian	City of Coalinga	
O/S C	0709-015	Commerical Garbage	9/27/2007	6,000.00	0.00		80.00	072-131-05	191 E ELM AVE	Ramon Lemus	
434	0709-016	Tear off and re-roof Additions	10/2/2007	9,000.00	0.00		81.00	083-134-21	245 E SACRAMENTO ST	Kenneth D & Bernice Weeks	
434	0709-017	Install an Out Door Kitchen,	9/28/2007	1,500.00	0.00		80.00	071-054-24 S	305 STANFORD AVE	Darren Blevins	
434	0710-001	Tear off and Re-Roof	10/1/2007	6,000.00	0.00		80.00	083-181-08 S	202 CINDY LN	Bruce & Allena Parkins	
434	0710-002	Tear Off and Re-Roof	10/1/2007	6,000.00	0.00		80.00	083-181-08 S	204 CINDY LN	Freddie R & Ardith C	
434	0710-003	Tear Off Re-Roof Additions	10/1/2007	6,000.00	0.00		80.00	083-181-01 S	405 CINDY LN	Jose & Maria Fernandez	
O/S C	0710-004	Installation of new sign Out of	12/4/2007	7,000.00	0.00		81.00	083-123-02	638 E POLK ST	Kalwinder S Bajwa	
434	0710-005	Tear off and re-roof Additions	10/2/2007	7,000.00	0.00		81.00	071-211-05 S	483 ROOSEVELT ST	Danvish Nemani	
O/S C	0710-007	Install New Sign Out of Scope	10/24/2007	3,000.00	0.00		80.00	083-080-79 S	149 W POLK ST	Donlon H & Agnes H	
434	0710-008	Re-Roof over exsisting,	10/5/2007	2,000.00	0.00		80.00	072-066-06	235 JEFFERSON ST	Roberto A & Bertha A Solorio	
434	0710-009	Tear off and re-roof Additions	10/8/2007	7,000.00	0.00		80.00	083-181-03 S	407 CINDY LN	Junior K & Anita B Vinson	
434	0710-011	Re-Roof (Overlay) Additions	10/8/2007	1,200.00	0.00		81.00	071-153-06 S	272 HOOVER ST	Joyce M & Michael A Voss	
434	0710-012	Replace siding & Insulation	10/9/2007	8,000.00	0.00	R-1		072-135-02	338 E DURIAN AVE	Mauro O & Juanita M Veliz	
434	0710-013	Kitchen Remodel Additions	10/15/2007	35,000.00	0.00		80.00	072-071-10 S	358 MONROE ST	Bradly A & Stephanie G	
434	0710-015	Tear off and re-roof Additions	11/1/2007	5,900.00	0.00	R-1	80.00	072-065-02 S	285 ADAMS ST	Manuel & Dolores M	
434	0710-016	Tear off & Re-roof Additions	10/17/2007	6,200.00	0.00		80.00	083-181-06 S	200 CINDY LN	Preston & Misty Martin	
434	0710-017	Fire Damage Repair-	10/31/2007	40,000.00	0.00	R-1	80.00	072-081-26	334 TYLER ST	Mike Kutnerian	
434	0710-018	Install New Swimming Pool	10/23/2007	58,420.00	0.00		81.00	071-211-16 S	524 N GARFIELD ST	Harold R & Maria D Allison	
319	0710-019	Re-Roof New Non-	10/22/2007	10,000.00	0.00		80.00	071-101-20 S	610 WASHINGTON ST	Avenal Church of the	
434	0710-021	Re-Roof over exisiting	10/23/2007	1,500.00	0.00		80.00	083-232-05 S	435 W HOUSTON ST	Jay Mahfood	
434	0710-022	New Solar Panel Unit	11/16/2007	49,557.00	0.00		79.00	083-303-05 S	335 BUCKEYE SPRINGS	Robert Denberg Cell: 362-	
434	0710-023	Tear Off & Re-roof Additions	10/29/2007	1,500.00	0.00		80.00	072-054-10	715 SUNSET ST	Victor & Carmen R Balderaz	
434	0710-025	Tear off and Re-roof	10/29/2007	5,000.00	0.00		80.00	071-101-19 S	602 WASHINGTON ST	Alejandro Lemus	
327	0710-026	Excavation of Soils for DTSC,	1/8/2008	0.00	0.00			072-200-03S	183 E POLK ST	Interra Vision Development	
434	0710-027	Add a GFIC Outlet for Spa	10/29/2007	500.00	0.00		80.00	071-041-25 S	425 CAMBRIDGE AVE	Paul & Connie Green	
102	0711-001	2639 sf SFR New Residential	11/27/2007	251,085.58	0.00	R-1	5339		219 Adobe Court	OTIS CONSTRUCTION	
102	0711-002	2000 sf. SFR New Residential	11/27/2007	215,475.64	0.00	R-1	5339		1990 Via Robles Dr	OTIS CONSTRUCTION	
102	0711-003	2639 sf SFR New Residential	11/27/2007	251,085.58	0.00	R-1	5339		1970 Via Robles Dr.	OTIS CONSTRUCTION	
434	0711-004	Tear Off- Re-roof Additions	11/7/2007	1,500.00	0.00		81.00	083-125-13	713 E VALLEY ST	Keith Oakley	

New Permits Issued

Report Date Range : 01/01/2007 to 04/30/2009

Class	Permit #	Type of Permit	Date Issued	Valuation	# of Units	Zoning	Census	APN	Job Address	Owner Contractor
434	0711-005	Run electrical to shed & add	11/7/2007	600.00	0.00		80.00	072-083-15	272 TYLER ST	Malcolm L & Kimberly M
434	0711-006	Tear Off Re-Roof, Windows	11/7/2007	10,000.00	0.00		80.00	072-114-12	257 E DURIAN AVE	Jose Arredondo 381-8220
434	0711-007	Install a new A/C system	11/8/2007	5,200.00	0.00		80.00	072-114-12	257 E DURIAN AVE	Jose Arredondo
434	0711-008	Construction of a new patio	11/20/2007	6,905.60	0.00		81.00	070-093-13 S	478 SAN MADELE AVE	Jim L & Susan Marie
434	0711-009	Demo repair interior	11/8/2007	25,000.00	0.00		81.00	071-200-12 S	505 PINE ST	Sharon L Rodrigues
434	0711-010	New Windows, Roof,	11/20/2007	100,000.00	0.00		80.00	071-122-13	196 FILLMORE ST	Judith M Palk
434	0711-012	Addition- Joining Garage to	11/9/2007	28,029.88	0.00		80.00	072-083-02	273 JACKSON ST	Clemmie H & Nelda A
434	0711-013	Add framing to inside of walls,	11/13/2007	25,000.00	0.00		81.00	083-121-05	582 E POLK ST	Ignacio B & Mayela M
434	0711-014	Tear Off and Re-Roof	11/13/2007	8,200.00	0.00		80.00	083-251-23 S	550 W HOUSTON ST	Dennis L & Johnett K Watt
437	0711-015	Install Commercial Hood	11/14/2007	1,000.00	0.00		80.00	072-105-24	156 W DURIAN AVE	Order Eagles Fraternal
102	0711-016	2639 sf SFR New Residential	12/27/2007	251,085.58	0.00	R-1	5339		1971 Hacienda Dr.	OTIS CONSTRUCTION
102	0711-017	2000 sf. SFR New Residential	12/27/2007	215,475.64	0.00	R-1	5339		2051 Hacienda Dr.	OTIS CONSTRUCTION
102	0711-020	2200 sf SFR New Residential	12/27/2007	238,600.83	0.00	R-1	5339		3007 Carmele Ct.	OTIS CONSTRUCTION
102	0711-021	1843 sf. SFR New Residential	1/2/2008	191,185.39	0.00	R-1	5339		2086 Carmele Ct.	OTIS CONSTRUCTION
434	0711-022	Tear Off Re-Roof Additions	11/19/2007	7,400.00	0.00		80.00	083-181-11 S	216 CINDY LN	Jackie A & Vona A Darnell
102	0711-023	2285 s.f. S.F.R. New	11/27/2007	237,017.45	0.00	R-1	5451		765 Petite Sirah Lane	CLYDE MILES
102	0711-024	3157 sf. S.F.R New	11/27/2007	321,925.17	0.00	R-1	5451		824 Petite Sirah Lane	CLYDE MILES
102	0711-025	3157 sf S.F.R w/ Bonus	11/27/2007	360,207.59	0.00	R-1	5451		784 Petite Sirah Lane	CLYDE MILES
102	0711-026	2619 sf. S.F.R New	11/27/2007	287,781.05	0.00	R-1	5451		958 Cabernet Way	CLYDE MILES
434	0711-027	Installation of new heating and	11/20/2007	4,900.00	0.00		80.00	083-181-11 S	216 CINDY LN	Jackie A & Vona A Darnell
434	0711-028	Install new A/C Duel Pack	11/21/2007	5,783.00	0.00		80.00	072-113-05	264 E BIRCH AVE	Norberto Reyes
434	0711-029	Roofing Permit Additions and	11/21/2007	5,000.00	0.00		80.00	083-183-06 S	213 S PRINCETON AVE	David K & A Lorraine Neely
434	0711-030	Instal new electrical panel	11/21/2007	600.00	0.00				229 1/2 Buchanan	Larry Gentry
102	0711-033	2101 sf. S.F.R. New	12/5/2007	169,959.46	0.00	R-1			141 Appaloosa Ct.	OAKFIELD, LLC
102	0711-034	2286 sf. S.F.R. New	12/5/2007	187,360.56	0.00	R-1			120 Appaloosa Ct.	OAKFIELD, LLC
102	0711-035	2200 sf SFR New Residential	12/27/2007	238,600.83	0.00	R-1	5339		3026 Carmele Court	OTIS CONSTRUCTION
102	0711-036	2200 sf SFR New Residential	12/27/2007	238,600.83	0.00	R-1	5339		3027 Carmele Court	OTIS CONSTRUCTION
434	0712-001	Install Water Heater Additions	12/3/2007	500.00	0.00		80.00	072-194-04 S	435 ADAMS ST	Kahla Sullivan
101	0712-003	Temp Power Pole New	1/8/2008	500.00	0.00				948 Cabernet Way	Clyde Miles Construction
434	0712-006	Tear off - Re-roof Additions	12/12/2007	7,000.00	0.00		80.00	083-183-09 S	225 S COALINGA ST	Marybelle Smith
434	0712-007	Tear off Re-Roof Additions	1/28/2008	8,000.00	0.00	R-1	81.00	083-152-08 S	698 E PLEASANT ST	Steven C & Anne M Jorgens
434	0712-008	Tear off and re-roof Additions	1/28/2008	8,000.00	0.00	R-1	81.00	083-151-21	585 TACHE WAY	Steven C & Anne M Jorgens
434	0712-009	Tear off and re-roof Additions	12/14/2007	4,900.00	0.00		80.00	072-194-04 S	435 ADAMS ST	Kahla Sullivan

New Permits Issued

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Class	Permit #	Type of Permit	Date Issued	Valuation	# of Units	Zoning	Census	APN	Job Address	Owner Contractor
102	0712-010	2286 sf. S.F.R. New	12/27/2007	187,360.56	0.00	R-1	5246		156 Palamino Street	OAKFIELD, LLC
102	0712-011	2286 sf. S.F.R. New	12/27/2007	187,360.56	0.00	R-1	5246		149 Pinto Street	OAKFIELD, LLC
102	0712-012	S.F.R. New Residential -	12/27/2007	139,661.40	0.00	R-1	5246		156 Pinto Street	OAKFIELD, LLC
102	0712-013	2101 sf. S.F.R. New	12/27/2007	169,959.46	0.00	R-1	5246		144 Pinto Street	OAKFIELD, LLC
102	0712-014	2619 sf. S.F.R. New	12/21/2007	265,112.59	0.00	R-1	5451	083-393-14S	845 Petite Sirah Lane	CLYDE MILES
102	0712-015	2285 s.f. S.F.R. New	12/21/2007	237,017.45	0.00	R-1	5451	083-383-06	735 Petite Sirah Lane	CLYDE MILES
102	0712-016	2285 s.f. S.F.R. New	12/21/2007	237,017.45	0.00	R-1	5451	083-394-05S	804 Petite Sirah Lane	CLYDE MILES
102	0712-017	2285 s.f. S.F.R. New	12/21/2007	237,017.45	0.00	R-1	5451	083-384-02S	744 Petite Sirah Lane	CLYDE MILES
102	0712-018	3157 sf. S.F.R New	12/21/2007	321,925.17	0.00	R-1	5451	083-384-03S	734 Petite Sirah Lane	CLYDE MILES
102	0712-019	2285 s.f. S.F.R. New	12/21/2007	237,017.45	0.00	R-1	5451	083-384-07S	938 Cabernet Way	CLYDE MILES
102	0712-020	2200 sf SFR New Residential	1/2/2008	238,600.83	0.00	R-1	5339		3046 Carmele Court	OTIS CONSTRUCTION
102	0712-021	2639 sf SFR New Residential	1/2/2008	251,085.58	0.00	R-1	5339		362 Cabrillo Drive	OTIS CONSTRUCTION
102	0712-022	2000 sf. SFR New Residential	1/2/2008	215,475.64	0.00	R-1	5339		344 Cabrillo Drive	OTIS CONSTRUCTION
434	0712-024	Tear off and re-roof Additions	12/28/2007	5,000.00	0.00		81.00	083-142-15 S	315 E SACRAMENTO ST	Gustavo M & Martina M
434	0712-025	Replace Earthquake Gas	2/1/2008	8,900.00	0.00	R-3	80.00	083-080-48 S	500 PACIFIC ST	WEST HILLS HOUSING
434	0801-001	New Air Conditioning/Heating	1/2/2008	4,900.00	0.00	C-4	81.00	083-121-05	582 E POLK ST	Nacho Bernal
102	0801-002	Tem Power Pole New	1/8/2008	500.00	0.00				814 Petite Sirah Lane	Clyde Miles Construction
434	0801-003	Panel Change out Additions	1/4/2008	0.00	0.00		80.00	072-071-10 S	358 MONROE ST	Bradly A & Stephanie G
437	0801-004	Install Ceiling Fans Additions	1/7/2008	200.00	0.00			072-131-20	276 COALINGA PLZ	Richard Hill
434	0801-005	Tear Off Re-Roof Additions	1/8/2008	7,900.00	0.00		80.00	071-043-06 S	1407 NEVADA ST	Aurelio E & Maria G
434	0801-006	Replace 40 ft of sewer line	1/8/2008	500.00	0.00		80.00	072-095-12	590 N 4TH ST	Keith & Christine Montoya
434	0801-007	Replacing 8 windows	1/9/2008	11,239.00	0.00		80.00	071-041-05 S	444 DARTMOUTH AVE	Michael C & Katherine M
434	0801-008	Gas Line Replacement	1/10/2008	0.00	0.00		81.00	083-126-12 S	749 E PLEASANT ST	Christine Marie Carson
434	0801-010	Inceasing the height of the	1/10/2008	0.00	0.00		80.00	071-112-02 S	315 COLLEGE AVE	Mark Sheppard
434	0801-011	Bath room remodel Additions	1/11/2008	16,000.00	0.00		81.00	071-144-08 S	283 HOOVER ST	Joshua Daniel Cleveland
434	0801-012	Install New Service Panel	1/11/2008	1,486.00	0.00		80.00	072-194-04 S	435 ADAMS ST	Kahla Sullivan
102	0801-013	Install New Patio Cover (319	2/22/2008	5,295.40	0.00	R-1	81.00	070-092-36 S	464 JANAY CT	Frank & Laurena Grimmett
434	0801-014	Stucco House Additions and	1/18/2008	2,500.00	0.00	R-1	80.00	072-071-10 S	358 MONROE ST	Bradly A & Stephanie G
434	0801-015	Replace Water Heater	1/22/2008	500.00	0.00	R-1		071-161-31 S	1100 Maple Street	ASSEMBLY OF GOD
434	0801-016	Re-Plumb Residence, and	1/24/2008	2,000.00	0.00	R-1	80.00	071-043-06 S	1407 NEVADA ST	Aurelio E & Maria G
434	0801-017	Overlay Re-Roof Additions	1/23/2008	1,000.00	0.00	R-1	80.00	072-066-20	215 JEFFERSON ST	Platino, LLC
434	0801-018	Replace 80 feet of Sewer Line	1/24/2008	0.00	0.00	R-1	80.00	071-083-03 S	277 LINCOLN ST	Keith & Christine Montoya
434	0801-019	Install 320AMP Panel	1/28/2008	500.00	0.00	R-1	81.00	071-144-08 S	283 HOOVER ST	Joshua Daniel Cleveland

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Class	Permit #	Type of Permit	Date Issued	Valuation	# of Units	Zoning	Census	APN	Job Address	Owner Contractor
434	0801-020	Replace 8 feet of Sewer line	1/29/2008	0.00	0.00	R-1	80.00	071-122-01	195 PIERCE ST	Ellen Ruth Fleming
434	0801-021	Overlay Roof Additions and	2/1/2008	3,400.00	0.00	R-1	81.00	083-152-01 S	311 S HACHMAN ST	Timothy E Clark
434	0802-001	Replace water and gas lines	2/1/2008	0.00	0.00	R-1	80.00	071-083-03 S	277 LINCOLN ST	Keith & Christine Montoya
434	0802-004	Replace ~40 feet of sewerline	2/4/2008	0.00	0.00	R-1	80.00	071-064-01 S	455 HARVARD AVE	Randy A & Rhonda Eileen
434	0802-006	Tear Off Re-Roof Additions	2/6/2008	8,300.00	0.00	R-1	80.00	083-181-23 S	409 W POLK ST	Nancy Simpson
434	0802-007	Tear Off & Re-roof Additions	2/6/2008	6,000.00	0.00	R-1	80.00	072-054-16	740 CALIFORNIA ST	Sharon B Elwell
434	0802-010	Kitchen, Siding, Windows,	2/8/2008	15,000.00	0.00	R-1	81.00	071-155-10 S	383 COOLIDGE ST	Robert Montoya Jr.
434	0802-011	Sewer line replacement on site	2/8/2008	0.00	0.00		80.00	071-104-02 S	445 UNIVERSITY AVE	Jesus & Maria Lomeli
434	0802-012	Overlay- Re-roof Additions	2/11/2008	2,500.00	0.00	R-1	80.00	071-082-15 S	205 LINCOLN ST	Charles E & Alice L Epps
434	0802-013	Residential Addition- Bed,	3/25/2008	21,445.68	0.00	R-1	80.00	071-063-10 S	988 N PRINCETON AVE	Stephen & Ronda M Griswold
434	0802-014	Install New HVAC Additions	2/14/2008	0.00	0.00	R-1	81.00	071-211-10 S	547 ROOSEVELT ST	Laurie L Baker
434	0802-015	Install New HVAC Additions	2/13/2008	0.00	0.00	R-1	80.00	071-111-02 S	315 UNIVERSITY AVE	Rosario Frame
434	0802-016	Install New "Budget"	2/15/2008	0.00	0.00	C-M	81.00	083-111-08	304 E POLK ST	Jagroop S & Rupinder K Gill
434	0802-017	Gas Line Replacement	2/14/2008	0.00	0.00	R-1	81.00	083-125-02	706 E POLK ST	Laurie L Baker
437	0802-018	Install Illuminated Sign	2/14/2008	0.00	0.00	C-4	80.00	072-131-20	276 COALINGA PLAZA	Richard Hill
434	0802-019	Re-roof Additions and	2/15/2008	5,300.00	0.00	R-1	80.00	071-065-06 S	424 UNIVERSITY AVE	Lowell E & Maxine J Baker
437	0802-020	Construction of Carport/Patio	11/13/2008	37,350.00	0.00		81.00	072-127-15	198 W FOREST AVE	Herb Watanabe
O/S C	0802-021	Install Accessible ramp in	2/19/2008		0.00		80.00	083-080-60 S	25 W POLK ST	Sears Holding Management
434	0802-022	Replace 40ft of sewer line	2/21/2008	0.00	0.00	R-1	80.00	071-041-34 S	445 CAMBRIDGE AVE	William C & Daisy L Johnson
434	0802-023	Replace Sewer Line Additions	2/21/2008	0.00	0.00	R-1	80.00	071-043-06 S	1407 NEVADA ST	Aurelio E & Maria G
434	0802-024	Re-Roof Additions and	2/22/2008	10,000.00	0.00	R-1	80.00	072-193-11 S	414 JEFFERSON ST	Rick D & Joanne E Pulley
434	0802-025	Tear off and re-roof Additions	2/25/2008	6,290.00	0.00	R-1	81.00	071-251-02 S	577 PATRICIA LN	Edmund Y Wong
434	0802-026	Replace 14 feet of Sewer into	2/26/2008	0.00	0.00	R-1	80.00	071-052-02 S	445 STANFORD AVE	Barry D & Angela R Eldridge
434	0802-027	Install new Bathtub and	2/26/2008	0.00	0.00		80.00	083-251-23 S	550 W HOUSTON ST	Dennis L & Johnett K Watt
434	0802-028	Replace the gas line and test	2/26/2008	0.00	0.00		80.00	083-231-12 S	440 W HOUSTON ST	Barbara A Eade
434	0803-001	Repair Sewer Line Additions	3/4/2008	0.00	0.00	R-1			485 S 5TH ST	MORENOS PLUMBING
434	0803-002	New HVAC w/ Ducting	3/7/2008	5,100.00	0.00	R-1	80.00	071-082-14 S	211 LINCOLN ST	Arthur T & Bonnie Jean
434	0803-003	New HVAC w/ ducting	3/7/2008	4,900.00	0.00	R-1	81.00	072-052-09 S	372 ROOSEVELT ST	Kenneth & Nina Oxborrow
434	0803-005	Re-roof Additions and	3/5/2008	8,200.00	0.00		80.00	071-073-09 S	228 YALE AVE	Hartog Marjorie Ruth Den
434	0803-006	Re-roof Additions and	3/5/2008	3,400.00	0.00		81.00	083-303-01 S	235 COOLIDGE ST	John W & Carol L Hancock
434	0803-007	Re-roof Additions and	3/5/2008	3,800.00	0.00		81.00	071-153-12 S	259 COOLIDGE ST	Raul H & Isabel M Ortiz
434	0803-008	Replacment of existing A/C	3/7/2008	4,900.00	0.00		80.00	072-242-07 S	695 MONROE ST	John J & Jeannie M Love
434	0803-009	Tear Off and Re-Roof	3/25/2008	9,654.00	0.00		80.00	071-105-03 S	435 COLLEGE AVE	Donna J Pressey

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Class	Permit #	Type of Permit	Date Issued	Valuation	# of Units	Zoning	Census	APN	Job Address	Owner Contractor
434	0803-010	Tear off Re-roof Additions	3/11/2008	3,000.00	0.00	R-1	81.00	072-152-06	246 S 5TH ST	Ken W Smith
434	0803-011	Tear off & re-roof Additions	3/11/2008	4,200.00	0.00	R-1	81.00	083-152-16 S	636 E PLEASANT ST	Judith M Horn Greer
434	0803-012	Tear Off and Re-Roof	3/11/2008	4,290.00	0.00	R-1	81.00	083-142-19 S	305 E SACRAMENTO ST	Ted R & Lois E Frame
434	0803-013	Overlay Roof Additions and	3/13/2008	9,000.00	0.00	R-3		083-116-10	505 E VALLEY	BJL PROPERTIES III LLC
434	0803-014	Over lay Roofing Additions	3/14/2008	3,000.00	0.00		81.00	083-152-20 S	451 S HACHMAN ST	Dorothy M O'Brien
434	0803-015	Tear off re roof Additions and	3/17/2008	5,500.00	0.00	R-1	80.00	071-072-06 S	332 UNIVERSITY AVE	Gary A & Katherine M
434	0803-016	Remodel House (Updating	3/18/2008	0.00	0.00	R-1		072-085-14	250 CALIFORNIA ST &	Israel P & Mercedes M
434	0803-017	Construct 300 s/f Patio Cover	3/24/2008	4,980.00	0.00	R-1	80.00	071-082-13 S	217 LINCOLN ST	Keven E & Catina A Ruth
434	0803-018	Replace Gas and Sewer Lines	3/18/2008	0.00	0.00	R-1	80.00	071-082-14 S	211 LINCOLN ST	Arthur T & Bonnie Jean
434	0803-019	Install Electrical for Sign	3/18/2008	0.00	0.00	R-3	6.00	072-161-19	252 N GLENN AVE	NEW LIFE TABERNACLE
434	0803-021	Tear Off and Re-Roof	3/20/2008	6,620.00	0.00	R-1	81.00	083-270-18 S	595 PATRICIA LN	Shelly R Kern & Richard
434	0803-023	Install New Swimming Pool	3/26/2008	25,226.00	0.00	R-1	79.00	083-303-25 S	1674 POPPY MEADOW	Delia Barriga
434	0803-024	Tear off and Re-roof	3/24/2008	7,000.00	0.00	R-1	80.00	071-054-17 S	312 HARVARD AVE	Joseph & Monica Santino
434	0803-025	Rehabilitation- Self Help	3/25/2008	12,000.00	0.00	R-1	80.00	072-084-06	235 TYLER ST	Jose & Irene Diaz
434	0803-026	New Swimming Pool	4/2/2008	24,460.00	0.00	R-1			945 MERLOT WAY	Steve Gutierez
434	0803-027	New Swimming Pool	4/2/2008	24,667.00	0.00	R-1			935 MERLOT WAY	Jorge Sandaval
434	0803-028	Replace hot/cold line under	3/25/2008	0.00	0.00	R-1	80.00	072-095-12	590 N 4TH ST	Keith & Christine Montoya
102	0803-029	1843 sf. SFR New Residential	3/31/2008	191,185.39	1.00	R-1	5339		254 Cabrillio Drive	OTIS CONSTRUCTION
434	0803-030	Repair (2) Appartments [Fire	12/26/2008	403,340.00	0.00	R-3		083-183-01S	315 W. POLK ST	Rhoda Linch
434	0803-031	Overlay- Roof Additions and	3/27/2008	3,000.00	0.00	R-1	80.00	072-124-05	245 W DURIAN AVE	Warren C & Natalie G Ayers
102	0803-032	1843 sf. SFR New Residential	4/8/2008	191,185.39	1.00	R-1	5339		190 Adobe Court	OTIS CONSTRUCTION
434	0803-033	Re-roof Additions and	3/31/2008	2,000.00	0.00		81.00	083-114-17	423 E VALLEY ST	Ben Hansen
434	0804-001	Tear off - Re-roof Additions	4/1/2008	6,000.00	0.00	R-1	80.00	072-061-06 S	376 JEFFERSON ST	De Anna J Lander
434	0804-002	Replace (80) feet of Water line	4/2/2008	0.00	0.00	R-1	81.00	071-154-05 S	260 COOLIDGE ST	Christine F Morrow
437	0804-003	electrical, plumbing, and	4/3/2008	0.00	0.00		81.00	071-020-14 S	190 TRUMAN ST	Tom Fawler
434	0804-004	Re-Roof (Tear Off) Additions	5/30/2008	6,300.00	0.00	R-1	80.00	071-105-04 S	425 COLLEGE AVE	Ruben O Veliz
434	0804-005	Repair 2500 s/f of alluminum	4/3/2008	3,200.00	0.00	C-M		072-020-11	530 N FORREST	Randall G & Barbara J
434	0804-006	Tear off- Re-Roof Additions	4/8/2008	6,290.00	0.00	R-1	6.00	072-163-20	328 N GLENN AVE	Arthur G & Lydia R
434	0804-007	Roof Overlay Additions and	4/8/2008	5,100.00	0.00	R-1	81.00	071-163-24 S	231 LOCUST AVE	Anthony F & Betty J Levens
434	0804-009	HVAC Change Out - No	4/10/2008	0.00	0.00	R-1	80.00	072-071-07	308 MONROE ST	Darin & Manjula Freeland
434	0804-010	Re-route elctrical + sub panel	4/11/2008	0.00	0.00	R-3		083-183-01 S	319 W POLK ST	Rita Scrivner
434	0804-011	Tear off and Re-roof	4/14/2008	8,375.00	0.00	R-1	80.00	072-040-50 S	508 N MONTEREY AVE	Edward J & Sarah E
434	0804-012	Tear Off & Re-roof Additions	4/15/2008	3,800.00	0.00	R-1	80.00	072-194-11 S	404 JEFFERSON ST	Jerry & Deanna Lander

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434	0804-014	Tear off and Re-roof	4/21/2008	7,800.00	0.00	R-1	80.00	071-114-11 S	240 WASHINGTON ST	Billie Ramsey	
434	0804-015	Replace 60 Feet of Water	4/22/2008	0.00	0.00		80.00	071-051-14 S	425 CORNELL AVE	Allen J & Ellen F Clare	
O/S C	0804-017	Install new per the approved	4/24/2008	900,000.00	0.00				25034 W. Palmer Ave.	City of Coalinga	
434	0804-018	Tear off and Re-roof	4/28/2008	4,100.00	0.00	R-1	81.00	071-155-11 S	375 COOLIDGE ST	Harry & Lori Burtovoy	
434	0804-019	HVAC Rooftop Replacement	4/29/2008	4,200.00	0.00	R-1	81.00	071-146-01 S	312 HARRISON ST	Wilburn F Click	
434	0804-020	HVAC Rooftop Replacement	4/29/2008	3,200.00	0.00	R-1	80.00	083-350-31 S	340 SUNSET ST	Rita Scrivner	
434	0804-021	Replace 20 feet of gas line	4/29/2008	0.00	0.00	R-1		083-102-05	246 E POLK STREET	Raymond E & Rosie N Smith	
437	0804-022	(2) HVAC Rooftop	4/29/2008	8,000.00	0.00	C-4		070-060-79 S	1645 E Elm Ave	Keys Energy	
434	0805-002	New Gas Line (~80 Feet)	5/1/2008	0.00	0.00	R-1		071-122-07	514 VAN NESS ST	Angel V & Martha E Cruz	
434	0805-003	Install a new patio cover 104	5/1/2008	10,000.00	0.00			72-221-1S	409 E Forrest Court	Jose Salazar	
434	0805-004	Replacement of Gas Line +	5/23/2008	0.00	0.00	R-1	80.00	071-066-05 S	384 YALE AVE	Robert L & Norma J Jorden	
434	0805-005	Tear Off Re-rof Additions and	5/5/2008	6,500.00	0.00	R-1	80.00	083-251-15 S	515 S MONTEREY AVE	John C & Eleanor L Palmer	
434	0805-007	Install a new sewer line in back	5/6/2008	0.00	0.00		80.00	083-182-05 S	216 S COALINGA ST	Debbie Elizabeth Adams	
O/S Demo C	0805-008	Destroy a 12" well 122 feet	5/8/2008	0.00	0.00			072-200-015	183 E Polk	Intera Development Partners	
O/S R	0805-010	Demo- Fill in Swimming Pool	5/6/2008		0.00	R-1	80.00	071-064-01 S	455 HARVARD AVE	Randy A & Rhonda Eileen	
O/S C	0805-011	Remove Old Poll Light and	5/6/2008		0.00				400 Garfield	Coalinga Huron Parks District	
434	0805-012	Tear Off and Re-roof	5/6/2008	4,500.00	0.00	R-1	80.00	072-124-08	255 N 6TH ST	Jose Omar & Erin Elaine	
434	0805-014	Replace 10ft of sewerline	5/7/2008	0.00	0.00	R-1	80.00	071-041-04 S	454 DARTMOUTH AVE	Robert L & Dene Staley	
O/S Demo C	0805-017	Abandond, Destroy and	5/13/2008		0.00				135 E SACRAMENTO	City of Coalinga	
434	0805-018	Replace 22 sheets of rotted	5/14/2008	13,000.00	0.00	R-1	81.00	071-154-10 S	571 E POLK ST	Aline G White	
434	0805-019	Replace Hot and Cold Water	5/14/2008	0.00	0.00	R-1	81.00	083-125-07	730 E POLK ST	Domingo & Gloria Zamora	
434	0805-020	Complete Water Damage	5/15/2008	5,055.58	0.00	R-1	80.00	071-063-12 S	1074 N PRINCETON AVE	Shelly R Kern-Bradley	
434	0805-021	New Gas Line (80') Feet (1")	5/15/2008	0.00	0.00	R-1	80.00	072-113-07	286 E BIRCH AVE	Maria Carmen Navarro	
437	0805-022	Replace (2) new HVAC	5/21/2008	20,000.00	0.00	C-P	80.00	072-111-18	410 N 5TH ST	COUNTY BANK	
434	0805-023	Tub Replacement Additions	5/19/2008	2,000.00	0.00	R-1	80.00	083-252-06 S	515 S PRINCETON AVE	Albert Eugene Martin	
434	0805-024	Terar off & Re-roof Additions	5/19/2008	5,800.00	0.00	R-1	80.00	083-240-20 S	855 S COALINGA ST	Lowell E & Maxine J Baker	
434	0805-026	Replace 80 feet of Sewerline	5/19/2008	0.00	0.00	R-1	80.00	072-065-03	271 ADAMS ST	Jose Salmeron	
437	0805-028	Covert Exsisting Restroom into	5/21/2008	5,000.00	0.00				160 E BIRCH AVE	Pleasant Valley Christian	
437	0805-029	Replace a 15 gal. Water	5/27/2008		0.00				115 W Durian	City of Coalinga	
434	0805-030	Roof Overlay Additions and	5/27/2008	3,500.00	0.00	R-1	81.00	083-151-13 S	436 S HACHMAN ST	Martin & Imogene Hobbs Jr.	
434	0805-031	HVAC 1- Roof Top GAS	5/27/2008	11,500.00	0.00	R-1	80.00	083-251-17 S	510 S PRINCETON AVE	Michael & Sandra Dee	
O/S C	0805-033	Install (9) Signs for Walgreens	7/23/2008	0.00	0.00				265 W FOREST	Interra Development	
437	0805-035	Replacing Water Heater and	5/28/2008	0.00	0.00				269 & 277 Coalinga Plaza	City of Coalinga	

New Permits Issued

Report Date Range : 01/01/2007 to 04/30/2009

Class	Permit #	Type of Permit	Date Issued	Valuation	# of Units	Zoning	Census	APN	Job Address	Owner	Contractor
434	0805-037	Replace 80 feet of water and	5/30/2008	0.00	0.00	R-1	81.00	072-151-02	219 W GLENN AVE	Rhoda Hendrix	
434	0805-039	Overlay Re-Roof Additions	5/30/2008	2,000.00	0.00	R-1	80.00	072-068-08	105 JEFFERSON ST	Alex Smith	
434	0805-040	Tear off and Re-roof	5/30/2008	6,000.00	0.00	R-1	80.00	072-068-07	117 JEFFERSON ST	Alex Smith	
434	0805-041	Tear off and Re-roof	5/30/2008	6,000.00	0.00	R-1	81.00	071-145-10 S	373 HARRISON ST	Ronald Anthony & Sharon	
O/S C	0806-001	Install (1) Internally Illuminated	8/27/2008	0.00	0.00				183-195 E Polk Street	Interra Development	
434	0806-003	Replace the gas line Additions	6/5/2008	0.00	0.00		80.00	071-106-02 S	385 UNIVERSITY AVE	Martin & Ana Maria Caldera	
434	0806-004	Tear Off and Re-Roof	6/19/2008	5,000.00	0.00			083-233-03 S	325 S COALINGA ST	Teresa L Rummel	
434	0806-005	Tear off and Re-roof	6/19/2008	5,000.00	0.00			083-233-04 S	335 S COALINGA ST	John F & Catherine H Tullis	
434	0806-006	Tear Off & Re-Roof Additions	6/9/2008	5,900.00	0.00	R-1	80.00	083-240-35 S	522 W DOVEWOOD CT	Glenn W Muggelberg	
434	0806-008	New HVAC Cut-In (Ducting)	6/10/2008	0.00	0.00	R-1	80.00	071-063-10 S	988 N PRINCETON AVE	Stephen & Ronda M Griswold	
434	0806-009	Tear off and re-roof Additions	6/11/2008	5,900.00	0.00	R-1	80.00	083-240-28 S	545 W DOVEWOOD CT	Clifford & K Parli	
434	0806-010	Tear off roof and install new	6/11/2008	10,000.00	0.00	R-1	81.00	071-145-08 S	395 HARRISON ST	Eugene & Ophelia C Franks	
437	0806-011	Replumb north wing of City	6/12/2008	0.00	0.00				155 W. DURIAN	City of Coalinga	
434	0806-012	Fire Damage Repair (New	6/19/2008	15,000.00	0.00	R-1			911 CHIANTI CIRCLE	The Hofmann Co.	
434	0806-013	Tear off, sheet and re-roof	6/16/2008	7,100.00	0.00	R-1	80.00	072-076-10	325 SUNSET ST	Evert Albert & Martha Lee	
434	0806-014	Tear off, sheet and re-roof	6/16/2008	5,100.00	0.00	R-1	80.00	071-082-01 S	289 LINCOLN ST	Zhi Kuang SA	
434	0806-015	Replace Gas Line Additions	6/17/2008	0.00	0.00	R-1	80.00	071-044-07 S	335 CAMBRIDGE AVE	Ann E Woodson	
434	0806-016	Replace Wondows at	6/17/2008	1,000.00	0.00	R-1	81.00	071-145-10 S	373 HARRISON ST	Ronald Anthony & Sharon	
434	0806-017	A/C Rooftop Replacement	6/18/2008	0.00	0.00	R-1	80.00	083-251-12 S	455 S MONTEREY AVE	Richard J Jordan	
105	0806-018	Construction of 2252 s/f cover	8/5/2008	83,121.32	0.00	C-M			500 ENTERPRISE	Sequoia Packing	
434	0806-019	Install new 100 AMP Panel	6/19/2008	0.00	0.00	R-1	80.00	071-063-15 S	1088 N PRINCETON AVE	Monica Sanchez	
434	0806-020	Construct 592 s/f Carport and	6/24/2008	21,850.72	0.00		80.00	072-124-08	255 N 6TH ST	Jose Omar & Erin Elaine	
434	0806-022	Tear off and Re-roof & Repair	6/24/2008	4,000.00	0.00	R-1	81.00	072-161-16	205 E HAWTHORNE ST	Ken Smith	
102	0806-024	A new single family home with	7/29/2008	326,518.23	0.00	R-1			3047 Carmele Ct.	Terry B Otis	
102	0806-025	A new single family home with	7/29/2008	326,518.23	0.00	R-1			236 Cabrillo Drive	Terry B Otis	
434	0806-026	Tear Off and Re-Roof	6/25/2008	5,100.00	0.00	R-1	80.00	072-040-45 S	601 N PRINCETON AVE	Charles J & Vicky G Carson	
437	0806-027	Install New Roof Additions	6/25/2008	8,000.00	0.00	C-4	80.00	072-132-13	186 N 5TH ST	Zhi Kuang Yu	
434	0806-028	Tear off and re-roof Additions	6/25/2008	7,000.00	0.00	R-1	80.00	083-181-12 S	221 S JOAQUIN ST	James W & Mary Catherine	
434	0806-030	Replace water line and	6/27/2008	0.00	0.00	R-1	80.00	071-105-04 S	425 COLLEGE AVE	Ruben O Veliz	
434	0806-031	Split System A/C	7/1/2008	5,980.00	0.00	R-1	79.00	083-303-27 S	1700 POPPY MEADOW	Dino G & Carla M Canu	
434	0806-032	Roof Top A/C Replacement-	7/1/2008	7,700.00	0.00	R-1	81.00	070-111-04 S	255 CASA BUENA LN	Paul J & Deanna L Estrada	
434	0807-001	Tear off and re-roof Additions	7/1/2008	8,000.00	0.00	R-1	80.00	072-085-02	165 JACKSON ST	Walter F & T M Burnett	
434	0807-002	Tear off and re-roof Additions	7/1/2008	7,000.00	0.00	R-1	80.00	072-192-10 S	666 N PRINCETON AVE	Leroy & Mary M Burnett	

New Permits Issued

Report Date Range : 01/01/2007 to 04/30/2009

Class	Permit #	Type of Permit	Date Issued	Valuation	# of Units	Zoning	Census	APN	Job Address	Owner	Contractor
O/S C	0807-003	Remove doors, Range Hoods,	7/1/2008	0.00	0.00				834 E. Elm	Navin Patel	
434	0807-004	Construct (2) Patio Covers	7/3/2008	2,822.00	0.00	R-1			155 N HACHMAN	BERNAL RAMON &	
327	0807-005	Construction of Me "N" Eds	1/15/2009	238,689.40	0.00			072-133-10	285 E ELM AVE [Me & Eds]	Jalaa & Hassan Mahfood	
434	0807-006	Re-Roof Additions and	7/8/2008	5,000.00	0.00	R-1	81.00	083-115-12	210 WARTHAN ST	Valentin V Jacobo	
434	0807-007	Foundation Repair by Jacking,	10/6/2008	28,350.00	0.00			072-081-15 S	204 N COALINGA ST [	Floyd Gene Root	
434	0807-008	Replace roof mounted A/C	7/10/2008	5,790.00	0.00	R-1	80.00	071-044-06 S	345 CAMBRIDGE AVE	Hollis V & Leoma V Green	
434	0807-009	New A/C Installation	7/10/2008	0.00	0.00	R-1	80.00	072-066-21	205 JEFFERSON ST	Robert R & Joyce Ann Folsom	
434	0807-012	Replace 40' for Gas Line	7/14/2008	0.00	0.00	R-1	80.00	072-040-35 S	509 MADISON ST	Ray C & Valerie L Love	
434	0807-013	A/C Roof Replacement	7/14/2008	4,900.00	0.00	R-1	80.00	083-240-25 S	860 S COALINGA ST	Steven W & Jamie M Hosman	
434	0807-014	A/C Replacement on Roof	7/14/2008	4,900.00	0.00	R-1	80.00	072-133-21	248 E DURIAN AVE	Gustavo V & Georgina	
434	0807-015	A/C Roof Change-out	7/14/2008	5,100.00	0.00	R-1	80.00	072-040-50 S	508 N MONTEREY AVE	Edward J & Sarah E	
434	0807-017	Tear off and Re-roof	7/16/2008	8,500.00	0.00	R-1	80.00	071-117-01 S	190 MOUNTAIN VIEW PL	HOLEMAN JOSEPH E &	
434	0807-018	Tear off an d Re-roof	7/22/2008	0.00	0.00	R-1	80.00	072-194-05 S	455 ADAMS ST	Terrel W & Karen Jeffery	
437	0807-019	Replacement of A/C Unit	7/22/2008	0.00	0.00	C-4	80.00	072-126-10	205 COALINGA PLZ	KIT SANG LAAN U S A	
434	0807-020	Tear off and re-roof Additions	7/22/2008	0.00	0.00		80.00	072-095-09	207 E BIRCH AVE	Robert G Smith	
434	0807-022	Install a new roof over the old	7/22/2008	8,000.00	0.00		81.00	071-153-15 S	223 COOLIDGE ST	Cris Robles	
434	0807-023	Tear off and re-roof Additions	7/24/2008	0.00	0.00	R-1	81.00	083-115-28	411 E PLEASANT ST	Donald E Payne	
434	0807-025	Replace Electrical Panel	7/28/2008		0.00	R-1	80.00	072-076-05	135 MONROE ST	John W & Pamela J Johns	
434	0807-026	Replace electric pannel with	7/29/2008	0.00	0.00		81.00	083-113-02	314 E VALLEY ST	Dorothy Lopez	
434	0807-027	Tear off and re-roof Additions	7/30/2008	8,500.00	0.00	R-1	80.00	071-114-02 S	275 COLLEGE AVE	Francis L & Barbara J Prindle	
434	0807-028	3 Ton A/C Replacement	7/30/2008	0.00	0.00	R-1	80.00	083-252-06 S	515 S PRINCETON AVE	Albert Eugene Martin	
434	0807-029	Run New Elctrical to Patio	7/30/2008	0.00	0.00	R-1			560 BUENA VISTA DR	Jennifer Wong	
434	0808-001	Tear off and re-roof Additions	8/4/2008	8,500.00	0.00	R-1	81.00	083-324-04 S	220 WALNUT AVE	Jeffrey T & Jennifer E Millette	
434	0808-002	Tear off and re-roof Additions	8/4/2008	8,500.00	0.00	3	80.00	072-081-02 S	425 S PRINCETON AVE	Roger A Jr & Pamela K	
434	0808-003	Tear off and re-roof Additions	8/4/2008	8,500.00	0.00	R-1	80.00	083-252-06 S	515 S PRINCETON AVE	Albert Eugene Martin	
437	0808-005	Structural Repairs to (6) Units	8/26/2008	50,000.00	0.00	C-5		071-161-30 S	834 E ELM AVE #1-15	Navin Patel	
437	0808-006	Repair Walkways per plans	8/12/2008	40,000.00	0.00	C-5	80.00	070-060-84 S	100 CAMBRIDGE AVE	Jack Patel	
434	0808-007	Re-route Gas and Water line	8/5/2008	0.00	0.00	R-1	81.00	083-131-14	165 E HOUSTON ST	Donald Thiesen	
434	0808-008	Tear off and Re-roof (Reds	8/6/2008	3,320.00	0.00	R-1	80.00	072-081-02 S	359 JACKSON ST	Lee Hawkins	
434	0808-009	New Swimming Pool	8/12/2008	36,350.00	0.00	R-1	81.00	071-164-06 S	850 FOLSOM ST	Richard G & Shelly R	
434	0808-010	A/C Replacement Additions	8/7/2008	4,900.00	0.00	R-1	80.00	083-252-09 S	425 S PRINCETON AVE	Roger A Jr & Pamela K	
434	0808-011	A/C Replacement Additions	8/7/2008	0.00	0.00	R-1	81.00	070-081-24 S	401 MALIBU DR	Bill McDermott	
434	0808-012	A/C Replacement Additions	8/7/2008	5,800.00	0.00	R-1	81.00	071-163-10 S	308 WALNUT AVE	Bobbie D & Wanda I	

New Permits Issued

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Class	Permit #	Type of Permit	Date Issued	Valuation	# of Units	Zoning	Census	APN	Job Address	Owner Contractor
329	0808-013	Install a new Skate Park,	8/14/2008	0.00	0.00				650 E. Cambridge Ave.	Coalinga-Huron Parks Distirct
437	0808-015	Ansul System Installation	8/21/2008	2,450.00	0.00		80.00	070-060-05 S	200 CAMBRIDGE AVE	Protective Order Benevolent
434	0808-016	New Patio Cover (371 s/f)	9/5/2008	6,158.60	0.00	R-1	81.00	083-321-24 S	560 HAZELHURST WAY	Roger & Tamara Schindler
434	0808-017	A/C Replacement Additions	8/13/2008	0.00	0.00		80.00	083-181-22 S	409 W POLK ST	Nancy Simpson
434	0808-018	A/V Replacement Additions	8/14/2008	6,200.00	0.00		80.00	072-105-25	311 COALINGA PLZ	Kays Llc McMahan
434	0808-019	A/C Replacement Additions	8/14/2008	5,100.00	0.00	R-1	81.00	070-112-05 S	137 MADRA CT	Chester Russell & Michele S
438	0808-020	Build New 20 x 20 Garage	8/15/2008	14,764.00	0.00	R-1	80.00	071-101-07 S	605 COLLEGE AVE	Richard E & Sally A Gowitt
434	0808-021	Install a new roof Additions	8/19/2008	8,500.00	0.00		80.00	071-041-03 S	464 DARTMOUTH AVE	Ramiro & Colleen Villarreal
434	0808-022	Construct New Patio Cover	8/19/2008	5,942.80	0.00	R-1		083-362-07	138 ARABIAN ST	Linda Moon
329	0808-024	A/C Replacement New Non-	8/20/2008	4,818.00	0.00	R-1	81.00	072-221-18 S	479 E GLENN AVE	Carlos R & Arcelia Loredo
434	0808-025	A/C Replacement Additions	8/20/2008	4,900.00	0.00	R-1	80.00	071-102-07 S	616 COLLEGE AVE	David & Valerie Popejoy
434	0808-027	Re-Roof Additions and	8/22/2008	8,500.00	0.00	R-1	80.00	072-066-19	540 FRESNO ST	Jose L & Maria C Ayala
434	0808-028	Replace A/C w/ HERS Test	8/22/2008	0.00	0.00	R-1	80.00	072-066-19	540 FRESNO ST	Jose L & Maria C Ayala
434	0808-030	Addition to home (191 s/f)	9/18/2008	17,965.46	0.00	R-1	81.00	070-111-07 S	290 CASA BUENA LN	Randal J & Sharon A
434	0808-031	HVAC Replacement	8/27/2008	0.00	0.00	R-1		071-156-09 S	107 N GARFIELD ST	Barry Clarke
434	0808-032	Build a new patio cover	8/28/2008	6,000.00	0.00		81.00	072-221-14 S	423 E GLENN AVE	Manuel & Ignacia R Ramirez
434	0808-034	Re-Roof Additions and	8/29/2008	8,500.00	0.00	R-1			536 N FOURTH STREET	Robert Smith
102	0808-035	2286 sf. S.F.R. New	9/4/2008	187,360.56	0.00	R-1			114 TROTTER STREET	OAKFIELD, LLC
102	0808-036	2101 sf. S.F.R. New	9/4/2008	169,959.46	0.00	R-1			112 SACRAMENTO	OAKFIELD, LLC
102	0808-037	S.F.R. New Residential -	9/4/2008	139,661.40	0.00	R-1	81		122 SACRAMENTO	OAKFIELD, LLC
434	0808-038	Construct 286 s/f Patio Cover	8/29/2008	4,747.60	0.00	R-1		083-365-01	150 PALOMINO	Andrew Otto
434	0809-001	Add a Patio and Jacuzzi room	9/5/2008	29,745.28	0.00		81.00	083-322-04 S	220 MCCOLLUM LN	Cecilio Mora
O/S C	0809-002	Reconstruct the second floor	9/5/2008	50,000.00	0.00			072-154-01	201 S 5TH ST [Laura	Inder S Deswel
434	0809-004	Renovate bathroom,	10/17/2008	21,075.00	0.00			072-081-15 S	204 N COALINGA ST	Floyd Gene Root
434	0809-005	Re-Roof and Drywall	9/11/2008	8,500.00	0.00	R-1	81.00	083-144-04	528 E PLEASANT ST	GUADALUPE GONZALEZ
434	0809-006	A. C. Replacement - HERS	9/11/2008	5,100.00	0.00	R-1	81.00	071-154-03 S	236 COOLIDGE ST	Linda Eaton
437	0809-007	A.C. Replacement Additions	9/11/2008	6,280.00	0.00		80.00	072-053-19 S	201 WASHINGTON ST	Ted R & Lois E Frame
O/S C	0809-008	5 year sprinkler test inspection	9/12/2008	0.00	0.00			072-105-25	311 COALINGA PLZ [fire	Kays Llc McMahan
434	0809-009	Tear off and Re-roof	9/15/2008	8,500.00	0.00	R-1	80.00	071-042-11 S	424 CORNELL AVE	William D Rauhauser II
437	0809-010	Tear off and hot-mop	9/15/2008	8,500.00	0.00		80.00	072-124-12	270 W ELM AVE	Gertrude Helene Kruger
434	0809-011	Repalce 8o feet of sewerline	9/15/2008	0.00	0.00	R-1	80.00	071-112-02 S	315 CORNELL AVE	Howard E & Juanda M
O/S C	0809-012	Replace sewer line 180 feet	9/23/2008	0.00	0.00		81.00	071-161-15 S	834 MAPLE RD	COALINGA REGIONAL
434	0809-014	Tear off and Re-Roof	9/22/2008	8,500.00	0.00	R-1	80.00	083-270-12 S	675 S PRINCETON AVE	Joe F & Lois A Reel

New Permits Issued

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Class	Permit #	Type of Permit	Date Issued	Valuation	# of Units	Zoning	Census	APN	Job Address	Owner Contractor
434	0809-015	Re-Roof Additions and	9/24/2008	8,500.00	0.00	R-3	81.00	071-230-06 S	211 ROOSEVELT ST	Rosalina Hernandez McClain
434	0809-016	Re-Roof Additions and	9/24/2008	8,500.00	0.00	R-3	81.00	071-230-04 S	207 ROOSEVELT ST	Nancy Simpson
434	0809-017	Re-Roof Additions and	9/24/2008	8,500.00	0.00	R-3	81.00	071-230-01 S	201 ROOSEVELT ST	Nancy Simpson
434	0809-018	Re-Roof Additions and	9/24/2008	8,500.00	0.00	R-3	81.00	071-230-05 S	209 ROOSEVELT ST	Jack H & E Idelle Mahrt
434	0809-019	Rebuild a Patio Cover	9/23/2008	2,257.60	0.00		80.00	083-251-07 S	315 S MONTEREY AVE	Janell L Clark
434	0809-020	Replace Gas Line from house	9/25/2008	0.00	0.00	R-1	80.00	072-191-11 S	648 N MONTEREY AVE	Laverne Gambin
434	0809-021	Construct 12 x 16 Shed	9/26/2008	7,086.72	0.00	R-1	81.00	070-111-23 S	273 SAN SIMEON LN	Delmer D & Shari L Scroggins
434	0809-022	Re-Roof (1/2) Additions and	9/26/2008	4,250.00	0.00	R-1	81.00	083-116-06	510 E POLK ST	Phillip R Bragg
437	0809-023	Install New Signage at Fastrip	10/3/2008	4,200.00	0.00		80.00	072-133-08	296 E ELM AVE	JACO Oil Company
434	0809-024	Replace Water Line Additions	9/30/2008	0.00	0.00	R-1	80.00	083-231-02 S	465 W PLEASANT ST	Thomas Edward & Debora S
434	0810-001	Build a Patio Cover Additions	10/6/2008	5,644.00	0.00			083-364-09	835 Mustang Way	RODRIGUEZ AGUSTIN &
434	0810-003	Re-Roof Additions and	10/8/2008	8,500.00	0.00	R-1	80.00	083-182-07 S	217 CINDY LN	Michael Alan & Melody Haigh
434	0810-004	Construct 780 s/f Garage	10/14/2008	18,524.00	0.00	R-1	80.00	072-040-05 S	415 JEFFERSON ST	Edythe Braly
434	0810-005	Re-Roof Overlay Additions	10/14/2008	4,000.00	0.00	R-1	81.00	083-122-23	595 E PLEASANT ST	Ricardo V Murillo
434	0810-006	Re-Roof Additions and	10/17/2008	8,500.00	0.00	R-1	80.00	071-042-13 S	444 CORNELL AVE	Jacob & Linda Davis
434	0810-007	Siding, Insulation, Electric	10/17/2008	0.00	0.00		81.00	071-155-12 S	349 COOLIDGE ST	Harold L & Barbara Wiest
434	0810-008	A/V Replacement Additions	10/21/2008	0.00	0.00	R-1			165 E. GLENN STREET	Donald Tarr
434	0810-009	A/V Replacementr-3	10/21/2008	0.00	0.00	R-1	81.00	071-153-15 S	223 COOLIDGE ST	Chris Robles
327	0810-011	Tenant Improvement 1300sf	2/13/2009	70,000.00	0.00	C-5			183 East Polk	Interra Development
O/S C	0810-012	Install an Electric Panal for	10/23/2008	0.00	0.00				140 E Durian	City of Coalinga
434	0810-014	Replumb water piping	10/24/2008	0.00	0.00		80.00	072-052-02	351 WASHINGTON ST	James Harold Martin
434	0810-015	Replace Water Line Additions	10/27/2008	0.00	0.00	R-1	80.00	071-081-09 S	229 BUCHANAN ST	Anna L Gentry
434	0810-016	Roof Permit Additions and	10/28/2008	8,500.00	0.00		80.00	072-083-11	222 TYLER ST	Joe & Rosalinda Dominguez
437	0810-018	TI- Medical Office (Fire	11/13/2008	80,000.00	0.00				1191 Phelps Ave.	Coalinga Regonal Medical
O/S Demo R	0810-019	Pool Demolition Out of Scope	10/30/2008		0.00	R-1	80.00	071-122-09	130 FILLMORE ST	Gregg Cooper
434	0810-020	Re-Roof Additions and	10/31/2008	4,250.00	0.00	R-1	81.00	071-153-16 S	258 PINE ST	Paul J & Patricia L Higgs
434	0811-001	Roof Overlay Permit Additions	11/3/2008	4,500.00	0.00	R-1	80.00	072-114-04	252 E CEDAR AVE	Martha E Johncox
434	0811-002	Re-Roof, Replacing Shingles	11/6/2008	4,750.00	0.00	R-1	80.00	072-242-06 S	669 MONROE ST	Clifford D & Michelle D
434	0811-003	Tear off reroof Additions and	11/5/2008	6,000.00	0.00	R-1	80.00	083-191-08 S	208 S JOAQUIN ST	Imogene Sparks
434	0811-004	Reroof Additions and	11/6/2008	5,000.00	0.00				254 1/2 Buchanan	James Hosp
434	0811-005	Replace 40 feet of Sewer Line	11/6/2008	0.00	0.00	R-1	80.00	071-081-08 S	235 BUCHANAN ST	Harry L & Doris Stroup
434	0811-006	Roof Patch Additions and	11/6/2008	2,000.00	0.00	R-1	80.00	071-131-13	150 BUCHANAN ST	Jim A Gillitzer
437	0811-008	Bathroom Addittion (1 W,	12/3/2008	50,000.00	0.00	C-P			1191 Phelps Ave	Coalinga Regonal Medical

New Permits Issued

Report Date Range : 01/01/2007 to 04/30/2009

Class	Permit #	Type of Permit	Date Issued	Valuation	# of Units	Zoning	Census	APN	Job Address	Owner Contractor
434	0811-009	A/C Replacement Additions	11/18/2008	0.00	0.00	R-1	80.00	083-233-04 S	335 S COALINGA ST	John F & Catherine H Tullis
434	0811-010	Electrical Panel Change-out	11/13/2008	0.00	0.00	R-1	81.00	083-113-08	325 E PLEASANT ST	FEDERAL NATIONAL
437	0811-011	Install Ansul Hood Supression	11/19/2008	0.00	0.00		81.00	083-123-02	638 E POLK ST	Kalwinder S Bajwa
434	0811-013	Tear off and re-roof Additions	11/21/2008	9,000.00	0.00	R-1	80.00	072-093-08	181 E BIRCH AVE	Phillip R Bragg
437	0811-014	Moving 6' non load berring	11/20/2008	1,500.00	0.00	C-1	80.00	071-132-20	250 Van Ness	YOUNG BROS
437	0811-015	4 HVAC change outs	11/20/2008	16,600.00	0.00	C-1	81.00	072-152-05	240 Coalinga Plaza	Leslie Roberta Peavy
434	0811-016	Remove P-Trap in sewer line	11/20/2008	0.00	0.00	R-1	80.00	072-063-12	653 FRESNO ST	Hester Roos Alvarez
438	0811-019	Addition of two patio covers	12/1/2008	4,980.00	0.00	R-1	46.02	083-151-18 S	582 TACHE WAY	James Steven Anderson
434	0812-001	Tear off and Re-roof	12/1/2008	5,800.00	0.00	R-1	81.00	072-170-04	150 IVY AVE	Henry D & Della E Gentry
434	0812-002	Tear off and re-roof Additions	12/1/2008	5,900.00	0.00	R-1	80.00	071-054-13 S	304 HARVARD AVE	David T & Brenda L Isaac
434	0812-004	New HVAC Additions and	12/3/2008	0.00	0.00	R-1	80.00	072-040-28 S	542 N PRINCETON AVE	David G & Carroll S Canada
434	0812-005	Hvac Installation Additions	12/3/2008	0.00	0.00	R-1	80.00	071-053-13 S	314 STANFORD AVE	Douglas L & Becky A Stanley
102	0812-006	2101 sf. S.F.R. New	12/5/2008	169,959.46	0.00	R-1	81		730 Mustang Way	OAKFIELD, LLC
102	0812-007	2286 sf. S.F.R. New	12/5/2008	187,360.56	0.00	R-1			125 Appaloosa Ct.	OAKFIELD, LLC
437	0812-008	remodel after fire minor	12/5/2008	2,650.00	0.00	C-4	80.00	072-200-14 S	102 S 5TH ST	Maria A Camberos
434	0812-009	Reroof 1457 sqft Additions	12/11/2008	3,000.00	0.00	R-1	81.00	083-151-19 S	574 E PLEASANT ST	Jose S & Emilia I Mora
O/S C	0812-010	Grading Permit for Auto	12/12/2008	0.00	0.00	C-M		072-125-04	231 W ELM AVE- AUTO	BAKER R C MEMORIAL
434	0812-012	Gas Line and Test Additions	12/15/2008	0.00	0.00	R-1		071-082-25 S	268 BUCHANAN ST	Rodney D Graham
437	0812-013	Replace Domestic Water Line	12/15/2008	0.00	0.00	C-4	80.00	072-131-22	135 E ELM AVE	COALINGA FEED YARD
434	0812-014	Electrical Panel Change out	12/15/2008	0.00	0.00	R-1		071-084-19 S	198 W CHERRY LN	Kennt and Nina Oxborrow
434	0812-015	Replace Sewerline (60 feet)	12/16/2008		0.00	R-1	80.00	071-122-13	196 FILLMORE ST	Judith M Arthurton
437	0812-016	Reroof back section 800 sq ft	12/19/2008	3,000.00	0.00	C-5	81.00	083-116-06	510 E POLK ST	Phillip R Bragg
434	0812-017	Panel change out Additions	12/22/2008	0.00	0.00	R-1	80.00	071-073-06 S	1195 CALIFORNIA ST	Timothy R Auhll
434	0812-018	install short line --pressure	12/22/2008	0.00	0.00	C-5	81.00	083-111-08	304 E POLK ST	Jagroop S & Rupinder K Gill
434	0812-019	Tear off and re-roof Additions	12/29/2008	7,000.00	0.00	R-1	80.00	072-040-05 S	415 JEFFERSON ST	Edyth Braly
434	0812-020	Tear off and Re-roof	12/29/2008	3,000.00	0.00	R-1	80.00	072-063-12	653 FRESNO ST	Hester Cartwright
434	0812-021	Change out gas line due to	12/30/2008	0.00	0.00	R-1	81.00	071-154-04 S	248 COOLIDGE ST	Wanda Sue Trippel
437	0901-001	Repair Fire damage Additions	1/5/2009	1,200.00	0.00	R-2	80.00	072-067-04	637 SUNSET ST	ROMAN CATHOLIC
434	0901-002	HVAC Change out Additions	1/5/2009	0.00	0.00	R-1	80.00	071-051-01 S	1350 N JOAQUIN ST	Dustin & Valerie Walker
434	0901-003	Repair Gas Leak Additions	1/6/2009	0.00	0.00	R-1	80.00	072-040-06 S	405 JEFFERSON ST	Raenell Culwell Padilla
434	0901-004	Electrical Panel Change out	1/6/2009	0.00	0.00	R-1	80.00	072-068-16	150 MADISON ST	Candelaria Cisneros
434	0901-005	50 ft of new gas line Additions	1/12/2009	0.00	0.00	R-1	81.00	071-163-09 S	304 WALNUT AVE	Johanna Duval
434	0901-006	Install new 100 AMP	1/21/2009	0.00	0.00	R-1	81.00	071-146-05 S	360 HARRISON ST	Isaac & Mary Ramirez

New Permits Issued

Report Date Range : 01/01/2007 to 04/30/2009

Class	Permit #	Type of Permit	Date Issued	Valuation	# of Units	Zoning	Census	APN	Job Address	Owner	Contractor
434	0901-007	Minor Electrical in kitchen	1/21/2009	0.00	0.00	R-1	80.00	072-064-15 S	373 JEFFERSON ST	Jonathon and Laura Terra	
434	0901-008	Remodel Apts 109 and 110	1/23/2009	25,000.00	0.00	R-3	80.00	083-183-01 S	315 W POLK ST	Rita Scrivner	
437	0901-009	Repair plumbing in restroom,	2/27/2009	4,000.00	0.00	C-4	80.00	072-126-13	122 W ELM AVE	KIT SANG LAAN U S A	
437	0901-010	electrical panel change out add	2/10/2009	4,000.00	0.00	C-5	81.00	083-116-06	510 E POLK ST	Phillip R Bragg	
434	0901-011	Remove nonberring demising	1/23/2009	1,500.00	0.00	R-1	80.00	071-066-01 S	397 HARVARD AVE	Verna Hernandez	
437	0901-012	Installation of new UL300 Fire	1/28/2009	0.00	0.00	C-1	80.00	071-132-20	260 VAN NESS ST	YOUNG BROS	
437	0901-014	Stucco exterior, starp	1/29/2009	17,000.00	0.00	C-P	80.00	070-060-84 S	100 CAMBRIDGE AVE	Jack Patel	
434	0902-002	Gas Test Additions and	2/4/2009	0.00	0.00	R-1	81.00	083-124-12 S	661 E PLEASANT ST	David Wright/ Norman Flam	
434	0902-003	Demo Pool Additions and	2/5/2009	500.00	0.00	R-1	80.00	071-051-03 S	445 CORNELL AVE	COALINGA FEED YARD	
O/S C	0902-004	Insallation of (2) Illuminated	2/9/2009	0.00	0.00				183 E POLK ST	Interra Development	
434	0902-005	85 Feet of Gas Pipe with Gas	2/10/2009	0.00	0.00	R-1	80.00	083-232-09 S	410 W SACRAMENTO ST	Marian Husted	
434	0902-008	Replace main Gas line 80 ft.	2/12/2009	0.00	0.00	R-1	80.00	072-105-03	159 W CEDAR AVE	Sonja Murphy	
FIRE	0902-010	5-Year Sprinkler Certification	2/13/2009	0.00	0.00				750 Van Ness St. / Auditorium	Coalinga Huron School	
434	0902-018	reroof 20X20 shop Additions	2/12/2009	1,500.00	0.00	R-1	81.00	071-154-02 S	224 COOLIDGE ST	Cris H & Movita G Robles	
434	0902-019	Electrical, Plumbing, HVAC,	2/17/2009	5,000.00	0.00		80.00	072-054-12	148 ADAMS ST	Cal Minor	
434	0902-021	Multi structure roofing	2/23/2009	8,200.00	0.00	R-1	80.00	072-068-01	193 JEFFERSON ST	Ralph Gorrill	
434	0902-022	Change Out Electrical Panel,	2/24/2009	0.00	0.00	R-1	80.00	071-072-04 S	304 UNIVERSITY AVE	Warren Ayers	
O/S C	0902-023	Install New Signs - Non	2/25/2009	1,800.00	0.00		80.00	072-136-18	301 E FOREST AVE	David B & Vickie L Billingsley	
434	0902-024	HVAC Change Out Roof-top	2/24/2009	0.00	0.00	R-1	81.00	071-262-03 S	466 KIMBERLY PL	Norman Eugene & Penny	
434	0902-025	Replace damaged sewer line ,	2/25/2009	0.00	0.00	R-1	80.00	071-083-18 S	218 LINCOLN ST	Rafael Iniguez	
434	0902-027	Replace Sewer Lne Additions	2/26/2009	0.00	0.00	R-1	80.00	072-114-12	257 E DURIAN AVE	Gloria Arrendondo	
O/S C	0902-029	Install Fire Detection System	2/27/2009	0.00	0.00			060-042-07	122 W. Elm Ave.	Joseph Cheung	
434	0903-001	Shed 9 X 11 Additions and	3/2/2009	1,643.40	0.00	R-1	81.00	083-114-05	498 E POLK ST	Jesus Lopez Diaz	
434	0903-002	Tear off and Re-Roof	3/2/2009	4,600.00	0.00	R-1	80.00	072-068-02	183 JEFFERSON ST	Glenn R & Mary L Rowland	
437	0903-004	Install 69" X 8' lighted sign	3/4/2009	0.00	0.00	C-4	80.00	072-134-19	250 E ELM AVE	Jerry Oliver	
434	0903-005	Tear off reroof, Elecrtical	3/5/2009	55,000.00	0.00	R-1	81.00	083-133-22	325 E HOUSTON ST	Dorthy Wallace	
434	0903-006	Roof Overlay Additions and	3/10/2009	4,100.00	0.00	R-1	80.00	071-064-10 S	454 YALE AVE	Michael J & Susan A Keenan	
434	0903-008	Verify panel after tanper seal	3/11/2009	0.00	0.00	R-1	81.00	071-153-05 S	260 HOOVER ST	Michelle A Cannon	
437	0903-009	Rework Electrical, move 6ft.	3/11/2009	5,000.00	0.00	C-4	80.00	072-135-16	301 E ELM AVE	William E & Marcelyn M	
434	0903-010	80 Feet of 4in sewer pipe	3/11/2009	0.00	0.00	R-1	81.00	071-155-13 S	347 COOLIDGE ST	Donald Fisher	
434	0903-013	Tear off Reroof 20 Sq's	3/16/2009	11,000.00	0.00	R-1	80.00	071-051-15 S	415 CORNELL AVE	Vandous L & Monica D	
434	0903-014	Tear off Reroof 20 sq.	3/16/2009	5,100.00	0.00	R-1	80.00	083-240-18 S	835 S COALINGA ST	Lauro & Elizaeth Nodal	
437	0903-015	Trench and burry power line	3/17/2009	5,000.00	0.00	C-4	80.00	072-134-19	250 E ELM AVE	Jerry Oliver	

New Permits Issued

Report Date Range : 01/01/2007 to 04/30/2009

Class	Permit #	Type of Permit	Date Issued	Valuation	# of Units	Zoning	Census	APN	Job Address	Owner Contractor
437	0903-018	swap out HVAC on unit 280	3/19/2009	0.00	0.00	R-3	80.00	072-142-01	270 N 2ND ST	Eddie J & Tina Huang
437	0903-019	single sign Electrical with	3/19/2009	0.00	0.00	C-M		083-080-77 S	187 W POLK ST	Donlon H & Agnes H
434	0903-020	Addition to Home 499 sq.ft. 1	3/19/2009	46,935.94	0.00	R-1	81.00	071-143-10 S	271 HARRISON ST	Roberto Castillo
437	0903-021	HVAC Change out Additions	3/25/2009	0.00	0.00	C-4		072-105-25	329 COALINGA PLZ	Kays Llc McMahan
434	0903-022	Electrical panel change out	3/25/2009	0.00	0.00	R-1	81.00	083-125-12	715 E VALLEY ST	Henry Wintergerst
437	0903-023	Antenna Upgrade Additions	4/6/2009	6,000.00	0.00	M-1		083-240-51S	990 W Elm St.	Crown Castle
434	0904-004	Tear off Reroof Additions and	4/7/2009	0.00	0.00	R-1	80.00	071-041-25 S	425 CAMBRIDGE AVE	Paul and Connie Green
434	0904-005	Replace old piping with new	4/9/2009	0.00	0.00	R-1	80.00	083-370-05	525 SUNSET ST	Samantha Morris
434	0904-006	Replace Sewer Lateral remove	4/8/2009	0.00	0.00	R-1	81.00	083-151-13 S	436 S HACHMAN ST	Martin & Imogene Hobbs Jr.
437	0904-008	Change out 4- Dual Pacs	4/14/2009	0.00	0.00	C-4	80.00	072-126-13	122 W ELM AVE	KIT SANG LAAN U S A
434	0904-010	Frame wall at restroom, swap	4/15/2009	0.00	0.00	R-1	81.00	083-124-02 S	624 E VALLEY ST	Hester J Cartwright
434	0904-012	Tear off reroof Additions and	4/16/2009	0.00	0.00	R-1	80.00	071-052-06 S	401 STANFORD AVE	Gregory K Callison
434	0904-013	Replacemanet of Shower,	4/21/2009	0.00	0.00	R-1	80.00	083-251-22 S	404 S PRINCETON AVE	Walter E & Sharon L Blair Jr.
434	0904-014	New panel, water heater	4/21/2009	913.00	0.00	R-1	81.00	071-155-15 S	323 COOLIDGE ST	Jeffery Kunz

Total Number of Permits Listed 608 **24,684,429.73**

R E P O R T

BIOLOGICAL RESOURCES TECHNICAL REPORT FOR THE SAN JOAQUIN SOLAR POWER GENERATING FACILITY, FRESNO COUNTY, CALIFORNIA

Prepared for

Martifer Renewables Solar Thermal LLC

URS Project No. 27658031.00900

January 22, 2009

URS

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EXECUTIVE SUMMARY

The purpose of this Biological Resources Technical Report is to describe biological resources within the areas of potential effect for the Martifer Renewables Solar Thermal LLC Project Site. This report details the results of general wildlife surveys, focused and protocol special status species surveys, vegetation mapping, and a jurisdictional waters delineation conducted in the Project area.

The Project area is defined as the area that could potentially be directly or indirectly impacted during Project construction and operation. This includes the 640-acre Project site and a 500-foot buffer, and a 400-foot buffer on each side of the two proposed approximately 6-mile transmission line alternative routes. In addition to the immediate Project survey area, the habitats within 1 mile of the Project site and ¼ mile of the proposed transmission lines were characterized per California Energy Commission Guidance. The Project site is located on one section of land on the south side of Jayne Avenue approximately 6 miles east of Coalinga and approximately 3 miles west of Interstate 5, on the northern perimeter of the San Joaquin Valley farm district. The 6-mile offsite transmission line alignments start at the north and south boundaries of the Project site and go to the Gates substation. Figure 1, Regional Map San Joaquin Solar 1&2, displays the general topography of the Project Area and vicinity.

Prior to conducting field surveys, a review of literature was performed, including a query of the California Native Plant Society (CNPS) Inventory of Rare Plants Database, United States Fish and Wildlife Service (USFWS) species database, and the California Department of Fish and Game (CDFG) California Natural Diversity Database (CNDDB) to identify special-status species previously documented within the Project survey area and vicinity. Biological field surveys were conducted by URS in April and May 2008, June through August 2008, and December 1-12, 2008 in accordance with CEC regulations (CEC 2000, revised 2007), and CDFG and USFWS protocols for surveys of special-status species. The Project site was surveyed and found to be under active agricultural activities; therefore, no focused surveys for special-status species were conducted on the Project site.

Surveys of the northern transmission line routes included habitat assessment, vegetation and general wildlife surveys, and CDFG-protocol surveys for blunt-nosed leopard lizards (BNLL) (*Gambelia sila*) within 400 feet of the north and south sides of each of the alignment in June, July, and August 2008. Protocol small-mammal trapping surveys were conducted on both of the proposed alignments in December, 2008. CDFG0-protocol rare plant surveys will be conducted in spring 2009 on both alignments, and BNLL surveys will be performed on the southern transmission line atlernative during the 2009 survey season.

The observed vegetation in and surrounding the Project study area is disturbed in nature and includes a disturbed grassland and saltbush scrub matrix and agricultural vegetation communities, (Figure 2). A CNDDB query of the Project area and assessment buffers listed six special-status plant species that historically occured or have the potential to occur within ten miles of the Project study site and alternative transmission line alignments, although none of these plant species were observed during field surveys. The CNDDB lists 22 special-status wildlife species as historically detected and potentially occurring in the Project vicinity, with only a few special-status wildlife species having a low to moderate potential to occur in the Project study area. Five special-status wildlife species were observed along the transmission line routes during the 2008 surveys; none were observed within the Project site.

Biological field surveys resulted in the detection of the following special status species along the alternative transmission line routes:

Wildlife

Loggerhead shrike (*Lanius ludovicianus)*

Golden eagle (*Aquila chrysaetos*)

Northern harrier (*Circus cyaneus*)

Blunt-nosed leopard lizard (*Gambelia sila*)

American badger (*Taxidea taxus*)

SECTION 1 INTRODUCTION

This Biological Resources Technical Report has been prepared to support environmental compliance and permitting for the proposed development of a MRST solar-powered electric generating facility near Coalinga, California, at a site designated as San Joaquin Solar (SJS) 1&2, collectively referred to herein as the Project area. The purpose of this Biological Resources Technical Report is to describe biological resources within the areas of potential effect for the Project Site. This report details the results of special status species protocol and general wildlife surveys, vegetation mapping, and a jurisdictional waters delineation conducted in the Project area.

1.1 PROJECT DESCRIPTION

San Joaquin Solar 1&2 are two 53.4 MW net solar hybrid power stations. Martifer Renewables Solar Thermal LLC (MRST) will be leasing the property for use as a solar and biomass energy generation facility. Clean renewable energy will be produced from heat derived from the collection of solar radiation and the combustion of biomass, both employed to power a conventional steam turbine cycle.

Two alternative transmission line routes have been identified and evaluated. One proposed transmission line (the northern route) extends from the northeast corner of the Project site east, along the south side of West Jayne Avenue in or near the existing PG&E ROW to a point south of the Gates Substation. The second proposed transmission line (the southern route) extends from the southeast corner of the Project site east, along the section boundary line one mile south of and parallel to West Jayne Avenue to a point south of the Gates Substation. The southern route then turns north to Gates Substation. For both route options, the overhead line will begin at the dead-end structure in each Plant's switchyard and will continue east along the northern edge of SJS 2 solar field for approximately 1,500 feet, then either north or south for about 1,500 feet to the respective corner of the Project site. The transmission line will be approximately 6 miles long and will use 85-foot 230 kV Type A wood poles.

SECTION 2 ENVIRONMENTAL SETTING

2.1 PROJECT SETTING

The proposed Project site is situated on 640 acres, located on the south side of Jayne Avenue, approximately 6 miles east of Coalinga and approximately 3 miles west of Interstate 5 on the northern perimeter of the San Joaquin Valley farm district. The Project site is located entirely within Section 3 of Township 21 South, Range 16 East on the Guijarral Hills and Avenal USGS 7.5-minute quadrangle maps. The northern Project boundary borders West Jayne Avenue (Figure 1). The northern route of the transmission line alternative is in or near an existing transmission right-of-way along the south side of West Jayne Avenue from the northeast corner of the Project area to the PG&E Gates Substation, and the southern alternative route is one-mile south of the northern route. Land use at the Project site, transmission line alignments, and vicinity is designated agricultural and rangeland, as well as public facilities. Land use in the immediate site vicinity includes livestock-related agriculture, cultivated crops, rural residential, and public facilities. The non-agricultural uses within a 1-mile radius of the Project site include Coalinga State Hospital and Pleasant Valley State Prison. Land use on both the northern and southern transmission line routes is comprised of disturbed native habitat for approximately 2 miles, then becomes intensive agricultural such as orchards and other cultivated crops. Both routes of the alignment would span Zapato Chino Creek.

The Project site is currently active farmland recently cleared and planted with wheat and pistachio crops, and has supported several types of crops, including cotton, safflower and garlic. Development onsite includes several unpaved service roads that separate different fields, an extensive irrigation system, a groundwater well with associated irrigation pump equipment above-ground storage tanks located near the southwestern corner of the site, and an abandoned concrete pad in the vacant, northwestern corner of the site. An approximately 1-acre area along the eastern property boundary is not part of the project. Based on historical information reviewed, the majority of the Project site has supported agricultural and livestock uses since approximately 1970.

2.2 FIELD SURVEY METHODOLOGY

The Project area is defined as the area that could potentially be directly or indirectly impacted during Project construction and operation. The 640-acre Project site includes the two solar field sites, construction laydown and parking areas, two biomass facilities, two power blocks, and transmission line connections. The Project survey area includes the Project site and a 500-foot buffer, and a 400-foot buffer on each side of the two proposed approximately 6-mile transmission line alternative routes. In addition to the immediate Project survey area, the habitats within 1 mile of the Project site and ¼ mile of the proposed transmission lines were characterized per California Energy Commission Guidance.

A site visit was conducted with URS staff and Justin Sloan, California Department of Fish and Game (CDFG) biologist on April 11, 2008 to allow CDFG staff to examine the site and agree on survey protocols prior to commencement of the survey season. Biological field surveys were conducted in accordance with CEC regulations (CEC 2000, revised 2007), CDFG and United States Fish and Wildlife Service (USFWS) protocols for surveys of special-status species. Surveys were conducted by URS, Quad Knopf, and AlphaBiota biologists from April through August 2008, and in December 2008, as defined by

protocol requirements described below (see Appendix C). A habitat assessment survey was conducted of the Project site and both sides of the northern transmission line alignment to the Gates substation connection in April and May, 2008. Areas that supported suitable habitat (i.e., were not under active agriculture including crop cultivation and orchards) were the areas where focused surveys for special status botanical and wildlife resources were conducted in 2008 (Figure 2; Figure 3 in Appendix H). The southern transmission alternative route was added to the assessment in late 2008. General wildlife and plant surveys, as well as focused botanical and protocol BNLL surveys will be performed on the proposed southern transmission line alternative route in spring and summer 2009.

Prior to conducting field surveys, a review of literature was performed, including a query of the California Native Plant Society (CNPS) Inventory of Rare Plants Database, USFWS, and the CDFG California Natural Diversity Database (CNDDB) to identify special-status species previously documented within 10 miles of the Project survey area. These searches revealed a number of historical sensitive plant and animal locations within 10 miles of the Project site; however, only a few species were located within the Project survey area (Appendix B). The USFWS Recovery Plan for Upland Species of the San Joaquin Valley was also reviewed, as well as several documents that were developed in association with the City of Coalinga and Pleasant Valley Habitat Conservation Plan (HCP) processes in the Coalinga area in 2005-2007.

Based on the vegetation and habitat assessment survey of the 640-acre Project site (the site is currently active agriculture, including barley, row and pistachio crops), focused special-status species surveys were not conducted on the Project site. CDFG staff concurred with this assessment in April 2008. General plant and wildlife surveys, and CDFG-protocol surveys for blunt-nosed leopard lizards (BNLL) and San Joaquin antelope squirrel (SJAS) were conducted within 400 feet on the north and south sides of the proposed northern transmission line alignment adjacent to West Jayne Avenue in June, July, and August 2008. General wildlife surveys were conducted concurrently during these surveys. Protocol small-mammal trapping surveys were conducted in December, 2008. CDFG-protocol focused botanical surveys will be conducted on the northern and southern transmission line alignments, and protocol BNLL surveys will be conducted on the southern transmission line alignment in spring 2009.

The habitat assessment surveys of the Project survey area were conducted by URS senior biologists Dr. Patrick Mock and Theresa Miller on April 11, 2008 and by Theresa Miller on May 15, 2008. Vegetation types were delineated onto the aerial map in the field, and then later digitized into a geographical information system (GIS), including those areas within 1 mile of the Project study area. All areas were surveyed on foot, and all areas were visible from the survey routes. Animals were identified using scat, tracks, burrows, recognition of vocalizations, or direct visual observations with the aid of binoculars. All botanical and wildlife species detected during surveys were recorded, and locations of sensitive resources were mapped in the field with the aid of handheld Global Positioning System (GPS) units (5-meter accuracy) and plotted on a rectified 2005 aerial photograph using GIS.

Based on the habitat assessment and discussions with CDFG staff, CDFG-protocol surveys were conducted for the BNLL on the proposed northern transmission line route. Because the 640-acre Project site currently supports active agriculture, CDFG staff concurred that focused surveys for BNLL were not necessary on the Project site. Two BNLL survey periods are specified in the protocol: twelve (12) adult surveys between April 15 and July 31 and five (5) juvenile surveys between August 1 and September 15.

During the adult survey period, 12 transect surveys were completed within an 800-foot wide buffer (400 feet on each side of West Jayne Avenue) of the proposed northern transmission line alignment between May 28 and July 9, 2008. During the juvenile survey period, a total of five transect surveys were completed within the 800-foot wide buffer of the proposed northern transmission line route between August 9 and August 22, 2008. During the surveys, a team of four or five biologists walked in transects spaced 20 meters apart, searching for BNLL and other lizards. All surveys had one Level II surveyor present for every three Level I surveyors (3:1 ratio), as required by CDFG protocol. Each survey was started on the opposite side of the alignment from the previous survey to avoid introducing temporal or temperature biases to the BNLL surveys. The limits of temperatures and wind specified in the protocol were followed; all surveys were conducted within of the designated time of day (before 2 pm), temperature range (25-35 degrees Celsius (ºC)) or wind ranges (maximum 10 mph sustained winds). BNLL surveys are planned for 2009 using the same protocol within a 800 ft wide corridor of the southern transmission line route.

Surveys for San Joaquin antelope squirrel (SJAS) (*Ammospermophilus nelsoni)* were conducted concurrent with BNLL surveys, as approved during coordination with CDFG staff. Since the Project site is comprised of active row crops, orchard, and other agricultural uses that is not suitable habitat, SJAS surveys were not conducted within the Project site; CDFG staff required that the surveys be conducted only within potential habitat. SJAS are known to be most active in temperatures up to 30ºC; under the BNLL survey protocol, surveys occur between 25 C and 35ºC. Because of this difference in favorable temperatures for optimal activity of the two species, surveys for SJAS were discontinued when temperatures reached the SJAS maximum temperature of 30ºC, while the BNLL surveys continued if the BNLL protocol maximum was not met at the time. The location at which the temperature reached 30ºC was noted, and the next survey was started near this location to avoid introducing temperature bias to the SJAS survey. Incidental observations of other detected species were recorded during the BNLL and SJAS surveys.

Nocturnal trapping surveys for small mammals were conducted within the disturbed non-native grassland, saltbush scrubland, and fallow agricultural lands along the northern and southern transmission line routes in December, 2008. Four trapping lines were established along the northern route (trap lines 1 through 4), consisting of 20 traps, 100 traps, 80 traps, and 100 traps, respectively (Figure 3 in Appendix H). Four trapping lines were established along the southern transmission line, consisting of 50 traps each. Traps were placed at intervals of approximately 15 meters along the trap lines. Each line was trapped for four consecutive nights; trap lines 1 through 4 were trapped from December 1-4, 2008 and trap lines 5 through 8 were operated from December 7-10, 2008. A combination of standard 9-inch and 13-inch kangaroo rat special Sherman live traps were used. The 9-inch traps were modified to minimize the potential for tail injuries to kangaroo rats. Traps were baited with mixed bird seed and opened prior to dusk each night. One trap check each night was conducted, commencing at approximately 2300 hours and concluding between 0200 and 0430 the following morning. Traps were closed after being checked. A total of 1,200 trap-nights were conducted along the northern transmission line route and 800 trap-nights were conducted along the southern transmission line route. Each animal that was captured was identified to species; weight, age, sex, and sexual condition were noted. Each captured rodent was marked by clipping a patch of fur on its right rump, and released at its point of capture. Notes on previous injuries or other anomalies were recorded. Curtis Uptain from Quad Knopf and Sundeep Amin from URS conducted trapping along

the northern transmission line route and Curtis Uptain and Rick Bailey from URS conducted trapping along the southern transmission line route (see Appendix H for greater detail).

During coordination discussions with staff from the CDFG Fresno Field Office, it was assumed that San Joaquin kit fox (SJKF) (*Vulpes macrotis mutica*) utilize the Project study area, and that protocol surveys for this species would not be necessary because of the SJS 1&2 location within the San Joaquin Valley and recent SJKF sightings documented in the vicinity. Burrowing owl (*Athene cunicularia*) have not been observed in the Project vicinity for several years; however, during the BNLL surveys, biologists searched for kit fox dens and burrowing owl sign or burrows to document usage of the Project study area by these species. Burrows that appeared to be suitable for kit fox or burrowing owl were scoped to confirm use within the Project. Sign of giant kangaroo rat and pocket mouse precincts or tracks, SJAS, and other special-status species with a potential to be present in the Project vicinity were also searched for during each survey on the Project site. Survey dates, personnel, and weather data for each survey are listed in Appendix C. BNLL survey data sheets, including weather data for each survey date, are provided in Appendix F. Resumes of the biologists that conducted the surveys are provided in Appendix G.

2.2.1 Jurisdictional Waters Delineation

A formal jurisdictional waters delineation per Army Corps of Engineers (ACOE) protocol was conducted as part of this assessment. Waters of the United States (U.S.), including vegetated wetlands, subject to jurisdiction pursuant to Section 404 of the Clean Water Act (CWA) were identified using methods describe by the ACOE (1987). Non-wetland waters of the U.S. were delineated based on the presence of an ordinary high water mark (OHWM) as defined at 33 CFR 328.3(e). The OHWM is defined as:

> "The term 'ordinary high water mark' means that line on the shore established by the fluctuations of water and indicated by physical characteristics such as clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas."

Jurisdictional waters delineations were conducted to determine if areas subject to jurisdiction, pursuant to Section 1600 of the California Fish and Game Code, occur within the subject property. Section 1601(a) describes areas subject to its jurisdiction as:

> "Except as provided in this section, general plans sufficient to indicate the nature of a project for earth moving by, or on behalf of, any state or local governmental agency or any public utility shall be submitted to the department if the project will (1) divert, obstruct, or change the natural flow or the bed, channel, or bank of any river, stream, or lake designated by the department in which there is at any time an existing fish or wildlife resource or from which these resources derive benefit, (2) use material from the streambeds designated by the department, or (3) result in the disposal or deposition of debris, waste, or other material containing crumbled, flaked, or ground pavement where it can pass into any river, stream, or lake designated by the department."

Section 1601(a) is based on Title 14 California Code of Regulations (CCR) 720, which designates waters of the state to be:

> "For the purpose of implementing Sections 1601 and 1603 of the Fish and Game Code which requires submission to the department of general plans sufficient to indicate the nature of a project for construction by or on behalf of any person, governmental agency, state or local, and any public utility, of any project which will divert, obstruct, or change the natural flow or bed of any river, stream, or lake designated by the department, or will use material from the streambeds designated by the department, all rivers, streams, lakes, and streambeds in the State of California, including all rivers, streams and streambeds which may have intermittent flows of water, are hereby designated for such purpose."

Streams, including creeks and rivers, are defined at Title 14 CCR 1.72 as:

> "A stream is a body of water that flows at least periodically or intermittently through a bed or channel having banks and supports fish or other aquatic life. This includes watercourses having a surface or subsurface flow that supports or has supported riparian vegetation."

A jurisdictional waters delineation for the Project was conducted by URS senior biologist Ms. Theresa Miller within the northern transmission line alignment in June 2008, and Quad Knopf biologists Curtis Uptain and Woody Moise delineated the channel where it intersects with the southern transmission line alignment in January, 2009. The delineations were performed to document the extent of jurisdictional waters within the SJS 1&2 Project area. Hydrological and vegetation conditions were evaluated along the length of an identified drainage channel (indicated as a "blue-line stream" on the USGS Topo map), and soil samples were taken in the channel where it intersects with the Project study area. The delineation identified whether hydrophytic vegetation, hydric soils, and hydrology were present within the channel. Soil data and CDFG channel width measurements were recorded, and the limits of the OHWM and the banks of the channel were measured and recorded using a Trimble submeter GPS unit and drawn onto an aerial map.

SECTION 3 FIELD SURVEY RESULTS

3.1 VEGETATION

The observed habitat in the Project study area is disturbed in nature and includes disturbed and agricultural vegetation communities, as defined by Holland (1995). The Project site is bare due to recent plowing, except in small areas of the Project site that appear to be access areas. In these areas, primarily non-native annual plant species are present. Plant species observed on the Project site include non-native species such as mustards, Russian thistle (*Salsola tragus*) and fiddleneck (*Amsinckia* spp.). Higher vegetation density occurs along each of the the transmission line routes, where dominant plant species include soft chess, Russian thistle, mustards, fiddleneck, red-stem filaree, California goldfields, and saltbush species until they reach the orchards and other cultivated agricultural approximately 2 miles east of the Project site. These agricultural land uses then continue to the point where the transmission line routes turn north and head to the substation through agricultural land uses. Figure 2 displays the vegetation communities in the Project study area, and Appendix D lists the plant species identified in the SJS 1&2 Project study area (including the Project site, transmission line alignments, and 1 mile assessment buffer surrounding the Project area) during the 2008 biological surveys. The existing plant communities within the Project study area are described below. Plant nomenclature follows Hickman (1993), and vegetation community identification follows Holland (1986).

Table 1
Vegetation Communities Observed within SJS 1&2 Project Site
and Proposed Transmission Line Routes

Community Name	Holland Code	Northern Transmission Route (acres)	Southern Transmission Route (acres)
Developed	12000	36.6	15.8
Agriculture	18300	446.6	930.5
Disturbed Valley Saltbush Scrub/Non-native Grassland Mosaic	36221/42200	165.1	32.2
Open Flood Channel	N/A	2.4	20.1
Total within Transmission Line Routes	N/A	650.6	998.6
Total including 640 acres of Agriculture on Project site	N/A	1,290.6	1,638.6

Developed

Developed lands (Holland Code 12000) include roads, built structures, and associated infrastructure and bare ground. Developed areas on the Project site include several unpaved service roads that separate fields, a groundwater well with associated irrigation pump equipment and aboveground storage tanks located near the southwestern corner of the site, and an abandoned concrete pad in the northwestern corner of the site. A total of 36.6 acres of developed lands are present within the 800-foot buffer the SJS 1&2 northern transmission line route and 15.8 acres are present within 800 feet of the southern transmission line route.

Agricultural Lands

Agricultural areas (Holland Code 18000) include actively cultivated lands, or lands that support nursery operations. The level of soil disturbance is such that only the species under cultivation and the most ruderal plant species would be expected to occur in this vegetative community. No grazing occurs on the Project site or in the immediate vicinity of the Project study area. The majority of the Project site is actively cultivated at this time, with pistachio and wheat cultivation in progress. In addition to the cultivated lands on the Project site, the majority of the proposed transmission line alignment is comprised of orchards and row crops. A total of 640 acres of agricultural lands are present on the SJS 1&2 site, 446.6 acres are present within the 800-foot buffer of the northern transmission line route, and 930.5 acres of agricultural lands are within 800 feet of the southern transmission line route.

Disturbed Valley Saltbush Scrub/Non-native Grassland Mosaic

Disturbed Valley saltbush scrub (Holland Code 36221) is intermixed with disturbed non-native grassland habitat within the proposed transmission line corridor to the north and east of the Project site. Because these two habitats were not mutually exclusive of one another, they are described together and calculation of the area covered by the two habitats was combined. A total of 165.1 acres of disturbed valley saltbush scrub/non-native grassland mosaic are present within the 800-foot buffer of the northern transmission line route, and 32.2 acres are found within 800 feet of the southern transmission line route.

Valley saltbush scrub is typically on sandy to loamy soils without surface alkalinity, characterized by open, gray- or blue-green chenopod scrubs (10-40% cover), usually over a low herbaceous annual understory. Cover types are dominated by common saltbrush (*Atriplex polycarpa)* or spinescale (*Atriplex spinifera*) (Holland 1986). Other species common within this habitat include larkspur, tarplant, and other annuals. Because the Valley saltbush scrub habitat that is present in the proposed transmission line alignment is sparsely distributed within the non-native grassland community, it is considered disturbed. This community is found to the north, south, and east of the Project site.

Non-native grassland habitat (Holland Code 42200) is characterized by a dense to sparse cover of annual grasses with native and non-native flowering forbs (Holland 1986). With a few exceptions, the plants in this association are dead through the summer and fall dry season, but persist as seeds. This habitat is a disturbance-related community most often found in old fields or openings in native scrub habitats. Common grasses include wild oat (*Avena spp*.), soft chess (*Bromus mollis*), ripgut grass (*Bromus diandrus*), and foxtail fescue (*Vulpia megalura*). Characteristic forbs include red-stem filaree (*Erodium cicutarium*), mustard (*Brassica* spp.), tarweed (*Hemizonia spp*.), California goldfields (*Lasthenia chrysostoma*), and owl's clover (*Orthocarpus purpurascens*). Species found within the Project area along the transmission line alignment include soft chess, Russian thistle, mustards, fiddleneck, red-stem filaree and California goldfields.

Non-Vegetated Channel or Floodway

Non-vegetated channels or floodways (Holland Code 64200) are unvegetated or sparsely vegetated drainages outside of the area of tidal influence. The lack of significant vegetative cover in such areas can be attributed to either natural processes, such as flooding, or to human activities, such as vegetation

clearing, sand mining, or stream channelization. Areas are designated as disturbed flood channels if the channel has been artificially cleared or disturbed, or if the channel is dominated by nonnative trees and lacks any native riparian component.

Tamarisk dominates the banks of the open channel in the Project area where Zapato Chino Creek crosses the transmission line alignment south of West Jayne Avenue. Individual cottonwood trees are present along the banks, as well as non-native grasses such as mustards and bromus. The channel is the apparent result of natural processes during heavy rain events in the valley. Approximately 2.4 acres of open channel is located within the 800-foot buffer of the northern transmission line route, and 20.1 acres is within 800 feet of the southern transmission line route.

3.2 WILDLIFE

The SJS 1&2 site provides limited habitat to support wildlife species as a result of the chronic disturbance caused by the current extensive irrigated agricultural activities. No surveys were conducted on the existing active agricultural field within the Project site or within existing orchards and farmlands found along the transmission line routes. However, surveys were conducted along approximately 2 miles of the proposed northern transmission line route where native habitat is present on the north and south sides of the proposed alignment along West Jayne Avenue. Surveys of the southern transmission line route will be conducted in 2009; however, the habitat is likely to support the same species that were observed on the northern transmission line in 2008. Therefore, this discussion encompasses both proposed routes with the potential detection of additional species associated with the southern transmission line route in 2009.

Within the 800-foot buffer of the northern transmission line route of the SJS 1&2 transmission line study area, 18 bird species, six reptile species and 10 mammal species were observed, or their sign was detected during the various surveys in 2008 and 2009. Typical bird species observed included house finch (*Carpodacus mexicanus*), western kingbird (*Tyrannus verticalis*), western meadowlark (*Stunella neglecta)*, common raven (*Corvus corax*), red-tailed hawk (*Buteo jamaicenis*), turkey vulture (*Cathartes aura*), mourning dove (*Zenaida macroura*), horned lark (*Eremophila alpestris*), loggerhead shrike (CA Species of Special Concern [SSC]), golden eagle (SSC), barn owl (*Tyto alba*), great-horned owl (*Bubo virginianus*), and red-wing blackbird (*Agelaius phoeniceus*).

Coyote (*Canis latrans*), California ground squirrel (*Spermophilous beecheyi*), black-tailed jackrabbit (*Lepus californicus richardsonii)*, cottontail rabbit (*Sylvilagus audubonii*), and Heerman's kangaroo rat (*Dipodomys heermanni*) were common mammals observed or detected within the SJS 1&2 transmission line alignment survey area. Two bobcat (*Lynx rufus*) were observed on or near the northern transmission line survey area. One bobcat was observed as road kill on Sutter Avenue south of the Project site, and an American badger (SSC) was observed as road kill on West Jayne Avenue along the northern transmission line alignment. Kangaroo rat tracks and scattered burrow complexes were observed in various locations along the northern transmission line survey area. Reptile species observed include western whiptail (*Cnemidophorus tigris*), San Joaquin fence lizard (*Sceloporus occidentalis biseriatus*), side-blotched lizard (*Uta stansburiani)*, and Pacific gopher snake (*Pituophis catenifer catenifer*). Wildlife species identified in the Project survey area and the vicinity are shown on Figure 3 and in Appendix E.

During the nocturnal small mammal trapping program, only heerman's kangaroo rats and deer mice (*Peromyscus maniculatus*) were captured along both the northern and southern transmission line routes (Table 1). *D. heermanni* were captured more frequently than *P. maniculatus*, with 313 individual kangaroo rats captured a total of 552 times versus 80 deer mice being captured a total of 126 times. The majority of captures of both species (93% of *D. heermanni* and 75% of *P. maniculatus*) were captured along the northern transmission line (plots 1 through 4). This is not unexpected because there was more habitat available, the habitat was less disturbed, and there was a greater sampling effort (1,200 trap nights in the northern trapping areas versus 800 trap nights in the southern trapping areas). After adjusting for different sampling effort, the northern trapping areas remained superior to the southern trapping areas on a per-acre basis. The majority of all animals captured were adults (100% of *D. heermanni* and 85% of *P. maniculatus*). Further details on the results of the trapping program are provided in Appendix H.

Other species of small mammals known from the trapping sites include the pocket gopher (*Thomomys bottae*), cottontail (*Sylvilagus auduboni*), and black-tailed jackrabbit (*Lepus californicus*). Other small mammal species known from the vicinity of the project sites include the California pocket mouse (*Cheatodipus californicus*), San Joaquin pocket mouse (*Perognathus inornatus*), Tulare grasshopper mouse (*Onychomys torridus*), Tipton kangaroo rat (*Dipodomys nitratoides nitratoides*), and San Joaquin antelope ground squirrel (*Ammospermophilus nelsoni*). There was no evidence collected during the trapping efforts that confirms the presence of these species on the project site. However, the San Joaquin antelope ground squirrel is a crepuscular species that was not targeted by this trapping effort. Although no sign of this species was observed either during these trapping efforts or during other biological surveys of the project sites, it is recommended that focused trapping for the San Joaquin antelope ground squirrel be conducted prior to ground clearing activities for the transmission line.

3.3 SPECIAL STATUS PLANT SPECIES

Plant species of special management concern are considered rare, threatened, or endangered by the USFWS, CDFG, and/or CNPS. No rare, threatened, or endangered plants were detected onsite. A CNDDB query listed six special-status plant species that historically occur or have potential to occur within ten miles of the Project study site and transmission line alignment. Suitable habitat is not present for many of the special-status plants in the Project survey area, as the majority of the plant species have been recorded to the north or southeast in alkali soils, chenopod scrub, chaparral, saltbush scrub, or vernal pools/salt marshes, and are not found in disturbed habitat such as agricultural land. Special-status plant species that have been previously recorded within 10 miles of the Project are discussed in Appendix C. No plant species of special management concern were detected during the 2008 survey effort. Rare plant surveys of the transmission line routes will be conducted in spring 2009.

3.4 SPECIAL STATUS WILDLIFE SPECIES

Special-status wildlife species are those considered rare, threatened, or endangered by the USFWS or CDFG. The CNDDB query lists 22 special-status wildlife species as historically present and potentially occurring in the Project vicinity. Most of these special-status species records are located outside of the Project study area, within the undisturbed areas of the Central Valley, and are not expected to occur in the Project study area due to lack of suitable habitat. Only a few special-status wildlife species such as San Joaquin kit fox (*Vulpes macrotis mutica,* SE, FE) (SJKF), San Joaquin antelope squirrel, short-nosed

kangaroo rat, San Joaquin pocket mouse, California horned lark (recently downgraded from SSC to the CDFG watch list), and BNLL have been recorded within the Project vicinity. Five special-status wildlife species were observed within the Project survey area during the 2008 and 2009 surveys: loggerhead shrike (SSC), golden eagle (SSC), Blunt-nosed Leopard Lizard (Federal Threatened and CDFG Endangered and Fully Protected), northern harrier (SSC), and American badger (SSC). CNDDB data sheets for several of these species are included in Appendix F. Potential SJFK dens were observed along the northern transmission line route but they were not active at the time of surveys and therefore not confirmed. However, because an urban population of SJKF is known to be present in Coalinga and because the Project area provides suitable habitat, it is assumed that SJKF utilize habitat within the Project site and transmission line routes.

American Badger

Regulatory Status: State Status: Species of Special Concern; Federal Status: None

This moderately-sized terrestrial mammal has a flattish body, more width than height, with short bowed legs, a shaggy coat from grizzled gray to brown, and a short, bushy, yellowish tail. In California, badgers occupy a diversity of habitats. Their principal requirements seem to be sufficient food, friable soils, and relatively open, uncultivated ground. Grasslands, savannas, and mountain meadows near timberline are preferred. Badgers prey primarily on burrowing rodents such as gophers (*Thomomys* spp.), ground squirrels (*Spermophilus* spp., *Ammospermophilus* spp.), marmots (*Marmota* spp.), and kangaroo rats (*Dipodomys* spp.). They are predatory specialists on these rodents, although they will eat a variety of other animals including mice, woodrats, reptiles, birds and their eggs, bees, and other insects. The male is larger than the female. Mating usually occurs between July to August with implantation delayed until February. A litter of one to five young is born typically between March to April. Dens have one entrance, with a pile of dirt just outside that may serve as a latrine area. This powerful burrower is basically nocturnal but is often active by day.

Its home range varies from about 590 to 4,200 acres (240 to 1,700 hectares). The home range of the male is larger and encompasses the ranges of several females. American badgers occur from northern Alberta southward to central Mexico, and range from the Pacific Coast eastward through Ohio. They are absent from the humid coastal forests and from other regions with dense forests. In California, badgers once ranged throughout the state except for the humid coastal forests of northwestern California in Del Norte County and the northwestern portion of Humboldt County. Badger populations have declined drastically in California within the last century, and many populations have been extirpated from urbanizing areas of the state (e.g., coastal areas). Localized populations are reduced or declining, but most of original range is still occupied. Deliberate killing probably has been a major factor in the decline of badger populations. Most people regard badgers as detrimental to their interests and attempt to kill them. Land conversion for agricultural production is adverse to badgers, as they do not survive on intensely cultivated lands. Agricultural and urban developments have been the primary causes of decline of local populations of badgers in California. Rodent and predator poisoning pose double threats through direct and secondary poisoning of badgers and elimination of the food badgers are dependent upon. One roadkilled badger was observed along West Jayne Avenue during juvenile BNLL surveys in 2008. One recent badger burrow was observed on the north side of the northern transmission line corridor survey area; it was found the

same day the dead badger was observed on West Jayne Avenue and is assumed to be the burrow for that badger.

Blunt-Nosed Leopard Lizard

Regulatory Status: State Status: Endangered, Fully Protected; Federal Status: Endangered

The BNLL lives in grassland and scrub habitats in the southern San Joaquin Valley. BNLL eat mostly insects, but opportunistically consume smaller lizards, including young leopard lizards. BNLL are polygamous, with one male mating with several females, and eggs and young are produced during summer and early fall. Predators include snakes, birds, and carnivorous mammals, including the San Joaquin kit fox. Primary threats to the BNLL include habitat fragmentation, disturbance, and destruction. The BNLL is listed as endangered by both the federal government and the state of California (USFWS 1998), and is a CDFG fully protected species. The nearest CNDDB record of BNLL is located in the valley scrub/grassland mosaic habitat adjacent to the Project site. One adult BNLL was observed at the CDFG Pleasant Valley Ecological Reserve (PVER) satellite site located adjacent to the Project site and within the southern transmission line alternative during protocol surveys of the PVER in June 2008 (Figure 3). No BNLL were observed on the SJS 1&2 site. Protocol surveys of the southern transmission line route will be conducted beginning in April 2009.

Western Burrowing Owl

Regulatory Status: State Status: Species of Special Concern; Fully Protected Federal Status: USFWS Bird of Conservation Concern and Bureau of Land Management (BLM) sensitive designations

Burrowing owl is a small ground-dwelling bird with a round head and no ear tufts. They have white eyebrows, yellow eyes, and long legs. The owl is sandy colored on the head, back, and upperparts of the wings, and white-to-cream with barring on the breast and belly, and a prominent white chin stripe. Burrowing owls are typically found in open, dry grasslands, agricultural and range lands, and desert habitats often associated with burrowing animals, particularly prairie dogs, ground squirrels, and badgers. Burrowing owls are comparatively easy to see because they are often active in daylight, and are surprisingly bold, approachable, and generally active at dusk and dawn, but sometimes also at night. They are highly terrestrial, and are often seen perched on a mound of dirt, telegraph or fence post, frequently on one foot. They bob up and down when excited. Burrowing owls feed on a wide variety of prey, changing food habits as location and time of year determine availability. Large arthropods, mainly beetles, crickets and grasshoppers, comprise a large portion of their diet. Small mammals, especially mice, rats, gophers, and ground squirrels, are also important food items. Other prey animals include reptiles and amphibians, scorpions, young cottontail rabbits, bats, and birds, such as sparrows and horned larks. During the nesting season, adult males forage over a home range of 2 to 3 square kilometers. Burrowing owls are able to live for at least 9 years in the wild and over 10 years in captivity.

The nesting season begins in late March or April. Burrowing owls are usually monogamous, but occasionally, a male will have two mates. Burrowing owls nest underground in abandoned burrows dug by mammals or, if soil conditions allow, they will dig their own burrows. Adults usually return to the same burrow or a nearby area each year. One or more “satellite” burrows can usually be found near the nest burrow, and are used by adult males during the nesting period and by juvenile owls for a few weeks

after they emerge from the nest. It is this ground nesting that makes the owl vulnerable to injury and mortality by human-caused activities such as vehicle and equipment operation, farming practices, road building, etc. They are often killed by vehicles when crossing roads, and have many natural enemies, including larger owls, hawks, falcons, badgers, skunks, snakes, cats, and dogs. This species was formerly a common, even locally abundant, permanent resident throughout much of California, but a decline noticeable by the 1940s has continued through to the present time. The reasons for the decline include conversion of grasslands and pasturelands to agriculture and destruction of ground squirrel colonies. Assimilation of poisons applied to ground squirrel colonies has probably also taken a toll. Burrowing owl have not been detected during general and protocol surveys conducted in the Project area in 2008; furthermore, they were not detected during surveys for the habitat conservation planning process in 2005 and 2006 (CDFG 2008).

Golden Eagle

Regulatory Status: State Status: Species of Special Concern, Fully Protected; Federal Status: Protected under Bald Eagle Protection Act

Golden eagles are distributed throughout North America, Eurasia, and north Africa (Johnsgard 1990). Golden eagles occur as breeding residents in the western half of the United States and formerly nested in the northeast (Johnsgard 1990). Golden eagles forage in grassy and open shrubby habitats and nest primarily on cliffs, with secondary use of large trees (*e.g.*, oaks and sycamore). Breeding pairs may occupy territories of several square miles, within which they may often use several nest sites, shifting nests sites from year to year. This species has declined because of loss of foraging and nesting habitat to urban and agricultural development, human persecution (illegal shooting), incidental poisoning of prey species (*e.g.*, ground squirrels and prairie dogs), egg collecting, power line electrocution, and human disturbance at the nest (Snow 1973, Johnsgard 1990, Scott 1985). One golden eagle was observed during the 2008 biological surveys flying over the riparian habitat where Zapato Chino Creek crosses the proposed northern transmission line route.

Hoppings Blister Beetle (Lytta hoppingi)

Regulatory Status: State Status None; Federal Status: Threatened

The Hoppings Blister Beetle is found in the foothills in the southern end of the Central Valley. This beetle is black with brown wings and orange markings on the head and thorax. Adults are often found on flowers. Very little is known about the life history or behavior of this species, but they have been collected from late March through June. Females excavate shallow burrows in which to oviposit, then the female brings soil down into the burrow and covers the egg mass. Some species in the genus are known to produce 80 to 250 eggs. This species has been recorded approximately 7 miles northwest of the Project site, and is not expected to occur within the Project area.

Le Conte's Thrasher (Toxostoma lecontei)

Regulatory Status: State Status: Species of Special Concern; Federal Status: Bird Species of Conservation Concern

The Le Conte's Thrasher is pale gray-brown on the upperparts and pale buff on the underparts. The long tail is dark brown to blackish, and contrasts with the pale body. Le Conte's Thrasher is a widespread, but uncommon permanent resident in the western and southern San Joaquin Valley, upper Kern River Basin, Owens Valley, Mojave Desert, and Colorado Desert in southwestern United States. California serves as a main population center for this species. Though the extent of its known range has not changed since the late 19th Century, much of its U.S. habitat within that range has been lost to development, resulting in great reductions locally in its numbers. Earliest nesting for this non-migratory species begins in February in California, peaking in mid-March through April. It prefers breeding in saltbush/shadscale vegetation or cholla cacti in sandy substrate. It is sensitive to disturbance, including off-road vehicle use, livestock grazing, oil drilling and development. Its typical habitat is sparsely vegetated desert flats, dunes, or gently rolling topography with a high proportion of species of saltbush or shadscale and cholla cactus. Most of the shrubs are below 2.5 m in height. It digs small pits in the ground with its long bill, searching for seeds, insects, and small vertebrates in the litter; it will also take small bird eggs. Portions of the habitat within the SJS 1&2 transmission line routes are marginally suitable for this species; however no individuals of this species were detected during the 2008 surveys.

Loggerhead Shrike

Regulatory Status: State Status: Species of Special Concern; Federal Status: Bird Species of Conservation Concern

Loggerhead shrike is a robin-sized gray bird with black wings, white wing-patches, a black mask, and a black tail. Both sexes look alike. Found year-round in most of Mexico and the southern half of the United States. Throughout most of the southern part of its range, the loggerhead shrike is resident; northern populations are migratory. Where resident, this species usually lives in pairs on permanent territories. Loggerhead shrike breeding habitat is generally characterized as open areas dominated by grasses and/or forbs, interspersed with shrubs or trees and bare ground. Available cover is the most important criterion for nest site selection, and trees with thorns are preferred. The prey typically consists of small birds, mice, or large insects. Loggerhead shrikes will stun or kill prey with their powerful, hooked beak before impaling it on a plant thorn or barbed-wire fence, then the prey will then be picked apart over time. Threats to the loggerhead shrike include changes in human land-use practices, the spraying of biocides, and competition with species that are more tolerant of human-induced changes. This species was observed during the 2008 surveys (Figure 3).

Long-Eared Owl (Otus wilsonianus)

Regulatory Status: State Status: Species of Special Concern; Fully Protected Federal Status: None

The Long-eared owl breeds from western Canada to the Maritime Provinces, southward to Baja California, southern Arizona and New Mexico, and the Great Lakes region. This bird is partially migratory, moving south in winter from the northern parts of its temperate range. Though widespread and

relatively common in its range, it is rarely seen. The Long-eared owl's breeding season is from February to July and it nests in trees, often coniferous, using the old stick nests of other birds such as crows, ravens, magpies and various hawks. It inhabits dense vegetation adjacent to grasslands or shrublands, as well as open forests. The species diet consists of mostly small mammals and birds. Long-eared owl populations appear to be stable in most of North America, but in some portions of its range this species has declined due to the loss of riparian vegetation, conversion of hunting areas to intensive agricultural land uses, and reforestation of open areas. This species is not likely to be present within the Project site; however, it may use the riparian habitat located to the south and west of the Project, and may forage where the SJS 1&2 area support potentially suitable habitat.

Merlin (Falco columbarius)

Regulatory Status: State Status: Species of Special Concern, Fully Protected; Federal Status: None

The Merlin is a small hawk with long and pointed wings, a long banded tail, a faint mustache mark, brown streaking on chest and belly, and its back is unmarked gray or brown. American subspecies range from pale (Great Plains) to nearly black (Pacific Northwest). The sexes differ in adult plumage, with females noticeably larger than males. It breeds in open country from open coniferous woodland to prairie, occasionally in adjacent suburbs, and winters in open woodland, grasslands, open cultivated fields, marshes, estuaries, and seacoasts. It is a rare winter visitor in southern California. Primarily monogamous, the Merlin raises one brood each breeding season. Most Merlins will use abandoned corvid or hawk nests in conifer or mixed tree stands. They will also build nests on cliff faces and on the ground. Most prey are smaller birds (10-40 g), with local preferences for larks, pipits, sandpipers and house sparrows. Almost any bird that is locally abundant will be taken, up to the size of rock pigeons. Breeding pairs will frequently hunt cooperatively, with one bird flushing the victims towards their mate. Other prey includes insects (dragonflies and moths), small mammals (bats and voles) and reptiles. One record of this species is located approximately 9 miles northeast of the Project site and 4 miles east of Gates substation along the California Aqueduct. Merlins are likely to forage over the SJS 1&2 area and surrounding habitats.

Molestan Blister Beetle (Lytta molesta)

Regulatory Status: State: None; Federal: Threatened

The Molestan blister beetle is black with orange markings on the thorax, and ranges from 11-22 mm in length. They can be found throughout Central California. Adults are often found on flowers. Very little is known about the life history or behavior of this species, but they have been collected from early April to early July. *Lytta* larvae are nest parasites of solitary bees; the beetle larvae feed on the pollen stores that the female bee has provided for her own larvae. One record of this species is located approximately 9 miles northeast of the Project site; this species has not been observed in the Project study area.

Northern Harrier

Regulatory Status: State Status: Species of Special Concern; Federal: None

Northern harriers are a medium sized, long-winged, long-tailed hawk, with a flat face with an owl-like facial disk, dark bars on the tail, and a white rump. Habitats include grasslands, steppes, wetlands,

meadows, cultivated areas, and tundra. Northern harriers prey on small mammals, birds, reptiles, insects, and carrion, and hunt using a low, slow flight over the ground, then plunge onto their prey. Harriers roost and nest on the ground, often in groups in a traditional location. Northern harriers nest on the ground in thick grass, shrubbery, or other vegetation. The nest is a pile of sticks and grass. The female lays 3 - 6 eggs depending on the abundance of small rodents. This species used to be a common resident in the southern coastal area. At present, nesting localities are still scattered throughout the state, but numbers are much reduced, particularly in the southern coastal area, around San Francisco Bay, and in the Mono Lake area. The bulk of the breeding population is concentrated in ungrazed portions of state and federal wildlife refuges (CDFG, 2007). Northern harrier were observed in the within the vicinity of the northern and southern transmission line alignments of the Project study area in 2009 and potentially use the disturbed grassland habitat within the transmission line alignments for foraging. The Project site would provide marginal foraging habitat for harriers, and ground-nesting habitat may be present within the Project survey area in the disturbed grassland areas at a distance greater than 500 feet from Jayne Avenue.

San Joaquin (Nelson's) Antelope Squirrel

Regulatory Status: State: Threatened; Federal: None

The San Joaquin antelope squirrel (SJAS) is one of five species of antelope squirrels. The species is omnivorous, with a diet consisting primarily of grass, seeds, and insects. Antelope squirrels are fossorial animals that occur in grasslands with moderate shrub cover where they use burrows that they or other animals have dug. They require widely scattered shrubs, forbs, and grasses in broken terrain with gullies and washes and loam soils (CNDDB 2007). This species is most active during spring and summer months when air temperatures are between 68 to 86 ºF. Historically, SJAS ranged from western Merced County to the southern end of western San Joaquin Valley, and occupied the valley floor in Kern County and along the eastern edge northward to Tipton, Tulare County. The current species range is restricted to marginal habitats of the low foothills of the western edge of the San Joaquin Valley, and populations of significant size only exist in western Kern County at Elk Hills and on portions of the Carrizo and Elkhorn plains. Conversion of native habitat to intensive forms of agricultural development is the greatest threat to this species (CDFG 2007). SJAS have been recorded near the Project site; however, this species was not detected during the 2008 daylight surveys or during the nocturnal small mammal trapping surveys in 2008.

San Joaquin Dune Beetle (Coelus gracilis)

Regulatory Status: State: None; Federal: Threatened

The San Joaquin Dune Beetle is fairly robust, dorsally inflated, and ranges in color from pale yellowish-brown to dark brownish-black. The female is slightly larger than the male. Historically, the range of the San Joaquin dune beetle extended from Contra Costa County in the north, to the Kettleman Hills in Kings County in the south. They inhabited inland sand dunes within this range. Currently, this beetle is restricted to small isolated sand dunes (250 - 10,000 m^2) along the western edge of the San Joaquin Valley. Little information exists on the feeding habits of San Joaquin dune beetles, though they probably feed on decomposing vegetation buried in the sand. Certain related beetles feed mostly on dung. Nothing is known about the mating system or breeding season of San Joaquin dune beetles. In general, female

beetles lay eggs singly or in masses, with hatching occurring after several days. The presence of immature dune beetles and larvae is evident throughout the year, which suggests that egg-laying occurs over a long period. The larvae develop and pupate exclusively in the sand. This species was recorded approximately 4.5 miles southwest of the Project site. The habitat on the SJS 1&2 site is not suitable for this species.

San Joaquin Kit Fox

Regulatory Status: State: Endangered; Federal: Endangered

The SJKF historically ranged throughout the San Joaquin Valley from Contra Costa County in the north to northern Santa Barbara County in the south. Currently, SJKF still has a wide distribution; however, kit fox numbers are greatly reduced and populations are isolated from one another. Kit foxes primarily live in grassland and to a lesser extent, shrub, and agricultural habitats. Kit foxes predominantly eat rodents, ground squirrels, rabbits and hares, and ground-nesting birds. Kit fox pups are born in late winter and early spring, and the male provides most of the food for the female while she is nursing. Kit foxes change dens frequently, and often enlarge existing ground squirrel burrows in order to make new dens. Predation or competitive exclusion of kit foxes may occur in the presence of coyotes, introduced red foxes, domestic dogs, bobcats, and large raptors. Human threats to kit fox include destruction of habitat, habitat degradation, predators, pest control programs, and accidents caused by proximity to humans such as electrocution, roadkill, and suffocation from accidental burial in dens. Finally, natural factors such as drought, flooding, and rabies cause a significant percent of kit fox deaths. The SJKF is currently listed as an endangered species by both the federal government and the state of California (USFWS 1998). CNDDB records of San Joaquin kit fox are located within 1 mile of the Project area. Several CNDDB records of kit fox are located within 1 and 2 miles of the Project site. Kit fox apparently move through the Project vicinity, and potential kit fox dens were observed on the north side of the northern transmission line alignment during the 2008 surveys. California ground squirrels are present on the Project site and likely comprise an potential forage base for SJKF in the project vicinity.

Short-Nosed Kangaroo Rat (Dipodomys nitratoides brevinasus)

Regulatory Status: State: Species of Special Concern; Federal: None

The short-nosed kangaroo rat is nocturnal and active year-round. They can be distinguished from other kangaroo rats within its geographic range by the presence of four toes on its hind foot; the other species in the area have five toes. They inhabit grasslands with scattered shrubs and desert-shrub associations on powdery soils. They also inhabit highly saline soils around Soda Lake on the Carrizo Plain, and less saline soils elsewhere. Over most of their range, they are generally more numerous in lighter, powdery soils such as the sandy bottoms and banks of arroyos and other sandy areas. At higher elevations in the western portion of its geographic range, the reproductive season of the short-nosed kangaroo rat is about two to three months shorter than on the Valley floor, with breeding beginning in late February or March and typically ending by May. In years with a prolonged wet spring, individuals may continue breeding through August. The extensive agricultural development of the 1960s and 1970s within its historical range is the main cause of short-nosed kangaroo rat decline. The extent of its current distribution is unknown. This species was not detected on either of the proposed transmission line routes during the small mammal trapping program that was conducted in early December 2008.

Silvery Legless Lizard (Anniella pulchra pulchra)

Regulatory Status: State Status: Species of Special Concern; Federal Status: None

This species ranges from the San Francisco Bay Area of California south into northwestern Baja California; it also occurs on several offshore islands. It is known from sea level to 5,085 feet. The species is found in areas with loose, moist soil (sand or loam) in chaparral, oak woodlands, and, in particular, coastal dunes with sparse vegetation. The shiny legless lizard is with eyelids but without external ear openings. Usually silvery or tan with dark stripe down middle of back, dark striping on sides. Their back is sometimes completely dark and their belly yellow. The species is primarily fossorial by day, but emerges to forage at night. Its small smooth scales and blunt tail make burrowing easy for this lizard. Most of their time is spent under the surface of the soil or beneath leaf litter, where it eats small insects and their larvae. The species is not threatened at present, but agriculture has eliminated many California populations. It is not expected to occur in the Project study area.

Swainson's Hawk (Buteo swainsoni)

Regulatory Status: State Status: Threatened, Fully Protected; Federal Status: None

The Swainson's is a slender hawk with a long tail and pointed wings compared to other buteos. The tail is grayish with narrow, dark bands. This species forages in open stands of grass-dominated vegetation, sparse shrublands, and small, open woodlands; however, it has adapted well to foraging in agricultural areas in many parts of its range. This hawk cannot forage in most perennial crops or in annual crops that grow much higher than native grasses, as prey is more difficult to find. In the Central Valley, the Swainson's hawk forages in row, grain, and hay crop agriculture, particularly during and after harvest when prey are both numerous and conspicuous. Breeding occurs in west to central Washington and Oregon, extreme northeastern California (Bloom 1980), western and southern Nevada, northern and southeastern Arizona (Monson and Phillips 1981), and disjunctly in California in the Sacramento and San Joaquin valleys, valleys of the Sierra Nevada in Inyo and Mono counties, and occasionally elsewhere. Swainson's hawks mainly hunt mice, ground squirrels, rabbits, birds, and reptiles during the breeding season, and live off of insects like grasshoppers, locusts, and beetles during the non-breeding season. They're a highly gregarious species that can be seen foraging and migrating in flocks up to thousands of birds. This species was not observed in the Project area during the 2008 surveys, and there are no historical sightings recorded on the CNDDB nearby. Therefore, Swainson's hawk is not expected to utilize potentially suitable habitat in the vicinity of the SJS 1&2 site.

Tricolored Blackbird (Agelaius tricolor)

Regulatory Status: State Status: Species of Special Concern; Federal Status: None

This species closely resembles red-winged blackbirds, with differences in coloration, bill shape, and overall morphology. Tricolored blackbirds are opportunistic foragers and will consume any locally abundant insect resource, including grasshoppers (Collier 1968), grains (maturing and ripe seeds), snails (Martin *et al.,* 1951), and small clams (Skorupa *et al.,* 1980). Suitable habitat is found in freshwater marshes dominated by cattails (*Typha* spp.) or bulrushes, and foraging habitat includes perennial grasslands and riparian woodlands in the Central Valley. Most of Central Valley has been converted to

agriculture and urbanization; however, agricultural fields may provide forage habitat and abundant insect prey. Tricolored blackbirds have recently been observed forming "mega-colonies" in grain fields that can reach over 100,000 birds. The majority of the mega-colonies are associated with dairy farms in the San Joaquin Valley, where the birds utilize the habitat for building nests and foraging in the open water and irrigated pastures (Kelsey 2008). During a statewide survey for tricolored blackbirds by Audubon California in 2008, only 1,000 birds were counted in Fresno County, and only one of the three known breeding colonies in the county was occupied (Kelsey 2008). Therefore, it is unlikely that this species would utilize the habitat in the Project vicinity.

Tulare Grasshopper Mouse (Onychomys torridus tularensis)

Regulatory Status: State: Species of Special Concern; Federal: None

The Tulare grasshopper mouse lives in arid grasslands, shrub lands, and alkali sink habitats in the San Joaquin Valley. This species is carnivorous, feeding on scorpions, beetles, grasshoppers, pocket mice, western harvest mice, lizards, and frogs with some seeds taken when no other food sources are available. Young are born in the late spring to early summer and both parents care for them. Grasshopper mice are territorial and males will produce a sharp call to mark their territory. Predators of this species include badgers, SJKF, coyote, and barn owls. Primary threats include habitat destruction and fragmentation and the use of pesticides. This species was not detected on either of the proposed transmission line routes during the small mammal trapping program that was conducted in early December 2008.

Western Mastiff Bat (Eumops perotis californicus)

Regulatory Status: State: Species of Special Concern; Federal: None

The Western mastiff bat has a body length of 5½ to 7½ inches and a wingspan of over 22 inches. It has chocolate brown fur. In California, the *E. perotis* is most frequently encountered in broad open areas. Generally, this bat is found in a variety of habitats, from dry desert washes, flood plains, chaparral, oak woodland, open ponderosa pine forest, grassland, montane meadows, and agricultural areas. During the day western mastiff bats form colonies of less than 100. At least 3 meters of open space is needed under its roosting site for takeoff. It feeds mostly on moths, and will often drop down and forage on the ground with its tail sticking up. Threats to this species include loss of large open-water drinking sites, disturbance or destruction of cliff habitats and urban/suburban expansion. Western mastiff bats may forage in the Project vicinity; however, this species is not expected to roost within the Project site.

Western Spadefoot Toad (Spea [Scaphiopus] hammondi)

Regulatory Status: State: Species of Special Concern; Federal: None

The western spadefoot toad is a small pelobatid toad that occurs in the Central Valley of California and west of the coastal ranges from Point Conception to northern Baja California (CDFG 1988). This species spends much of the year in burrows, emerging at night during the early spring rains to breed in temporary ponds, vernal pools, and backwaters of slow-flowing creeks. The remainder of the year is spent in upland habitats such as grasslands and coastal sage scrub, where burrows are constructed. Tadpoles grow at an accelerated rate and transform in as little as three weeks in short-lasting pools; longer in deeper pools. The

western spadefoot is best surveyed at night, preferably after a warm rain, and tadpoles are readily identifiable at later developmental stages. Because no temporary ponds or slow-flowing creeks are present on the Project site or within the transmission corridor, and upland habitat that is present is not suitable for burrowing, this species is not expected in the Project survey area and was not detected during the 2008 biological surveys.

3.5 WILDLIFE MOVEMENT

A wildlife corridor is defined as a linear landscape feature that allows animal movement between two patches of habitat or between occupied habitat and geographically discrete resources (*e.g.*, water). To function effectively, a corridor must accomplish two basic functions. First, it must effectively link two or more large patches of habitat. The corridor must conduct animals through the landscape to areas of suitable habitat without excessive risk of directing them to unsuitable areas where risk of mortality may be very high. Second, the corridor must be suitable to the focal target species so that they will use the corridor frequently enough to achieve the desired demographic and genetic exchange between populations.

Corridors are often defined by their use by focal species. Focal species are those that naturally occur in low densities and that may be unwilling or unable to cross extensive areas of development or otherwise unfavorable habitat. Animals have a natural aversion to situations or physical settings they perceive to be dangerous and will often shy away from situations in which they are exposed without cover or escape routes. The presence of disturbance outside of the animal's normal experience is also a situation that is often avoided by animals. In the California Central Valley, potential focal species for wildlife movement assessment in the San Joaquin Valley could include mountain lion (*Felis concolor*), coyote, deer, bobcat, SJKF, and American badger.

The SJS 1&2 Project site is located entirely within existing active agricultural use, and the site is surrounded on the west, south, and east by agricultural, disturbed, or developed land uses. The majority of the area within the proposed transmission line corridor is agriculture, including orchards. The Project vicinity provides an open and unconstrained environment for wildlife movement. In addition, Zapato Chino Creek is a widely-cut, usually dry channel that is recognized by CDFG as a likely southwest-northeast wildlife travel corridor through the agricultural land uses that are dominant in the vicinity. This wildlife movement route provides foraging and potential breeding habitat for focal mammal species and raptors in the Coalinga area. Zapato Chino Creek connects to Los Gatos Creek approximately 1.7 miles north of West Jayne Avenue. The PVER is located approximately 2 miles northwest of the Project site, and is managed by CDFG. The PVER has historically supported SJKF, BNLL and western spadefoot toad, and is a continuation of the wildlife movement route near the Project area. Three of the key mammalian predators in central California were found near or are assumed to use the SJS 1&2 study area. Zapato Chino Creek is a likely functional wildlife movement route that supports wildlife and raptor foraging, roosting, and nesting habitats in the Project vicinity. The Project vicinity also functions as foraging habitat for raptors. Based on the large amount of land available for wildlife movement, implementation of the proposed Project is not anticipated to reduce the quality of existing wildlife movement routes adjacent to the project site.

3.6 POTENTIAL WATERS OF THE UNITED STATES/STATE JURISDICTIONAL WATERS

Zapato Chino Creek is a large natural drainage that meanders in a southwest to northeast direction in the San Joaquin Valley. It crosses the southern transmission line alternative in two locations and the northern transmission line alignment at West Jayne Avenue (Figure 2). A large bridge overpass is located approximately 1.5 miles east of the Project site on West Jayne Avenue that allows the creek to flow north under West Jayne Avenue until it eventually meets up with Los Gatos Creek. It becomes channelized near I-5, then becomes a distributional flow into a topographically flat agricultural area and the OHWM disappears before it reaches the California Aqueduct. The average width of the Zapato Chino Creek channel where it crosses the northern transmission line alternative is approximately 18 feet, and the average bank-to-bank width is approximately 121 feet (Figure 4A). The average width of the OHWM of the Creek within upper portion of the southern transmission line alternative is approximately 66 feet, and the banks average 203 feet (Figure 4B). Along the lower portion of the southern transmission alternative, the width of the OHWM averages 23 feet and the bank widths average 56 feet (Figure 4C).

The banks of the Creek in the northern transmission line alternative are dominated by upland vegetation such as scale broom (*Lepidospartum squamatum*) with cottonwood (*Populus fremontii*), mulefat (*Baccharis salicifolia*), and tamarisk (*Tamarix ramosissima)* becoming more prevalent near the bridge at Jayne Avenue. The creek channel becomes deeply cut, and riparian species are more dominant along the banks in the southern transmission line alternative. The channel bottom is non-vegetated for the majority of the creek and the soils are not hydrophytic. The channel was dry during the surveys in May through August 2008, as well as in January 2009; however, it is apparent that the channel supports heavy flow during large storm events. The Zapato Chino Creek has a well-defined bed and bank, but does not connect to a USACE-jurisdictional tributary or other waters of U.S. downstream after it confluences with Los Gatos Creek. Therefore, it is identified as a non-wetland waters of the State under the jurisdiction of CDFG and RWQCB. No wetlands or USACE-jurisdictional waters are present within the Project area.

SECTION 4 IMPACTS

4.1 IMPACTS

Potential and expected direct and indirect impacts to biological resources are discussed below. Significant impacts are those that would involve the loss of a special-status plant or wildlife species, or degradation of their habitat. The Project would have significant impacts to vegetation and wildlife if it would:

- Cause a fish or wildlife population to drop below self-sustaining levels, California Environmental Quality Act ("CEQA") Guidelines, Section 15065 (a).
- Threaten to eliminate a plant or animal community, CEQA Guidelines, Section 15065 (a).
- Substantially affect, reduce the number, or restrict the range of unique, rare, or endangered species of animal, plant, or the habitat of the species, CEQA Guidelines, Section 15065 (a), Appendix G (c), Appendix I (II.4.b) and (II.5.b).
- Substantially diminish or reduce habitat for fish, wildlife, or plants CEQA Guidelines, Section 15065 (a), Appendix G (t).
- Interfere substantially with the movement of resident or migratory fish or wildlife species, CEQA Guidelines, Appendix G (d).
- Change the diversity of species, or number of any species of plants (including trees, shrubs, grass crops, and aquatic plants) or animals (birds, land animals including reptiles, fish and shellfish, benthic organisms, or insects), CEQA Guidelines, Appendix I (II.4.1) and (II.5.a).
- Introduce new species of plants or animals into an area, or act as a barrier to the normal replenishment of existing species, CEQA Guidelines, Appendix I (II.4.c) and (II.5.c).
- Deteriorate existing fish or wildlife habitat, CEQA Guidelines, Appendix I (II.5.d).
- Conflict with any regional Habitat Conservation Plans (HCP).

The above criteria are used to evaluate the proposed Project's impacts to plant communities and wildlife. The potential impacts associated with the construction and operations of the SJS 1&2 facility are discussed below.

4.1.1 Project Site

Loss of 640 acres of active intensive agricultural field will occur as a result of the proposed Project. The Project site has been actively cultivated for crops for several decades, as has the majority of surrounding area. The Project site was recently tilled and new crops were planted in the spring of this year; thus, it was observed that although the Project site is within the known range of BNLL, the site does not provide suitable habitat for BNLL. The Project site is suitable to provide pass-through and marginal foraging habitat for SJKF, American badger, and selected raptor species including golden eagle, barn owl, and loggerhead shrike. Loss of the 640 acres of actively cultivated land on the Project site that supports potential foraging for special-status species would be considered significant, but would be mitigated to less than significant with implementation of the recommended mitigation measures.

4.1.2 Transmission Line

The proposed transmission line routes would not result in significant impacts to biological resources because it would not cause impacts as listed above in Section 4.1.

Five special-status species were observed during the 2008 and 2009 surveys, or are known to occur along the transmission line routes. Four of the species are birds that are likely to use this area for foraging, and one species is a ground-dwelling mammal that was observed as roadkill on West Jayne Avenue. The proposed transmission line routes are also likely to support SJKF as foraging and pass-through habitat. One BNLL was detected near the southern route in 2008 during surveys of the CDFG-owned Pleasant Valley Preserve that is located adjacent the site and immediately north of the southern transmission line route; focused surveys of this route will be conducted in 2009 to determine if this one individual is still present within the transmission line route. If BNLL are detected, the pole locations near the CDFG reserve will be sited to avoid native vegetation, and monitoring would be conducted during construction of the project to preclude BNLL mortality.

The dry creek bed of Zapato-Chino Creek that crosses both routes is a wildlife movement route that likely supports foraging and nesting habitat for birds and several special-status wildlife species. Because the transmission line is expected to span the creek, no impacts to waters of the State are anticipated.

Impacts to the habitat located within the proposed transmission line routes are anticipated to be less than significant, as limited ground disturbance is associated with installation of the poles that support transmission lines. At this time it is not possible to determine the habitats that will be impacted by the installation of the transmission line poles because pole locations have not yet been determined. However, permanent disturbance areas would include a square approximately 50 feet by 50 feet (0.057 acre per pole) where transmission line pole pads will be located. Temporary impact area would be approximately 20 feet by 100 feet (0.046 acre per pole) for construction and erection of each pole, as well as for cable pulling. For the purposes of this estimate, it is assumed that there will be approximately 5 transmission line poles per linear mile, totaling approximately 25-30 poles (1.72 acres permanent impacts, 1.38 acres of temporary impacts). The poles will be situated so they span any sensitive habitats and the Zapato Chino Creek channel to preclude significant impacts to the creek and associated habitat.

Bird Collisions

Potential impacts to raptors and migratory birds from collisions with the proposed transmission lines are anticipated to be less than significant, as the SJS 1&2 Project site is not within an area that would concentrate migratory birds. Common, abundant local resident bird species would be most at risk of collision with the proposed structures. Because the SJS 1&2 Project site is not located near a large perennial waterbody, large numbers of susceptible waterfowl species are absent from the project vicinity. Based on previous studies (e.g., McCrary et al 1986, Koops 1987), a conservative estimate of between 10 and 430 birds (all bird species) per year could be killed from collisions with the proposed transmission line associated with the Project, or with buildings or other structures greater than 90 feet high. Use of FireFly bird flight diverters (Birdbusters website 2008), or similar devices placed on the transmission lines will make the structures more visible and minimize the risk of bird collisions.

Several studies on bird mortality from collisions with high-tension lines, buildings and windows, wind turbines, and vehicles are available. A brief summary of several studies that may be related to this project is provided below. Fatalities associated with buildings are usually the result of collisions with tall multi-story buildings that are lighted at night and collisions with reflecting windows at residential houses. USFWS estimates that 97.6 to 976 million bird deaths per year in the U.S. are due to collisions with building windows.

In the Netherlands, where approximately 2,875 miles (4,600 km) of high-tension lines are present, Koops (1987) estimated that approximately 750,000 to 1 million birds are killed annually by collisions based on an extrapolation made from three other Netherlands studies. Estimates in all three studies were in the same order of magnitude. The latter study estimated (unadjusted for scavenging and searcher efficiency) 113 fatalities per km of high tension line in grasslands, 58 fatalities per km of high tension line in agricultural lands, and 489 fatalities per km of high tension line near river crossings. The study used the mean estimate (adjusted for scavenging and searcher efficiency bias) of 750,000/2,875 = 261 bird deaths/mile of high tension line. Extrapolating the mid-range of this estimate to the 500,000 miles (800,000 km) of bulk transmission lines in the United States would lead to a fatality estimate of approximately 130 million birds per year. Given the large, but unknown number of miles of power and other high tension lines in the U.S., and the lack of standardized data in the U.S., this estimate may be off by an order of magnitude or more in either direction (Erickson et al. 2005, Manville 2005).

Table 4.1-1
Comparison of Sources of Avian Mortality

Mortality Sources Compared—Erickson et al.

Table 2—*Summary of predicted annual avian mortality.*

Mortality source	Annual mortality estimate	Percent composition
Buildings[1]	550 million	58.2 percent
Power lines[2]	130 million	13.7 percent
Cats[3]	100 million	10.6 percent
Automobiles[4]	80 million	8.5 percent
Pesticides[5]	67 million	7.1 percent
Communications towers[6]	4.5 million	0.5 percent
Wind turbines[7]	28.5 thousand	<0.01 percent
Airplanes	25 thousand	<0.01 percent
Other sources (oil spills, oil seeps, fishing by-catch, etc.)	not calculated	not calculated

[1] Mid-range of fatality estimates reported from Klem (1990), 1 – 10 bird fatalities per house, extrapolated to 100 million residences
[2] Based primarily on a study in the Netherlands (Koops 1987), extrapolated to 500,000 miles of bulk transmission line in U.S.
[3] One study in Wisconsin estimated 40 million (Coleman and Temple 1996), there are 60 million cats claimed as pets in the U.S.
[4] Based primarily on one study in England (Hudson 1965, Banks 1979) that estimated 15.1 fatalities/mile of road each year, no searcher efficiency or bias adjustments in that study, updated based on increase in vehicle registrations
[5] Conservative estimate using low range of empirical fatality rate (0.1 to 3.6 birds/acre), studies typically adjusted from searcher efficiency and scavenging
[6] Estimates from models derived by Manville and Evans (M. Manville, pers. comm.).
[7] Mid-range of per turbine and per MW estimates derived from empirical data collected at several wind projects (*table 1*).

4.1.2.1 Temporary Impacts

Temporary impacts to the habitat along the either transmission line route associated with construction will be returned back to the existing state once construction is finished. Transmission lines have a minimal impact on habitat and wildlife movement because there is limited ground disturbance, and transmission line poles also tend to create nesting habitat for raptors such as red-tailed hawk, golden eagle, raven and others. Because the total amount of habitat that will be impacted is approximately 3.2 acres, the permanent and temporary impacts are not considered significant. The transmission line and the poles that support the line are anticipated to span the creek and associated habitat; therefore, no significant impacts to the creek are anticipated.

4.1.3 Cumulative Effects

The cumulative impacts discussion for the proposed Project has several purposes:

- Identify past, present, and reasonably foreseeable actions within the Project vicinity that could affect the same resource(s) as SJS 1&2 site.
- Determine whether impacts of SJS 1&2 and the other actions would overlap in time or geographic extent.
- Determine whether the impacts of the proposed Project would interact with, or intensify the impacts of other actions.
- Determine whether this AFC overlaps another existing or planned AFC.
- Identify any potentially significant cumulative impacts.

The proposed Project and other projects in the vicinity are not expected to result in significant cumulative impacts to environmental resource areas, including, but not limited to, air quality, land use, cultural resources, water resources, or traffic during the construction or operation phases. All existing and proposed projects considered in this analysis can be characterized primarily as commercial development. Of the 19 projects with permit applications submitted, 7 are exploratory oil and gas well facilities and one natural gas pipeline. Of the remaining 11 projects, 4 include minor infrastructure projects related to the I-5/West Jayne Avenue interchange, and one is a cell tower. The remaining six projects include a tomato processing plant, a sand and gravel operation, and an electrical generation facility.

The closest permitted projects are located approximately 0.5-mile to the south of the Project site and includes exploratory oil and gas well and production facility sites. In addition, no permitted projects within 2.0-miles of the SJS 1&2 site include features that are likely to contribute to any direct and or indirect impacts caused by SJS 1&2. The tomato processing facilities projects, gravel and sand operation, and electrical generation facility are located at least 5 miles from the Project site. Thus, as mentioned above, no significant cumulative impacts have been identified as a result of the construction, operation, maintenance, or long-term presence of the Project and other projects in the area.

Potential cumulative impacts to biological resources caused by the construction of two solar hybrid power plants on the Project site will include loss of 640 acres of marginal habitat. Because the surrounding area is either disturbed grassland, disturbed Valley saltbush scrub habitat, or existing agricultural land uses, no

disruptions to wildlife movement are expected to occur. The primary wildlife movement route (Zapato-Chino Creek) will not be affected. In addition, because the proposed SJS 1&2 site is within a large area of disturbed habitat and is near a drainage with riparian habitat that acts as a functional wildlife movement corridor, cumulative impacts to special-status species including SJKF, American badger, and golden eagle would not be considered significant after implementation of recommended mitigation measures.

SECTION 5 MITIGATION AND MONITORING

This section identifies and describes recommended mitigation measures for the species-specific impacts previously identified in this section. In addition, several general mitigation measures and BMPs are also provided to potentially minimize potential indirect impacts that could affect site biological resources.

5.1 CONSTRUCTION MONITORING AND VEGETATION CLEARING

The following general mitigation measures and BMPs are proposed to minimize direct and indirect impacts caused by installation of the Project and the proposed transmission line.

Provide mitigation construction monitoring by a qualified biologist. The biologist will be given authority to execute the following functions:

- Conduct pre-construction surveys for sensitive species in impact areas.
- Establish construction exclusion zones and make recommendations for implementing erosion control measures in temporary impact areas.
- Provide worker environmental awareness training for all construction personnel that identifies sensitive biological resources and measures required to minimize Project impacts during construction.
- Prepare construction monitoring and compliance reports that analyze mitigation measure effectiveness.
- Vegetation clearing shall occur during the non-breeding bird season (September 1 to January 15).

5.2 FOCUSED MITIGATION

San Joaquin Kit Fox

Mitigation for impacts to SJKF should be consistent with USFWS Recovery Plan for San Joaquin Valley Upland Species.

Impacts to 640 acres of marginal (SJKF) habitat (active agricultural field and approximately 3 acres of habitat associated with transmission line) are considered significant. SJKF use of the Project site appears to be limited to pass-through habitat and marginal foraging habitat. Proposed SJKF mitigation measures follow:

- Mitigate impacts to 643 acres of marginal SJKF foraging/pass-through habitat at a 1.1:1 ratio (708 acres of aglands or naturalized habitats supporting SJKF). This mitigation ratio is consistent with other CEC-permitted projects located on active agricultural lands within a landscape also dominated by agricultural lands. Mitigation can be accomplished though purchase of mitigation credits from a FWS/CDFG- approved mitigation bank for loss of SJKF habitat.
- Construction BMPs required by USFWS to avoid incidental take (harassment) of SJKF shall be implemented. These conditions are outlined below and must be printed on grading and building

plans. When implemented the measures will minimize take and reduce impacts to kit fox habitat to an insignificant level.

- Mitigate for loss of kit fox habitat either by:
  - Establishing a conservation easement on-site or off-site in a suitable Fresno County location and provide a non-wasting endowment for management and monitoring of the property in perpetuity;
  - Deposit funds into an approved in-lieu fee program;
  - Purchase credits in an approved conservation bank in Fresno County; or
  - Enter into a mitigation agreement with CDFG and provide a non-wasting endowment for management and monitoring of the terms of the agreement for perpetuity.
- Retain a qualified biologist to conduct a pre-construction survey of the Project site and conduct a pre-construction briefing for construction workers on kit fox biology and protection measures to be implemented.
- Include kit fox protection measures on project plans.
- Require a maximum 25 mph speed limit at the Project site during construction.
- Stop all construction activities at dusk.
- Cover excavations deeper than 2 feet at the end of each working day or provide escape ramps for kit fox.
- Inspect pipes, culverts or similar structures for kit fox before burying, capping, or moving.
- Remove food-related trash from Project site.
- If pesticides or herbicides are used, they must be used according to local, state, and federal regulations to prevent secondary poisoning of kit foxes.
- If a kit fox is discovered at any time in the Project area, all construction must stop and the CDFG and USFWS must be contacted.

Raptor Nest Sites and Migratory Bird Treaty Act

Impacts to large raptor species observed in the Project survey area (golden eagle, red tailed hawk, barn owl) are anticipated to be significant due to the permanent loss of 640 acres of raptor foraging habitat. Larger raptors will be less able to forage on site after project build-out; however, smaller raptors (e.g., American kestrel) will still be able to use the site. A total of 1.3 acres of temporary loss of raptor foraging habitat as a result of installation of the transmission line would be considered less than significant because of the minimal amount of impacts and because the habitat will be returned to its original land use that currently supports foraging for raptors. In addition, transmission line towers often provide habitat in the form of perching and nesting sites for raptors.

The potential for avian mortality as a result of collisions with buildings on the Project site and the proposed transmission line would be mitigated to less than significant by the use of FireFly bird flight

diverters, or similar devices, placed on the transmission lines to make the transmission lines more visible and minimize the risk of bird collisions.

Mitigation for loss of raptor foraging habitat will be provided through the compensatory mitigation acreage provided for SJKF mitigation. Additional BMP measures are also proposed:

- Pre-construction nest surveys of trees within the Project area during the non-breeding season.
- **If nests are detected, removal of nest trees must occur during the non-breeding season.**

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SITE PHOTOGRAPHS

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Photograph #1

View of the SJS 1&2 Project Site from northwest corner south along western edge. Coalinga State Hospital and Prison are located adjacent to the SJS Site.

Photograph #2

View of the SJS 1&2 Project site from Jayne Avenue. View is from north to southwest.

Photograph #3

View of the SJS 1&2 Project site from west end of the site. The west side of the site is entirely cleared of vegetation and prepared for seeding at the time of this photograph (May, 2008). Site does not support suitable habitat for BNLL.

Photograph #4

View of the SJS 1&2 Project site from the southwest corner, looking to the northeast. Note existing crops across the southern portion of the site and water pump in the foreground.

Photograph #5

View of the SJS 1&2 Project site from the northeast corner to the east at the disturbed non-native grassland and saltbush scrub habitat along the transmission line corridor on the south side of Jayne Avenue.

Photograph #6

View of the SJS 1&2 Project site from west toward the east at row crops. Shows lack of suitable habitat for BNLL.

Photograph #7

View of the SJS 1&2 Project site from west toward the east of soils prepared for row crops.

Photograph #8

View of Zapato Chino Creek where it crosses the SJS 1&2 transmission line corridor. This view is to the south of Jayne Avenue. The banks are dominated by tamarisk, with individual cottonwood trees and non-native grasses.

POTENTIALLY OCCURRING AND OBSERVED SPECIES ON THE PROJECT SITE AND TRANSMISSION LINE ROUTES

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Common Name	Scientific Name	Status[1]	Preferred Habitat	Potential for Occurrence within Site or Transmission Line Corridor
Animals				
American Badger	*Taxidea taxus berlandieri*	CSC	Found in relatively open, uncultivated ground with friable soils. Grasslands, savannas, and mountain meadows near timberline are preferred.	Likely within Project area where suitable habitat is present. One dead badger was observed in the Project area during surveys.
Blunt-nosed leopard lizard	*Gambelia sila*	FE, SE, CDFG Fully Protected	Found in arid areas with scattered vegetation, non-native grassland and alkali sink scrub communities of the San Joaquin Valley floor.	This species was observed on the CDFG Pleasant Valley Ecological Reserve immediately adjacent to the Project site. Suitable habitat is present within transmission line alignment; however, BNLL was not observed within the Project site during protocol surveys in 2008.
Burrowing owl	*Athene cunicularia*	CSC	Primarily found in grasslands, can thrive in agricultural landscapes. Prefers to place burrows in short vegetation with sparse shrubs.	Reported within 1 mile of Project area in 1920. Assumed extirpated from Pleasant Valley/Coalinga in 1936. No recent observations of this species have been documented. Not observed in Project area.
Golden eagle	*Aquila chrysaetos*	CSC	forage in grassy and open shrubby habitats and nest primarily on cliffs, with secondary use of large trees (*e.g.*, oaks and sycamore). Breeding pairs may occupy territories of several square miles.	Observed near the creek along the northern transmission line alignment.
Hopping's blister beetle	*Lytta hoppingi*	FT	Found in the foothills in the southern end of the Central Valley. Reported in Taft, Kern, Fresno and Tulare counties. There is no published information on habitat or floral visitation.	Reported approximately 8 miles west of Project area in natural habitats. May occur within transmission line alignment outside of agricultural areas.

COMMON NAME	SCIENTIFIC NAME	STATUS[1]	PREFERRED HABITAT	POTENTIAL FOR OCCURRENCE WITHIN SITE OR TRANSMISSION LINE CORRIDOR
LECONTE'S THRASHER	*TOXOSTOMA LECONTEI*	CSC	LE CONTE'S THRASHER IS AN UNCOMMON RESIDENT OF DESERT SCRUB, DESERT WASH AND ALKALI DESERT SCRUB HABITATS FROM INYO COUNTY TO THE MEXICAN BORDER.	LIKELY WITHIN PROJECT TRANSMISSION LINE ALIGNMENT WHERE SUITABLE HABITAT IS PRESENT.
LOGGERHEAD SHRIKE	*LANIUS LUDOVICIANUS*	CSC	UNCOMMON YEAR-ROUND RESIDENT OF GRASSLAND AND DESERT SCRUB.	LIKELY TO FORAGE WITHIN PROJECT AREA WHERE SUITABLE HABITAT IS PRESENT. OBSERVED ALONG THE TRANSMISSION LINE ALIGNMENT.
LONG-EARED OWL	*OTUS WILSONIANUS*	CSC	OCCURS PRIMARILY IN DENSE OAK AND RIPARIAN WOODLAND; NESTS IN TREES, OFTEN IN THE ABANDONED NESTS OF CORVIDS OR OTHER RAPTORS.	MAY USE RIPARIAN HABITAT THAT CROSSES THE TRANSMISSION LINE ALIGNMENT. ALSO LIKELY TO FORAGE WITHIN PROJECT AREA WHERE SUITABLE HABITAT IS PRESENT.
MERLIN FALCON	*FALCO COLUMBARIUS*	CSC	GRASSLANDS AND AGRICULTURAL FIELDS. WINTERING POPULATIONS IN CALIFORNIA HAVE DECLINED POSSIBLY DUE TO PESTICIDE USE IN BREEDING AREAS.	LIKELY TO FORAGE IN PROJECT AREA WHERE SUITABLE HABITAT IS PRESENT.
MOLESTAN BLISTER BEETLE	*LYTTA MOLESTA*	FT	BLACK BEETLE WITH ORANGE ON THORAX. FEEDS ON LUPINES AND VERNAL POOL SPECIES IN THE CENTRAL VALLEY.	REPORTED APPROXIMATELY 8 MILES NORTH OF PROJECT AREA IN NATURAL HABITATS. MAY OCCUR WITHIN TRANSMISSION LINE ALIGNMENT OUTSIDE OF AGRICULTURAL AREAS.
MORRISON'S BLISTER BEETLE	*LYTTA MORRISONI*	FT	FOUND IN THE SOUTHERN CENTRAL VALLEY; FEEDS ON GILIA TRICOLOR AND LINANTHUS LINIFLORUS.	REPORTED APPROXIMATELY 8 MILES WEST OF PROJECT AREA IN NATURAL HABITATS. MAY OCCUR WITHIN TRANSMISSION LINE ALIGNMENT OUTSIDE OF AGRICULTURAL AREAS.
SAN JOAQUIN ANTELOPE SQUIRREL	*AMMOSPERMOPHILIUS NELSONI*	ST, FSC	GRASSLANDS WITH MODERATE SHRUB COVER; WIDELY SCATTERED SHRUBS, FORBS, AND GRASSES IN BROKEN TERRAIN WITH GULLIES AND WASHES AND LOAM SOILS. USE BURROWS THAT THEY OR OTHER ANIMALS HAVE DUG.	REPORTED WITHIN 1 MILE OF PROJECT AREA. LIKELY WITHIN PROJECT AREA WHERE SUITABLE HABITAT IS PRESENT.

Common Name	Scientific Name	Status[1]	Preferred Habitat	Potential for Occurrence within Site or Transmission Line Corridor
San Joaquin dune beetle	*Coelis gracilis*	FC	Smallest species of dune beetle; is found only in sand dunes in California	Not likely in Project area; suitable habitat is not present.
San Joaquin kit fox	*Vulpes macrotis mutica*	FE, ST	Grasslands and scrublands; often in areas of oil exploration and extraction, wind turbines, agricultural land uses, and urban areas.	Assumed within Project area where suitable habitat is present.
San Joaquin pocket mouse	*Perognathus inornatus inornatus*	FSC	Requires friable soils in grasslands and Blue Oak savannas from near sea level to 1500 feet elevation along the eastern side of the San Joaquin Valley.	Likely within Project area where suitable habitat is present. Trapping program planned for December 2008 will identify species using area.
San Joaquin whipsnake	*Masticophis flagellum ruddocki*	CSC	Grassland, savanna, chaparral, and woodland habitats from San Joaquin Valley to Kern and Santa Barbara Counties.	May occur within Project area where suitable habitat is present.
Short-nosed kangaroo rat	*Dipodomys nitratoides brevinasus*	CSC	Grassland and desert-shrub associations on friable soils. Also on uncultivated sites in the Kettleman Hills, and in and around oil fields near Coalinga, Fresno County.	Likely within Project area where suitable habitat is present. Trapping program planned for December 2008 will identify species using area.
Silvery legless lizard	*Anniella pulchra pulchra*	CSC	Common in several habitats supporting friable soils, especially in coastal dune, valley-foothill, chaparral, and coastal sage scrub. It may occasionally enter desert scrub habitats.	Found historically northwest and southeast of Project site, in stream habitats.
Swainson's hawk	*Buteo swainsoni*	ST	Found in deserts, grasslands and prairies; forages over pastures and agricultural fields. Nests in trees in riparian, groves and farmlands.	Likely to forage in Project area where suitable habitat is present. May nest in riparian area associated with Zapato Chino Creek to east and south of Project area.

Common Name	Scientific Name	Status[1]	Preferred Habitat	Potential for Occurrence within Site or Transmission Line Corridor
Tricolored blackbird	*Agelaius tricolor*	CSC (breeding populations)	Fresh water marsh habitat, usually in cattails or reeds; forages in agricultural fields, grasslands, lakeshores and scrub habitats.	Likely to forage in Project area where suitable habitat is present.
Tulare grasshopper mouse	*Onychomys torridus tularensis*	CSC	Arid shrubland communities in hot, arid grassland and shrubland associations.	Likely within Project area where suitable habitat is present. Trapping program planned for December 2008 will identify species using area.
Western mastiff bat	*Eumops perotis californicus*	CSC	Roost in rugged, rocky areas where suitable crevices are available for day-roosts. Forage in open areas up to 2000 feet and up to 15 miles from roost sites.	May forage in Project area where suitable habitat is present.
Western spadefoot	*Scaphiopus hammondii*	CSC	Emerges at night during the early spring rains to breed in temporary ponds, vernal pools, and backwaters of slow flowing creeks; burrows are constructed in upland habitats including grasslands and coastal sage scrub.	Not expected within Project area; no standing water present within or near Project area.
Plants				
Brittlescale	*Atriplex depressa*	CNPS List 1B	Broad flood basins and alluvial fans, barren areas within alkali grassland, alkali meadow, and alkali scrub. Low elevations to 1,055 feet.	Not expected within Project area; habitat is not suitable.

Common Name	Scientific Name	Status[1]	Preferred Habitat	Potential for Occurrence within Site or Transmission Line Corridor
California jewel-flower	Caulanthus californicus	FE, SE, CNPS List 1B, BLM Sensitive	Nonnative grassland, upper Sonoran subshrub scrub, cismontane juniper woodland and scrub communities; 240 to 2,950 feet. Three concentrations of naturally-occurring populations include the Kreyenhagen Hills in Fresno County	Kreyenhagen Hills is near the Project study area. May occur in transmission line alignment. Potential for occurrence within Project area is low
Hoover's eriastrum	*Eriastrum hooveri*	CNPS List 4.2, (FT delisted 2003)	Drying grassy areas, chenopod scrub, pinyon and juniper woodland, valley and foothill grassland (50-915m).	Potential for occurrence within Project area is likely where suitable habitat is present.
Lemmon's jewelflower	*Caulanthus coulteri* var. *lemmonii*	CNPS List 1B.2	Dry, exposed slopes in pinyon and juniper woodland; valley and foothill grasslands (80-8000m).	Potential for occurrence within Project area is low; suitable habitat is not present.
Pale yellow layia	*Astragalus didymocarpus var. milesianus*	CNPS List 1B.2	Grassy areas near coast, coastal scrub (20-90m). Santa Barbara, San Luis Obispo, Ventura Counties.	Potential for occurrence within Project area is low. Suitable habitat is not present.
San Joaquin woollythreads	Monolopia congdonii	FE, CNPS List 1B	Nonnative grassland, valley saltbush scrub, interior Coast Range saltbush scrub and upper Sonoran subshrub communities at elevations from 200 to 850 feet on the San Joaquin Valley floor	May occur in transmission line alignment, however, potential for occurrence within Project area is low.

Notes:

[1] U.S. Fish and Wildlife Service (federal).
FE = Endangered (in danger of becoming extinct throughout all or a significant portion of its range).
FT = Threatened (likely to become endangered in the foreseeable future in the absence of special protection).
FC = Federal Candidate (candidate for FT or FE listing).
FSC = Species of Concern (sufficient information exists which warrants concern over that species' status and warrants study).
CDFG = California Department of Fish and Game (State).
SE = State Endangered (in danger of becoming extinct throughout all or a significant portion of its range).
SC = State Candidate (candidate for SE or State threatened [likely to become endangered in the foreseeable future in the absence of special protection).
CSC = Species of Concern (information exists which warrants concern over that species' status and warrants study).

CNPS List 1B = California Native Plant Society: Rare or endangered throughout its range.

References: CNDDB 2008; USFWS 2008.

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BIOLOGICAL SURVEY DATES, WEATHER CONDITIONS, AND SURVEY STAFF

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San Joaquin Solar 1 & 2 Biological Survey Dates, Weather Conditions, and Survey Staff

Survey Date	Survey Type	Start/End Times	Start/End Temp (C)	Start/End Sky Cover (%)	Wind Speed (mph)	Survey Staff
4/11/08	Habitat Assessment	1330-1430	n/a	n/a	n/a	URS – TM, PM
5/15/08	Habitat Assessment	0900-1148	29-37	0/0	0-4	URS – TM
5/28/2008	BNLL Survey #1 - Adult	1115-1320	25-26.6	10/40	0-2	URS – SA, TW, DM QK – LB (Level II), WM (Level II), YB
5/29/2008	BNLL Survey #2 – Adult	1035-1218	25-28.3	25/5	0-6	URS – SA, TW, DM, QK – LB (Level II), WM (Level II) YB
5/30/2008	BNLL Survey #3 – Adult	1007- 1152	25.5-27.7	5/0	0-1	URS – SA, TW, DM QK – LB (Level II), WM (Level II) YB
6/07/2008	Survey Reference Site only (not within protocol	0805-0835	25-26	0/0	10-18	URS – TM (Level II), TW, SA, JS
6/08/2008	BNLL Survey #4 – Adult	0840-1038	25-28	0/0	0-7	URS TM (Level II), TW, SA, JS
6/21/2008	BNLL Survey #5 - Adult	0620-0752	25-32.2	0/0	0-8	URS – SA, TW QK – LB (Level II) YB
6/22/2008	BNLL Survey #6 - Adult	0718-0902	25-32.2	0/0	0-5	URS – SA, TW QK – LB (Level II) YB
6/23/2008	BNLL Survey #7 – Adult	0804-0932	25-27.7	10/25	0-3	URS – SA, TW QK – WM (Level II) YB
6/30/2008	BNLL Survey #8 – Adult	0815-0952	26-31	0	1-5	URS – RB QK – LB (Level II), WM (Level II) YB
7/01/2008	BNLL Survey #9 – Adult	0845-1025	26-30.5	0	0-4	URS - RB QK – LB (Level II), WM (Level II)

San Joaquin Solar 1 & 2 Biological Survey Dates, Weather Conditions, and Survey Staff (Continued)

Survey Date	Survey Type	Start/End Times	Start/End Temp (C)	Start/End Sky Cover (%)	Wind Speed (mph)	Survey Staff
7/02/2008	BNLL Survey #10 – Adult	0827-1011	26-30	0	3-5	URS – RB QK – LB (Level II), WM (Level II) YB
7/03/2008	BNLL Survey #11 – Adult	0820-0939	26-28	0/0	0-9	URS – RB QK – LB (Level II), WM (Level II) YB
7/09/2008	BNLL Survey #12 – Adult	0650-0747	26-27	0/0	0-5	QK – LB (Level II), WM (Level II) YB
8/9/2008	BNLL Survey #1 - Juvenile	825-1010	25-33	0/0	0-2/2-4	URS – SA, BB, QK – LB (Level II), YB
8/10/2008	BNLL Survey #2 - Juvenile	840-1011	25-30	0/0	5-7/0-2	URS – SA, BB, QK – LB (Level II), YB
8/19/2008	BNLL Survey #3 - Juvenile	0809-1045	25-27	0/0	2-5/6-8	URS – AB, CE, QK – LB (Level II) YB
8/20/2008	BNLL Survey #4 - Juvenile	0856-1000	25-29	0/0	2-4/2-6	URS – AB, CE, QK – LB (Level II) YB
8/21/2008	BNLL Survey #5 - Juvenile	0825-1020	25.5-30.2	0/0	1-2/2-6	URS – AB, CE, QK – LB (Level II) YB
12/1/08	Nocturnal Small Mammal Trapping	2330-0645	7-5	100/100 (fog)	1-3	URS – SA QK - CU
12/2/08	Nocturnal Small Mammal Trapping	2300-0545	7-5	90/90	0-2	URS – SA QK – CU
12/3/08	Nocturnal Small Mammal Trapping	2230-0430	7-5	80/100	0	URS – SA QK – CU
12/4/08	Nocturnal Small Mammal Trapping	2230-0400	7-5	5/10	0	URS – SA QK – CU

Survey Date	Survey Type	Start/End Times	Start/End Temp (C)	Start/End Sky Cover (%)	Wind Speed (mph)	Survey Staff
12/8/08	Nocturnal Small Mammal Trapping	2310-2459	10-6	80/80	0-2	URS – RB QK – CU
12/9/08	Nocturnal Small Mammal Trapping	2303-2417	4-0	0/0	0-1	URS – RB QK – CU
12/10/08	Nocturnal Small Mammal Trapping	2326-2444	4-3	0/0	0-1	URS – RB QK – CU
12/11/08	Nocturnal Small Mammal Trapping	2304-2443	5-4	0/0	0-1	URS – RB QK - CU

Notes:
URS Staff: BB Brittany Benson, DM – Dennis Miller, RB – Rick Bailey, SA – Sundeep Amin, TM – Theresa Miller, TW – Tim Witman, JS – Jill Seed, PM – Patrick Mock, WV – Wayne Vogler, AB – Alyssa Berry, CE – Cletis England
QK Staff: CU – Curtis Uptain, LB – Lori Bono, WM – Woody Moise
YB - Yancey Bissonnette, Alphabiota

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PLANT SPECIES OBSERVED ON THE SJS 1&2 PROJECT SITE AND TRANSMISSION LINE ROUTES

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Scientific Name	Common Name
ANGIOSPERMS (DICOTYLEDONS)	
ASTERACEAE	SUNFLOWER FAMILY
Ambrosia acanthicarpa	annual bursage
Baccharis salicifolia	mulefat
Centaurea melitensis	tocalote
Centaurea solstitialis	yellow star-thistle
Helianthus annuus	California sunflower
Hemizonia sp.	tarplant, tarweed
Lepidospartum squamatum	scale broom
Xanthium strumarium	common cocklebur
BORAGINACEAE	BORAGE FAMILY
Amsinckia menziesii	common fiddleneck
Cryptantha sp.	cryptantha
Plagiobothrys sp.	popcorn flower
BRASSICACEAE	MUSTARD FAMILY
Brassica nigra	black mustard
Capsella bursa-pastoris	sheperd's-purse
Hirschfeldia incana	short-podded mustard
Lepidium nitidum	shining peppergrass
CHENOPODIACEAE	GOOSEFOOT FAMILY
Atriplex polycarpa	common saltbrush
Salsola tragus	Russian thistle
CUCURBITACEAE	GOURD FAMILY
Cucurbita palmata	coyote melon
EUPHORBIACEAE	SPURGE FAMILY
Eremocarpus setigerus	dove weed
FABACEAE	LEGUME FAMILY
Astragalus sp.	astragalus
Lotus purshianus	Spanish clover
GERANIACEAE	GERANIUM FAMILY
Erodium cicutarium	red-stemmed filaree
MALVACEAE	MALLOW FAMILY
Malvella leprosa	alkali-mallow
PAPAVERACEAE	POPPY FAMILY
Eschscholzia californica	California poppy
POLYGONACEAE	BUCKWHEAT FAMILY
Eriogonum sp.	annual buckwheat
SOLANACEAE	NIGHTSHADE FAMILY
Datura wrightii	jimson weed
Nicotiana glauca	tree tobacco
TAMARICACEAE	TAMARISK FAMILY
Tamarix sp.	tamarisk

Scientific Name	Common Name
ANGIOSPERMS (MONOCOTYLEDONS)	
POACEAE	GRASS FAMILY
Avena sp.	wild oat
Bromus diandrus	ripgut grass
Bromus hordeaceus	soft chess
Bromus madritensis ssp. rubens	red brome
Horedum marinum ssp. *gussoneanum*	Mediterranean barley
*Lolium perenne**	perennial ryegrass
*Schismus barbatus**	Mediterranean schismus
Vulpia myuros var. *myuros**	Zorro annual fescue

WILDLIFE SPECIES OBSERVED ON THE SJS 1&2 PROJECT SITE AND TRANSMISSION LINE ROUTES

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Scientific Name	Common Name
Birds	
Agelaius phoeniceus	red-winged blackbird
Aquila chrysaetos (CSSC)	golden eagle
Bubo virginianus	great-horned owl
Buteo jamaicensis	red-tailed hawk
Calypte anna	Anna's hummingbird
Carpodacus mexicanus	house finch
Cathartes aura	turkey vulture
Circus cyaneus (CSSC)	northern harrier
Colaptes auratus	northern flicker
Corvus corax	common raven
Eremophila alpestris	horned lark
Lanius ludovicianus (CSSC)	loggerhead shrike
Mimus polyglottos	northern mockingbird
Stelgidopteryx serripennis	northern rough-winged swallow
Sturnella neglecta	western meadowlark
Tyrannus verticalis	western kingbird
Tyto alba	barn owl
Zenaida macroura	mourning dove
Mammals	
Canus latrans	coyote
Dipodomys heermanni	Heermann's kangaroo rat
*Lepus californicus (*CSSC*)*	black tailed jackrabbit
Lynx rufus	bobcat
Mustela frenata	long-tailed weasel
Peromyscus maniculatus	Deer mouse
Spermophilus beecheyi	California ground squirrel
Sylvilagus audubonii	cottontail rabbit
Taxidea taxus (CSSC)	American badger
Reptiles	
Cnemidophorus tigris	western whiptail lizard
Crotalus viridis	western rattlesnake
Masticophis flagellum	coachwhip snake
Pituophis catenifer catenifer	Pacific gopher snake
Sceloporus occidentalis biseriatus	San Joaquin fence lizard
Uta stansburiana	common side-blotched lizard

CSSC = California Species of Special Concern

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BNLL SURVEY DATA SHEETS, WEATHER DATA, AND CNDDB RECORDS

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BIOLOGISTS' QUALIFICATIONS

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SMALL MAMMAL TRAPPING REPORT

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Summary Report of Small Mammal Trapping along Two Proposed Transmission Line Corridors for the San Joaquin Solar 1 and 2 Project

Submitted by:
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Submitted to:
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22 December 2008

Summary Report of Small Mammal Trapping along Two Proposed Transmission Line Corridors for the San Joaquin Solar 1 and 2 Project

1.0 Introduction

A solar energy generating facility is currently proposed for construction along Jayne Avenue, west of Interstate 5, near Coalinga, California (Figure 1). The project site currently is a disked field that contains virtually no biological resources. Two transmission lines are associated with this facility, which would transfer power to a site east of Interstate 5 (Figure 2). Various biological surveys have been conducted along the two proposed transmission lines. Most of the transmission line corridors are composed of agricultural fields including permanent orchards and row crops, but there are some expanses of Non-native Grassland, Atriplex Shrubland, and fallow agricultural lands along these alignments. This report summarizes the results of small mammal trapping conducted along those routes.

2.0 Methods

Nocturnal trapping for small mammals was conducted within the Non-native Grassland, Atriplex Scrubland, and fallow agricultural lands along the northern and southern transmission line routes. Four trapping lines were established along the northern route (trap lines 1 through 4), consisting of 20 traps, 100 traps, 80 traps, and 100 traps, respectively (Figure 3). Four trapping lines were established along the southern transmission line, consisting of 50 traps each. Traps were placed at intervals of approximately 15 meters along the trap lines.

Each line was trapped for four consecutive nights; trap lines 1 through 4 were trapped from 1 December 2008 to 4 December 2008 and trap lines 5 through 8 were operated from 7 December to 10 December 2008. A combination of standard 9-inch and 13-inch kangaroo rat special Sherman live traps were used. The 9-inch traps were modified to reduce tail injuries to kangaroo rats as approved by the California Department of Fish and Game. Traps were baited with mixed bird seed and opened prior to dusk each night. One trap check each night was conducted, commencing at approximately 2300 hours and concluding between 0200 and 0430 the following morning. Traps were closed when checked. A total of 1200 trap nights were conducted along the northern transmission line route and 800 trap nights were conducted along the southern transmission line route.

Each animal captured was identified to species, its age, sex, and sexual condition was noted, its weight was taken, it was marked by clipping a patch of fur on its right rump, and released at its point of capture. Notes on previous injuries or other anomalies were recorded. Curtis Uptain and Sundeep Amin conducted trapping along the northern route

and Curtis Uptain and Rick Bailey conducted trapping along the southern transmission line route.

2.0 Results

Heermans kangaroo rats (*Dipodomys heermanni*) and deer mice (*Peromyscus maniculatus*) were the only two species captured along both the northern and southern transmission line routes (Table 1). *D. heermanni* were captured more frequently than *P. maniculatus*, with 313 individual kangaroo rats captured a total of 552 times versus 80 deer mice being captured a total of 126 times. The majority of captures of both species (93% of *D. heermanni* and 75% of *P. maniculatus*) were captured along the northern transmission line (plots 1 through 4). This is not unexpected because there was more habitat available, the habitat was less disturbed, and there was a greater sampling effort (1,200 trap nights in the northern trapping areas versus 800 trap nights in the southern trapping areas). When adjusted for unequal sampling effort, the northern trapping areas remained superior to the southern trapping areas.

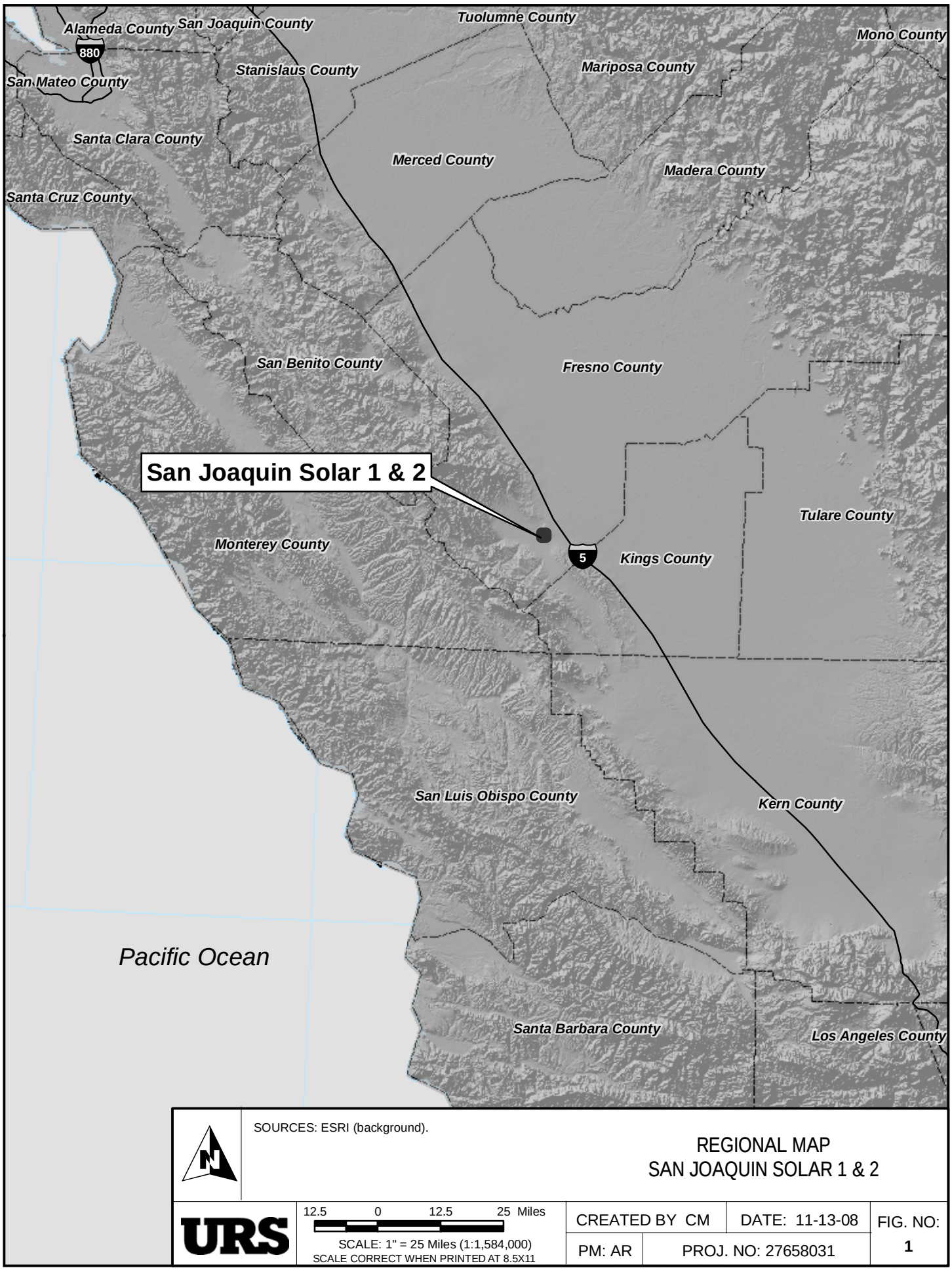
Table 1. Results of small mammal trapping along transmission line routes, San Joaquin Solar 1 and 2. D.H. = *Dipodomys heermanni*, P.M. = *Peromyscus maniculatus*. The number of each sex and age class is only provided for "new" captures, not recaptured animals.

Plot/species	# of recaptures	# of new captures	# of Males	# of Females	# of Adults	# of Juveniles
Plot 1						
D.H.	10	10	7	3	10	0
P.M.	8	10	5	5	10	0
Plot 2						
D.H.	46	52	26	26	52	0
P.M.	23	24	18	5	21	2
Plot 3						
D.H.	43	81	42	39	81	0
P.M.	3	9	5	4	7	2
Plot 4						
D.H.	127	102	48	54	102	0
P.M.	10	17	7	10	14	3
Plot 5						
D.H.	1	1	0	1	1	0
P.M.	0	0	0	0	0	0
Plot 6						
D.H.	0	1	0	1	1	0
P.M.	1	2	1	1	2	0
Plot 7						
D.H.	8	11	7	4	11	0
P.M.	1	5	3	2	4	1

Plot 8						
D.H.	4	9	6	3	9	0
P.M.	0	13	6	7	9	4
Total						
D.H.	239	313	136	131	313	0
P.M.	46	80	50	30	68	12

The majority of all animals captured were adults (100% of *D. heermanni* and 85% of *P. maniculatus*). The ratio of males to females was nearly equal among *D heermanni* and. males accounted for approximately 63% of *P. maniculatus*. Most of the males of both species were reproductively active. The majority of male kangaroo rats were slightly post-reproductive as evidenced by a withering testicular sac with ascending testicles. Although most of the female kangaroo rats were classified as non-reproductive, most were suspected of being in very early pregnancy (some females exhibited copulatory plugs, others exhibited turgid vulva, but most exhibited no definitive sign of pregnancy but seemed to have a slightly swollen abdomen).

Other species of small mammals known from the trapping sites include the pocket gopher (*Thomomys bottae*), cottontail (*Sylvilagus audubonii*), and black-tailed jackrabbit (*Lepus californicus*). Other small mammal species known from the vicinity of the project sites include the California pocket mouse (*Chaetodipus californicus*), San Joaquin pocket mouse (*Perognathus inornatus*), Tulare grasshopper mouse (*Onychomys torridus*), short-nosed kangaroo rat (*Dipodomys nitratoides brevinasus*), and San Joaquin antelope ground squirrel (*Ammospermophilus nelsoni*). There was no evidence collected during the trapping efforts that confirms the presence of these species on the project site. However, the San Joaquin antelope ground squirrel is a crepuscular species that was not targeted by this trapping effort. Although no sign of this species was observed either during these trapping efforts or during other biological surveys of the project sites, it is recommended that focused trapping for the San Joaquin antelope ground squirrel be conducted prior to ground clearing activities.



SOURCES: ESRI (background).

REGIONAL MAP
SAN JOAQUIN SOLAR 1 & 2

URS

12.5 0 12.5 25 Miles

SCALE: 1" = 25 Miles (1:1,584,000)
SCALE CORRECT WHEN PRINTED AT 8.5X11

CREATED BY CM	DATE: 11-13-08	FIG. NO:
PM: AR	PROJ. NO: 27658031	1

Path: G:\gis\projects\1577\27658031\alternative\map_docs\mxd\bio\bio-tech\regional.mxd, 12/03/08, colin_mattison

OVERVIEW MAP

S El Dorado Ave
S Butte Ave
W Phelps Ave
S Lake Ave
S Trinity Ave
S Lassen Ave
W Jayne Ave
Gates Substation
Sommerville Ln
San Joaquin Solar 1 & 2
S Sutter Ave
S Glenn Ave
Modoc Ave
Skyline Rd

LEGEND

Vegetation
- Agriculture
- Disturbed - Non-native Grassland/Saltbush Scrub
- Disturbed Bare Ground
- Developed
- Disturbed Habitat/Saltbush Scrub
- Open Channel/Riparian Scrub

Transmission Lines
- Northern Route
- Southern Route
- 1 Mile Buffer
- San Joaquin Solar 1 & 2
- Gates Substation
- 0.25 Mile Transmission Line Buffer

SOURCES:
USDA FSA Aerial Photography Field Office (aerial 2005); CNDDB (Mar. 2008); ESRI (roads).

VEGETATION AND OWUS MAP
SAN JOAQUIN SOLAR 1 & 2

URS

1500 0 1500 3000 Feet
SCALE: 1" = 3000' (1:36,000)
SCALE CORRECT WHEN PRINTED AT 11X17

CREATED BY: CM	DATE: 11-05-08	FIG. NO: 2
PM: AR	PROJ. NO: 27658031	

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OVERVIEW MAP

LEGEND

- Small Mammal Trapping End Point
- Small Mammal Trapping Line
- 0.25 Mile Transmission Line Buffer

Vegetation

- Agriculture
- Disturbed - Non-native Grassland/Saltbush Scrub
- Disturbed Bare Ground
- Developed
- Disturbed Habitat/Saltbush Scrub
- Open Channel/Riparian Scrub

Transmission Lines

- Northern Route
- Southern Route
- 1 Mile Buffer
- San Joaquin Solar 1 & 2

Trap Line # 3
80 Traps

Trap Line # 4
100 Traps

Trap Line # 1
Circular, 20 Traps

Trap Line # 2
100 Traps

Trap Line # 8
50 Traps

Trap Line # 6
50 Traps

Trap Line # 5
50 Traps

Trap Line # 7
50 Traps

San Joaquin Solar 1 & 2

S El Dorado Ave

S Sutter Ave

S Glenn Ave

Sommerville Ln

5

SOURCES:
USDA FSA Aerial Photography Field Office (aerial 2005); CNDDB (Mar. 2008); ESRI (roads); URS (mammal trapping 2008).

SMALL MAMMAL TRAP LINES LOCATIONS SAN JOAQUIN SOLAR 1 & 2

URS

1000 0 1000 2000 Feet

SCALE: 1" = 2000' (1:24,000)
SCALE CORRECT WHEN PRINTED AT 11X17

CREATED BY: CM	DATE: 01-12-09	FIG. NO: 3
PM: AR	PROJ. NO: 27658031	

Path: G:\gis\projects\1577\27658031\alternative\map_docs\mxd\bio\mammal_trapping_program.mxd, 01/12/09, colin_mattison

	**Photograph #1** Photograph of small mammal trapping line 1 taken from the northernmost trap facing south.
	**Photograph #2** Photograph of small mammal trapping line 2 taken from the easternmost trap facing west.

	**Photograph #3** Photograph of small mammal trapping line 3 taken from the easternmost trap facing west.
	**Photograph #4** Photograph of small mammal trapping line 4 taken from the easternmost trap facing west.

	**Photograph #5** Photograph of small mammal trapping line 5 taken from the westernmost trap facing east.
	**Photograph #6** Photograph of small mammal trapping line 6 taken from the westernmost trap facing east.

	**Photograph #7** Photograph of small mammal trapping line 7 taken from the westernmost trap facing east.
	**Photograph #8** Photograph of small mammal trapping lines 7 and 8 taken from the easternmost trap facing west.

	**Photograph #9** Photograph of small mammal trapping line 8 taken from the westernmost trap facing east.
	**Photograph #10** This field was “targeted” for small mammal trapping but is not suitable for small mammals. Trapping did not occur in this field. It is located along the south transmission line, easternmost trapping area

	**Photograph #11** Photograph of a Heermann's kangaroo rat found in a trap.

FIELD DATA SHEET

RV FORM 08

PLOT	DATE			OBS
	DAY	MONTH	YEAR	
II	DD	MM	YY	I
2-3	5-6	7-8	9-10	12
1	1	12	08	cl/SA

SEX: 1 Male; 2 Female; 9 Unknown

SEXUAL CONDITION: MALE — 1 Testes Abdominal; 2 Testes scrotal Up; 3 Testes scrotal Dwn. FEMALE — 4 Vulva inactive, closed; 5 Vulva turgid, enlarged; 6 Cop. plug; 7 Pregnant; 8 Lactating; 9 Condition unknown

AGE: 1 Young Yr.; 2 Adult; 9 Unknown

Time	Air Temp. °C	Rel Hum %	Beauf. No.	Cloud Cover	Moon		
II	IIID	II	II	I	I		
51-52	54-57	59-60	62-63	65	66		
2330	12	90	0	6	4		

SPECIES CODE	ALPHA CODE GENUS	ALPHA CODE SPECIES	NEW	ANIMAL NUMBER	NO. CONFUSED	SEX	SEXUAL COND.	AGE	TORPID-DEAD	GRID STAKE NUMBER	BODY WT. (gr.)	BRIEF NOTES	
II	AAA	AAA	I	IIIII	I	I	I	I	I	IIII	IIID	AAAAAAAAA	
14-15	17-19	20-22	24	26-30	32	34	36	38	40	41-44	46-49	72-80	
	Per	man	5			2	4	2		2	13		1
	Per	man	5			1	1	2		3	11		2
	Dip	her	5			1	2	2		8	84		3
	Dip	her	5			1	2	2		16	84		4
	Dip	her	5			1	2	2		20	72		5
	Dip	her	5			1	2	2		1		No weight	6
										Finish 24:09			7
													8
													9
													10
													11
													12
													13
													14
													15
													16
													17
													18
													19
													20
													21
													22
													23
													24
													25

WIND

Beauf. No.	km.	mi.
00	.5	.5
02	9	6
04	23	14
06	40	25
08	60	38
10	84	52
12	104	65

CLOUD COVER
0 Clear
1 Partly Cloudy
2 Cloudy
3 Drizzle
4 Rain
5 Snow
6 Fog

MOON
0 None
1 Quarter
2 Half
3 3-Quarter
4 Full

NEW (Basic)
1 New animal
2 Re-tag

NEW (Asses.)
5 New animal

RE-CAPTURS
Blank

TIME
Hr. from sunset

NUMBER CONFUSED
1 Tag lost
2 Natural amputation
3 Escaped

TORPID - DEAD
1 Torpid
2 Dead

GRID STAKE NUMBER
9999 - Unusual location

ANIMAL NUMBER
8 Dead unmarked animal
9 Multiple amputation

FIRST DIGIT - EAR CLIP
0 = No Clip
1 = Right ear
2 = Left ear
3 = Both ears

Animals straight cut

FIELD DATA SHEET

RV FORM 08

PLOT	DATE			OBS
	DAY	MONTH	YEAR	
II	DD	MM	YY	I
2-3	5-6	7-8	9-10	12
1	2	12	08	CW/BA

SEX: 1 Male; 2 Female; 9 Unknown

SEXUAL CONDITION (MALE): 1 Testes Abdominal; 2 Testes scrotal Up; 3 Testes scrotal Dwn.

SEXUAL CONDITION (FEMALE): 4 Vulva inactive, closed; 5 Vulva turgid, enlarged; 6 Cop. plug; 7 Pregnant; 8 Lactating; 9 Condition unknown

AGE: 1 Young Yr.; 2 Adult; 9 Unknown

Time	Air °C	Rel % Hum	Beauf. No. Wind	Cloud Cover	Moon		
II	IIID	II	II	I	I		
51-52	54-57	59-60	62-63	65	66		
2356	10	70-80	0	6	0		

SPECIES CODE	ALPHA CODE GENUS	ALPHA CODE SPECIES	NEW	ANIMAL NUMBER	NO. CONFUSED	SEX	SEXUAL COND	AGE	TORPID-DEAD	GRID STAKE NUMBER	BODY WT. (gr.)	BRIEF NOTES	
II	AAA	AAA	I	IIIII	I	I	I	I	I	IIII	IIID	AAAAAAAAA	
14-15	17-19	20-22	24	26-30	32	34	36	38	40	41-44	46-49	72-80	
	Dip	hee	5			2	4	2		1	70		1
	Per	man	R							2			2
	Per	man	5			1	1	2		5	17	previously wounded on R flank	3
	Dip	hee	R							9			4
	Per	man	5			2	4	2		11	12		5
	Per	man	R							13			6
	Per	man	5			1	2	2		16	17		7
	Dip	hee	R							17			8
	Per	man	5			2	4	2		18	15		9
	Dip	hee	5			1	2	2		19	82		10
	Dip	hee	5			2	4	2		20	39		11
													12
													13
													14
													15
													16
													17
													18
													19
													20
													21
													22
													23
													24
													25

WIND

Beauf. No.	km.	mi.
00	.5	.5
02	9	6
04	23	14
06	40	25
08	60	38
10	84	52
12	104	65

CLOUD COVER
0 Clear; 1 Partly Cloudy; 2 Cloudy; 3 Drizzle; 4 Rain; 5 Snow; 6 Fog

MOON
0 None; 1 Quarter; 2 Half; 3 3-Quarter; 4 Full

NEW (Basic)
1 New animal; 2 Re-tag

NEW (Asses.)
5 New animal

RE-CAPTURS
Blank

TIME
Hr. from sunset

NUMBER CONFUSED
1 Tag lost; 2 Natural amputation; 3 Escaped

TORPID - DEAD
1 Torpid; 2 Dead

GRID STAKE NUMBER
9999 - Unusual location

ANIMAL NUMBER
8 Dead unmarked animal; 9 Multiple amputation

FIRST DIGIT - EAR CLIP
0 = No Clip
1 = Right ear
2 = Left ear
3 = Both ears

Animals straight cut

FIELD DATA SHEET

RV FORM 08

PLOT	DATE: DAY	DATE: MONTH	DATE: YEAR	OBS	Time	Air Temp. °C	Rel Hum %	Wind Beauf. No.	Cloud Cover	Moon
II	DD	MM	YY	I	II	IIID	II	II	I	I
2-3	5-6	7-8	9-10	12	51-52	54-57	59-60	62-63	65	66
1	3	12	68	SK/SM	2311	10	60-70	0-2	6	0

SEX
1 Male
2 Female
9 Unknown

AGE
1 Young Yr.
2 Adult
9 Unknown

SEXUAL CONDITION
1 Testes Abdominal
2 Testes scrotal Up
3 Testes scrotal Dwn.
} MALE
4 Vulva inactive, closed
5 Vulva turgid, enlarged
6 Cop. plug
7 Pregnant
8 Lactating
9 Condition unknown
} FEMALE

	SPECIES CODE	ALPHA CODE: GENUS	ALPHA CODE: SPECIES	NEW	ANIMAL NUMBER	NO. CONFUSED	SEX	SEXUAL COND	AGE	TORPID-DEAD	GRID STAKE NUMBER	BODY WT. (gr.)	BRIEF NOTES
	II	AAA	AAA	I	IIIII	I	I	I	I	I	IIII	IIID	AAAAAAAAA
	14-15	17-19	20-22	24	26-30	32	34	36	38	40	41-44	46-49	72-80
1		Per	man	5			2	4	2		2	21	
2		Per	man	R							3		
3		Per	man	5			1	1	2		5	18	
4		Dip	hee	5			2	4	2		8	67	
5		Per	man	5			1	2	2		13	21	
6		Dip	hee	5			1	3	2		17	78	
7		Per	man	5			2	4	2		18	23	
8		Dip	hee	R							19		
9		Dip	hee	R							20		
10											End 23:32		
11													
12													
13													
14													
15													
16													
17													
18													
19													
20													
21													
22													
23													
24													
25													

WIND

Beauf. No.	km.	mi.
00	.5	.5
02	9	6
04	23	14
06	40	25
08	60	38
10	84	52
12	104	65

CLOUD COVER
0 Clear
1 Partly Cloudy
2 Cloudy
3 Drizzle
4 Rain
5 Snow
6 Fog

MOON
0 None
1 Quarter
2 Half
3 3-Quarter
4 Full

NEW (Basic)
1 New animal
2 Re-tag

NEW (Asses.)
5 New animal

RE-CAPTURS
Blank

TIME
Hr. from sunset

NUMBER CONFUSED
1 Tag lost
2 Natural amputation
3 Escaped

TORPID - DEAD
1 Torpid
2 Dead

GRID STAKE NUMBER
9999 - Unusual location

ANIMAL NUMBER
8 Dead unmarked animal
9 Multiple amputation

FIRST DIGIT - EAR CLIP
0 = No Clip
1 = Right ear
2 = Left ear
3 = Both ears
Animals straight cut

RV FORM 08

FIELD DATA SHEET

PLOT	DATE			OBS
	DAY	MONTH	YEAR	
II	DD	MM	YY	I
2-3	5-6	7-8	9-10	12
1	4	12	08	WK/AP/RM

SEX
1 Male
2 Female
9 Unknown

AGE
1 Young Yr.
2 Adult
9 Unknown

SEXUAL CONDITION
MALE:
1 Testes Abdominal
2 Testes scrotal Up
3 Testes scrotal Dwn.
FEMALE:
4 Vulva inactive, closed
5 Vulva turgid, enlarged
6 Cop. plug
7 Pregnant
8 Lactating
9 Condition unknown

Time	Air Temp. °C	Rel Hum %	Beaut. No.	Cloud Cover	Moon		
II	IIID	II	II	I	I		
51-52	54-57	59-60	62-63	65	66		
HT	8	40	8	0	2		

2341

SPECIES CODE	ALPHA CODE GENUS	ALPHA CODE SPECIES	NEW	ANIMAL NUMBER	NO. CONFUSED	SEX	SEXUAL COND.	AGE	TORPID-DEAD	GRID STAKE NUMBER	BODY WT. (gr.)	BRIEF NOTES	
II	AAA	AAA	I	IIIII	I	I	I	I	I	IIII	IIID	AAAAAAAAA	
14-15	17-19	20-22	24	26-30	32	34	36	38	40	41-44	46-49	72-80	
	Dip	hee	R							1			1
	Per	man	R							2			2
	Per	man	R							3			3
	Per	man	R							6			4
	Dip	hee	R							8			5
	Per	man	R							13			6
	Dip	hee	R			1	3	2		15	84		7
	Dip	hee	R							16			8
	Dip	hee	R							17			9
	Dip	hee	R							18			10
	Per	man	R							19			11
	Dip	hee	R							20			12
	Dip	hee	R										13
													14
													15
													16
													17
													18
													19
													20
													21
													22
													23
													24
													25
													26

WIND

Beauf. No.	km.	mi.
00	.5	.5
02	9	.6
04	23	14
06	40	25
08	60	38
10	84	52
12	104	65

CLOUD COVER
0 Clear
1 Partly Cloudy
2 Cloudy
3 Drizzle
4 Rain
5 Snow
6 Fog

MOON
0 None
1 Quarter
2 Half
3 3=Quarter
4 Full

NEW (Basic)
1 New animal
2 Re-tag

NEW (Asses.)
5 New animal

RE-CAPTURS
Blank

TIME
Hr. from sunset

NUMBER CONFUSED
1 Tag lost
2 Natural amputation
3 Escaped

TORPID - DEAD
1 Torpid
2 Dead

GRID STAKE NUMBER
9999 = Unusual location

ANIMAL NUMBER
8 Dead unmarked animal
9 Multiple amputation

FIRST DIGIT - EAR CLIP
0 = No Clip
1 = Right ear
2 = Left ear
3 = Both ears

Animals straight cut

FIELD DATA SHEET

RV FORM 08

PLOT	DATE			OBS
	DAY	MONTH	YEAR	
II	DD	MM	YY	I
	5-6	7-8	9-10	12
2	1	12	03	01

SEX: 1 Male; 2 Female; 9 Unknown

SEXUAL CONDITION — MALE: 1 Testes Abdominal; 2 Testes scrotal Up; 3 Testes scrotal Dwn.

SEXUAL CONDITION — FEMALE: 4 Vulva inactive, closed; 5 Vulva turgid, enlarged; 6 Cop. plug; 7 Pregnant; 8 Lactating; 9 Condition unknown

AGE: 1 Young Yr.; 2 Adult; 9 Unknown

	Time	Air Temp. °C	Rel Hum %	Beaut. No.	Cloud Cover	Moon		
	II	IIID	II	II	I	I		
	51-52	54-57	59-60	62-63	65	66		
	2410	~~82~~	90	0	6			

SPECIES CODE	ALPHA CODE GENUS	ALPHA CODE SPECIES	NEW	ANIMAL NUMBER	NO.CONFUSED	SEX	SEXUAL COND	AGE	TORPID-DEAD	GRID STAKE NUMBER	BODY WT. (gr.)	BRIEF NOTES	
II	AAA	AAA	I	IIIII	I	I	I	I	I	IIII	IIID	AAAAAAAAA	
14-15	17-19	20-22	24	26-30	32	34	36	38	40	41-44	46-49	72-80	
	Dip	her	5			1	2	2		2	82	close all	1
	Per	man	5			2	4	2		3	15	↓	2
	Dip	her	5			2	4	2		4	79		3
	Per	man	5			2	4	2		6	16		4
	Dip	her	5			2	5	2		10	76		5
	Dip	her	5			2	4	2		12	58		6
	Dip	her	5			2	4	2		13	59		7
	Per	man	5			1	1	1		19	14		8
	Dip	her	5			2	4	2		35	38		9
	Per	man	5			2	4	2		47	19		10
	Dip	her	5			2	3	2		51	84		11
	Dip	her	5			1	3	2		55	80		12
	Dip	her	5			1	2	2		58	80		13
	Dip	her	5			2	4	2		59	62		14
	Dip	her	5			1	3	2		61	80	most ♂ in between	15
	Dip	her	5			1	2	2		66	80	post descent but	16
	Dip	her	5			1	3	2		78	72	pel patch	17
	Dip	her	5			2	4	2		84	54		18
	Dip	her	5			1	2	2		86	84		19
	Dip	her	5			2	4	2		87	74		20
	Per	man	5			1	1	2		89	18		21
	Per	man	5							90		to escape!	22
	Dip	her	5			2	4	2		91	73		23
	Dip	her	5			2	4	2		95	59	♀ look early preg, but no signs	24
										enter 96 1:46			25

WIND

Beauf. No.	km.	mi.
00	.5	.5
02	9	6
04	23	14
06	40	25
08	60	38
10	84	52
12	104	65

CLOUD COVER
0 Clear; 1 Partly Cloudy; 2 Cloudy; 3 Drizzle; 4 Rain; 5 Snow; 6 Fog

MOON
0 None; 1 Quarter; 2 Half; 3 3-Quarter; 4 Full

NEW (Basic)
1 New animal; 2 Re-tag

NEW (Asses.)
5 New animal

RE-CAPTURS
Blank

TIME
Hr. from sunset

NUMBER CONFUSED
1 Tag lost; 2 Natural amputation; 3 Escaped

TORPID - DEAD
1 Torpid; 2 Dead

GRID STAKE NUMBER
9999 - Unusual location

ANIMAL NUMBER
8 Dead unmarked animal; 9 Multiple amputation

FIRST DIGIT - EAR CLIP
0 = No Clip
1 = Right ear
2 = Left ear
3 = Both ears
Animals straight cut

FIELD DATA SHEET

RV FORM 08

PLOT	DATE			OBS
	DAY	MONTH	YEAR	
II	DD	MM	YY	I
2-3	5-6	7-8	9-10	12
2	2	12	08	04/18

SEX
1 Male
2 Female
9 Unknown

AGE
1 Young Yr.
2 Adult
9 Unknown

SEXUAL CONDITION

MALE
1 Testes Abdominal
2 Testes scrotal Up
3 Testes scrotal Dwn.

FEMALE
4 Vulva inactive, closed
5 Vulva turgid, enlarged
6 Cop. plug
7 Pregnant
8 Lactating
9 Condition unknown

Time	°C Air Temp.	% Rel Hum	Beaut. No. Wind	Cloud Cover	Moon		
II	IIID	II	II	I	I		
51-52	54-57	59-60	62-63	65	66		
2420	10	70-80	0	0	0		

SPECIES CODE	ALPHA CODE GENUS	ALPHA CODE SPECIES	NEW	ANIMAL NUMBER	NO. CONFUSED	SEX	SEXUAL COND.	AGE	TORPID-DEAD	GRID STAKE NUMBER	BODY WT. (gr.)	BRIEF NOTES	
II	AAA	AAA	I	IIIII	I	I	I	I	I	IIII	IIID	AAAAAAAAA	
14-15	17-19	20-22	24	26-30	32	34	36	38	40	41-44	46-49	72-80	
	Per	man	R							3			1
	Dip	her	R							4			2
	Per	man	5			1	1	2		7	16		3
	Dip	her	5			2	4	2		9	63		4
	Dip	her	5			1	2	2		10	88		5
	Per	man	5			1	1	2		11	16		6
	Dip	her	R							13		lost tail	7
	Dip	her	5			1	2	2		15	64	tail damage	8
	Per	man	5			1	2	2		17	18		9
	Per	man	5			1	3	2		18	17		10
	Per	man	R							21			11
	Per	man	5			1	1	2		23	19		12
	Per	man	5			1	1	2		27	16		13
	Per	man	5			1	2	2		31	20		14
	Dip	her	R							35			15
	Dip	her	5			2	4	2		38	38		16
	Per	her	5			2	4	1		49	12		17
	Per	her	R							50			18
	Dip	her	5			1	2	2		51	98		19
	Dip	her	5			2	6	2		52	~~68~~ 58		20
	Per	man	5			2	4	2		53	31	fleas	21
	Dip	her	5			1	3	2		54	70		22
	Per	man	5			1	2	2		55	17		23
	Dip	her	R							57			24
	Dip	her	R							59			25

WIND

Beauf. No.	km.	mi.
00	.5	.5
02	9	6
04	23	14
06	40	25
08	60	38
10	84	52
12	104	65

CLOUD COVER
0 Clear
1 Partly Cloudy
2 Cloudy
3 Drizzle
4 Rain
5 Snow
6 Fog

MOON
0 None
1 Quarter
2 Half
3 3-Quarter
4 Full

NEW (Basic)
1 New animal
2 Re-tag

NEW (Asses.)
5 New animal

RE-CAPTURS
Blank

TIME
Hr. from sunset

NUMBER CONFUSED
1 Tag lost
2 Natural amputation
3 Escaped

TORPID - DEAD
1 Torpid
2 Dead

GRID STAKE NUMBER
9999 - Unusual location

ANIMAL NUMBER
8 Dead unmarked animal
9 Multiple amputation

FIRST DIGIT - EAR CLIP
0 = No Clip
1 = Right ear
2 = Left ear
3 = Both ears

Animals straight cut

FIELD DATA SHEET

RV FORM 08

PLOT	DATE			OBS
	DAY	MONTH	YEAR	
II	DD	MM	YY	I
2-3	5-6	7-8	9-10	12
2	2	12	08	CN/SS

SEX
1 Male
2 Female
9 Unknown

AGE
1 Young Yr.
2 Adult
9 Unknown

SEXUAL CONDITION
MALE
1 Testes Abdominal
2 Testes scrotal Up
3 Testes scrotal Dwn.
FEMALE
4 Vulva inactive, closed
5 Vulva turgid, enlarged
6 Cop. plug
7 Pregnant
8 Lactating
9 Condition unknown

Time	Air °C Temp.	Rel % Hum	Beaut. No. Wind	Cloud Cover	Moon		
II	IIID	II	II	I	I		
51-52	54-57	59-60	62-63	65	66		
109							

SPECIES CODE	ALPHA CODE GENUS	ALPHA CODE SPECIES	NEW	ANIMAL NUMBER	NO. CONFUSED	SEX	SEXUAL COND.	AGE	TORPID-DEAD	GRID STAKE NUMBER	BODY WT. (gr.)	BRIEF NOTES	
II	AAA	AAA	I	IIIII	I	I	I	I	I	IIII	IIID	AAAAAAAAA	
14-15	17-19	20-22	24	26-30	32	34	36	38	40	41-44	46-49	72-80	
	Dip	hee	5			2	4	2		62	36		1
	Dip	hee	R							63		black nose	2
	Dip	hee	5			1	2	2		64	69	lost tail tip	3
	Dip	hee	5			2	4	2		68	72		4
	Per	man	5			1	1	2		82	17		5
	Dip	hee	R							85			6
	Dip	hee	5			1	3	2		86	87		7
	Per	man	5			2	4	2		92	21		8
	Dip	hee	R							94			9
	Dip	hee	R 5			2	4	2		100	86	lost tail tip	10
								em ♀		139			11
													12
													13
													14
													15
													16
													17
													18
													19
													20
													21
													22
													23
													24
													25

WIND

Beauf. No.	km.	mi.
00	.5	.5
02	9	6
04	23	14
06	40	25
08	60	38
10	84	52
12	104	65

CLOUD COVER
0 Clear
1 Partly Cloudy
2 Cloudy
3 Drizzle
4 Rain
5 Snow
6 Fog

MOON
0 None
1 Quarter
2 Half
3 3-Quarter
4 Full

NEW (Basic)
1 New animal
2 Re-tag

NEW (Asses.)
5 New animal

RE-CAPTURS
Blank

TIME
Hr. from sunset

NUMBER CONFUSED
1 Tag lost
2 Natural amputation
3 Escaped

TORPID - DEAD
1 Torpid
2 Dead

GRID STAKE NUMBER
9999 - Unusual location

ANIMAL NUMBER
8 Dead unmarked animal
9 Multiple amputation

FIRST DIGIT - EAR CLIP
0 = No Clip
1 = Right ear
2 = Left ear
3 = Both ears
Animals straight cut

RV FORM 08

FIELD DATA SHEET

PLOT	DATE			OBS
	DAY	MONTH	YEAR	
II	DD	MM	YY	I
2-3	5-6	7-8	9-10	12
2	3	12	08	04/Sta

SEX
1 Male
2 Female
9 Unknown

AGE
1 Young Yr.
2 Adult
9 Unknown

SEXUAL CONDITION
MALE:
1 Testes Abdominal
2 Testes scrotal Up
3 Testes scrotal Dwn.
FEMALE:
4 Vulva inactive, closed
5 Vulva turgid, enlarged
6 Cop. plug
7 Pregnant
8 Lactating
9 Condition unknown

Time	Air °C Temp.	Rel % Hum	Beaut. No. Wind	Cloud Cover	Moon		
II	IIID	II	II	I	I		
51-52	54-57	59-60	62-63	65	66		
2334	10	60-70	0	6	0		

SPECIES CODE	ALPHA CODE GENUS	ALPHA CODE SPECIES	NEW	ANIMAL NUMBER	NO. CONFUSED	SEX	SEXUAL COND.	AGE	TORPID-DEAD	GRID STAKE NUMBER	BODY WT. (gr.)	BRIEF NOTES	
II	AAA	AAA	I	IIIII	I	I	I	I	I	IIII	IIID	AAAAAAAAA	
14-15	17-19	20-22	24	26-30	32	34	36	38	40	41-44	46-49	72-80	
	Dip	hee	S			2	7	2		1	79		1
	Per	man	R							3			2
	Per	man	R							7			3
	Dip	hee	S			1	3	2		9	94	seed	4
	Dip	hee	S			1	3	2		15	72		5
	Per	man	R							18			6
	Per	man	R							19			7
	Dip	hee	R/S			1	3	2		20	73	Tail dam. Lost 1st night	8
	Per	man	R							27			9
	Dip	hee	S			1	3	2		28	90		10
	Per	man	S			2	4	2		31	14		11
	Dip	hee	S			2	7	2		32	72		12
	Dip	hee	R							35			13
	Dip	hee	S			2	4	2		49	72		14
	Per	man	R							50			15
	Per	man	S			1	2	2		51	20		16
	Dip	hee	R							52			17
	Dip	hee	R			1	3	2		56			18
	Dip	hee	R							59			1
	Dip	hee	R							60			2
	Dip	hee	R							63			3
	Dip	hee	S			2	4	2		68 68	44		4
	Dip	hee	S			1	3	2		73	82		5
	Dip	hee	S			1	3	2		74	78		6
	Dip	hee	R							78			7

WIND

Beauf. No.	km.	mi.
00	.5	.5
02	9	6
04	23	14
06	40	25
08	60	38
10	84	52
12	104	65

CLOUD COVER
0 Clear
1 Partly Cloudy
2 Cloudy
3 Drizzle
4 Rain
5 Snow
6 Fog

MOON
0 None
1 Quarter
2 Half
3 3=Quarter
4 Full

NEW (Basic)
1 New animal
2 Re-tag

NEW (Asses.)
5 New animal

RE-CAPTURS
Blank

TIME
Hr. from sunset

NUMBER CONFUSED
1 Tag lost
2 Natural amputation
3 Escaped

TORPID - DEAD
1 Torpid
2 Dead

GRID STAKE NUMBER
9999 = Unusual location

ANIMAL NUMBER
8 Dead unmarked animal
9 Multiple amputation

FIRST DIGIT = EAR CLIP
0 = No Clip
1 = Right ear
2 = Left ear
3 = Both ears

Animals straight cut

RV FORM 08

FIELD DATA SHEET

PLOT	DATE			OBS
	DAY	MONTH	YEAR	
II	DD	MM	YY	I
2-3	5-6	7-8	9-10	12
2	3	12	08	CV/SAC

SEX
1 Male
2 Female
9 Unknown

AGE
1 Young Yr.
2 Adult
9 Unknown

SEXUAL CONDITION
MALE
1 Testes Abdominal
2 Testes scrotal Up
3 Testes scrotal Dwn.
FEMALE
4 Vulva inactive, closed
5 Vulva turgid, enlarged
6 Cop. plug
7 Pregnant
8 Lactating
9 Condition unknown

Time	Air °C	Rel Hum %	Wind Beaut. No.	Cloud Cover	Moon		
II	IIID	II	II	I	I		
51-52	54-57	59-60	62-63	65	66		
2431	10	60-70	02	6	0		

SPECIES CODE	ALPHA CODE GENUS	ALPHA CODE SPECIES	NEW	ANIMAL NUMBER	NO. CONFUSED	SEX	SEXUAL COND.	AGE	TORPID-DEAD	GRID STAKE NUMBER	BODY WT. (gr.)	BRIEF NOTES	
II	AAA	AAA	I	IIIII	I	I	I	I	I	IIII	IIID	AAAAAAAAA	
14-15	17-19	20-22	24	26-30	32	34	36	38	40	41-44	46-49	72-80	
	Per	man	R							83			1
	Per	man	S			1	2	2		84	14		2
	Dip	hee	R							86			3
	Dip	hee	S			2	4	2		87	68		4
	Dip	hee	S			2	4	2		88	63		5
	Dip	hee	S							89			6
	Dip	hee	R							92		escapee	7
	Per	man								93			8
	Dip	hee	R							94			9
	Dip	hee	R							96			10
	Dip	hee	R							98	96		11
	Dip	hee	S			1	3	2		end 24:47			12
													13
													14
													15
													16
													17
													18
													19
													20
													21
													22
													23
													24
													25

WIND

Beauf. No.	km.	mi.
00	.5	.5
02	9	6
04	23	14
06	40	25
08	60	38
10	84	52
12	104	65

CLOUD COVER
0 Clear
1 Partly Cloudy
2 Cloudy
3 Drizzle
4 Rain
5 Snow
6 Fog

MOON
0 None
1 Quarter
2 Half
3 3-Quarter
4 Full

NEW (Basic)
1 New animal
2 Re-tag

NEW (Asses.)
5 New animal

RE-CAPTURS
Blank

TIME
Hr. from sunset

NUMBER CONFUSED
1 Tag lost
2 Natural amputation
3 Escaped

TORPID - DEAD
1 Torpid
2 Dead

GRID STAKE NUMBER
9999 = Unusual location

ANIMAL NUMBER
8 Dead unmarked animal
9 Multiple amputation

FIRST DIGIT = EAR CLIP
0 = No Clip
1 = Right ear
2 = Left ear
3 = Both ears

Animals straight cut

RV FORM 08

FIELD DATA SHEET

PLOT	DATE			OBS
	DAY	MONTH	YEAR	
II	DD	MM	YY	I
2-3	5-6	7-8	9-10	12
2	4	12	08	cursa raw

SEX
1 Male
2 Female
9 Unknown

AGE
1 Young Yr.
2 Adult
9 Unknown

SEXUAL CONDITION
MALE:
1 Testes Abdominal
2 Testes scrotal Up
3 Testes scrotal Dwn.
FEMALE:
4 Vulva inactive, closed
5 Vulva turgid, enlarged
6 Cop. plug
7 Pregnant
8 Lactating
9 Condition unknown

Time	Air °C Temp.	Rel % Hum	Beaut. No. Wind	Cloud Cover	Moon		
II	IIID	II	II	1	1		
51-52	54-57	59-60	62-63	65	66		
2340	8	90-50	0	0	0		

SPECIES CODE	ALPHA CODE GENUS	ALPHA CODE SPECIES	NEW	ANIMAL NUMBER	NO. CONFUSED	SEX	SEXUAL COND.	AGE	TORPID-DEAD	GRID STAKE NUMBER	BODY WT. (gr.)	BRIEF NOTES	
II	AAA	AAA	I	IIIII	—	I	I	I	—	IIII	IIID	AAAAAAAAA	
14-15	17-19	20-22	24	26-30	32	34	36	38	40	41-44	46-49	72-80	
	Per	man	5			1	2	2		3	18		1
	Dip	hee	5			1	3	2		5	76		2
	Per	man	R							6			3
	Per	man	R							7			4
	Dip	hee	R							9			5
	Per	man	R							11			6
	Dip	hee	R							14			7
	Per	man	R							19			8
	Dip	hee	R							20			9
	Dip	hee	5			1	3	2		22	84		10
	Dip	hee	R							26			11
	Per	man	5			2	4	2		27	19		12
	Per	man	R							29			13
	Per	man	R							31			14
	Per	man	5			2	4	2		32	20		15
	Dip	hee	R							34			16
	Dip	hee	R							36			17
	Dip	hee	R							37			18
	Dip	hee	5			1	3	2		38	68		19
	Per	man	R							49			20
	Per	man	R							50			21
	~~Dip hee~~		R	Per man						52			22
	Dip	hee	R							53			23
	Dip	hee	R							54			24
	Per	man	R							55			25

WIND

Beauf. No.	km.	mi.
00	.5	.5
02	9	6
04	23	14
06	40	25
08	60	38
10	84	52
12	104	65

CLOUD COVER
0 Clear
1 Partly Cloudy
2 Cloudy
3 Drizzle
4 Rain
5 Snow
6 Fog

MOON
0 None
1 Quarter
2 Half
3 3-Quarter
4 Full

NEW (Basic)
1 New animal
2 Re-tag

NEW (Asses.)
5 New animal

RE-CAPTURS
Blank

TIME
Hr. from sunset

NUMBER CONFUSED
1 Tag lost
2 Natural amputation
3 Escaped

TORPID - DEAD
1 Torpid
2 Dead

GRID STAKE NUMBER
9999 = Unusual location

ANIMAL NUMBER
8 Dead unmarked animal
9 Multiple amputation

FIRST DIGIT - EAR CLIP
0 = No Clip
1 = Right ear
2 = Left ear
3 = Both ears

Animals straight cut

RV FORM 08

FIELD DATA SHEET

PLOT	DATE			OBS
	DAY	MONTH	YEAR	
II	DD	MM	YY	I
2-3	5-6	7-8	9-10	12
2	4	12	08	CW/SG/PR

SEX
1 Male
2 Female
9 Unknown

AGE
1 Young Yr.
2 Adult
9 Unknown

SEXUAL CONDITION
MALE
1 Testes Abdominal
2 Testes scrotal Up
3 Testes scrotal Dwn.
FEMALE
4 Vulva inactive, closed
5 Vulva turgid, enlarged
6 Cop. plug
7 Pregnant
8 Lactating
9 Condition unknown

Time	Air °C Temp.	Rel % Hum	Beaut. No. Wind	Cloud Cover	Moon		
II	IIID	II	II	I	I		
51-52	54-57	59-60	62-63	65	66		
2425	8	40-50	0	0	0		

SPECIES CODE	ALPHA CODE GENUS	ALPHA CODE SPECIES	NEW	ANIMAL NUMBER	NO. CONFUSED	SEX	SEXUAL COND.	AGE	TORPID-DEAD	GRID STAKE NUMBER	BODY WT. (gr.)	BRIEF NOTES	
II	AAA	AAA	I	IIIII	I	I	I	I	I	IIII	IIID	AAAAAAAAA	
14-15	17-19	20-22	24	26-30	32	34	36	38	40	41-44	46-49	72-80	
	Dip	hee	R							59			1
	Dip	hee	R							60			2
	Dip	hee	R							61			3
	Dip	hee	R							68			4
	Dip	hee	R			2	4	2		70	59		5
	Dip	hee	S							73			6
	Dip	hee	R							75	11		7
	Per	man	S			1	1	1		79			8
	Dip	hee	R							81	14		9
	Per	man	S			2	4	2		84			10
	Per	man	R							85			11
	Dip	hee	R							92			12
	Per	man	R							93			13
	Dip	hee	R							94	61		14
	Dip	hee	S			1	2	2		97			15
	Per	man	R							98			16
	Dip	hee	R							END 2456			17
													18
													19
													20
													21
													22
													23
													24
													25

WIND

Beauf. No.	km.	mi.
00	.5	.5
02	9	6
04	23	14
06	40	25
08	60	38
10	84	52
12	104	65

CLOUD COVER
0 Clear
1 Partly Cloudy
2 Cloudy
3 Drizzle
4 Rain
5 Snow
6 Fog

MOON
0 None
1 Quarter
2 Half
3 3-Quarter
4 Full

NEW (Basic)
1 New animal
2 Re-tag

NEW (Asses.)
5 New animal

RE-CAPTURS
Blank

TIME
Hr. from sunset

NUMBER CONFUSED
1 Tag lost
2 Natural amputation
3 Escaped

TORPID - DEAD
1 Torpid
2 Dead

GRID STAKE NUMBER
9999 - Unusual location

ANIMAL NUMBER
8 Dead unmarked animal
9 Multiple amputation

FIRST DIGIT - EAR CLIP
0 = No Clip
1 = Right ear
2 = Left ear
3 = Both ears

Animals straight cut

FIELD DATA SHEET

PLOT	DATE			OBS
	DAY	MONTH	YEAR	
II	DD	MM	YY	I
2-3	5-6	7-8	9-10	12
3	4	12	08	outside edge

SEX
1 Male
2 Female
9 Unknown

AGE
1 Young Yr.
2 Adult
9 Unknown

SEXUAL CONDITION

MALE
1 Testes Abdominal
2 Testes scrotal Up
3 Testes scrotal Dwn.

FEMALE
4 Vulva inactive, closed
5 Vulva turgid, enlarged
6 Cop. plug
7 Pregnant
8 Lactating
9 Condition unknown

Time	Air °C Temp.	Rel % Hum	Beaut. No. Wind	Cloud Cover	Moon		
II	IIID	II	II	I	I		
51-52	54-57	59-60	62-63	65	66		
120	6	50 60	0	0	0		

	SPECIES CODE	ALPHA CODE GENUS	ALPHA CODE SPECIES	NEW	ANIMAL NUMBER	NO. CONFUSED	SEX	SEXUAL COND	AGE	TORPID-DEAD	GRID STAKE NUMBER	BODY WT. (gr.)	BRIEF NOTES	
	II	AAA	AAA	I	IIIII	I	I	I	I	I	IIII	IIID	AAAAAAAAA	
	14-15	17-19	20-22	24	26-30	32	34	36	38	40	41-44	46-49	72-80	
1		Dip	hee	R							1			
2		Dip	hee	R							2			
3		Dip	hee	S			2	4	2		3	59		
4		Dip	hee	S			2	4	2		7	49		
5		Dip	hee	S			2	6	2		9	61		
6		Dip	hee	S			2	4	2		10	70		
7		Dip	hee	S							16			
8		Dip	hee	R							18			
9		Dip	hee	R							21			
10		Dip	hee	R							24			
11		Dip	hee	R							27			
12		Dip	hee	R							28			
13		Dip	hee	R							30			
14		Dip	hee	R							31			
15		Dip	hee	R							36			
16		Dip	hee	R							37			
17		Dip	hee	R							38			
18		Dip	hee	R							39			
19		Dip	hee	R							40			
20		Per	man	R							41	72		
21		Dip	hee	S			1	3	2		44			
22		Dip	hee	R							45			
23		Dip	hee	R							47			
24		Dip	hee	R							48			
25		Per	man	R							50			
		Dip	hee	R										

WIND

Beauf. No.	km.	mi.
00	.5	.5
02	9	.6
04	23	14
06	40	25
08	60	38
10	84	52
12	104	65

CLOUD COVER
0 Clear
1 Partly Cloudy
2 Cloudy
3 Drizzle
4 Rain
5 Snow
6 Fog

MOON
0 None
1 Quarter
2 Half
3 3-Quarter
4 Full

NEW (Basic)
1 New animal
2 Re-tag

NEW (Assess.)
5 New animal

RE-CAPTURS
Blank

TIME
Hr. from sunset

NUMBER CONFUSED
1 Tag lost
2 Natural amputation
3 Escaped

TORPID - DEAD
1 Torpid
2 Dead

GRID STAKE NUMBER
9999 = Unusual location

ANIMAL NUMBER
8 Dead unmarked animal
9 Multiple amputation

FIRST DIGIT - EAR CLIP
0 = No Clip
1 = Right ear
2 = Left ear
3 = Both ears

Animals straight cut

FIELD DATA SHEET

RV FORM 08

PLOT	DATE			OBS
	DAY	MONTH	YEAR	
II	DD	MM	YY	I
2-3	5-6	7-8	9-10	12
3	1	12	08	a/sa

SEX
1 Male
2 Female
9 Unknown

AGE
1 Young Yr.
2 Adult
9 Unknown

SEXUAL CONDITION
MALE
1 Testes Abdominal
2 Testes scrotal Up
3 Testes scrotal Dwn.
FEMALE
4 Vulva inactive, closed
5 Vulva turgid, enlarged
6 Cop. plug
7 Pregnant
8 Lactating
9 Condition unknown

Time	°C Air Temp.	% Rel Hum	Beaut. No. Wind	Cloud Cover	Moon		
II	IIID	II	II	I	I		
51-52	54-57	59-60	62-63	65	66		
155	11	90	0	6	0		

SPECIES CODE	ALPHA CODE GENUS	ALPHA CODE SPECIES	NEW	ANIMAL NUMBER	NO. CONFUSED	SEX	SEXUAL COND.	AGE	TORPID-DEAD	GRID STAKE NUMBER	BODY WT. (gr.)	BRIEF NOTES	
II	AAA	AAA	I	IIIII	I	I	I	I	I	IIII	IIID	AAAAAAAAA	
14-15	17-19	20-22	24	26-30	32	34	36	38	40	41-44	46-49	72-80	
	Dip	her	5			1	2	2		1	86		1
	Dip	her	5			1	2	2		3	82		2
	Dip	her	5			1	2	2		5	86		3
	Dip	her	5			1	3	2		7	76		4
	Per	man	5			1	1	2		9	21		5
	Dip	her	5			1	3	2		13	81		6
	Dip	her	5			2	4	2		15	70		7
	Dip	her	5			2	4	2		17	64		8
	Dip	her	5			2	4	2		18	63		9
	Dip	her	5			2	4	2		19	69		10
	Dip	her	5			1	3	2		20	70		11
	Dip	her	5			1	3	2		21	87		12
	Dip	her	5			2	4	2		23	60		13
	Dip	her	5			1	2	2		25	73		14
	Dip	her	5			1	2	2		28	88		15
	Per	man	5			2	4	2		29	18		16
	Dip	her	5			2	4	2		32	49		17
	Dip	her	5			2	4	2		33	73		18
	Dip	her	5			1	3	2		35	75		19
	Dip	her	5			2	6	2		36	52		20
	Dip	her	5			1	3	2		37	94		21
	Dip	her	5			1	3	2		38	73	Wooly nose	22
	Dip	her	5			2	4	2		39	68		23
	Dip	her	5			2	4	2		40	72		24
	Per	man	5			2	4	2		41	22		25

WIND

Beauf. No.	km.	mi.
00	.5	.5
02	9	6
04	23	14
06	40	25
08	60	38
10	84	52
12	104	65

CLOUD COVER
0 Clear
1 Partly Cloudy
2 Cloudy
3 Drizzle
4 Rain
5 Snow
6 Fog

MOON
0 None
1 Quarter
2 Half
3 3-Quarter
4 Full

NEW (Basic)
1 New animal
2 Re-tag

NEW (Asses.)
5 New animal

RE-CAPTURS
Blank

TIME
Hr. from sunset

NUMBER CONFUSED
1 Tag lost
2 Natural amputation
3 Escaped

TORPID - DEAD
1 Torpid
2 Dead

GRID STAKE NUMBER
9999 - Unusual location

ANIMAL NUMBER
8 Dead unmarked animal
9 Multiple amputation

FIRST DIGIT - EAR CLIP
0 = No Clip
1 = Right ear
2 = Left ear
3 = Both ears

Animals straight cut

FIELD DATA SHEET

RV FORM 08

PLOT	DATE			OBS
	DAY	MONTH	YEAR	
II	DD	MM	YY	I
2-3	5-6	7-8	9-10	12
3	1	12	08	CW/SAX

SEX
1 Male
2 Female
9 Unknown

SEXUAL CONDITION
MALE
1 Testes Abdominal
2 Testes scrotal Up
3 Testes scrotal Dwn.
FEMALE
4 Vulva inactive, closed
5 Vulva turgid, enlarged
6 Cop. plug
7 Pregnant
8 Lactating
9 Condition unknown

AGE
1 Young Yr.
2 Adult
9 Unknown

Time	Air Temp. °C	Rel Hum %	Beaut. Wind No.	Cloud Cover	Moon		
II	IIID	II	II	I	I		
51-52	54-57	59-60	62-63	65	66		

SPECIES CODE	ALPHA CODE GENUS	ALPHA CODE SPECIES	NEW	ANIMAL NUMBER	NO. CONFUSED	SEX	SEXUAL COND	AGE	TORPID-DEAD	GRID STAKE NUMBER	BODY WT. (gr.)	BRIEF NOTES	
II	AAA	AAA	I	IIIII	I	I	I	I	I	IIII	IIID	AAAAAAAAA	
14-15	17-19	20-22	24	26-30	32	34	36	38	40	41-44	46-49	72-80	
	Dip	her	5			1	2	2		43	80		1
	Per	man	5			1	2	2		44	20		2
	Dip	her	5			1	2	2		46	72	damaged tail	3
	Dip	her	5			1	2	2		50		no weight	4
	Dip	her	5			2	4	2		51	68		5
	Dip	her	5			2	4	2		52	65		6
	Dip	her	5			1	2	2		53	60		7
	Dip	her	5			2	4	2		54	78		8
	Dip	her	5			2	4	2		56	68		9
	Dip	her	5			1	3	2		57	85		10
	Dip	her	5			2	5	2		59	58	slight tail damage	11
	Dip	her	5			2	4	2		61	78		12
	Dip	her	5			2	4	2		63	76		13
	Dip	her	5			2	6	2		65	70		14
	Dip	her	5			2	4	2		69	60		15
	Dip	her	5			1	2	2		71	68		16
	Dip	her	5			1	2	2		73	70		17
	Dip	her	5			2	4	2		75	42		18
									end 76	3:43			19
													20
													21
													22
													23
													24
													25

WIND

Beauf. No.	km.	mi.
00	.5	.5
02	9	6
04	23	14
06	40	25
08	60	38
10	84	52
12	104	65

CLOUD COVER
0 Clear
1 Partly Cloudy
2 Cloudy
3 Drizzle
4 Rain
5 Snow
6 Fog

MOON
0 None
1 Quarter
2 Half
3 3-Quarter
4 Full

NEW (Basic)
1 New animal
2 Re-tag

NEW (Asses.)
5 New animal

RE-CAPTURS
Blank

TIME
Hr. from sunset

NUMBER CONFUSED
1 Tag lost
2 Natural amputation
3 Escaped

TORPID - DEAD
1 Torpid
2 Dead

GRID STAKE NUMBER
9999 - Unusual location

ANIMAL NUMBER
8 Dead unmarked animal
9 Multiple amputation

FIRST DIGIT - EAR CLIP
0 = No Clip
1 = Right ear
2 = Left ear
3 = Both ears

Animals straight cut

FIELD DATA SHEET

RV FORM 08

PLOT	DATE			OBS
	DAY	MONTH	YEAR	
II	DD	MM	YY	I
2-3	5-6	7-8	9-10	12
3	2	12	08	M/SA

SEX: 1 Male; 2 Female; 9 Unknown

SEXUAL CONDITION: 1 Testes Abdominal; 2 Testes scrotal Up; 3 Testes scrotal Dwn. (MALE); 4 Vulva inactive, closed; 5 Vulva turgid, enlarged; 6 Cop. plug; 7 Pregnant; 8 Lactating; 9 Condition unknown (FEMALE)

AGE: 1 Young Yr.; 2 Adult; 9 Unknown

Time	° Air Temp.	% Rel Hum	Beaut. No. Wind	Cloud Cover	Moon		
II	IIID	II	II	I	I		
51-52	54-57	59-60	62-63	65	66		
240	10	70	0	0	0		

SPECIES CODE	ALPHA CODE GENUS	ALPHA CODE SPECIES	NEW	ANIMAL NUMBER	NO. CONFUSED	SEX	SEXUAL COND.	AGE	TORPID-DEAD	GRID STAKE NUMBER	BODY WT. (gr.)	BRIEF NOTES	
II	AAA	AAA	I	IIIII	I	I	I	I	I	IIII	IIID	AAAAAAAAA	
14-15	17-19	20-22	24	26-30	32	34	36	38	40	41-44	46-49	72-80	
	Dip	her	5			1	3	2		1	85		1
	Dip	her	5			1	2	2		2	81		2
	Per	man	5			1	2	2		3	18		3
	Dip	her	5			1	3	2		6	90	own tail damage	4
	Dip	her	5			2	6	2		7	80		5
	Per	man	5			2	4	2		9	20		6
	Dip	her	5			1	2	2		12	81		7
	Dip	her	5			2	4	2		13	60	bloody nose	8
	Dip	her	5			1	2	2		22	80		9
	Dip	her	R							23			10
	Dip	her	R							24			11
	Dip	her	R							26		tail damage	12
	Dip	her	5			1	3	2		30	82		13
	Dip	her	R							31			14
	Dip	her	5			2	4	2		32	74		15
	Dip	her	5			1	2	2		35	88		16
	Dip	her	R							36			17
	Dip	her	5			1	2	2		37	84		18
	Dip	her	5			2	4	2		38	80		19
	Dip	her	5			1	2	2		39	58		20
	Dip	her	5			2	4	2		40	58		21
	Dip	her	5			1	2	2		43	84		22
	Per	man	5			1	2	2		44	18		23
	Dip	her	5			1	2	2		45	62		24
	Per	man	5			2	4	1		48	16		25

WIND

Beauf. No.	km.	mi.
00	.5	.5
02	9	6
04	23	14
06	40	25
08	60	38
10	84	52
12	104	65

CLOUD COVER
0 Clear
1 Partly Cloudy
2 Cloudy
3 Drizzle
4 Rain
5 Snow
6 Fog

MOON
0 None
1 Quarter
2 Half
3 3-Quarter
4 Full

NEW (Basic)
1 New animal
2 Re-tag

NEW (Asses.)
5 New animal

RE-CAPTURS
Blank

TIME
Hr. from sunset

NUMBER CONFUSED
1 Tag lost
2 Natural amputation
3 Escaped

TORPID - DEAD
1 Torpid
2 Dead

GRID STAKE NUMBER
9999 - Unusual location

ANIMAL NUMBER
8 Dead unmarked animal
9 Multiple amputation

FIRST DIGIT - EAR CLIP
0 = No Clip
1 = Right ear
2 = Left ear
3 = Both ears

Animals straight cut

FIELD DATA SHEET

RV FORM 08

PLOT	DATE			OBS
	DAY	MONTH	YEAR	
II	DD	MM	YY	I
2-3	5-6	7-8	9-10	12
3	2	12	08	04/BA

SEX: 1 Male; 2 Female; 9 Unknown

SEXUAL CONDITION: MALE — 1 Testes Abdominal; 2 Testes scrotal Up; 3 Testes scrotal Dwn. FEMALE — 4 Vulva inactive, closed; 5 Vulva turgid, enlarged; 6 Cop. plug; 7 Pregnant; 8 Lactating; 9 Condition unknown

AGE: 1 Young Yr.; 2 Adult; 9 Unknown

Time	Air Temp. °C	Rel Hum %	Beauf. Wind No.	Cloud Cover	Moon		
II	IIID	II	II	I	I		
51-52	54-57	59-60	62-63	65	66		
304							

SPECIES CODE	ALPHA CODE GENUS	ALPHA CODE SPECIES	NEW	ANIMAL NUMBER	NO. CONFUSED	SEX	SEXUAL COND.	AGE	TORPID-DEAD	GRID STAKE NUMBER	BODY WT. (gr.)	BRIEF NOTES	
II	AAA	AAA	I	IIIII	I	I	I	I	I	IIII	IIID	AAAAAAAAA	
14-15	17-19	20-22	24,	26-30	32	34	36	38	40	41-44	46-49	72-80	
	Per	man	5			1	2	1		52	12		1
	Dip	hen	5			2	4	2		53	70	tail damage	2
	Dip	hen	R							54			3
	Dip	hen	5			1	2	2		55	74		4
	Dip	hen	5			1	3	2		56	94		5
	Dip	hen	R							57			6
	Dip	hen	R							59		tail damage	7
	Dip	hen	5			1	3	2		61	88		8
	Dip	hen	5			1	3	2		63	82		9
	Dip	hen	5			1	2	2		64	62		10
	Dip	hen	R							65			11
	Dip	hen	R							67		tail damage	12
	Dip	hen	5			2	4	2		68	68	tail damage	13
	Dip	hen	5			1	2	2		71	75		14
	Dip	hen	5			2	3	2		73	80		15
	Dip	hen	5			2	5	2		75	58		16
	Dip	hen	R							76		tail damage	17
									enz 329				18
													19
													20
													21
													22
													23
													24
													25

WIND

Beauf. No.	km.	mi.
00	.5	.5
02	9	.6
04	23	14
06	40	25
08	60	38
10	84	52
12	104	65

CLOUD COVER
0 Clear; 1 Partly Cloudy; 2 Cloudy; 3 Drizzle; 4 Rain; 5 Snow; 6 Fog

MOON
0 None; 1 Quarter; 2 Half; 3 3-Quarter; 4 Full

NEW (Basic)
1 New animal; 2 Re-tag

NEW (Asses.)
5 New animal

RE-CAPTURS
Blank

TIME
Hr. from sunset

NUMBER CONFUSED
1 Tag lost; 2 Natural amputation; 3 Escaped

TORPID - DEAD
1 Torpid; 2 Dead

GRID STAKE NUMBER
9999 - Unusual location

ANIMAL NUMBER
8 Dead unmarked animal; 9 Multiple amputation

FIRST DIGIT - EAR CLIP
0 = No Clip
1 = Right ear
2 = Left ear
3 = Both ears
Animals straight cut

RV FORM 68

FIELD DATA SHEET

PLOT	DATE			OBS
	DAY	MONTH	YEAR	
II	DD	MM	YY	I
2-3	5-6	7-8	9-10	12
3	3	12	08	WLA

SEX
1 Male
2 Female
9 Unknown

AGE
1 Young Yr.
2 Adult
9 Unknown

SEXUAL CONDITION
MALE
1 Testes Abdominal
2 Testes scrotal Up
3 Testes scrotal Dwn.
FEMALE
4 Vulva inactive, closed
5 Vulva turgid, enlarged
6 Cop. plug
7 Pregnant
8 Lactating
9 Condition unknown

Time	Air °C	Rel Hum %	Beaut. No.	Cloud Cover	Moon		
II	IIID	II	II	I	I		
51-52	54-57	59-60	62-63	65	66		
1:25	90	60-70	0	6	0		

SPECIES CODE	ALPHA CODE GENUS	ALPHA CODE SPECIES	NEW	ANIMAL NUMBER	NO. CONFUSED	SEX	SEXUAL COND.	AGE	TORPID-DEAD	GRID STAKE NUMBER	BODY WT. (gr.)	BRIEF NOTES	
II	AAA	AAA	I	IIIII	I	I	I	I	I	IIII	IIID	AAAAAAAAA	
14-15	17-19	20-22	24	26-30	32	34	36	38	40	41-44	46-49	72-80	
	Per	man	R							2			1
	Dip	nee	R							3			2
	Dip	nee	R							6			3
	Per	man	R							9			4
	Dip	nee	S			2	6	2		15	74		5
	Dip	nee	S			2	4	2		16	63		6
	Dip	nee	S			1	2	2		18	73		7
	Dip	nee	S			1	3	2		20	68		8
	Dip	nee	R							22			9
	Dip	nee	R							23			10
	Dip	nee	R							24			11
	Dip	nee	R							26	70		12
	Dip	nee	S			2	4	2		28			13
	Dip	nee	R							30			14
	Dip	nee	R							31			15
	Dip	nee	R							32			16
	Dip	nee	R							36			17
	Dip	nee	R							38			18
	Dip	nee	R							40			19
	Dip	nee	R							45	72		20
	Dip	nee	S			2	4	2		47	80	tail damage/healed	21
	Dip	nee	S			1	2	2		48			22
	Per	man	R							50	58		23
	Dip	nee	S			2	4	2		55			24
	Dip	nee	R							56			25
	Dip	nee	R										26

WIND

Beauf. No.	km.	mi.
00	.5	.5
02	9	6
04	23	14
06	40	25
08	60	38
10	84	52
12	104	65

CLOUD COVER
0 Clear
1 Partly Cloudy
2 Cloudy
3 Drizzle
4 Rain
5 Snow
6 Fog

MOON
0 None
1 Quarter
2 Half
3 3-Quarter
4 Full

NEW (Basic)
1 New animal
2 Re-tag

NEW (Assess.)
5 New animal

RE-CAPTURS
Blank

TIME
Hr. from sunset

NUMBER CONFUSED
1 Tag lost
2 Natural amputation
3 Escaped

TORPID - DEAD
1 Torpid
2 Dead

GRID STAKE NUMBER
9999 = Unusual location

ANIMAL NUMBER
8 Dead unmarked animal
9 Multiple amputation

FIRST DIGIT - EAR CLIP
0 = No Clip
1 = Right ear
2 = Left ear
3 = Both ears

Animals straight cut

FIELD DATA SHEET

PLOT	DATE			OBS
	DAY	MONTH	YEAR	
II	DD	MM	YY	I
2-3	5-6	7-8	9-10	12
3	3	12	08	a/pm

SEX
1 Male
2 Female
9 Unknown

AGE
1 Young Yr.
2 Adult
9 Unknown

SEXUAL CONDITION
MALE:
1 Testes Abdominal
2 Testes scrotal Up
3 Testes scrotal Dwn.
FEMALE:
4 Vulva inactive, closed
5 Vulva turgid, enlarged
6 Cop. plug
7 Pregnant
8 Lactating
9 Condition unknown

Time	Air °C	Rel Hum %	Beaut. No.	Cloud Cover	Moon		
II	IIID	II	II	—	—		
51-52	54-57	59-60	62-63	65	66		
202	18	60-70	0	6	0		

	SPECIES CODE	ALPHA CODE GENUS	ALPHA CODE SPECIES	NEW	ANIMAL NUMBER	NO. CONFUSED	SEX	SEXUAL COND	AGE	TORPID-DEAD	GRID STAKE NUMBER	BODY WT. (gr.)	BRIEF NOTES
	II	AAA	AAA	I	IIIII	—	—	—	—	—	IIII	IIID	AAAAAAAAA
	14-15	17-19	20-22	24	26-30	32	34	36	38	40	41-44	46-49	72-80
1		Dip	hee	R							57		
2		Dip	hee	5			1	3	2		61	80	
3		Dip	hee	R							63		
4		Dip	hee	R							67		
5		Dip	hee	5			2	4	2		71	60	
6		Dip	hee	R							73		
7		Dip	hee	R							74		
8		Dip	hee	5			2	4	2		75	48	
9		Dip	hee	R							77		
10											end 216		
11													
12													
13													
14													
15													
16													
17													
18													
19													
20													
21													
22													
23													
24													
25													
26													
27													

WIND

Beauf. No.	km.	mi.
00	.5	.5
02	9	6
04	23	14
06	40	25
08	60	38
10	84	52
12	104	65

CLOUD COVER
0 Clear
1 Partly Cloudy
2 Cloudy
3 Drizzle
4 Rain
5 Snow
6 Fog

MOON
0 None
1 Quarter
2 Half
3 3-Quarter
4 Full

NEW (Basic)
1 New animal
2 Re-tag

NEW (Assess.)
5 New animal

RE-CAPTURS
Blank

TIME
Hr. from sunset

NUMBER CONFUSED
1 Tag lost
2 Natural amputation
3 Escaped

TORPID - DEAD
1 Torpid
2 Dead

GRID STAKE NUMBER
9999 = Unusual location

ANIMAL NUMBER
8 Dead unmarked animal
9 Multiple amputation

FIRST DIGIT - EAR CLIP
0 = No Clip
1 = Right ear
2 = Left ear
3 = Both ears

Animals straigh cut

RV FORM 08

FIELD DATA SHEET

PLOT	DATE: DAY	MONTH	YEAR	OBS
II	DD	MM	YY	I
2-3	5-6	7-8	9-10	12
3	4	12	08	CM/[illegible]

SEX
1 Male
2 Female
9 Unknown

AGE
1 Young Yr.
2 Adult
9 Unknown

SEXUAL CONDITION
1 Testes Abdominal
2 Testes scrotal Up
3 Testes scrotal Dwn.
} MALE
4 Vulva inactive, closed
5 Vulva turgid, enlarged
6 Cop. plug
7 Pregnant
8 Lactating
9 Condition unknown
} FEMALE

Time	Air Temp. °C	Rel Hum %	Wind Beaut. No.	Cloud Cover	Moon
II	IIID	II	II	I	I
51-52	54-57	59-60	62-63	65	66
154	6	50	0	0	0

	SPECIES CODE	ALPHA CODE: GENUS	SPECIES	NEW	ANIMAL NUMBER	NO. CONFUSED	SEX	SEXUAL COND	AGE	TORPID-DEAD	GRID STAKE NUMBER	BODY WT. (gr.)	BRIEF NOTES
	II	AAA	AAA	I	IIIII	I	I	I	I	I	IIII	IIID	AAAAAAAAA
	14-15	17-19	20-22	24	26-30	32	34	36	38	40	41-44	46-49	72-80
1		Dip	hee	5			2	4	2		51	57	
2		Dip	hee	5			1	2	2		53	83	
3		Dip	hee	5			2	4	2		54	46	
4		Dip	hee	R							55		
5		Dip	hee	R							56		
6		Dip	hee	R							57		
7		Dip	hee	R							59		
8		Dip	hee	R							60		
9		Dip	hee	R							64		
10		Dip	hee	R							69		
11		Dip	hee	R							70		
12		Dip	hee	R							71		
13		Dip	hee	R							73		
14		Dip	hee	R							74		
15		Dip	hee	R							75		
16		Dip	hee	5			2	4	2		77	64	
17		Dip	hee	5			2	4	2		78	41	
18											end 2:12		

WIND

Beauf. No.	km.	mi.
00	.5	.5
02	9	6
04	23	14
06	40	25
08	60	38
10	84	52
12	104	65

CLOUD COVER
0 Clear
1 Partly Cloudy
2 Cloudy
3 Drizzle
4 Rain
5 Snow
6 Fog

MOON
0 None
1 Quarter
2 Half
3 3-Quarter
4 Full

NEW (Basic)
1 New animal
2 Re-tag

NEW (Asses.)
5 New animal

RE-CAPTURS
Blank

TIME
Hr. from sunset

NUMBER CONFUSED
1 Tag lost
2 Natural amputation
3 Escaped

TORPID - DEAD
1 Torpid
2 Dead

GRID STAKE NUMBER
9999 = Unusual location

ANIMAL NUMBER
8 Dead unmarked animal
9 Multiple amputation

FIRST DIGIT - EAR CLIP
0 = No Clip
1 = Right ear
2 = Left ear
3 = Both ears

Animals straight cut

FIELD DATA SHEET

RV FORM 08

PLOT	DATE			OBS
	DAY	MONTH	YEAR	
II	DD	MM	YY	I
2-3	5-6	7-8	9-10	12
4	1	12	08	CA/BA

SEX: 1 Male, 2 Female, 9 Unknown

SEXUAL CONDITION (MALE): 1 Testes Abdominal, 2 Testes scrotal Up, 3 Testes scrotal Dwn.

SEXUAL CONDITION (FEMALE): 4 Vulva inactive, closed, 5 Vulva turgid, enlarged, 6 Cop. plug, 7 Pregnant, 8 Lactating, 9 Condition unknown

AGE: 1 Young Yr., 2 Adult, 9 Unknown

	Time	Air °C Temp.	Rel % Hum	Beaufort No.	Cloud Cover	Moon		
	II	IIID	II	II	I	I		
	51-52	54-57	59-60	62-63	65	66		
	400		90	1-2	6	0		

SPECIES CODE	ALPHA CODE GENUS	ALPHA CODE SPECIES	NEW	ANIMAL NUMBER	NO. CONFUSED	SEX	SEXUAL COND.	AGE	TORPID-DEAD	GRID STAKE NUMBER	BODY WT. (gr.)	BRIEF NOTES	
II	AAA	AAA	I	IIIII	I	I	I	I	I	IIII	IIID	AAAAAAAAA	
14-15	17-19	20-22	24	26-30	32	34	36	38	40	41-44	46-49	72-80	
	Dip	her	5			2	4	2		1	60		1
	Dip	her	5			2	4	2		2	65		2
	Dip	her	5			2	4	2		3	72		3
	Dip	her	5			2	4	2		4	64		4
	Dip	her	5			1	3	2		5	85		5
	Dip	her	5			2	4	2		6	78		6
	Dip	her	5			1	3	2		7	94		7
	Dip	her	5			2	4	2		9	80	bloody nose	8
	Dip	her	5			1	3	2		10	78		9
	Dip	her	5			1	2	2		11	85		10
	Dip	her	5			2	4	2		12	75		11
	Dip	her	5			1	2	2		13	73		12
	Dip	her	5			1	2	2		14	87		13
	Dip	her	5			2	4	2		15	72		14
	Dip	her	5			1	2	2		17	84		15
	Dip	her	5			1	2	2		18	83	lots of seed	16
	Dip	her	5			2	4	2		19	82	"	17
	Dip	her	5			2	4	2		21	74		18
	Dip	her	5			1	2	2		22	72		19
	Dip	her	5			2	4	2		24	76		20
	Dip	her	5			2	4	2		26	78	lots of seed	21
	Dip	her	5			2	4	2		27	70		22
	Dip	her	5			1	3	2		28	75		23
	Dip	her	5			2	4	2		31	78		24
	Dip	her	5			2	4	2		32	65	seed!	25

WIND

Beauf. No.	km.	mi.
00	.5	.5
02	9	6
04	23	14
06	40	25
08	60	38
10	84	52
12	104	65

CLOUD COVER
0 Clear
1 Partly Cloudy
2 Cloudy
3 Drizzle
4 Rain
5 Snow
6 Fog

MOON
0 None
1 Quarter
2 Half
3 3-Quarter
4 Full

NEW (Basic)
1 New animal
2 Re-tag

NEW (Asses.)
5 New animal

RE-CAPTURS
Blank

TIME
Hr. from sunset

NUMBER CONFUSED
1 Tag lost
2 Natural amputation
3 Escaped

TORPID - DEAD
1 Torpid
2 Dead

GRID STAKE NUMBER
9999 - Unusual location

ANIMAL NUMBER
8 Dead unmarked animal
9 Multiple amputation

FIRST DIGIT - EAR CLIP
0 = No Clip
1 = Right ear
2 = Left ear
3 = Both ears

Animals straight cut

FIELD DATA SHEET

RV FORM 08

PLOT	DATE			OBS
	DAY	MONTH	YEAR	
II	DD	MM	YY	I
2-3	5-6	7-8	9-10	12
4	1	12	88	KU/SA

SEX: 1 Male; 2 Female; 9 Unknown

SEXUAL CONDITION (MALE): 1 Testes Abdominal; 2 Testes scrotal Up; 3 Testes scrotal Dwn.

SEXUAL CONDITION (FEMALE): 4 Vulva inactive, closed; 5 Vulva turgid, enlarged; 6 Cop. plug; 7 Pregnant; 8 Lactating

AGE: 1 Young Yr.; 2 Adult; 9 Unknown

9 Condition unknown

Time	°C Air Temp.	% Rel Hum	Beauf. No. Wind	Cloud Cover	Moon		
II	IIID	II	II	I	I		
51-52	54-57	59-60	62-63	65	66		

	SPECIES CODE	ALPHA CODE GENUS	ALPHA CODE SPECIES	NEW	ANIMAL NUMBER	NO.CONFUSED	SEX	SEXUAL COND.	AGE	TORPID-DEAD	GRID STAKE NUMBER	BODY WT. (gr.)	BRIEF NOTES	
	II	AAA	AAA	I	IIIII	I	I	I	I	I	IIII	IIID	AAAAAAAAA	
	14-15	17-19	20-22	24	26-30	32	34	36	38	40	41-44	46-49	72-80	
		Dip	her	5			2	5	2		34	70		1
		Dip	her	5			1	2	2		36	87		2
		Dip	her	5			2	4	2		37	59		3
		Dip	her	5			2	4	2		38	69		4
		Dip	her	5			1	2	2		44	77		5
		Dip	her	5			1	2	2		46	70		6
		Dip	her	5			2	4	2		47	74		7
		Dip	her	5			2	4	2		48	72		8
		Per	man	5			2	7	2		49	24		9
		Dip	her	5			2	4	2		50	64		10
		Per	man	5			1	1	2		51	18		11
		Dip	her	5			2	4	2		52	72		12
		Dip	her	5			1	3	2		54	96		13
		Dip	her	5			2	4	2		56	72		14
		Dip	her	5			1	3	2		57	76		15
		Dip	her	5			2	4	2		58	77	seed	16
		Dip	her	5			2	4	2		60	77		17
		Dip	her	5			2	4	2		62	77		18
		Dip	her	5			2	4	2		64	68		19
		Dip	her	5			2	4	2		67	72		20
		Dip	her	5			1	2	2		68	90		21
		Dip	her	5			1	2	2		70	82		22
		Dip	her	5			1	2	2		71	85		23
		Dip	her	5			2	4	2		72	64		24
		Dip	her	5			1	3	2		74	82		25

WIND

Beauf. No.	km.	mi.
00	.5	.5
02	9	6
04	23	14
06	40	25
08	60	38
10	84	52
12	104	65

CLOUD COVER

0 Clear
1 Partly Cloudy
2 Cloudy
3 Drizzle
4 Rain
5 Snow
6 Fog

MOON

0 None
1 Quarter
2 Half
3 3-Quarter
4 Full

NEW (Basic)

1 New animal
2 Re-tag

NEW (Asses.)

5 New animal

RE-CAPTURS

Blank

TIME

Hr. from sunset

NUMBER CONFUSED

1 Tag lost
2 Natural amputation
3 Escaped

TORPID - DEAD

1 Torpid
2 Dead

GRID STAKE NUMBER

9999 - Unusual location

ANIMAL NUMBER

8 Dead unmarked animal
9 Multiple amputation

FIRST DIGIT - EAR CLIP

0 = No Clip
1 = Right ear
2 = Left ear
3 = Both ears

Animals straight cut

FIELD DATA SHEET

RV FORM 08

PLOT	DATE			OBS
	DAY	MONTH	YEAR	
II	DD	MM	YY	I
2-3	5-6	7-8	9-10	12
4	1	12	08	04/SM

SEX: 1 Male; 2 Female; 9 Unknown

SEXUAL CONDITION — MALE: 1 Testes Abdominal; 2 Testes scrotal Up; 3 Testes scrotal Dwn.

SEXUAL CONDITION — FEMALE: 4 Vulva inactive, closed; 5 Vulva turgid, enlarged; 6 Cop. plug; 7 Pregnant; 8 Lactating; 9 Condition unknown

AGE: 1 Young Yr.; 2 Adult; 9 Unknown

Time	Air °C Temp.	Rel % Hum	Beaut. No. Wind	Cloud Cover	Moon		
II	IIID	II	II	I	I		
51-52	54-57	59-60	62-63	65	66		

SPECIES CODE	ALPHA CODE GENUS	ALPHA CODE SPECIES	NEW	ANIMAL NUMBER	NO. CONFUSED	SEX	SEXUAL COND	AGE	TORPID-DEAD	GRID STAKE NUMBER	BODY WT. (gr.)	BRIEF NOTES	
II	AAA	AAA	I	IIIII	I	I	I	I	I	IIII	IIID	AAAAAAAAA	
14-15	17-19	20-22	24	26-30	32	34	36	38	40	41-44	46-49	72-80	
	Dip	her	5			1	3	2		76	80		1
	Dip	her	5			1	2	2		79	52		2
	Per	man	5			2	4	1		79 80	16		3
	Per	man	5			1	2	2		80	18		4
	Dip	her	5			2	4	2		83	67		5
	Dip	her	5			1	3	2		84	86		6
	Per	man	5			2	4	2		88	17		7
	Per	man	5			1	2	2		90	18		8
	Per	man	5			2	7	2		95	23		9
	Dip	her	5			2	4	2		97	78		10
	Dip	her	5			1	3	2		99	95		11
	Dip	her	5			2	4	2		100	78		12
									end	550			13
													14
													15
													16
													17
													18
													19
													20
													21
													22
													23
													24
													25

WIND

Beauf. No.	km.	mi.
00	.5	.5
02	9	6
04	23	14
06	40	25
08	60	38
10	84	52
12	104	65

CLOUD COVER
0 Clear
1 Partly Cloudy
2 Cloudy
3 Drizzle
4 Rain
5 Snow
6 Fog

MOON
0 None
1 Quarter
2 Half
3 3-Quarter
4 Full

NEW (Basic)
1 New animal
2 Re-tag

NEW (Asses.)
5 New animal

RE-CAPTURS
Blank

TIME
Hr. from sunset

NUMBER CONFUSED
1 Tag lost
2 Natural amputation
3 Escaped

TORPID - DEAD
1 Torpid
2 Dead

GRID STAKE NUMBER
9999 - Unusual location

ANIMAL NUMBER
8 Dead unmarked animal
9 Multiple amputation

FIRST DIGIT - EAR CLIP
0 = No Clip
1 = Right ear
2 = Left ear
3 = Both ears

Animals straight cut

FIELD DATA SHEET

RV FORM 0.

PLOT	DATE			OBS
	DAY	MONTH	YEAR	
II	DD	MM	YY	I
2-3	5-6	7-8	9-10	12
4	2	12	08	w/SA

SEX: 1 Male; 2 Female; 9 Unknown

SEXUAL CONDITION (MALE): 1 Testes Abdominal; 2 Testes scrotal Up; 3 Testes scrotal Dwn.

SEXUAL CONDITION (FEMALE): 4 Vulva inactive, closed; 5 Vulva turgid, enlarged; 6 Cop. plug; 7 Pregnant; 8 Lactating; 9 Condition unknown

AGE: 1 Young Yr.; 2 Adult; 9 Unknown

Time	°C Air Temp.	% Rel Hum	Beauf. No. Wind	Cloud Cover	Moon		
II	IIID	II	II	I	I		
51-52	54-57	59-60	62-63	65	66		
342	10	70-80	0	6	0		

SPECIES CODE	ALPHA CODE GENUS	ALPHA CODE SPECIES	NEW	ANIMAL NUMBER	NO. CONFUSED	SEX	SEXUAL COND.	AGE	TORPID-DEAD	GRID STAKE NUMBER	BODY WT. (gr.)	BRIEF NOTES	
II	AAA	AAA	I	IIIII	I	I	I	I	I	IIII	IIID	AAAAAAAAA	
14-15	17-19	20-22	24	26-30	32	34	36	38	40	41-44	46-49	72-80	
	Dip	hel	5			1	2	2		1	65		1
	Dip	hel	R							3			2
	Dip	hel	R							4			3
	Per	man	5			1	2	2		5	19		4
	Dip	hel	R							8			5
	Dip	hel	5			2	4	2		9	65		6
	Dip	hel	R							10			7
	Dip	hel	R							11			8
	Dip	hel	5			1	3	2		12	74		9
	Dip	hel	5			2	4	2		13	56		10
	Dip	hel	R							14			11
	Dip	hel	R							15			12
	Dip	hel	5			2	4	2		16	70		13
	Dip	hel	R							17			14
	Dip	hel	R							18			15
	Dip	hel	5			2	5	2		19	74	sed	16
	Dip	hel	R							20			17
	Dip	hel	5			2	4	2		21	68		18
	Dip	hel	R							22			19
	Dip	hel	5			1	2	2		23	75		20
	Dip	hel	5			1	3	2		25	77		21
	Dip	hel	5			1	2	2		27	77		22
	Dip	hel	R							29			23
	Dip	hel	5			2	4	2		30	78		24
	Dip	hel	R							31			25

WIND

Beauf. No.	km.	mi.
00	.5	.5
02	9	.6
04	23	14
06	40	25
08	60	38
10	84	52
12	104	65

CLOUD COVER
0 Clear; 1 Partly Cloudy; 2 Cloudy; 3 Drizzle; 4 Rain; 5 Snow; 6 Fog

MOON
0 None; 1 Quarter; 2 Half; 3 3-Quarter; 4 Full

NEW (Basic)
1 New animal; 2 Re-tag

NEW (Asses.)
5 New animal

RE-CAPTURS
Blank

TIME
Hr. from sunset

NUMBER CONFUSED
1 Tag lost; 2 Natural amputation; 3 Escaped

TORPID - DEAD
1 Torpid; 2 Dead

GRID STAKE NUMBER
9999 - Unusual location

ANIMAL NUMBER
8 Dead unmarked animal; 9 Multiple amputation

FIRST DIGIT - EAR CLIP
0 = No Clip
1 = Right ear
2 = Left ear
3 = Both ears
Animals straight cut

FIELD DATA SHEET

RV FORM 08

PLOT	DATE			OBS
	DAY	MONTH	YEAR	
II	DD	MM	YY	I
2-3	5-6	7-8	9-10	12
4	2	12	08	W/H

SEX
1 Male
2 Female
9 Unknown

SEXUAL CONDITION
1 Testes Abdominal } MALE
2 Testes scrotal Up } MALE
3 Testes scrotal Dwn. } MALE
4 Vulva inactive, closed
5 Vulva turgid, enlarged
6 Cop. plug
7 Pregnant } FEMALE
8 Lactating } FEMALE
9 Condition unknown

AGE
1 Young Yr.
2 Adult
9 Unknown

Time	Air °C Temp.	% Rel Hum	Beaut. No. Wind	Cloud Cover	Moon		
II	IIID	II	II	I	I		
51-52	54-57	59-60	62-63	65	66		
417							

SPECIES CODE	ALPHA CODE GENUS	ALPHA CODE SPECIES	NEW	ANIMAL NUMBER	NO. CONFUSED	SEX	SEXUAL COND	AGE	TORPID-DEAD	GRID STAKE NUMBER	BODY WT. (gr.)	BRIEF NOTES	
II	AAA	AAA	I	IIIII	I	I	I	I	I	IIII	IIID	AAAAAAAAA	
14-15	17-19	20-22	24	26-30	32	34	36	38	40	41-44	46-49	72-80	
	Dip	hee	R							32			1
	Dip	hee	S			1	3	2		33	89		2
	Dip	hee	R							34			3
	Dip	hee	S			1	2	2		37	72	bloody nose	4
	Dip	hee	R							38			5
	Dip	hee	S			1	3	2		40	92		6
	Dip	hee								43		lost/escape	7
	Dip	hee	R							44			8
	Dip	hee	R							46			9
	Per	man	R							47			10
	Per	man	S			2	4	1		49	15		11
	Dip	hee	S			2	6	2		50	70		12
	Per	man	S			1	1	1		51	13		13
	~~Per~~ Dip	hee	S			1	2	2		52	67		14
	Dip	hee	S			1	2	2		53	75		15
	Dip	hee	R							54			16
	Dip	hee	R							55			17
	Dip	hee	S			2	4	2		57	73		18
	Dip	hee	R							58			19
	Dip	hee	S			1	3	2		59	88		20
	Dip	hee	R							60			21
	Dip	hee	R							61			22
	Dip	hee	R							63			23
	Dip	hee	S			2	4	2		65	78		24
	Dip	hee	S			1	3	2		67	85		25

WIND

Beauf. No.	km.	mi.
00	.5	.5
02	9	.6
04	23	14
06	40	25
08	60	38
10	84	52
12	104	65

CLOUD COVER
0 Clear
1 Partly Cloudy
2 Cloudy
3 Drizzle
4 Rain
5 Snow
6 Fog

MOON
0 None
1 Quarter
2 Half
3 3-Quarter
4 Full

NEW (Basic)
1 New animal
2 Re-tag

NEW (Asses.)
5 New animal

RE-CAPTURS
Blank

TIME
Hr. from sunset

NUMBER CONFUSED
1 Tag lost
2 Natural amputation
3 Escaped

TORPID - DEAD
1 Torpid
2 Dead

GRID STAKE NUMBER
9999 - Unusual location

ANIMAL NUMBER
8 Dead unmarked animal
9 Multiple amputation

FIRST DIGIT - EAR CLIP
0 = No Clip
1 = Right ear
2 = Left ear
3 = Both ears

Animals straight cut

FIELD DATA SHEET

RV FORM 08

PLOT	DATE			OBS
	DAY	MONTH	YEAR	
II	DD	MM	YY	I
2-3	5-6	7-8	9-10	12
4	2	12	08	04/A

SEX: 1 Male; 2 Female; 9 Unknown

SEXUAL CONDITION (MALE): 1 Testes Abdominal; 2 Testes scrotal Up; 3 Testes scrotal Dwn.

SEXUAL CONDITION (FEMALE): 4 Vulva inactive, closed; 5 Vulva turgid, enlarged; 6 Cop. plug; 7 Pregnant; 8 Lactating

AGE: 1 Young Yr.; 2 Adult; 9 Unknown

9 Condition unknown

Time	Air °C Temp.	Rel % Hum	Beaut. No. Wind	Cloud Cover	Moon		
II	IIID	II	II	I	I		
51-52	54-57	59-60	62-63	65	66		
450							

	SPECIES CODE	ALPHA CODE GENUS	ALPHA CODE SPECIES	NEW	ANIMAL NUMBER	NO. CONFUSED	SEX	SEXUAL COND.	AGE	TORPID-DEAD	GRID STAKE NUMBER	BODY WT. (gr.)	BRIEF NOTES	
	II	AAA	AAA	I	IIIII	I	I	I	I	I	IIII	IIID	AAAAAAAAA	
	14-15	17-19	20-22	24	26-30	32	34	36	38	40	41-44	46-49	72-80	
		Dip	hee	R							68			1
		Dip	hee	R							69			2
		Dip	hee	R							70			3
		Dip	hee	R							71			4
		Dip	hee	S			1	3	2		73	82		5
		Dip	hee	R							74			6
		Dip	hee	R							76			7
		Per	man	R							78			8
		Dip	hee	R							79			9
		Dip	hee	R							82			10
		Dip	hee	S			2	4	2		86	71		11
		Per	man	R							93			12
		Dip	hee	S			1	2	2		94	85		13
		Dip	hee	R							97			14
		Per	man	S			2	4	2		98	19		15
		Per	man	S			2	4	2		99	18		16
		Dip	hee	R							100			17
											end 515			18
														19
														20
														21
														22
														23
														24
														25

WIND

Beauf. No.	km.	mi.
00	.5	.5
02	9	.6
04	23	14
06	40	25
08	60	38
10	84	52
12	104	65

CLOUD COVER
0 Clear
1 Partly Cloudy
2 Cloudy
3 Drizzle
4 Rain
5 Snow
6 Fog

MOON
0 None
1 Quarter
2 Half
3 3-Quarter
4 Full

NEW (Basic)
1 New animal
2 Re-tag

NEW (Asses.)
5 New animal

RE-CAPTURS
Blank

TIME
Hr. from sunset

NUMBER CONFUSED
1 Tag lost
2 Natural amputation
3 Escaped

TORPID - DEAD
1 Torpid
2 Dead

GRID STAKE NUMBER
9999 - Unusual location

ANIMAL NUMBER
8 Dead unmarked animal
9 Multiple amputation

FIRST DIGIT - EAR CLIP
0 = No Clip
1 = Right ear
2 = Left ear
3 = Both ears

Animals straight cut

RV FORM 68

FIELD DATA SHEET

PLOT	DATE			OBS
	DAY	MONTH	YEAR	
II	DD	MM	YY	I
2-3	5-6	7-8	9-10	12
4	3	12	08	W/SN

SEX
1 Male
2 Female
9 Unknown

SEXUAL CONDITION
MALE:
1 Testes Abdominal
2 Testes scrotal Up
3 Testes scrotal Dwn.
FEMALE:
4 Vulva inactive, closed
5 Vulva turgid, enlarged
6 Cop. plug
7 Pregnant
8 Lactating
9 Condition unknown

AGE
1 Young Yr.
2 Adult
9 Unknown

Time	Air °C	Rel Hum %	Wind Beaut. No.	Cloud Cover	Moon		
II	IIID	II	II	I	I		
51-52	54-57	59-60	62-63	65	66		
225	10	60-70	0	6	0		

SPECIES CODE	ALPHA CODE GENUS	ALPHA CODE SPECIES	NEW	ANIMAL NUMBER	NO.CONFUSED	SEX	SEXUAL COND	AGE	TORPID-DEAD	GRID STAKE NUMBER	BODY WT. (gr.)	BRIEF NOTES	
II	AAA	AAA	I	IIIII	I	I	I	I	I	IIII	IIID	AAAAAAAAA	
14-15	17-19	20-22	24	26-30	32	34	36	38	40	41-44	46-49	72-80	
	Dip	hee	R							1			1
	Dip	hee	R							3			2
	Dip	hee	R							4			3
	Dip	hee	R							5			4
	Dip	hee	R							6			5
	Dip	hee	R			2	4	2		7	52		6
	Dip	hee	5			2	4	2		11	67		7
	DIP	HER	5							12			8
	Dip	hee	R							13			9
	Dip	hee	R							14			10
	Dip	hee	R							15			11
	Dip	hee	R							16			12
	Dip	hee	R							17	86		13
	DIP	HER	5			2	4	2		18			14
	Dip	hee	R							19			15
	DIP	HER	R							20			16
	Dip	hee	R							21			17
	Dip	hee	R							22			18
	Dip	hee	R							24			1
	Dip	hee	R							25			2
	DIP	HER	R							26	92		2
	Dip	hee	5			1	3	2		28	90		2
	Dip	hee	5			1	3	2		30	82		2
	Dip	hee	5			2	4	2		31			2
	Dip	hee	R							32			2
	Dip	hee	R										

WIND

Beauf. No.	km.	mi.
00	.5	.5
02	9	.6
04	23	14
06	40	25
08	60	38
10	84	52
12	104	65

CLOUD COVER
0 Clear
1 Partly Cloudy
2 Cloudy
3 Drizzle
4 Rain
5 Snow
6 Fog

MOON
0 None
1 Quarter
2 Half
3 3-Quarter
4 Full

NEW (Basic)
1 New animal
2 Re-tag

NEW (Asses.)
5 New animal

RE-CAPTURS
Blank

TIME
Hr. from sunset

NUMBER CONFUSED
1 Tag lost
2 Natural amputation
3 Escaped

TORPID - DEAD
1 Torpid
2 Dead

GRID STAKE NUMBER
9999 = Unusual location

ANIMAL NUMBER
8 Dead unmarked animal
9 Multiple amputation

FIRST DIGIT - EAR CLIP
0 = No Clip
1 = Right ear
2 = Left ear
3 = Both ears

Animals straight cut

RV FORM 08

FIELD DATA SHEET

PLOT	DATE			OBS
	DAY	MONTH	YEAR	
II	DD	MM	YY	I
2-3	5-6	7-8	9-10	12
4	3	12	08	CW/SA

SEX
1 Male
2 Female
9 Unknown

AGE
1 Young Yr.
2 Adult
9 Unknown

SEXUAL CONDITION
MALE:
1 Testes Abdominal
2 Testes scrotal Up
3 Testes scrotal Dwn.
FEMALE:
4 Vulva inactive, closed
5 Vulva turgid, enlarged
6 Cop. plug
7 Pregnant
8 Lactating
9 Condition unknown

Time	Air °C Temp.	Rel % Hum	Beaut. No. Wind	Cloud Cover	Moon		
II	IIID	II	II	I	I		
51-52	54-57	59-60	62-63	65	66		
315	10	60-70	0	6	0		

	SPECIES CODE	ALPHA CODE GENUS	ALPHA CODE SPECIES	NEW	ANIMAL NUMBER	NO. CONFUSED	SEX	SEXUAL COND.	AGE	TORPID-DEAD	GRID STAKE NUMBER	BODY WT. (gr.)	BRIEF NOTES	
	II	AAA	AAA	I	IIIII	I	I	I	I	I	IIII	IIID	AAAAAAAAA	
	14-15	17-19	20-22	24	26-30	32	34	36	38	40	41-44	46-49	72-80	
1		Dip	hee	R							34			1
2		Dip	hee	S			2	4	2		35	70		2
3		Dip	hee	R							36			3
4		Dip	hee	R							37			4
5		Dip	hee	R							38			5
6		Dip	hee	R			1	3	2		39	80		6
7		Dip	hee	S			1	3	2		40	74		7
8		Dip	hee	S							44			8
9		Dip	hee	R							45			9
10		Dip	hee	R							47			10
11		Per	man	R							48	83		11
12		Dip	hee	S			1	3	2		51			12
13		Per	man	R							53			13
14		Dip	hee	R							54			14
15		Dip	hee	R							55			15
16		Dip	hee	R							58	16		16
17		Per	man	S			2	4	2		59	73		17
18		Dip	hee	S			2	4	2		60			18
19		Dip	hee	R							62	69		19
20		Dip	hee	S			1	2	2		63			20
21		Dip	hee	R							64			21
22		Dip	hee	R							66			22
23		Dip	hee	R							67			23
24		Dip	hee	R							69	80		24
25		Dip	hee	S			2	6	2		71	52		25
26		Dip	hee	S			2	4	2					26

WIND

Beauf. No.	km.	mi.
00	.5	.5
02	9	.6
04	23	14
06	40	25
08	60	38
10	84	52
12	104	65

CLOUD COVER
0 Clear
1 Partly Cloudy
2 Cloudy
3 Drizzle
4 Rain
5 Snow
6 Fog

MOON
0 None
1 Quarter
2 Half
3 3-Quarter
4 Full

NEW (Basic)
1 New animal
2 Re-tag

NEW (Asses.)
5 New animal

RE-CAPTURS
Blank

TIME
Hr. from sunset

NUMBER CONFUSED
1 Tag lost
2 Natural amputation
3 Escaped

TORPID - DEAD
1 Torpid
2 Dead

GRID STAKE NUMBER
9999 = Unusual location

ANIMAL NUMBER
8 Dead unmarked animal
9 Multiple amputation

FIRST DIGIT - EAR CLIP
0 = No Clip
1 = Right ear
2 = Left ear
3 = Both ears

Animals straight cut

RV FORM 08

FIELD DATA SHEET

PLOT	DATE			OBS
	DAY	MONTH	YEAR	
II	DD	MM	YY	I
2-3	5-6	7-8	9-10	12
4	3	12	08	CA/SA

SEX
1 Male
2 Female
9 Unknown

AGE
1 Young Yr.
2 Adult
9 Unknown

SEXUAL CONDITION
1 Testes Abdominal } MALE
2 Testes scrotal Up
3 Testes scrotal Dwn.
4 Vulva inactive, closed } FEMALE
5 Vulva turgid, enlarged
6 Cop. plug
7 Pregnant
8 Lactating
9 Condition unknown

Time	Air °C Temp.	Rel % Hum	Beaut. No. Wind	Cloud Cover	Moon		
II	IIID	II	II	I	I		
51-52	54-57	59-60	62-63	65	66		
345	10	60-70	0	6	0		

SPECIES CODE	ALPHA CODE GENUS	ALPHA CODE SPECIES	NEW	ANIMAL NUMBER	NO. CONFUSED	SEX	SEXUAL COND.	AGE	TORPID-DEAD	GRID STAKE NUMBER	BODY WT. (gr.)	BRIEF NOTES	
II	AAA	AAA	I	IIIII	I	I	I	I	I	IIII	IIID	AAAAAAAAA	
14-15	17-19	20-22	24	26-30	32	34	36	38	40	41-44	46-49	72-80	
	Dip	hee	S			2	4	2		74	53		1
	Dip	hee	R							76			2
	Dip	hee	S			1	3	2		78	67		3
	Per	man	S			2	4	2		80	14		4
	Dip	hee	R							84			5
	Dip	hee	R							86			6
	Per	man	R							8890			7
	Dip	hee	S			1	2	2		91	75		8
	Per	man	S			2	4	2		93	20		9
	Dip	hee	R							95			10
	Dip	hee	R							98			11
	Par	man	S			1	2	2		99	16		12
	Dip	hee	R							100			13
										End 404			14
													15
													16
													17
													18
													19
													20
													21
													22
													23
													24
													25

WIND

Beauf. No.	km.	mi.
00	.5	.5
02	9	.6
04	23	14
06	40	25
08	60	38
10	84	52
12	104	65

CLOUD COVER
0 Clear
1 Partly Cloudy
2 Cloudy
3 Drizzle
4 Rain
5 Snow
6 Fog

MOON
0 None
1 Quarter
2 Half
3 3-Quarter
4 Full

NEW (Basic)
1 New animal
2 Re-tag

NEW (Asses.)
5 New animal

RE-CAPTURS
Blank

TIME
Hr. from sunset

NUMBER CONFUSED
1 Tag lost
2 Natural amputation
3 Escaped

TORPID - DEAD
1 Torpid
2 Dead

GRID STAKE NUMBER
9999 = Unusual location

ANIMAL NUMBER
8 Dead unmarked animal
9 Multiple amputation

FIRST DIGIT - EAR CLIP
0 = No Clip
1 = Right ear
2 = Left ear
3 = Both ears

Animals straigh cut

RV FORM 08

FIELD DATA SHEET

PLOT	DATE: DAY	MONTH	YEAR	OBS
II	DD	MM	YY	I
2-3	5-6	7-8	9-10	12
4	4	12	68	W/SM RM

SEX: 1 Male; 2 Female; 9 Unknown

AGE: 1 Young Yr.; 2 Adult; 9 Unknown

SEXUAL CONDITION: MALE: 1 Testes Abdominal; 2 Testes scrotal Up; 3 Testes scrotal Dwn. FEMALE: 4 Vulva inactive, closed; 5 Vulva turgid, enlarged; 6 Cop. plug; 7 Pregnant; 8 Lactating; 9 Condition unknown

Time	Air Temp. °C	Rel % Hum	Wind Beaut. No.	Cloud Cover	Moon
II	IIID	II	II	I	I
51-52	54-57	59-60	62-63	65	66
224	6	80	0-2	0	0

SPECIES CODE	GENUS	SPECIES	NEW	ANIMAL NUMBER	NO. CONFUSED	SEX	SEXUAL COND	AGE	TORPID-DEAD	GRID STAKE NUMBER	BODY WT. (gr.)	BRIEF NOTES	
II	AAA	AAA	I	IIIII	I	I	I	I	I	IIII	IIID	AAAAAAAAA	
14-15	17-19	20-22	24	26-30	32	34	36	38	40	41-44	46-49	72-80	
	Dip	hee	5			1	3	2		1	91		1
	Dip	hee	R							4			2
	Dip	hee	R							7			3
	Dip	hee	R							8			4
	Dip	hee	R							10			5
	Dip	hee	R							11			6
	Dip	hee	R							12			7
	Dip	hee	R							13			8
	Dip	hee	R							14			9
	Dip	hee	R							15			10
	Dip	hee	R							18			11
	Dip	hee	R							19			12
	Dip	hee	R							20			13
	Dip	hee	R							21			14
	Dip	hee	R							22			15
	Dip	hee	R							23			16
	Dip	hee	R							24			17
	Dip	hee	R							26			18
	Dip	hee	R							28			19
	Dip	hee	5			2	4	2		30	48		20
	Dip	hee	R							31			21
	Dip	hee	R							32			22
	Dip	hee	R							34			23
	Dip	hee	R							35			24
	Dip	hee	R							36			25

WIND

Beauf. No.	km.	mi.
00	.5	.5
02	9	.6
04	23	14
06	40	25
08	60	38
10	84	52
12	104	65

CLOUD COVER: 0 Clear; 1 Partly Cloudy; 2 Cloudy; 3 Drizzle; 4 Rain; 5 Snow; 6 Fog

MOON: 0 None; 1 Quarter; 2 Half; 3 3-Quarter; 4 Full

NEW (Basic): 1 New animal; 2 Re-tag

NEW (Asses.): 5 New animal

RE-CAPTURS: Blank

TIME: Hr. from sunset

NUMBER CONFUSED: 1 Tag lost; 2 Natural amputation; 3 Escaped

TORPID - DEAD: 1 Torpid; 2 Dead

GRID STAKE NUMBER: 9999 - Unusual location

ANIMAL NUMBER: 8 Dead unmarked animal; 9 Multiple amputation

FIRST DIGIT - EAR CLIP: 0 = No Clip; 1 = Right ear; 2 = Left ear; 3 = Both ears

Animals straight cut

RV FORM 08

FIELD DATA SHEET

PLOT	DATE			OBS
	DAY	MONTH	YEAR	
II	DD	MM	YY	I
2-3	5-6	7-8	9-10	12
4	4	12	08	COLW RCM

SEX
1 Male
2 Female
9 Unknown

AGE
1 Young Yr.
2 Adult
9 Unknown

SEXUAL CONDITION
MALE
1 Testes Abdominal
2 Testes scrotal Up
3 Testes scrotal Dwn.
FEMALE
4 Vulva inactive, closed
5 Vulva turgid, enlarged
6 Cop. plug
7 Pregnant
8 Lactating
9 Condition unknown

Time	Air Temp. °C	Rel Hum %	Wind Beaut. No.	Cloud Cover	Moon		
II	IIID	II	II	I	I		
51-52	54-57	59-60	62-63	65	66		
251	6	50	0	0	0		

SPECIES CODE	ALPHA CODE GENUS	ALPHA CODE SPECIES	NEW	ANIMAL NUMBER	NO. CONFUSED	SEX	SEXUAL COND.	AGE	TORPID-DEAD	GRID STAKE NUMBER	BODY WT. (gr.)	BRIEF NOTES	
II	AAA	AAA	I	IIIII	I	I	I	I	I	IIII	IIID	AAAAAAAAA	
14-15	17-19	20-22	24	26-30	32	34	36	38	40	41-44	46-49	72-80	
	Dip	hee	R							37			1
	Dip	hee	R							38			2
	Dip	hee	R							39			3
	Dip	hee	R							40			4
	Dip	hee	R							41			5
	Dip	hee	R							44	43		6
	Dip	hee	5			2	4	2		47		torpid	7
	Per	man	R						1	48			8
	Dip	hee	R							50			9
	Dip	hee	R							51			10
	Per	man	R							52			11
	Dip	hee	R							54			12
	Dip	hee	R							55	17		13
	Per	man	5			1	2	2		56			14
	Dip	hee	R							57			15
	Dip	hee	R							58			16
	Dip	hee	R							60			17
	Dip	hee	R							61			18
	Dip	hee	R							62			19
	Dip	hee	R							63			20
	Dip	hee	R							65			21
	Dip	hee	R							66			22
	Dip	hee	R							69			23
	Dip	hee	R							71			24
	Dip	hee	R							72			25

WIND

Beauf. No.	km.	mi.
00	.5	.5
02	9	.6
04	23	14
06	40	25
08	60	38
10	84	52
12	104	65

CLOUD COVER
0 Clear
1 Partly Cloudy
2 Cloudy
3 Drizzle
4 Rain
5 Snow
6 Fog

MOON
0 None
1 Quarter
2 Half
3 3-Quarter
4 Full

NEW (Basic)
1 New animal
2 Re-tag

NEW (Assess.)
5 New animal

RE-CAPTURS
Blank

TIME
Hr. from sunset

NUMBER CONFUSED
1 Tag lost
2 Natural amputation
3 Escaped

TORPID - DEAD
1 Torpid
2 Dead

GRID STAKE NUMBER
9999 = Unusual location

ANIMAL NUMBER
8 Dead unmarked animal
9 Multiple amputation

FIRST DIGIT - EAR CLIP
0 = No Clip
1 = Right ear
2 = Left ear
3 = Both ears

Animals straight cut

RV FORM 08

FIELD DATA SHEET

PLOT	DATE			OBS
	DAY	MONTH	YEAR	
II	DD	MM	YY	I
2-3	5-6	7-8	9-10	12
4	4	12	08	CH/SM/AK

SEX
1 Male
2 Female
9 Unknown

SEXUAL CONDITION
MALE
1 Testes Abdominal
2 Testes scrotal Up
3 Testes scrotal Dwn.
FEMALE
4 Vulva inactive, closed
5 Vulva turgid, enlarged
6 Cop. plug
7 Pregnant
8 Lactating
9 Condition unknown

AGE
1 Young Yr.
2 Adult
9 Unknown

Time	Air Temp. °C	Rel Hum %	Wind Beaut. No.	Cloud Cover	Moon		
II	IIID	II	II	I	I		
51-52	54-57	59-60	62-63	65	66		
319	6	50	0	0	0		

	SPECIES CODE	ALPHA CODE GENUS	ALPHA CODE SPECIES	NEW	ANIMAL NUMBER	NO. CONFUSED	SEX	SEXUAL COND.	AGE	TORPID-DEAD	GRID STAKE NUMBER	BODY WT. (gr.)	BRIEF NOTES
	II	AAA	AAA	I	IIIII	I	I	I	I	I	IIII	IIID	AAAAAAAAA
	14-15	17-19	20-22	24	26-30	32	34	36	38	40	41-44	46-49	72-80
1		Dip	hee	R							74		
2		Dip	hee	R							80		
3		Dip	hee	R							81		
4		Dip	hee	R							82		
5		Dip	hee	R							86	64	
6		Dip	hee	5			2	4	2		87		
7		Dip	hee	R							89	14	
8		Per	man	5			2	4	2		90		
9		Dip	hee	R							91		
10		Per	man	R							93		
11		Per	man	R							96	83	
12		Dip	hee	5			1	3	2		98		
13		Per	man	R							99		
14		Per	man	R							100		
15		Dip	hee	R							end 335		
16													
17													
18													
19													
20													
21													
22													
23													
24													
25													
26													
27													
28													
29													
30													

WIND

Beauf. No.	km.	mi.
00	.5	.5
02	9	6
04	23	14
06	40	25
08	60	38
10	84	52
12	104	65

CLOUD COVER
0 Clear
1 Partly Cloudy
2 Cloudy
3 Drizzle
4 Rain
5 Snow
6 Fog

MOON
0 None
1 Quarter
2 Half
3 3-Quarter
4 Full

NEW (Basic)
1 New animal
2 Re-tag

NEW (Asses.)
5 New animal

RE-CAPTURS
Blank

TIME
Hr. from sunset

NUMBER CONFUSED
1 Tag lost
2 Natural amputation
3 Escaped

TORPID - DEAD
1 Torpid
2 Dead

GRID STAKE NUMBER
9999 = Unusual location

ANIMAL NUMBER
8 Dead unmarked animal
9 Multiple amputation

FIRST DIGIT - EAR CLIP
0 = No Clip
1 = Right ear
2 = Left ear
3 = Both ears

Animals straight cut

RV FORM 08

FIELD DATA SHEET

PLOT	DATE			OBS
~~6~~	DAY	MONTH	YEAR	
II	DD	MM	YY	I
2-3	5-6	7-8	9-10	12
~~6~~5	8	12	2008	cy RB

SEX
1 Male
2 Female
9 Unknown

AGE
1 Young Yr.
2 Adult
9 Unknown

SEXUAL CONDITION
1 Testes Abdominal
2 Testes scrotal Up
3 Testes scrotal Dwn. } MALE
4 Vulva inactive, closed
5 Vulva turgid, enlarged
6 Cop. plug
7 Pregnant
8 Lactating
9 Condition unknown } FEMALE

Time	Air °C Temp.	Rel % Hum	Wind Beaut. No.	Cloud Cover	Moon
II	IIID	II	II	I	I
51-52	54-57	59-60	62-63	65	66
11:10	10		.5	2	2

SPECIES CODE	ALPHA CODE GENUS	ALPHA CODE SPECIES	NEW	ANIMAL NUMBER	NO.CONFUSED	SEX	SEXUAL COND.	AGE	TORPID-DEAD	GRID STAKE NUMBER	BODY WT. (gr.)	BRIEF NOTES	
II	AAA	AAA	I	IIIII	I	I	I	I	I	IIII	IIID	AAAAAAAAA	
14-15	17-19	20-22	24	26-30	32	34	36	38	40	41-44	46-49	72-80	
						2	4	2		40	75		1
	Dip	her	1										2
													3
													4
													5
				Finished 11:31									6
													7
													8
													9
													10
													11
													12
													13
													14
													15
													16
													17
													18
													19
													20
													21
													22
													23
													24
													25

WIND

Beauf. No.	km.	mi.
00	.5	.5
02	9	6
04	23	14
06	40	25
08	60	38
10	84	52
12	104	65

CLOUD COVER
0 Clear
1 Partly Cloudy
2 Cloudy
3 Drizzle
4 Rain
5 Snow
6 Fog

MOON
0 None
1 Quarter
2 Half
3 3-Quarter
4 Full

NEW (Basic)
1 New animal
2 Re-tag

NEW (Asses.)
5 New animal

RE-CAPTURS
Blank

TIME
Hr. from sunset

NUMBER CONFUSED
1 Tag lost
2 Natural amputation
3 Escaped

TORPID - DEAD
1 Torpid
2 Dead

GRID STAKE NUMBER
9999 - Unusual location

ANIMAL NUMBER
8 Dead unmarked animal
9 Multiple amputation

FIRST DIGIT - EAR CLIP
0 = No Clip
1 = Right ear
2 = Left ear
3 = Both ears

Animals straight cut

4a [illegible] today [illegible] man Dip her

RV FORM 08

FIELD DATA SHEET

PLOT	DATE			OBS
	DAY	MONTH	YEAR	
II	DD	MM	YY	I
2-3	5-6	7-8	9-10	12
5	9	12	2008	CU

SEX
1 Male
2 Female
9 Unknown

AGE
1 Young Yr.
2 Adult
9 Unknown

SEXUAL CONDITION
MALE:
1 Testes Abdominal
2 Testes scrotal Up
3 Testes scrotal Dwn.
FEMALE:
4 Vulva inactive, closed
5 Vulva turgid, enlarged
6 Cop. plug
7 Pregnant
8 Lactating
9 Condition unknown

Time	Air Temp. °C	Rel Hum %	Wind Beaut. No.	Cloud Cover	Moon		
II	IIID	II	II	I	I		
51-52	54-57	59-60	62-63	65	66		
11:03	84		.5	0	3		

SPECIES CODE	ALPHA CODE GENUS	ALPHA CODE SPECIES	NEW	ANIMAL NUMBER	NO. CONFUSED	SEX	SEXUAL COND.	AGE	TORPID-DEAD	GRID STAKE NUMBER	BODY WT. (gr.)	BRIEF NOTES	
				RB									
II	AAA	AAA	I	IIII	—	—	—	—	—	IIII	IIID	AAAAAAAAA	
14-15	17-19	20-22	24	26-30	32	34	36	38	40	41-44	46-49	72-80	
													1
													2
				End at 11:20									3
													4
													5
													6
													7
													8
													9
													10
													11
													12
													13
													14
													15
													16
													17
													18
													1
													2
													2
													2
													2
													2
													2

WIND

Beauf. No.	km.	mi.
00	.5	.5
02	9	.6
04	23	14
06	40	25
08	60	38
10	84	52
12	104	65

CLOUD COVER
0 Clear
1 Partly Cloudy
2 Cloudy
3 Drizzle
4 Rain
5 Snow
6 Fog

MOON
0 None
1 Quarter
2 Half
3 3-Quarter
4 Full

NEW (Basic)
1 New animal
2 Re-tag

NEW (Asses.)
5 New animal

RE-CAPTURS
Blank

TIME
Hr. from sunset

NUMBER CONFUSED
1 Tag lost
2 Natural amputation
3 Escaped

TORPID - DEAD
1 Torpid
2 Dead

GRID STAKE NUMBER
9999 = Unusual location

ANIMAL NUMBER
8 Dead unmarked animal
9 Multiple amputation

FIRST DIGIT - EAR CLIP
0 = No Clip
1 = Right ear
2 = Left ear
3 = Both ears

Animals straight cut

FIELD DATA SHEET

RV FORM 08

PLOT	DATE			OBS
	DAY	MONTH	YEAR	
II	DD	MM	YY	I
2-3	5-6	7-8	9-10	12
5	10	8 12	2008	CY

SEX: 1 Male; 2 Female; 9 Unknown

SEXUAL CONDITION — MALE: 1 Testes Abdominal; 2 Testes scrotal Up; 3 Testes scrotal Dwn.

SEXUAL CONDITION — FEMALE: 4 Vulva inactive, closed; 5 Vulva turgid, enlarged; 6 Cop. plug; 7 Pregnant; 8 Lactating

AGE: 1 Young Yr.; 2 Adult; 9 Unknown; 9 Condition unknown

Time	Air Temp. °C	Rel Hum %	Beaut. No. Wind	Cloud Cover	Moon		
II	IIID	II	II	I	I		
51-52	54-57	59-60	62-63	65	66		
11:26	4		-5	0	4		

SPECIES CODE	ALPHA CODE GENUS	ALPHA CODE SPECIES	NEW	ANIMAL NUMBER	NO. CONFUSED	SEX	SEXUAL COND	AGE	TORPID-DEAD	GRID STAKE NUMBER	BODY WT. (gr.)	BRIEF NOTES	
II	AAA	AAA	I	IIIII	—	—	—	—	I	IIII	IIID	AAAAAAAAA	
14-15	17-19	20-22	24	26-30	32	34	36	38	40	41-44	46-49	72-80	
	Dip	her	R	RB						41			1
													2
				End 11:44									3
													4
													5
													6
													7
													8
													9
													10
													11
													12
													13
													14
													15
													16
													17
													18
													19
													20
													21
													22
													23
													24
													25

WIND

Beauf. No.	km.	mi.
00	.5	.5
02	9	6
04	23	14
06	40	25
08	60	38
10	84	52
12	104	65

CLOUD COVER
0 Clear; 1 Partly Cloudy; 2 Cloudy; 3 Drizzle; 4 Rain; 5 Snow; 6 Fog

MOON
0 None; 1 Quarter; 2 Half; 3 3-Quarter; 4 Full

NEW (Basic)
1 New animal; 2 Re-tag

NEW (Asses.)
5 New animal

RE-CAPTURS
Blank

TIME
Hr. from sunset

NUMBER CONFUSED
1 Tag lost; 2 Natural amputation; 3 Escaped

TORPID - DEAD
1 Torpid; 2 Dead

GRID STAKE NUMBER
9999 - Unusual location

ANIMAL NUMBER
8 Dead unmarked animal; 9 Multiple amputation

FIRST DIGIT - EAR CLIP
0 = No Clip
1 = Right ear
2 = Left ear
3 = Both ears
Animals straight cut

FIELD DATA SHEET

RV FORM 08

PLOT	DATE			OBS
	DAY	MONTH	YEAR	
II	DD	MM	YY	I
2-3	5-6	7-8	9-10	12
5	11	12	2008	CU

SEX: 1 Male; 2 Female; 9 Unknown

AGE: 1 Young Yr.; 2 Adult; 9 Unknown

SEXUAL CONDITION — MALE: 1 Testes Abdominal; 2 Testes scrotal Up; 3 Testes scrotal Dwn.

SEXUAL CONDITION — FEMALE: 4 Vulva inactive, closed; 5 Vulva turgid, enlarged; 6 Cop. plug; 7 Pregnant; 8 Lactating; 9 Condition unknown

Time	Air Temp. °C	Rel Hum %	Wind Beaut. No.	Cloud Cover	Moon
II	IIID	II	II	I	I
51-52	54-57	59-60	62-63	65	66
11:04	5		.5	0	4

SPECIES CODE	ALPHA CODE GENUS	ALPHA CODE SPECIES	NEW	ANIMAL NUMBER (RB)	NO. CONFUSED	SEX	SEXUAL COND.	AGE	TORPID-DEAD	GRID STAKE NUMBER	BODY WT. (gr.)	BRIEF NOTES	
II	AAA	AAA	I	IIIII	I	I	I	I	I	IIII	IIID	AAAAAAAAA	
14-15	17-19	20-22	24	26-30	32	34	36	38	40	41-44	46-49	72-80	
													1
				End 11:25									2
													3
													4
													5
													6
													7
													8
													9
													10
													11
													12
													13
													14
													15
													16
													17
													18
													19
													20
													21
													22
													23
													24
													25

WIND

Beauf. No.	km.	mi.
00	.5	.5
02	9	6
04	23	14
06	40	25
08	60	38
10	84	52
12	104	65

CLOUD COVER
0 Clear; 1 Partly Cloudy; 2 Cloudy; 3 Drizzle; 4 Rain; 5 Snow; 6 Fog

MOON
0 None; 1 Quarter; 2 Half; 3 3-Quarter; 4 Full

NEW (Basic)
1 New animal; 2 Re-tag

NEW (Asses.)
5 New animal

RE-CAPTURS
Blank

TIME
Hr. from sunset

NUMBER CONFUSED
1 Tag lost; 2 Natural amputation; 3 Escaped

TORPID - DEAD
1 Torpid; 2 Dead

GRID STAKE NUMBER
9999 - Unusual location

ANIMAL NUMBER
8 Dead unmarked animal; 9 Multiple amputation

FIRST DIGIT - EAR CLIP
0 = No Clip
1 = Right ear
2 = Left ear
3 = Both ears
Animals straight cut

RV FORM 08

FIELD DATA SHEET

PLOT	DATE: DAY	DATE: MONTH	DATE: YEAR	OBS
II	DD	MM	YY	I
2-3	5-6	7-8	9-10	12
~~1~~6	8	12	2008	CY RB

SEX
1 Male
2 Female
9 Unknown

AGE
1 Young Yr.
2 Adult
9 Unknown

SEXUAL CONDITION
1 Testes Abdominal
2 Testes scrotal Up
3 Testes scrotal Dwn. } MALE
4 Vulva inactive, closed
5 Vulva turgid, enlarged
6 Cop. plug
7 Pregnant
8 Lactating } FEMALE
9 Condition unknown

Time	Air Temp. °C	Rel. Hum %	Wind Beauf. No.	Cloud Cover	Moon
II	IIID	II	II	I	I
51-52	54-57	59-60	62-63	65	66
11:35	10		-5	2	2

SPECIES CODE	ALPHA CODE: GENUS	ALPHA CODE: SPECIES	NEW	ANIMAL NUMBER	NO. CONFUSED	SEX	SEXUAL COND	AGE	TORPID-DEAD	GRID STAKE NUMBER	BODY WT. (gr.)	BRIEF NOTES	
II	AAA	AAA	I	IIIII	I	I	I	I	I	IIII	IIID	AAAAAAAAA	
14-15	17-19	20-22	24	26-30	32	34	36	38	40	41-44	46-49	72-80	
	Per	man	1			2	8	2		2	21		1
	Dip	her	1			2	4	2		16	78		2
	per	man	1			1	2	2		48	18		3
													4
													5
				Ended at 11:58									6
													7
													8
													9
													10
													11
													12
													13
													14
													15
													16

WIND

Beauf. No.	km.	mi.
00	.5	.5
02	9	6
04	23	14
06	40	25
08	60	38
10	84	52
12	104	65

CLOUD COVER
0 Clear
1 Partly Cloudy
2 Cloudy
3 Drizzle
4 Rain
5 Snow
6 Fog

MOON
0 None
1 Quarter
2 Half
3 3-Quarter
4 Full

NEW (Basic)
1 New animal
2 Re-tag

NEW (Asses.)
5 New animal

RE-CAPTURS
Blank

TIME
Hr. from sunset

NUMBER CONFUSED
1 Tag lost
2 Natural amputation
3 Escaped

TORPID - DEAD
1 Torpid
2 Dead

GRID STAKE NUMBER
9999 = Unusual location

ANIMAL NUMBER
8 Dead unmarked animal
9 Multiple amputation

FIRST DIGIT - EAR CLIP
0 = No Clip
1 = Right ear
2 = Left ear
3 = Both ears

Animals straight cut

FIELD DATA SHEET

RV FORM 08

PLOT	DATE			OBS
	DAY	MONTH	YEAR	
II	DD	MM	YY	I
2-3	5-6	7-8	9-10	12
6	9	12	2008	Cy

SEX
1 Male
2 Female
9 Unknown

SEXUAL CONDITION
MALE
1 Testes Abdominal
2 Testes scrotal Up
3 Testes scrotal Dwn.
FEMALE
4 Vulva inactive, closed
5 Vulva turgid, enlarged
6 Cop. plug
7 Pregnant
8 Lactating
9 Condition unknown

AGE
1 Young Yr.
2 Adult
9 Unknown

Time	Air Temp. °C	Rel Hum %	Wind Beaut. No.	Cloud Cover	Moon		
II	IIID	II	II	I	I		
51-52	54-57	59-60	62-63	65	66		
11:21	34		.5	0	3		

SPECIES CODE	ALPHA CODE GENUS	ALPHA CODE SPECIES	NEW	ANIMAL NUMBER (RB)	NO. CONFUSED	SEX	SEXUAL COND.	AGE	TORPID-DEAD	GRID STAKE NUMBER	BODY WT. (gr.)	BRIEF NOTES	
II	AAA	AAA	I	IIIII	I	I	I	I	I	IIII	IIID	AAAAAAAAA	
14-15	17-19	20-22	24	26-30	32	34	36	38	40	41-44	46-49	72-80	
				Funded 11/06									1
													2
													3
													4
													5
													6
													7
													8
													9
													10
													11
													12
													13
													14
													15
													16
													17
													18
													19
													20
													21
													22
													23
													24
													25

WIND

Beauf. No.	km.	mi.
00	.5	.5
02	9	6
04	23	14
06	40	25
08	60	38
10	84	52
12	104	65

CLOUD COVER
0 Clear
1 Partly Cloudy
2 Cloudy
3 Drizzle
4 Rain
5 Snow
6 Fog

MOON
0 None
1 Quarter
2 Half
3 3-Quarter
4 Full

NEW (Basic)
1 New animal
2 Re-tag

NEW (Asses.)
5 New animal

RE-CAPTURS
Blank

TIME
Hr. from sunset

NUMBER CONFUSED
1 Tag lost
2 Natural amputation
3 Escaped

TORPID - DEAD
1 Torpid
2 Dead

GRID STAKE NUMBER
9999 - Unusual location

ANIMAL NUMBER
8 Dead unmarked animal
9 Multiple amputation

FIRST DIGIT - EAR CLIP
0 = No Clip
1 = Right ear
2 = Left ear
3 = Both ears

Animals straight cut

FIELD DATA SHEET

RV FORM 08

PLOT	DATE			OBS
	DAY	MONTH	YEAR	
II	DD	MM	YY	I
2-3	5-6	7-8	9-10	12
6	10	12	2008	CN

SEX
1 Male
2 Female
9 Unknown

AGE
1 Young Yr.
2 Adult
9 Unknown

SEXUAL CONDITION
MALE
1 Testes Abdominal
2 Testes scrotal Up
3 Testes scrotal Dwn.
FEMALE
4 Vulva inactive, closed
5 Vulva turgid, enlarged
6 Cop. plug
7 Pregnant
8 Lactating
9 Condition unknown

Time	Air Temp. °C	Rel Hum %	Wind Beaut. No.	Cloud Cover	Moon		
II	IIID	II	II	I	I		
51-52	54-57	59-60	62-63	65	66		
11:45	4		.5	0	4		

SPECIES CODE	ALPHA CODE GENUS	ALPHA CODE SPECIES	NEW	ANIMAL NUMBER	NO.CONFUSED	SEX	SEXUAL COND.	AGE	TORPID-DEAD	GRID STAKE NUMBER	BODY WT. (gr.)	BRIEF NOTES	
II	AAA	AAA	I	IIIII	I	I	I	I	I	IIII	IIID	AAAAAAAAA	
14-15	17-19	20-22	24	26-30	32	34	36	38	40	41-44	46-49	72-80	
				RB									1
				End 11:59									2
													3
													4
													5
													6
													7
													8
													9
													10
													11
													12
													13
													14
													15
													16
													17
													18
													19
													20
													21
													22
													23
													24
													25

WIND

Beauf. No.	km.	mi.
00	.5	.5
02	9	6
04	23	14
06	40	25
08	60	38
10	84	52
12	104	65

CLOUD COVER
0 Clear
1 Partly Cloudy
2 Cloudy
3 Drizzle
4 Rain
5 Snow
6 Fog

MOON
0 None
1 Quarter
2 Half
3 3-Quarter
4 Full

NEW (Basic)
1 New animal
2 Re-tag

NEW (Asses.)
5 New animal

RE-CAPTURS
Blank

TIME
Hr. from sunset

NUMBER CONFUSED
1 Tag lost
2 Natural amputation
3 Escaped

TORPID - DEAD
1 Torpid
2 Dead

GRID STAKE NUMBER
9999 - Unusual location

ANIMAL NUMBER
8 Dead unmarked animal
9 Multiple amputation

FIRST DIGIT - EAR CLIP
0 = No Clip
1 = Right ear
2 = Left ear
3 = Both ears
Animals straight cut

FIELD DATA SHEET

RV FORM 08

PLOT	DATE			OBS
	DAY	MONTH	YEAR	
II	DD	MM	YY	I
2-3	5-6	7-8	9-10	12
6	11	12	2008	CN

SEX: 1 Male; 2 Female; 9 Unknown

SEXUAL CONDITION (MALE): 1 Testes Abdominal; 2 Testes scrotal Up; 3 Testes scrotal Dwn.

SEXUAL CONDITION (FEMALE): 4 Vulva inactive, closed; 5 Vulva turgid, enlarged; 6 Cop. plug; 7 Pregnant; 8 Lactating

AGE: 1 Young Yr.; 2 Adult; 9 Unknown

SEXUAL CONDITION: 9 Condition unknown

Time	Air Temp. °C	Rel Hum %	Wind Beaut. No.	Cloud Cover	Noon
II	IIID	II	II	I	I
51-52	54-57	59-60	62-63	65	66
11:27	5		.5	0	4

RB

SPECIES CODE	ALPHA CODE GENUS	ALPHA CODE SPECIES	NEW	ANIMAL NUMBER	NO. CONFUSED	SEX	SEXUAL COND	AGE	TORPID-DEAD	GRID STAKE NUMBER	BODY WT. (gr.)	BRIEF NOTES	
II	AAA	AAA	I	IIIII	I	I	I	I	I	IIII	IIID	AAAAAAAAA	
14-15	17-19	20-22	24	26-30	32	34	36	38	40	41-44	46-49	72-80	
	Per	man	R							2			1
													2
				End 11:45									3
													4
													5
													6
													7
													8
													9
													10
													11
													12
													13
													14
													15
													16
													17
													18
													19
													20
													21
													22
													23
													24
													25

WIND

Beauf. No.	km.	mi.
00	.5	.5
02	9	6
04	23	14
06	40	25
08	60	38
10	84	52
12	104	65

CLOUD COVER
0 Clear; 1 Partly Cloudy; 2 Cloudy; 3 Drizzle; 4 Rain; 5 Snow; 6 Fog

MOON
0 None; 1 Quarter; 2 Half; 3 3-Quarter; 4 Full

NEW (Basic)
1 New animal; 2 Re-tag

NEW (Asses.)
5 New animal

RE-CAPTURS
Blank

TIME
Hr. from sunset

NUMBER CONFUSED
1 Tag lost; 2 Natural amputation; 3 Escaped

TORPID - DEAD
1 Torpid; 2 Dead

GRID STAKE NUMBER
9999 - Unusual location

ANIMAL NUMBER
8 Dead unmarked animal; 9 Multiple amputation

FIRST DIGIT - EAR CLIP
0 = No Clip
1 = Right ear
2 = Left ear
3 = Both ears
Animals straight cut

RV FORM 08

FIELD DATA SHEET

PLOT	DATE			OBS
	DAY	MONTH	YEAR	
II	DD	MM	YY	I
2-3	5-6	7-8	9-10	12
7	8	12	2008	CY

SEX
1 Male
2 Female
9 Unknown

AGE
1 Young Yr.
2 Adult
9 Unknown

SEXUAL CONDITION
MALE:
1 Testes Abdominal
2 Testes scrotal Up
3 Testes scrotal Dwn.
FEMALE:
4 Vulva inactive, closed
5 Vulva turgid, enlarged
6 Cop. plug
7 Pregnant
8 Lactating
9 Condition unknown

Time	Air Temp. °C	Rel Hum %	Beaut. Wind No.	Cloud Cover	Moon		
II	IIID	II	II	I	I		
51-52	54-57	59-60	62-63	65	66		
12:11	~~TX~~ 16		.5	2	2		

SPECIES CODE	ALPHA CODE GENUS	ALPHA CODE SPECIES	NEW	ANIMAL NUMBER	NO. CONFUSED	SEX	SEXUAL COND.	AGE	TORPID-DEAD	GRID STAKE NUMBER	BODY WT. (gr.)	BRIEF NOTES	
II	AAA	AAA	I	IIIII	I	I	I	I	I	IIII	IIID	AAAAAAAAA	
14-15	17-19	20-22	24	26-30	32	34	36	38	40	41-44	46-49	72-80	
	Dip	her	1	RB		1	2	2		3	87		1
	Per	man	1			2	4	2		4	22		2
	Dip	her	1			2	4	2		~~3~~ 14	78		3
	Dip	her	1			1	3	2		20	82		4
	Dip	her	1			1	3	2		24	90		5
	Dip	her	1			1	3	2		27	83		6
	Dip	her	1			2	4	2		30	88		7
	Dip	her	1			1	3	2		46	77		8
	Dip	her	1			1	3	2		50	85		9
	Dip	her	1	Ended at 12:48									10
													11
													12
													13
													14
													15
													16
													17
													18
													19
													20
													21
													22
													23
													24
													25

WIND

Beauf. No.	km.	mi.
00	.5	.5
02	9	.6
04	23	14
06	40	25
08	60	38
10	84	52
12	104	65

CLOUD COVER
0 Clear
1 Partly Cloudy
2 Cloudy
3 Drizzle
4 Rain
5 Snow
6 Fog

MOON
0 None
1 Quarter
2 Half
3 3-Quarter
4 Full

NEW (Basic)
1 New animal
2 Re-tag

NEW (Asses.)
5 New animal

RE-CAPTURS
Blank

TIME
Hr. from sunset

NUMBER CONFUSED
1 Tag lost
2 Natural amputation
3 Escaped

TORPID - DEAD
1 Torpid
2 Dead

GRID STAKE NUMBER
9999 = Unusual location

ANIMAL NUMBER
8 Dead unmarked animal
9 Multiple amputation

FIRST DIGIT - EAR CLIP
0 = No Clip
1 = Right ear
2 = Left ear
3 = Both ears

Animals straight cut

FIELD DATA SHEET

RV FORM 08

PLOT	DATE			OBS
	DAY	MONTH	YEAR	
II	DD	MM	YY	I
2-3	5-6	7-8	9-10	12
7	9	12	2008	CU

SEX: 1 Male; 2 Female; 9 Unknown

SEXUAL CONDITION (MALE): 1 Testes Abdominal; 2 Testes scrotal Up; 3 Testes scrotal Dwn.

SEXUAL CONDITION (FEMALE): 4 Vulva inactive, closed; 5 Vulva turgid, enlarged; 6 Cop. plug; 7 Pregnant; 8 Lactating; 9 Condition unknown

AGE: 1 Young Yr.; 2 Adult; 9 Unknown

Time	Air Temp. °C	Rel Hum %	Beaut. Wind No.	Cloud Cover	Moon		
II	IIID	II	II	I	I		
51-52	54-57	59-60	62-63	65	66		
1137	0		.5	0	3		

SPECIES CODE	ALPHA CODE GENUS	ALPHA CODE SPECIES	NEW	ANIMAL NUMBER (RB)	NO. CONFUSED	SEX	SEXUAL COND.	AGE	TORPID-DEAD	GRID STAKE NUMBER	BODY WT. (gr.)	BRIEF NOTES	
II	AAA	AAA	I	IIIII	I	I	I	I	I	IIII	IIID	AAAAAAAAA	
14-15	17-19	20-22	24	26-30	32	34	36	38	40	41-44	46-49	72-80	
	Per	man	R							13			1
	Dip	her	R							19			2
	Dip	her	R							28			3
	Dip	her	R							38			4
				Ended 12:00									6

WIND			CLOUD COVER	MOON	NEW (Basic)	NUMBER CONFUSED	ANIMAL NUMBER
Beauf. No.	km.	mi.	0 Clear	0 None	1 New animal	1 Tag lost	8 Dead unmarked animal
00	.5	.5	1 Partly Cloudy	1 Quarter	2 Re-tag	2 Natural amputation	9 Multiple amputation
02	9	6	2 Cloudy	2 Half	NEW (Asses.)	3 Escaped	FIRST DIGIT - EAR CLIP
04	23	14	3 Drizzle	3 3-Quarter	5 New animal	TORPID - DEAD	0 = No Clip
06	40	25	4 Rain	4 Full	RE-CAPTURS	1 Torpid	1 = Right ear (Animals
08	60	38	5 Snow		Blank	2 Dead	2 = Left ear straight
10	84	52	6 Fog		TIME	GRID STAKE NUMBER	3 = Both ears cut
12	104	65			Hr. from sunset	9999 - Unusual location	

FIELD DATA SHEET

RV FORM 08

PLOT	DATE			OBS
	DAY	MONTH	YEAR	
II	DD	MM	YY	I
2-3	5-6	7-8	9-10	12
7	10	12	2008	CY

SEX: 1 Male; 2 Female; 9 Unknown

AGE: 1 Young Yr.; 2 Adult; 9 Unknown

SEXUAL CONDITION — MALE: 1 Testes Abdominal; 2 Testes scrotal Up; 3 Testes scrotal Dwn.

SEXUAL CONDITION — FEMALE: 4 Vulva inactive, closed; 5 Vulva turgid, enlarged; 6 Cop. plug; 7 Pregnant; 8 Lactating; 9 Condition unknown

Time	Air Temp. °C	Rel Hum %	Beaut. Wind No.	Cloud Cover	Moon		
II	IIID	II	II	I	I		
51-52	54-57	59-60	62-63	65	66		
~~12:00~~	4		~~4~~ 5	0	4		

SPECIES CODE	ALPHA CODE GENUS	ALPHA CODE SPECIES	NEW	ANIMAL NUMBER (RB)	NO. CONFUSED	SEX	SEXUAL COND.	AGE	TORPID-DEAD	GRID STAKE NUMBER	BODY WT. (gr.)	BRIEF NOTES	
II	AAA	AAA	I	IIIII	I	I	I	I	I	IIII	IIID	AAAAAAAAA	
14-15	17-19	20-22	24	26-30	32	34	36	38	40	41-44	46-49	72-80	
	Dip	her	I			2	4	2		8	64		1
	Dip	~~her~~	R							19			2
	Dip	her	R							28			3
	Per	man	I			2	4	2		35	18		4
	Dip	her	R							38			5
	Per	man				1	2	2		50	19		6
													7
				End 12:23									8
													9
													10
													11
													12
													13
													14
													15
													16
													17
													18
													19
													20
													21
													22
													23
													24
													25

WIND

Beauf. No.	km.	mi.
00	.5	.5
02	9	6
04	23	14
06	40	25
08	60	38
10	84	52
12	104	65

CLOUD COVER
0 Clear; 1 Partly Cloudy; 2 Cloudy; 3 Drizzle; 4 Rain; 5 Snow; 6 Fog

MOON
0 None; 1 Quarter; 2 Half; 3 3-Quarter; 4 Full

NEW (Basic)
1 New animal; 2 Re-tag

NEW (Asses.)
5 New animal

RE-CAPTURS
Blank

TIME
Hr. from sunset

NUMBER CONFUSED
1 Tag lost; 2 Natural amputation; 3 Escaped

TORPID - DEAD
1 Torpid; 2 Dead

GRID STAKE NUMBER
9999 - Unusual location

ANIMAL NUMBER
8 Dead unmarked animal; 9 Multiple amputation

FIRST DIGIT - EAR CLIP
0 = No Clip
1 = Right ear
2 = Left ear
3 = Both ears
Animals straight cut

FIELD DATA SHEET

RV FORM 08

PLOT	DATE			OBS
	DAY	MONTH	YEAR	
II	DD	MM	YY	I
2-3	5-6	7-8	9-10	12
7	11	12	2008	C4

SEX: 1 Male; 2 Female; 9 Unknown

SEXUAL CONDITION — MALE: 1 Testes Abdominal; 2 Testes scrotal Up; 3 Testes scrotal Dwn. — FEMALE: 4 Vulva inactive, closed; 5 Vulva turgid, enlarged; 6 Cop. plug; 7 Pregnant; 8 Lactating; 9 Condition unknown

AGE: 1 Young Yr.; 2 Adult; 9 Unknown

Time	° Air Temp. C	% Rel Hum	Wind Beaut. No.	Cloud Cover	Moon
II	IIID	II	II	I	I
51-52	54-57	59-60	62-63	65	66
11:48	5		.5	0	4

SPECIES CODE	ALPHA CODE GENUS	ALPHA CODE SPECIES	NEW	ANIMAL NUMBER (RB)	NO. CONFUSED	SEX	SEXUAL COND.	AGE	TORPID-DEAD	GRID STAKE NUMBER	BODY WT. (gr.)	BRIEF NOTES	
II	AAA	AAA	I	IIII	I	I	I	I	I	IIII	IIID	AAAAAAAAA	
14-15	17-19	20-22	24	26-30	32	34	36	38	40	41-44	46-49	72-80	
	Dip	her	R							27			1
	Per	man	1			2	4	2		35	15		2
	Dip	her	R							37			3
	Dip	her	1			2	4	2		38	69		4
	Dip	her	1			1	2	2		39	55		5
	Per	man	1			2	4	1		49	6		6
													7
													8
				End 12:14									9
													10
													11
													12
													13
													14
													15
													16
													17
													18
													19
													20
													21
													22
													23
													24
													25

WIND

Beauf. No.	km.	mi.
00	.5	.5
02	9	6
04	23	14
06	40	25
08	60	38
10	84	52
12	104	65

CLOUD COVER
0 Clear; 1 Partly Cloudy; 2 Cloudy; 3 Drizzle; 4 Rain; 5 Snow; 6 Fog

MOON
0 None; 1 Quarter; 2 Half; 3 3-Quarter; 4 Full

NEW (Basic)
1 New animal; 2 Re-tag

NEW (Asses.)
5 New animal

RE-CAPTURS
Blank

TIME
Hr. from sunset

NUMBER CONFUSED
1 Tag lost; 2 Natural amputation; 3 Escaped

TORPID - DEAD
1 Torpid; 2 Dead

GRID STAKE NUMBER
9999 - Unusual location

ANIMAL NUMBER
8 Dead unmarked animal; 9 Multiple amputation

FIRST DIGIT - EAR CLIP
0 = No Clip
1 = Right ear
2 = Left ear
3 = Both ears
Animals straight cut

RV FORM 08

FIELD DATA SHEET

PLOT	DATE			OBS
	DAY	MONTH	YEAR	
II	DD	MM	YY	I
2-3	5-6	7-8	9-10	12
8	8	12	2008	CU

SEX
1 Male
2 Female
9 Unknown

AGE
1 Young Yr.
2 Adult
9 Unknown

SEXUAL CONDITION
MALE:
1 Testes Abdominal
2 Testes scrotal Up
3 Testes scrotal Dwn.
FEMALE:
4 Vulva inactive, closed
5 Vulva turgid, enlarged
6 Cop. plug
7 Pregnant
8 Lactating
9 Condition unknown

Time	Air °C	Rel Hum %	Beauf. No.	Cloud Cover	Moon		
II	IIID	II	II	I	I		
51-52	54-57	59-60	62-63	65	66		
12:59	6	.5	2	2			

RB

SPECIES CODE	ALPHA CODE GENUS	ALPHA CODE SPECIES	NEW	ANIMAL NUMBER	NO. CONFUSED	SEX	SEXUAL COND.	AGE	TORPID-DEAD	GRID STAKE NUMBER	BODY WT. (gr.)	BRIEF NOTES	
II	AAA	AAA	I	IIIII	I	I	I	I	I	IIII	IIID	AAAAAAAAA	
14-15	17-19	20-22	24	26-30	32	34	36	38	40	41-44	46-49	72-80	
	Dip	her	1			1	3	2		7	94		1
	Dip	her	1			1	2	2		10	86		2
	Per	man	1			2	4	1		13	14		3
Dip	~~Per~~	her	1			2	4	2		19	59		4
	Dip	her	1			1	3	2		27	97		5
	Dip	her	1			2	4	2		33	72		6
	Dip	her	1			1	3	2		38	90		7
	Per	man	1			2	4	1		47	12		8
	Per	man	1			2	8	2		48	17		9
				Ended at 1:33									10
													11
													12
													13
													14
													15
													16
													17
													18
													19
													20
													21
													22
													23
													24
													25
													26
													27
													28

WIND

Beauf. No.	km.	mi.
00	.5	.5
02	9	6
04	23	14
06	40	25
08	60	38
10	84	52
12	104	65

CLOUD COVER
0 Clear
1 Partly Cloudy
2 Cloudy
3 Drizzle
4 Rain
5 Snow
6 Fog

MOON
0 None
1 Quarter
2 Half
3 3-Quarter
4 Full

NEW (Basic)
1 New animal
2 Re-tag

NEW (Assess.)
5 New animal

RE-CAPTURS
Blank

TIME
Hr. from sunset

NUMBER CONFUSED
1 Tag lost
2 Natural amputation
3 Escaped

TORPID - DEAD
1 Torpid
2 Dead

GRID STAKE NUMBER
9999 = Unusual location

ANIMAL NUMBER
8 Dead unmarked animal
9 Multiple amputation

FIRST DIGIT - EAR CLIP
0 = No Clip
1 = Right ear
2 = Left ear
3 = Both ears

Animals straight cut

FIELD DATA SHEET

RV FORM 08

PLOT	DATE			OBS
	DAY	MONTH	YEAR	
II	DD	MM	YY	I
2-3	5-6	7-8	9-10	12
8	9	12	2008	cy

SEX: 1 Male; 2 Female; 9 Unknown

SEXUAL CONDITION: 1 Testes Abdominal; 2 Testes scrotal Up; 3 Testes scrotal Dwn. (MALE); 4 Vulva inactive, closed; 5 Vulva turgid, enlarged; 6 Cop. plug; 7 Pregnant; 8 Lactating; 9 Condition unknown (FEMALE)

AGE: 1 Young Yr.; 2 Adult; 9 Unknown

Time	Air Temp. °C	Rel Hum %	Beaut. Wind No.	Cloud Cover	Moon		
II	IIID	II	II	I	I		
51-52	54-57	59-60	62-63	65	66		
1210	0		.5	0	3		

SPECIES CODE	ALPHA CODE GENUS	ALPHA CODE SPECIES	NEW	ANIMAL NUMBER (RB)	NO. CONFUSED	SEX	SEXUAL COND.	AGE	TORPID-DEAD	GRID STAKE NUMBER	BODY WT. (gr.)	BRIEF NOTES	
II	AAA	AAA	I	IIII	I	I	I	I	I	IIII	IIID	AAAAAAAAA	
14-15	17-19	20-22	24	26-30	32	34	36	38	40	41-44	46-49	72-80	
	Per	man	1			1	1	1		22	12	Double catch	1
	Per	man	1			1	1	2		22	19	Double catch	2
													3
				Ended 12:17									4
													5
													6
													7
													8
													9
													10
													11
													12
													13
													14
													15
													16
													17
													18
													19
													20
													21
													22
													23
													24
													25

WIND

Beauf. No.	km.	mi.
00	.5	.5
02	9	.6
04	23	14
06	40	25
08	60	38
10	84	52
12	104	65

CLOUD COVER
0 Clear
1 Partly Cloudy
2 Cloudy
3 Drizzle
4 Rain
5 Snow
6 Fog

MOON
0 None
1 Quarter
2 Half
3 3-Quarter
4 Full

NEW (Basic)
1 New animal
2 Re-tag

NEW (Asses.)
5 New animal

RE-CAPTURS
Blank

TIME
Hr. from sunset

NUMBER CONFUSED
1 Tag lost
2 Natural amputation
3 Escaped

TORPID - DEAD
1 Torpid
2 Dead

GRID STAKE NUMBER
9999 - Unusual location

ANIMAL NUMBER
8 Dead unmarked animal
9 Multiple amputation

FIRST DIGIT - EAR CLIP
0 = No Clip
1 = Right ear
2 = Left ear
3 = Both ears
Animals straight cut

FIELD DATA SHEET

RV FORM 08

PLOT	DATE			OBS
	DAY	MONTH	YEAR	
II	DD	MM	YY	I
2-3	5-6	7-8	9-10	12
8	10	12	2008	Cu

SEX: 1 Male; 2 Female; 9 Unknown

SEXUAL CONDITION: 1 Testes Abdominal; 2 Testes scrotal Up; 3 Testes scrotal Dwn. (MALE); 4 Vulva inactive, closed; 5 Vulva turgid, enlarged; 6 Cop. plug; 7 Pregnant; 8 Lactating; 9 Condition unknown (FEMALE)

AGE: 1 Young Yr.; 2 Adult; 9 Unknown

Time	Air Temp. °C	Rel Hum %	Beaut. No. Wind	Cloud Cover	Moon		
II	IIID	II	II	I	I		
51-52	54-57	59-60	62-63	65	66		
12:24	4		15	0	4		

RB

SPECIES CODE	ALPHA CODE GENUS	ALPHA CODE SPECIES	NEW	ANIMAL NUMBER	NO. CONFUSED	SEX	SEXUAL COND	AGE	TORPID-DEAD	GRID STAKE NUMBER	BODY WT. (gr.)	BRIEF NOTES	
II	AAA	AAA	I	IIIII	I	I	I	I	I	IIII	IIID	AAAAAAAAA	
14-15	17-19	20-22	24	26-30	32	34	36	38	40	41-44	46-49	72-80	
	Dip	her	R							3			1
	Dip	her	1			2	4	2		20	69		2
	Per	man	1			2	4	2		21	14		3
	Dip	her	1			1	3	2		24	91		4
	Per	man	1			1	2	2		26	24		5
	Per	man	1			2	4	2		30	15		6
	Dip	her	R							31		Bloody Nose	7
													8
				End 12:44									9
													10
													11
													12
													13
													14
													15
													16
													17
													18
													19
													20
													21
													22
													23
													24
													25

WIND

Beauf. No.	km.	mi.
00	.5	.5
02	9	6
04	23	14
06	40	25
08	60	38
10	84	52
12	104	65

CLOUD COVER
0 Clear; 1 Partly Cloudy; 2 Cloudy; 3 Drizzle; 4 Rain; 5 Snow; 6 Fog

MOON
0 None; 1 Quarter; 2 Half; 3 3-Quarter; 4 Full

NEW (Basic)
1 New animal; 2 Re-tag

NEW (Asses.)
5 New animal

RE-CAPTURS
Blank

TIME
Hr. from sunset

NUMBER CONFUSED
1 Tag lost; 2 Natural amputation; 3 Escaped

TORPID - DEAD
1 Torpid; 2 Dead

GRID STAKE NUMBER
9999 - Unusual location

ANIMAL NUMBER
8 Dead unmarked animal; 9 Multiple amputation

FIRST DIGIT - EAR CLIP
0 = No Clip
1 = Right ear
2 = Left ear
3 = Both ears
Animals straight cut

FIELD DATA SHEET

RV FORM 08

PLOT	DATE			OBS
	DAY	MONTH	YEAR	
II	DD	MM	YY	I
2-3	5-6	7-8	9-10	12
8	11	12	2008	C4

SEX: 1 Male; 2 Female; 9 Unknown

SEXUAL CONDITION: 1 Testes Abdominal; 2 Testes scrotal Up; 3 Testes scrotal Dwn. (MALE); 4 Vulva inactive, closed; 5 Vulva turgid, enlarged; 6 Cop. plug; 7 Pregnant; 8 Lactating; 9 Condition unknown (FEMALE)

AGE: 1 Young Yr.; 2 Adult; 9 Unknown

Time	Air Temp. °C	Rel Hum %	Beaut. Wind No.	Cloud Cover	Moon		
II	IIID	II	II	I	I		
51-52	54-57	59-60	62-63	65	66		
12:18	5		.5	0	4		

RB

	SPECIES CODE	ALPHA CODE GENUS	ALPHA CODE SPECIES	NEW	ANIMAL NUMBER	NO. CONFUSED	SEX	SEXUAL COND.	AGE	TORPID-DEAD	GRID STAKE NUMBER	BODY WT. (gr.)	BRIEF NOTES	
	II	AAA	AAA	I	IIIII	I	I	I	I	I	IIII	IIID	AAAAAAAAA	
	14-15	17-19	20-22	24	26-30	32	34	36	38	40	41-44	46-49	72-80	
1		Per	man	1			2	4	1		1	7		1
2		Per	man	1			1	2	2		3	19		2
3		Dip	her	R							4			3
4		Per	man	1			2	8	2		22	21	Huge Tumor on right side	4
5		Dip	her	R							24			5
6		Per	man	1			1	2	2		25	19		6
7		Per	man	1			1	2	2		29	16		7
8		Dip	her	1			1	2	2		34	78		8
9														9
10					End 12:43									10
11														11
12														12
13														13
14														14
15														15
16														16
17														17
18														18
19														19
20														20
21														21
22														22
23														23
24														24
25														25

WIND

Beauf. No.	km.	mi.
00	.5	.5
02	9	6
04	23	14
06	40	25
08	60	38
10	84	52
12	104	65

CLOUD COVER
0 Clear; 1 Partly Cloudy; 2 Cloudy; 3 Drizzle; 4 Rain; 5 Snow; 6 Fog

MOON
0 None; 1 Quarter; 2 Half; 3 3-Quarter; 4 Full

NEW (Basic)
1 New animal; 2 Re-tag

NEW (Asses.)
5 New animal

RE-CAPTURS
Blank

TIME
Hr. from sunset

NUMBER CONFUSED
1 Tag lost; 2 Natural amputation; 3 Escaped

TORPID - DEAD
1 Torpid; 2 Dead

GRID STAKE NUMBER
9999 - Unusual location

ANIMAL NUMBER
8 Dead unmarked animal; 9 Multiple amputation

FIRST DIGIT - EAR CLIP
0 = No Clip
1 = Right ear
2 = Left ear
3 = Both ears
Animals straight cut

JURISDICTIONAL DELINEATION DATA SHEETS

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WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site:	San Joaquin Solar	City/County: Fresno County		Sampling Date: 1/14/2009	
Applicant/Owner:		State: CA		Sampling Point: 1DP1U	
Investigator(s):	Curtis Uptain/Woody Moise	Section, Township, Range:			
Landform (hillslope, terrace, etc.):	Terrace	Local Relief (concave, convex, none): Flat		Slope (%): 0	
Subregion (LRR):	LRR C	Lat:	Long:	Datum: WGS 1984	
Soil Map Unit Name:			NWI Classification:		
Are climatic/hydrological conditions on the site typical for this time of the year?	☑ Yes ☐ No				
Are Vegetation, ☐ Soil, ☑ or Hydrology ☐	significantly disturbed?	Are "Normal Circumstances" Present?	☑ Yes ☐ No		
Are Vegetation, ☐ Soil, ☐ or Hydrology ☐	naturally problematic?	(If needed, explain answers in remarks)			

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	☐ Yes	☑ No	**Is the Sampled Area within a Wetland?** ☐ Yes ☑ No
Hydric Soil Present?	☐ Yes	☑ No	
Wetland Hydrology Present?	☐ Yes	☑ No	

Remarks: Soil pit on bank in upland. Past work in channel has pushed soil from channel onto bank.

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1. Populus fremontii	15%	X	FACW
2. Tamarix aphylla	10%	X	FACW
3.			
4.			
Total Cover:	0.25		
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:	0		
Herb Stratum			
1. Sisymbrium orientale	25%	X	NOL
2. Bromus diandrus	20%	X	NOL
3. Amsinckia menziesii	5%		NOL
4. Bromus madritensis	15%	X	NI
5.			
6.			
7.			
8.			
Total Cover:	0.65		
Woody Vine Stratum			
1.			
2.			
Total Cover:	0		
% Bare Ground in Herb Stratum: 50%	% Cover of Biotic Crust: 0%		

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 40% (A/B)

Prevalence Index worksheet:

	Total % Cover of:		Multiplied by:
OBL species		x1 =	
FACW species	25	x2 =	50
FAC species		x3 =	
FACU species		x4 =	
UPL species	65	x5 =	325
Column Totals:	90	(A)	375 (B)

Prevalence Index = B/A = 4.166666667

Hydrophytic Vegetation Indicators:

☐ Dominance Test is >50%

☐ Prevalence Index is ≤3.0[1]

☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? ☐ Yes ☑ No

Remarks:

SOIL

Sampling Point: 1DP1U

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-20	10 YR3/3	100	None				Sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):
Type:
Depth (inches):

Hydric Soil Present? ☐ Yes ☑ No

Remarks: No evidence of hydric soil indicators.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizopheres along Living Roots (C3)
- ☐ Presence Of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? ☐ Yes ☑ No Depth (inches):
Water Table Present? ☐ Yes ☑ No Depth (inches):
Saturation Present? (Includes capillary fringe) ☐ Yes ☑ No Depth (inches):

Wetland Hydrology Present? ☐ Yes ☑ No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: No evidence of hydrology.

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site:	San Joaquin Solar	City/County: Fresno County		Sampling Date: 1/14/2009	
Applicant/Owner:		State: CA		Sampling Point: 1DP1W	
Investigator(s):	Curtis Uptain/Woody Moise	Section, Township, Range:			
Landform (hillslope, terrace, etc.):	Channel	Local Relief (concave, convex, none): Concave		Slope (%): 2	
Subregion (LRR):	LRR C	Lat:	Long:	Datum: WGS 1984	
Soil Map Unit Name:			NWI Classification:		
Are climatic/hydrological conditions on the site typical for this time of the year?		☑ Yes	☐ No		
Are Vegetation, ☐ Soil, ☐ or Hydrology ☐	significantly disturbed?	Are "Normal Circumstances" Present?	☑ Yes	☐ No	
Are Vegetation, ☐ Soil, ☐ or Hydrology ☐	naturally problematic?	(If needed, explain answers in remarks)			

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	☐ Yes	☑ No	**Is the Sampled Area within a Wetland?**	☐ Yes ☑ No
Hydric Soil Present?	☐ Yes	☑ No		
Wetland Hydrology Present?	☑ Yes	☐ No		

Remarks:

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	0		
Sapling/Shrub Stratum			
1. Lepidospartum squamatum	5%	X	NOL
2.			
3.			
4.			
5.			
Total Cover:	0.05		
Herb Stratum			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	0		
Woody Vine Stratum			
1.			
2.			
Total Cover:	0		
% Bare Ground in Herb Stratum: 95%	% Cover of Biotic Crust: 0%		

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiplied by:	
OBL species		x1 =	
FACW species		x2 =	
FAC species		x3 =	
FACU species		x4 =	
UPL species		x5 =	
Column Totals:	0 (A)		0 (B)

Prevalence Index = B/A = #DIV/0!

Hydrophytic Vegetation Indicators:

☐ Dominance Test is >50%

☐ Prevalence Index is ≤3.0[1]

☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? ☐ Yes ☑ No

Remarks:

SOIL

Sampling Point: 1DP1W

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-20	10 YR 3/2	100					Sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):
Type:
Depth (inches):

Hydric Soil Present? ☐ Yes ☑ No

Remarks: No evidence of hydric soil indicators.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizopheres along Living Roots (C3)
- ☐ Presence Of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☑ Drift Deposits (B3) (**Riverine**)
- ☑ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? ☐ Yes ☑ No Depth (inches):
Water Table Present? ☐ Yes ☑ No Depth (inches):
Saturation Present? (Includes capillary fringe) ☐ Yes ☑ No Depth (inches):

Wetland Hydrology Present? ☑ Yes ☐ No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Secondary indicators in channel bottom.

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site:	San Joaquin Solar	City/County: Fresno County		Sampling Date: 1/14/2009	
Applicant/Owner:		State: CA		Sampling Point: 2DP1U	
Investigator(s):	Curtis Uptain/Woody Moise	Section, Township, Range:			
Landform (hillslope, terrace, etc.):	Terrace	Local Relief (concave, convex, none): None		Slope (%): 0-2	
Subregion (LRR):	LRR C	Lat:	Long:	Datum: WGS 1984	
Soil Map Unit Name:			NWI Classification:		
Are climatic/hydrological conditions on the site typical for this time of the year?	☑ Yes	☐ No			
Are Vegetation, ☐ Soil, ☐ or Hydrology ☐	significantly disturbed?	Are "Normal Circumstances" Present?	☑ Yes	☐ No	
Are Vegetation, ☐ Soil, ☐ or Hydrology ☐	naturally problematic?	(If needed, explain answers in remarks)			

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	☐ Yes	☑ No	**Is the Sampled Area within a Wetland?**	☐ Yes ☑ No
Hydric Soil Present?	☐ Yes	☑ No		
Wetland Hydrology Present?	☐ Yes	☑ No		

Remarks:

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1. Tamarix aphylla	8%	X	FACW
2.			
3.			
4.			
Total Cover:	0.08		
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:	0		
Herb Stratum			
1. Amsinckia menziesii	15%		NOL
2. Bromus diandrus	60%	X	NOL
3. Hordeum murinum	5%		NI
4. Erodium cicutarium	2%		NOL
5. Sisymbrium irio	4%		NOL
6.			
7.			
8.			
Total Cover:	0.86		
Woody Vine Stratum			
1.			
2.			
Total Cover:	0		
% Bare Ground in Herb Stratum: 6%	% Cover of Biotic Crust:		

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50% (A/B)

Prevalence Index worksheet:

	Total % Cover of:		Multiplied by:
OBL species		x1 =	
FACW species		x2 =	
FAC species		x3 =	
FACU species		x4 =	
UPL species		x5 =	
Column Totals:	0 (A)		0 (B)

Prevalence Index = B/A = #DIV/0!

Hydrophytic Vegetation Indicators:

☐ Dominance Test is >50%

☐ Prevalence Index is ≤3.0[1]

☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? ☐ Yes ☑ No

Remarks:

SOIL

Sampling Point: 2DP1U

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	7.5 YR 3/3	100	None				Sandy loam	silty clay
16-21	10 YR 4/3	75	None				Sandy loam	Sandy loam with intrusions as clumps

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):
Type: _____
Depth (inches): _____

Hydric Soil Present? ☐ Yes ☑ No

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizopheres along Living Roots (C3)
- ☐ Presence Of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? ☐ Yes ☐ No Depth (inches): _____
Water Table Present? ☐ Yes ☐ No Depth (inches): _____
Saturation Present? (Includes capillary fringe) ☐ Yes ☐ No Depth (inches): _____

Wetland Hydrology Present? ☐ Yes ☑ No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site:	San Joaquin Solar	City/County: Fresno County		Sampling Date: 1/14/2009	
Applicant/Owner:		State: CA		Sampling Point: 2DP1W	
Investigator(s):	Curtis Uptain/Woody Moise	Section, Township, Range:			
Landform (hillslope, terrace, etc.):	Creek channel	Local Relief (concave, convex, none): Concave		Slope (%): 2-4	
Subregion (LRR):	LRR C	Lat:	Long:	Datum: WGS 1984	
Soil Map Unit Name:			NWI Classification:		
Are climatic/hydrological conditions on the site typical for this time of the year?	☑ Yes	☐ No			
Are Vegetation, ☐ Soil, ☐ or Hydrology ☐	significantly disturbed?	Are "Normal Circumstances" Present?	☑ Yes	☐ No	
Are Vegetation, ☐ Soil, ☐ or Hydrology ☐	naturally problematic?	(If needed, explain answers in remarks)			

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	☐ Yes	☑ No	**Is the Sampled Area within a Wetland?**	☐ Yes ☑ No
Hydric Soil Present?	☐ Yes	☑ No		
Wetland Hydrology Present?	☑ Yes	☐ No		

Remarks: Soil pit on bank in upland. Past work in channel has pushed soil from channel onto bank.

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	0		
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:	0		
Herb Stratum			
1. Hordeum murinum	3%		NI
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	0.03		
Woody Vine Stratum			
1.			
2.			
Total Cover:	0		
% Bare Ground in Herb Stratum: 9%	% Cover of Biotic Crust:		

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: N/A (A)

Total Number of Dominant Species Across All Strata: (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: #VALUE! (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiplied by:	
OBL species		x1 =	
FACW species		x2 =	
FAC species		x3 =	
FACU species		x4 =	
UPL species		x5 =	
Column Totals:	(A)		(B)

Prevalence Index = B/A = #DIV/0!

Hydrophytic Vegetation Indicators:

☐ Dominance Test is >50%

☐ Prevalence Index is ≤3.0[1]

☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? ☐ Yes ☑ No

Remarks: Essentially unvegetated.

SOIL

Sampling Point: 2DP1W

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-20	10 YR 3/2	100					5	Pea gravel in 14-20"

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):
Type: _____
Depth (inches): _____

Hydric Soil Present? ☐ Yes ☑ No

Remarks: No evidence of hydric soil indicators.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizopheres along Living Roots (C3)
- ☐ Presence Of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☑ Drift Deposits (B3) (**Riverine**)
- ☑ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? ☐ Yes ☐ No Depth (inches): _____
Water Table Present? ☐ Yes ☐ No Depth (inches): _____
Saturation Present? (Includes capillary fringe) ☐ Yes ☐ No Depth (inches): _____

Wetland Hydrology Present? ☑ Yes ☐ No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site:	San Joaquin Solar	City/County: Fresno County	Sampling Date: 1/14/2009
Applicant/Owner:		State: CA	Sampling Point: 3DP1U
Investigator(s):	Curtis Uptain/Woody Moise	Section, Township, Range:	
Landform (hillslope, terrace, etc.):	River terrace	Local Relief (concave, convex, none): None	Slope (%): 0-4
Subregion (LRR):	LRR C	Lat: Long:	Datum: WGS 1984
Soil Map Unit Name:		NWI Classification:	

Are climatic/hydrological conditions on the site typical for this time of the year? ☑ Yes ☐ No

Are Vegetation, ☑ Soil, ☑ or Hydrology ☑ significantly disturbed? Are "Normal Circumstances" Present? ☐ Yes ☑ No

Are Vegetation, ☐ Soil, ☐ or Hydrology ☐ naturally problematic? (If needed, explain answers in remarks)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	☐ Yes	☑ No	**Is the Sampled Area within a Wetland?** ☐ Yes ☑ No
Hydric Soil Present?	☐ Yes	☑ No	
Wetland Hydrology Present?	☐ Yes	☑ No	

Remarks: Creek bed is channeled, and banks are graded.

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	0		
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:	0		
Herb Stratum			
1. Ambrosia psilostachya	20%	X	FAC
2. Lessingia sp.	50%	X	NOL
3. Bromus madritensis	10%		NI
4.			
5.			
6.			
7.			
8.			
Total Cover:	0.8		
Woody Vine Stratum			
1.			
2.			
Total Cover:	0		
% Bare Ground in Herb Stratum: 15%	% Cover of Biotic Crust: 0%		

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiplied by:	
OBL species		x1 =	
FACW species		x2 =	
FAC species		x3 =	
FACU species		x4 =	
UPL species		x5 =	
Column Totals:	(A)		(B)

Prevalence Index = B/A = #DIV/0!

Hydrophytic Vegetation Indicators:

☐ Dominance Test is >50%

☐ Prevalence Index is ≤3.0[1]

☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? ☐ Yes ☑ No

Remarks: Essentially unvegetated.

SOIL

Sampling Point: 3DP1U

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
1-12	2.5 YI 3/2	100					SL	Sandy loam
12-20	10 YR 3/2	100					5	Loose sand

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):
Type: _____
Depth (inches): _____

Hydric Soil Present? ☐ Yes ☑ No

Remarks: No evidence of hydric soil indicators.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizopheres along Living Roots (C3)
- ☐ Presence Of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? ☐ Yes ☑ No Depth (inches): _____
Water Table Present? ☐ Yes ☑ No Depth (inches): _____
Saturation Present? (Includes capillary fringe) ☐ Yes ☑ No Depth (inches): _____

Wetland Hydrology Present? ☐ Yes ☑ No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site:	San Joaquin Solar	City/County: Fresno County	Sampling Date: 1/14/2009
Applicant/Owner:		State: CA	Sampling Point: 3DP1W
Investigator(s):	Curtis Uptain/Woody Moise	Section, Township, Range:	
Landform (hillslope, terrace, etc.):	Creek channel	Local Relief (concave, convex, none): Concave	Slope (%): 5
Subregion (LRR):	LRR C	Lat: Long:	Datum: WGS 1984
Soil Map Unit Name:		NWI Classification:	

Are climatic/hydrological conditions on the site typical for this time of the year? ☑ Yes ☐ No

Are Vegetation, ☑ Soil, ☑ or Hydrology ☑ significantly disturbed? Are "Normal Circumstances" Present? ☐ Yes ☑ No

Are Vegetation, ☐ Soil, ☐ or Hydrology ☐ naturally problematic? (If needed, explain answers in remarks)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	☐ Yes	☑ No	**Is the Sampled Area within a Wetland?** ☐ Yes ☑ No
Hydric Soil Present?	☐ Yes	☑ No	
Wetland Hydrology Present?	☑ Yes	☐ No	

Remarks: Soil sandy - no redox features. Wetland hydrology only indicator present. The creek bed at this location has been channelled and the banks have been graded.

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	0		
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:	0		
Herb Stratum			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	0		
Woody Vine Stratum			
1.			
2.			
Total Cover:	0		
% Bare Ground in Herb Stratum: 100%	% Cover of Biotic Crust: 5%		

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: N/A (A)

Total Number of Dominant Species Across All Strata: (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: #VALUE! (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiplied by:	
OBL species		x1 =	
FACW species		x2 =	
FAC species		x3 =	
FACU species		x4 =	
UPL species		x5 =	
Column Totals:	(A)		(B)

Prevalence Index = B/A = #DIV/0!

Hydrophytic Vegetation Indicators:

☐ Dominance Test is >50%

☐ Prevalence Index is ≤3.0[1]

☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? ☐ Yes ☑ No

Remarks: Essentially unvegetated.

SOIL

Sampling Point: 3DP1W

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-20	7.5 YR 3/3	100					5	Sandy with silt-sand fragments

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):
Type:
Depth (inches):

Hydric Soil Present? ☐ Yes ☑ No

Remarks: No evidence of hydric soil indicators.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☑ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizopheres along Living Roots (C3)
- ☐ Presence Of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☑ Drift Deposits (B3) (**Riverine**)
- ☑ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? ☐ Yes ☑ No Depth (inches):
Water Table Present? ☐ Yes ☑ No Depth (inches):
Saturation Present? (Includes capillary fringe) ☐ Yes ☑ No Depth (inches):

Wetland Hydrology Present? ☑ Yes ☐ No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Channel and banks have been graded.

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site:	San Joaquin Solar	City/County: Fresno County	Sampling Date: 1/14/2009
Applicant/Owner:		State: CA	Sampling Point: 4DP1U
Investigator(s):	Curtis Uptain/Woody Moise	Section, Township, Range:	
Landform (hillslope, terrace, etc.):	Terrace	Local Relief (concave, convex, none): Convex	Slope (%): 5
Subregion (LRR):	LRR C	Lat: Long:	Datum: WGS 1984
Soil Map Unit Name:		NWI Classification:	

Are climatic/hydrological conditions on the site typical for this time of the year? ☑ Yes ☐ No

Are Vegetation, ☑ Soil, ☐ or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" Present? ☐ Yes ☐ No

Are Vegetation, ☐ Soil, ☐ or Hydrology ☐ naturally problematic? (If needed, explain answers in remarks)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	☐ Yes	☑ No	**Is the Sampled Area within a Wetland?** ☐ Yes ☑ No
Hydric Soil Present?	☐ Yes	☑ No	
Wetland Hydrology Present?	☐ Yes	☑ No	

Remarks: Soil pit on bank in upland. Past work in channel has pushed soil from channel onto bank.

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	0		
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:	0		
Herb Stratum			
1. Bromus madritensis	30%	X	NI
2. Bromus diandrus	15%		NOL
3. Marrubium vulgare	5%		FAC
4. Salsola tragus	40%	X	FACU
5.			
6.			
7.			
8.			
Total Cover:	0.9		
Woody Vine Stratum			
1.			
2.			
Total Cover:	0		
% Bare Ground in Herb Stratum: 10%	% Cover of Biotic Crust: 0%		

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

	Total % Cover of:		Multiplied by:
OBL species		x1 =	
FACW species		x2 =	
FAC species		x3 =	
FACU species		x4 =	
UPL species		x5 =	
Column Totals:	0 (A)		0 (B)

Prevalence Index = B/A = #DIV/0!

Hydrophytic Vegetation Indicators:

☐ Dominance Test is >50%

☐ Prevalence Index is ≤3.0[1]

☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? ☐ Yes ☑ No

Remarks:

SOIL

Sampling Point: 4DP1U

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-20	10 YR 3/2	100					5	Fine sand

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):
Type: _____
Depth (inches): _____

Hydric Soil Present? ☐ Yes ☑ No

Remarks: No hydric soil indicators.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizopheres along Living Roots (C3)
- ☐ Presence Of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? ☐ Yes ☑ No Depth (inches): _____
Water Table Present? ☐ Yes ☑ No Depth (inches): _____
Saturation Present? (Includes capillary fringe) ☐ Yes ☑ No Depth (inches): _____

Wetland Hydrology Present? ☐ Yes ☑ No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Low terrace above creek channel.

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site:	San Joaquin Solar	City/County: Fresno County		Sampling Date: 1/14/2009	
Applicant/Owner:		State: CA		Sampling Point: 4DP1W	
Investigator(s):	Curtis Uptain/Woody Moise	Section, Township, Range:			
Landform (hillslope, terrace, etc.):	Creek channel	Local Relief (concave, convex, none): Concave		Slope (%): 2	
Subregion (LRR):	LRR C	Lat:	Long:	Datum: WGS 1984	
Soil Map Unit Name:			NWI Classification:		
Are climatic/hydrological conditions on the site typical for this time of the year?	☑ Yes	☐ No			
Are Vegetation, ☐ Soil, ☐ or Hydrology ☐	significantly disturbed?	Are "Normal Circumstances" Present?	☑ Yes	☐ No	
Are Vegetation, ☐ Soil, ☐ or Hydrology ☐	naturally problematic?	(If needed, explain answers in remarks)			

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	☐ Yes	☑ No	**Is the Sampled Area within a Wetland?**	☐ Yes ☑ No
Hydric Soil Present?	☐ Yes	☑ No		
Wetland Hydrology Present?	☑ Yes	☐ No		

Remarks:

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	0		
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:	0		
Herb Stratum			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	0		
Woody Vine Stratum			
1.			
2.			
Total Cover:	0		
% Bare Ground in Herb Stratum: 100%	% Cover of Biotic Crust: 0%		

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: N/A (A)

Total Number of Dominant Species Across All Strata: (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: #VALUE! (A/B)

Prevalence Index worksheet:

	Total % Cover of:		Multiplied by:
OBL species		x1 =	
FACW species		x2 =	
FAC species		x3 =	
FACU species		x4 =	
UPL species		x5 =	
Column Totals:	0 (A)		0 (B)

Prevalence Index = B/A = #DIV/0!

Hydrophytic Vegetation Indicators:

☐ Dominance Test is >50%

☐ Prevalence Index is ≤3.0[1]

☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? ☐ Yes ☑ No

Remarks: Unvegetated channel.

SOIL

Sampling Point: 4DP1W

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-20	7.5 YR 3/2	100					5	Coarse and fine sands layered

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):
Type: _____
Depth (inches): _____

Hydric Soil Present? ☐ Yes ☑ No

Remarks: No hydric soil indicators present.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizopheres along Living Roots (C3)
- ☐ Presence Of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☑ Drift Deposits (B3) (**Riverine**)
- ☑ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? ☐ Yes ☐ No Depth (inches): _____
Water Table Present? ☐ Yes ☐ No Depth (inches): _____
Saturation Present? (Includes capillary fringe) ☐ Yes ☐ No Depth (inches): _____

Wetland Hydrology Present? ☑ Yes ☐ No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site:	San Joaquin Solar	City/County: Fresno County		Sampling Date: 1/14/2009	
Applicant/Owner:		State: CA		Sampling Point: 5DP1U	
Investigator(s):	Curtis Uptain/Woody Moise	Section, Township, Range:			
Landform (hillslope, terrace, etc.):	Terrace	Local Relief (concave, convex, none): Concave		Slope (%): 2	
Subregion (LRR):	LRR C	Lat:	Long:	Datum: WGS 1984	
Soil Map Unit Name:			NWI Classification:		
Are climatic/hydrological conditions on the site typical for this time of the year?	☑ Yes ☐ No				
Are Vegetation, ☐ Soil, ☐ or Hydrology ☐	significantly disturbed?	Are "Normal Circumstances" Present?	☑ Yes ☐ No		
Are Vegetation, ☐ Soil, ☐ or Hydrology ☐	naturally problematic?	(If needed, explain answers in remarks)			

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	☐ Yes	☑ No	**Is the Sampled Area within a Wetland?** ☐ Yes ☑ No
Hydric Soil Present?	☐ Yes	☑ No	
Wetland Hydrology Present?	☐ Yes	☑ No	

Remarks: Point taken on terrace above channel.

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	0		
Sapling/Shrub Stratum			
1. Artemisia californica	5%	X	NOL
2.			
3.			
4.			
5.			
Total Cover:	0.05		
Herb Stratum			
1. Artemisia douglasiana	5%		FACW
2. Brassica nigra	2%		NOL
3. Ambrosia psilostachya	5%		FACW
4. Bromus madritensis	25%	X	NI
5.			
6.			
7.			
8.			
Total Cover:	0.37		
Woody Vine Stratum			
1.			
2.			
Total Cover:	0		
% Bare Ground in Herb Stratum: 58%	% Cover of Biotic Crust:		

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiplied by:	
OBL species		x1 =	
FACW species		x2 =	
FAC species		x3 =	
FACU species		x4 =	
UPL species		x5 =	
Column Totals:	0 (A)		0 (B)

Prevalence Index = B/A = #DIV/0!

Hydrophytic Vegetation Indicators:

- ☐ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? ☐ Yes ☑ No

Remarks:

SOIL

Sampling Point: 5DP1U

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-20	7.5 YR 3/3	100					5	Fine sand

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):
Type: _____
Depth (inches): _____

Hydric Soil Present? ☐ Yes ☑ No

Remarks: No hydric soil indicators present.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizopheres along Living Roots (C3)
- ☐ Presence Of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? ☐ Yes ☑ No Depth (inches): _____
Water Table Present? ☐ Yes ☑ No Depth (inches): _____
Saturation Present? (Includes capillary fringe) ☐ Yes ☑ No Depth (inches): _____

Wetland Hydrology Present? ☐ Yes ☑ No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site:	San Joaquin Solar	City/County: Fresno County		Sampling Date: 1/14/2009	
Applicant/Owner:		State: CA		Sampling Point: 5DP1W	
Investigator(s):	Curtis Uptain/Woody Moise	Section, Township, Range:			
Landform (hillslope, terrace, etc.):	Creek channel	Local Relief (concave, convex, none): Convex		Slope (%): 2	
Subregion (LRR):	LRR C	Lat:	Long:	Datum: WGS 1984	
Soil Map Unit Name:			NWI Classification:		
Are climatic/hydrological conditions on the site typical for this time of the year?	☑ Yes	☐ No			
Are Vegetation, ☐ Soil, ☐ or Hydrology ☐	significantly disturbed?	Are "Normal Circumstances" Present?	☑ Yes	☐ No	
Are Vegetation, ☐ Soil, ☐ or Hydrology ☐	naturally problematic?	(If needed, explain answers in remarks)			

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	☐ Yes	☑ No	**Is the Sampled Area within a Wetland?**	☐ Yes ☑ No
Hydric Soil Present?	☐ Yes	☑ No		
Wetland Hydrology Present?	☑ Yes	☐ No		

Remarks: Point taken on terrace above channel.

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	0		
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:	0		
Herb Stratum			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	0		
Woody Vine Stratum			
1.			
2.			
Total Cover:	0		
% Bare Ground in Herb Stratum: 100%	% Cover of Biotic Crust:		

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: N/A (A)

Total Number of Dominant Species Across All Strata: (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: #VALUE! (A/B)

Prevalence Index worksheet:

	Total % Cover of:		Multiplied by:
OBL species		x1 =	
FACW species		x2 =	
FAC species		x3 =	
FACU species		x4 =	
UPL species		x5 =	
Column Totals:	0 (A)		0 (B)

Prevalence Index = B/A = #DIV/0!

Hydrophytic Vegetation Indicators:

☐ Dominance Test is >50%

☐ Prevalence Index is ≤3.0[1]

☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? ☐ Yes ☑ No

Remarks: Unvegetated channel.

SOIL

Sampling Point: 5DP1W

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-20	10 YR 3/2	100					5	Coarse sand

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):
Type: _____
Depth (inches): _____

Hydric Soil Present? ☐ Yes ☑ No

Remarks: No hydric soil indicators present.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizopheres along Living Roots (C3)
- ☐ Presence Of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☑ Drift Deposits (B3) (**Riverine**)
- ☑ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? ☐ Yes ☑ No Depth (inches): _____
Water Table Present? ☐ Yes ☑ No Depth (inches): _____
Saturation Present? (Includes capillary fringe) ☐ Yes ☑ No Depth (inches): _____

Wetland Hydrology Present? ☑ Yes ☐ No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site:	San Joaquin Solar	City/County: Fresno County		Sampling Date: 1/14/2009	
Applicant/Owner:		State: CA		Sampling Point: 6DP1U	
Investigator(s):	Curtis Uptain/Woody Moise	Section, Township, Range:			
Landform (hillslope, terrace, etc.):	Terrace	Local Relief (concave, convex, none): None		Slope (%): 0	
Subregion (LRR):	LRR C	Lat:	Long:	Datum: WGS 1984	
Soil Map Unit Name:			NWI Classification:		
Are climatic/hydrological conditions on the site typical for this time of the year?	☑ Yes	☐ No			
Are Vegetation, ☐ Soil, ☐ or Hydrology ☐	significantly disturbed?	Are "Normal Circumstances" Present?	☐ Yes	☑ No	
Are Vegetation, ☐ Soil, ☐ or Hydrology ☐	naturally problematic?	(If needed, explain answers in remarks)			

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	☐ Yes	☑ No	**Is the Sampled Area within a Wetland?**	☐ Yes ☑ No
Hydric Soil Present?	☐ Yes	☑ No		
Wetland Hydrology Present?	☐ Yes	☑ No		

Remarks: Rip rap upstream confines channel.

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	0		
Sapling/Shrub Stratum			
1. Artemisia californica	7%	X	NOL
2.			
3.			
4.			
5.			
Total Cover:	0.07		
Herb Stratum			
1. Bromus madritensis	50%	X	NI
2. Lessingia sp.	5%		NOL
3. Amsinckia menziesii	2%		NOL
4.			
5.			
6.			
7.			
8.			
Total Cover:	0.57		
Woody Vine Stratum			
1.			
2.			
Total Cover:	0		
% Bare Ground in Herb Stratum: 36%	% Cover of Biotic Crust: 2%		

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiplied by:	
OBL species		x1 =	
FACW species		x2 =	
FAC species		x3 =	
FACU species		x4 =	
UPL species		x5 =	
Column Totals:	0 (A)		0 (B)

Prevalence Index = B/A = #DIV/0!

Hydrophytic Vegetation Indicators:

☐ Dominance Test is >50%

☐ Prevalence Index is ≤3.0[1]

☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? ☐ Yes ☑ No

Remarks:

SOIL

Sampling Point: 6DP1U

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-20	7.5 YR 3/3	100					5	Sand with cobbles

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):
Type: _____
Depth (inches): _____

Hydric Soil Present? ☐ Yes ☑ No

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizopheres along Living Roots (C3)
- ☐ Presence Of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? ☐ Yes ☑ No Depth (inches): _____
Water Table Present? ☐ Yes ☑ No Depth (inches): _____
Saturation Present? (Includes capillary fringe) ☐ Yes ☑ No Depth (inches): _____

Wetland Hydrology Present? ☐ Yes ☑ No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site:	San Joaquin Solar	City/County: Fresno County	Sampling Date: 1/14/2009
Applicant/Owner:		State: CA	Sampling Point: 6DP1W
Investigator(s):	Curtis Uptain/Woody Moise	Section, Township, Range:	
Landform (hillslope, terrace, etc.):	Creek channel	Local Relief (concave, convex, none): Convex	Slope (%): 2
Subregion (LRR):	LRR C	Lat: Long:	Datum: WGS 1984
Soil Map Unit Name:		NWI Classification:	

Are climatic/hydrological conditions on the site typical for this time of the year? ☑ Yes ☐ No

Are Vegetation, ☐ Soil, ☐ or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" Present? ☑ Yes ☐ No

Are Vegetation, ☐ Soil, ☐ or Hydrology ☐ naturally problematic? (If needed, explain answers in remarks)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	☑ Yes	☐ No	**Is the Sampled Area within a Wetland?** ☐ Yes ☑ No
Hydric Soil Present?	☐ Yes	☑ No	
Wetland Hydrology Present?	☑ Yes	☐ No	

Remarks: Upstream, rip rap has confined channel, whereas here is open, broad, unconfined. Hydrologic and vegetative indicators present, but hydric soil indicators are not. Point taken within OHWM of channel.

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1. Populus fremontii	18%	X	FACW
2.			
3.			
4.			
Total Cover:	0.18		
Sapling/Shrub Stratum			
1. Baccharis salicifolia	5%	X	FACW
2. Artemesia californica	10%	X	NOL
3. Tamarix ramosissima	5%	X	FACW
4. Nicotiana glauca	3%		
5.			
Total Cover:	0.23		
Herb Stratum			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	0		
Woody Vine Stratum			
1.			
2.			
Total Cover:	0		

% Bare Ground in Herb Stratum: 80% | % Cover of Biotic Crust:

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 75% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiplied by:	
OBL species		x1 =	
FACW species	23	x2 =	46
FAC species	5	x3 =	15
FACU species		x4 =	
UPL species	10	x5 =	50
Column Totals:	38 (A)		111 (B)

Prevalence Index = B/A = 2.921052632

Hydrophytic Vegetation Indicators:

☑ Dominance Test is >50%

☑ Prevalence Index is ≤3.0[1]

☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? ☑ Yes ☐ No

Remarks:

SOIL

Sampling Point: 6DP1W

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-14	7.5 YR 3/2	100					5	Coarse sand
14-18	10 YR 3/3	100					silt	Silty clay
18-21	7.5 YR 3/2	100					5	Coarse sand

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):
Type:
Depth (inches):

Hydric Soil Present? ☐ Yes ☑ No

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizopheres along Living Roots (C3)
- ☐ Presence Of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☑ Drift Deposits (B3) (**Riverine**)
- ☑ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? ☐ Yes ☑ No Depth (inches):
Water Table Present? ☐ Yes ☑ No Depth (inches):
Saturation Present? (Includes capillary fringe) ☐ Yes ☑ No Depth (inches):

Wetland Hydrology Present? ☑ Yes ☐ No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site:	San Joaquin Solar	City/County: Fresno County		Sampling Date: 1/14/2009	
Applicant/Owner:		State: CA		Sampling Point: 7DP1U	
Investigator(s):	Curtis Uptain/Woody Moise	Section, Township, Range:			
Landform (hillslope, terrace, etc.):	Terrace	Local Relief (concave, convex, none): None		Slope (%): 3	
Subregion (LRR):	LRR C	Lat:	Long:	Datum: WGS 1984	
Soil Map Unit Name:			NWI Classification:		
Are climatic/hydrological conditions on the site typical for this time of the year?		☑ Yes	☐ No		
Are Vegetation, ☐ Soil, ☐ or Hydrology ☐	significantly disturbed?	Are "Normal Circumstances" Present?	☑ Yes	☐ No	
Are Vegetation, ☐ Soil, ☐ or Hydrology ☐	naturally problematic?	(If needed, explain answers in remarks)			

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	☐ Yes	☐ No	**Is the Sampled Area within a Wetland?**	☐ Yes ☑ No
Hydric Soil Present?	☐ Yes	☑ No		
Wetland Hydrology Present?	☐ Yes	☑ No		

Remarks: Terrace above deeply incised creek channel. Insufficient data on vegetation to determine if hydrophytic vegetation present.

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	0		
Sapling/Shrub Stratum			
1. Baccharis salicifolia	10%	X	FACW
2. Nicotiana glauca	5%	X	FACW
3.			
4.			
5.			
Total Cover:	0.15		
Herb Stratum			
1. Bromus madritensis	10%	X	NI
2. Marrubium vulgare	2%		FACW
3. Unknown	4%	X	?
4.			
5.			
6.			
7.			
8.			
Total Cover:	0.16		
Woody Vine Stratum			
1.			
2.			
Total Cover:	0		
% Bare Ground in Herb Stratum: 69%	% Cover of Biotic Crust:		

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A)

Total Number of Dominant Species Across All Strata: _____ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: #DIV/0! (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiplied by:	
OBL species		x1 =	
FACW species		x2 =	
FAC species		x3 =	
FACU species		x4 =	
UPL species		x5 =	
Column Totals:	0 (A)		0 (B)

Prevalence Index = B/A = #DIV/0!

Hydrophytic Vegetation Indicators:

☑ Dominance Test is >50%

☑ Prevalence Index is ≤3.0[1]

☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? ☐ Yes ☐ No

Remarks: Unidentified herb may be hydrophytic indicator, but not enough characters of this plant were available to identify it. Hydrophytic vegetation possibly present. Nonetheless, data point is not in a wetland because soil and hydrology indicators are absent.

SOIL

Sampling Point: 7DP1U

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-8	10 YR 3/2	100					5	Medium coarse sand
8-12	10 YR 3/3	100					5	Very coarse sand
12-21	7.5 YR 3/2	100					5	Fine sand

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):
Type: _____
Depth (inches): _____

Hydric Soil Present? ☐ Yes ☑ No

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizopheres along Living Roots (C3)
- ☐ Presence Of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☑ Drift Deposits (B3) (**Riverine**)
- ☑ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? ☐ Yes ☑ No Depth (inches): _____
Water Table Present? ☐ Yes ☑ No Depth (inches): _____
Saturation Present? (Includes capillary fringe) ☐ Yes ☑ No Depth (inches): _____

Wetland Hydrology Present? ☐ Yes ☑ No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site:	San Joaquin Solar	City/County: Fresno County		Sampling Date: 1/14/2009	
Applicant/Owner:		State: CA		Sampling Point: 7DP1W	
Investigator(s):	Curtis Uptain/Woody Moise	Section, Township, Range:			
Landform (hillslope, terrace, etc.):	Creek channel	Local Relief (concave, convex, none): Concave		Slope (%): 4	
Subregion (LRR):	LRR C	Lat:	Long:	Datum: WGS 1984	
Soil Map Unit Name:			NWI Classification:		
Are climatic/hydrological conditions on the site typical for this time of the year?	☑ Yes	☐ No			
Are Vegetation, ☐ Soil, ☐ or Hydrology ☐	significantly disturbed?	Are "Normal Circumstances" Present?	☑ Yes	☐ No	
Are Vegetation, ☐ Soil, ☐ or Hydrology ☐	naturally problematic?	(If needed, explain answers in remarks)			

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	☑ Yes	☐ No	**Is the Sampled Area within a Wetland?**	☐ Yes ☑ No
Hydric Soil Present?	☐ Yes	☑ No		
Wetland Hydrology Present?	☑ Yes	☐ No		

Remarks: Multiple channels are present.

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1. Nicotiana glauca	10%	X	FAC
2. Populus fremontii	30%	X	FACW
3.			
4.			
Total Cover:	0.4		
Sapling/Shrub Stratum			
1. Baccharis salicifolia	40%	X	FACW
2.			
3.			
4.			
5.			
Total Cover:	0.4		
Herb Stratum			
1. Marrubium vulare	5%	X	FAC
2. Artemisia douglasiana	15%	X	FACW
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	0.2		
Woody Vine Stratum			
1.			
2.			
Total Cover:	0		
% Bare Ground in Herb Stratum: 50%	% Cover of Biotic Crust:		

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiplied by:	
OBL species		x1 =	
FACW species	85	x2 =	170
FAC species	15	x3 =	45
FACU species		x4 =	
UPL species		x5 =	
Column Totals:	100 (A)		215 (B)

Prevalence Index = B/A = 2.15

Hydrophytic Vegetation Indicators:

☑ Dominance Test is >50%

☑ Prevalence Index is ≤3.0[1]

☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? ☑ Yes ☐ No

Remarks:

SOIL

Sampling Point: 7DP1W

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-14	7.5 YR 3/2	100					5	Sand
14-16	10 YR 3/4	100					5	Silty sand
16-21	7.5 YR 3/2	100					5	Sand

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):
Type: _____
Depth (inches): _____

Hydric Soil Present? ☐ Yes ☑ No

Remarks: No evidence of hydric soil indicators. However, point is within OH w/g of channel.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizopheres along Living Roots (C3)
- ☐ Presence Of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☑ Drift Deposits (B3) (**Riverine**)
- ☑ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? ☐ Yes ☐ No Depth (inches): _____
Water Table Present? ☐ Yes ☐ No Depth (inches): _____
Saturation Present? (Includes capillary fringe) ☐ Yes ☐ No Depth (inches): _____

Wetland Hydrology Present? ☑ Yes ☐ No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

BEFORE THE ENERGY RESOURCES CONSERVATION AND DEVELOPMENT COMMISSION OF THE STATE OF CALIFORNIA
1516 NINTH STREET, SACRAMENTO, CA 95814
1-800-822-6228 – WWW.ENERGY.CA.GOV

APPLICATION FOR CERTIFICATION FOR THE *SAN JOAQUIN SOLAR UNITS 1 AND 2 LICENSING PROJECT*

Docket No. 08-AFC-12

PROOF OF SERVICE
(Revised 8/27/2009)

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*indicates change

Declaration of Service

I, Anne Runnalls, declare that on September 23, 2009, I served and filed copies of the attached Response to CURE Data Request Set #4, dated September 23, 2009. The original document, filed with the Docket Unit, is accompanied by a opy of the most recent Proof of Service list, located on the web page for this project at: [http://www.energy.ca.gov/sitingcases/sjsolar/index.html]. The document has been sent to both the other parties in this proceeding (as shown on the Proof of Service list) and to the Commission's Docket Unit, in the following manner:

(*Check all that Apply*)

For service to all other parties:

__x___sent electronically to all email addresses on the Proof of Service list;

__ ___by personal delivery or by depositing in the United States mail at Sacramento, California with first-class postage thereon fully prepaid and addressed as provided on the Proof of Service list above to those addresses NOT marked "email preferred."

AND

For filing with the Energy Commission:

_x___sending an original paper copy and one electronic copy, mailed and emailed respectively, to the address below (preferred method);

OR

_____depositing in the mail an original and 12 paper copies, as follows:

CALIFORNIA ENERGY COMMISSION
Attn: Docket No. 08-AFC-12
1516 Ninth Street, MS-4
Sacramento, CA 95814-5512

docket@energy.state.ca.us

I declare under penalty of perjury that the foregoing is true and correct.

Anne Runnalls